

# Estimating costs of programme services and products using information provided in standard financial statements

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*The financial viability of programme services and product offerings requires that revenue exceeds expenses. Revenue includes payments for services and products as well as donor cash and in-kind contributions. Expenses reflect consumption of purchased or contributed time and materials and utilization (depreciation) of physical plant facilities and equipment. Standard financial reports contain this revenue and expense information, complemented when necessary by valuation and accounting of in-kind contributions. Since financial statements are prepared using consistent and accepted accounting practices, year-to-year and organization-to-organization comparisons can be made. The use of such financial information is illustrated in this article by determining the unit cost of cataract surgery in two hospitals in Nepal. The proportion of unit cost attributed to personnel, medical supplies, administrative materials, and depreciation varied significantly by institution. These variations are accounted for by examining differences in operational structure and capacity utilization.*

## Introduction

The underlying reason for costing programme services and products is to evaluate them, possibly leading to improvements in their efficiency. In general, evaluation of health care programmes involves assessment of programmatic accomplishment, i.e. the extent to which programme objectives have been met. For example, in cataract surgery programmes this may entail estimating the surgical rate in a target population, estimating the prevalence of cataract impairment, or investigating the sight restoration outcomes achieved. It is less common to address the resources consumed and their cost in the course of producing programme outputs. Nevertheless, as recognition of the importance of financial viability increases, particularly for those programmes undertaken by nongovernment organizations, cost (as well as effectiveness) is becoming more central in evaluation efforts. Financial viability is aided by understanding where costs lie and, thus, where cost reductions are possible.

This article is concerned with financial indices: *operating costs* (expenses), *investment* (assets), and *long-term financial viability* (revenue amounts and sources). We describe the use of standard financial reports — the balance sheet and the income statement — to obtain the necessary information and provide a comparative analysis of the cost of cataract surgery in two facilities in Nepal. Uniformity in cost accounting is particularly important in making comparisons between programmes. By advocating the use of standard financial reports and offering guidelines for the valuation of contributed resources, both accounting uniformity and completeness are addressed.

## Methods and results

### Cost determination

The performance of a programme is influenced by the specific structural and operational elements used to produce programmatic outputs (1). These elements determine the cost, as well as the quantity and quality of output (2). Although ultimately it may be of interest to compare programmes and facilities structurally and operationally, we propose cost comparisons since their use is more straightforward.

Cost comparisons can be focused on the *average* cost of producing a unit of output (total cost averaged over the entire programme output) or the cost of producing the last unit of output, i.e. the *marginal*

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cost. Fixed costs, such as those for equipment and labour, which do not vary with normal fluctuations in production levels, are part of the average cost calculation, but are not part of the marginal cost (marginal cost includes only variable costs). Our interest is in determining the total costs of a programme as the basis for calculating average unit cost.

Cost determination is complex. Care must be taken to ensure that accounting is complete, i.e. that no costs are overlooked, and caution must be exercised so that the costs of resources used for more than one programme or "product line" are fairly allocated if product line costing is of interest; a rational basis for allocation of shared resource costs must be established. Donated or in-kind resources represent another costing issue: these resources must be priced so that their value as programme inputs is accurately and realistically reflected.

The costing exercise could proceed in a bottom-up fashion, which requires that each operational element or component of the production process be delineated and all resources utilized "costed out." Unless the process description is complete, including indirect supporting resources, this "micro" approach is likely to result in an incomplete cost picture. It may be feasible for determining marginal costs, but it is likely to be deficient when total costs are of interest.

A realistic alternative is to approach programme costing from the top down. Standard financial statements provide the starting point for this approach. These reports are audited by external accountants to provide assurance that they are free of misstatements and that customary accounting principles are used. Such reports present a complete financial picture of the organization; all revenues and expenses are reflected as well as the assets used in the production of output. Because these reports are prepared using consistent and well-accepted accounting practices, comparisons from year-to-year and organization-to-organization can be made.

In this article we report the use of financial statements from two nongovernment hospitals in Nepal to determine the cost of cataract surgery. One hospital, the Fateh-Bal Eye Hospital, in the Berhi zone, is supported by the Swiss Red Cross. The other hospital, the Lumbini Rana Ambika Eye Hospital, in the Lumbini zone, was established by the Seva Foundation. Of interest is expense and revenue information from the income statement (income = the difference between total revenue and total expenses) for the 1994-95 fiscal year, referred to here as the current accounting period. We also obtained asset information from the balance sheet, which consists of two counter-balancing accounts: the assets or resources of the organization and the liabilities or

claims against these assets at a particular point in time (we use the end of the 1994-95 fiscal year).

### **Expense accounting**

Expenses associated with programme operations can readily be obtained from the income statement. Typically, these expenses are reported according to the various resource components used in the production process. Common resource categories include the following: personnel; materials and supplies; maintenance and repairs; and depreciation. Materials and supplies can be subdivided into drugs or medical supplies and administrative materials and supplies, the latter comprising utilities, communications, travel, advertising/promotion, staff training, etc. Maintenance and repair expenses for medical and office equipment can be reported separately from those for buildings. Expenditures for new equipment or facility improvement represent one-time costs for resources that usually have a useful life beyond the current accounting period. These asset-related expenditures are capitalized (included as assets in the balance sheet) and expended over time using a depreciation schedule that reflects the useful life of the asset. Depreciation is the allocation of the acquisition cost of a long-lived asset to the accounting periods that benefit from the use of the asset. Like depreciation, leasing costs are treated as an expense.

Because not all purchased materials and supplies are used in a given current accounting period, the expense account will include adjustments to account for changes in inventory (stock used from inventory adds to current period expenses). Total consumption is represented by the opening stock inventory (at the start of the current accounting period) plus purchases minus the closing stock inventory. Inventory changes are also reflected in the balance sheet as changes in current assets.

Expenses for the Fateh-Bal and Lumbini hospitals for the fiscal year 1994-95 are shown in Table 1. Shown also are the expenses allocated specifically to cataract activities, based on an item-by-item review of expenses detailed in available statements. For example, staff salaries and allowances were allocated by considering the staffing of hospital wards, operating theatre, outpatient department, satellite clinics, etc., using a percentage assignment that corresponds to the proportionate workload for cataract patients.

Because travel and training expenses are substantial, they are shown separately from other administrative materials and supplies. Staff training costs were relatively high at Fateh-Bal: these included NPR 437106 (US\$ 8742) for post-graduate diploma study by two ophthalmologists (who subse-

Table 1: Operating expenses in the fiscal year 1994–95 for Fateh-Bal and Lumbini hospitals, by category

Expenses	Cost in Fateh-Bal (in NPR) <sup>a</sup>		Cost in Lumbini (in NPR)	
	Cataract	Total	Cataract	Total
Staff salary and allowances	1 541 332	3 141 521	2 324 044	3 972 455
Medical supplies	946 565	1 582 805	6 960 043	7 581 391
Administrative materials and supplies	550 706	959 100	890 495	1 615 729
Patient subsidies	223 826 <sup>b</sup>	264 622 <sup>b</sup>	1 636	2 180
Travel/transportation	144 251	359 834	155 373	216 212
Staff training	620 487 <sup>c</sup>	1 439 990 <sup>c</sup>	152 939	324 032
Equipment maintenance and repair	14 646	21 025	359 282 <sup>d</sup>	399 203 <sup>d</sup>
Building maintenance and repair	91 482	123 733		
Depreciation	705 090	866 296	1 539 274	1 891 000
<b>Total</b>	<b>4 838 385</b>	<b>8 758 926</b>	<b>12 383 086</b>	<b>16 002 202</b>

<sup>a</sup> US\$ 1.00 = NPR 50.00

<sup>b</sup> Patient subsidies tenfold higher than previous year.

<sup>c</sup> Staff training fourfold higher than previous year.

<sup>d</sup> Includes both equipment and building maintenance and repair expenses.

quently resigned) and NPR 659 515 (US\$ 13 190) for continuing education expenses for the hospital administrator. Training expenses for the fiscal year 1994–95 were over four times higher than those for the previous fiscal year. These were also a tenfold increase over the previous year in the amount spent on patient subsidies (food and transport, but not medical expenses). These unusually high patient subsidies and training costs amount to a 1-year expense increase of about NPR 1.4 million (US\$ 28 000), about half of which was attributable to the cataract programme.

Since depreciation rates were not available for the Lumbini Eye Hospital, an estimate was obtained by applying the rates in Fateh-Bal Hospital for each of the various asset categories to the respective Lumbini assets (see Table 2). The cataract allocation was taken to be the same as that for Lumbini (81.4%).

### Gifts and in-kind contributions accounting

An important feature that separates nonprofit or charitable entities from the more traditional commercial corporation is gifts and in-kind contributions (3). Such contributions can take the form of cash for capital expenditure and operating expenses, or donations of labour, materials, equipment and physical plant infrastructure. Accounting for these contributions is fraught with difficulties in terms of both valuation and income measurement. Unless consistent and similar approaches to valuing in-kind contributions are used, comparisons across facilities or programmes are not feasible.

**Valuation guidelines.** Valuation of donated equipment or other capital assets should be based on use of a fair market value to the recipient at the time the donation is received. The value of gifts of supplies

Table 2: Physical plant assets for the end of the fiscal year 1994–95 in Fateh-Bal and Lumbini hospitals<sup>a</sup>

Fixed assets	Fateh-Bal (in NPR) <sup>b</sup>	Lumbini (in NPR) <sup>b</sup>
Land	1 660 000	2 913 000
Buildings	10 257 170 <sup>c</sup>	25 000 000
Fixtures/furnishings	720 707	700 000
Equipment	1 393 024	5 240 000 <sup>d</sup>
Vehicles	593 125	
<b>Total</b>	<b>14 624 026</b>	<b>33 853 000</b>

<sup>a</sup> The lack of historical documentation precludes the separation of contributed assets from those purchased from operating revenue. Asset values reflect depreciated book values

<sup>b</sup> US\$ 1.00 = NPR 50.00.

<sup>c</sup> Includes an NPR 1.2 million building fund contribution.

<sup>d</sup> Includes both equipment and building maintenance and repair expenses.

and medical consumables should also be based on local markets (there may be a tendency among donors to value in-kind contributions at maximum retail price in the donor's locality, rather than the market value in the recipient's location). Donated equipment or supplies that are not useable should be disregarded. Because in-kind contributions are not necessarily need-based, not all donations may be usable, either because of uncommon specifications or because the quantity is far greater than can be reasonably consumed. The determination of market value should take into consideration substitutable supplies that may be less costly. Whatever the specific circumstances, useful donated items should be valued at prices at which they, or an equivalent product, can be locally procured or at which they can be competitively imported.

Valuation of donated personnel time should be based on local salaries and wages for such work. Here again it is important to apply consistent rules of usefulness and relevance before assigning a value. Sometimes unsolicited volunteers participate in programmes but do not actually make any contribution to its activities. Valuation of paid work by expatriates should use actual salary and fringe benefit costs for that portion of time devoted to the organization/programme being evaluated. Often this cost, paid by an outside sponsoring organization, may be higher than that based on local valuation; nevertheless, it is a programme-related expenditure and thus should be reflected as such (presumably the expatriate brings skills that are not available locally — a circumstance not unlike that with imported equipment).

**Accounting guidelines.** Contributions of personnel time and in-kind materials and supplies are recorded simultaneously as both revenue and expense for the period in which they are used. Medical supply expenses at Lumbini include the substantial in-kind material donations arranged by the Seva Foundation. Although the Lumbini Programme received a donation of 11 045 sutures, valued by the donor at US\$ 10 per suture, only 4995 sutures were used during the fiscal year 1994–95, which when valued at the market price in Nepal (ca. US\$ 6.50) resulted in an expense (and revenue) of NPR 1 621 102 (US\$ 32422) for 1994–95. Other than this substantial increase in suture inventory, changes in inventories were small at both institutions, and thus, no adjustments to expenses were made to account for changes in inventory.

The contribution of equipment and other physical plant assets should be accounted for separately from other balance sheet assets in a special contributed capital account. Contributed capital should not

be included as revenue when received but rather when the asset is depreciated; that portion of the asset reported as depreciation expense within a particular accounting period is reported as revenue in the same period. Gifts of capital continue to affect future income statements throughout the life of the asset. By maintaining a contributed capital account within the balance sheet, allocation of this revenue over time is straightforward.

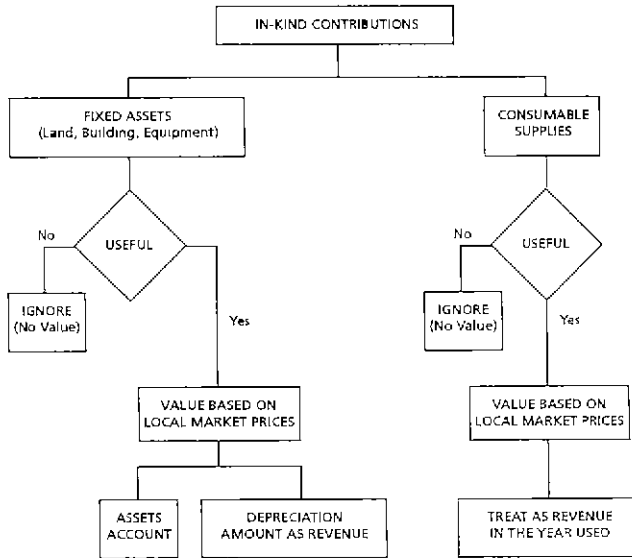
Cash contributions intended to cover current operating expenses (as opposed to capital investment) are reported as revenue when received. On the other hand, contributions for operating activities (whether cash or in-kind) that take place in future periods should be treated as balance sheet liabilities when they are received and become revenue in the period in which expenses are incurred for these activities. It is not uncommon for portions of large contributions to be earmarked for operating expenses in future years. Cash contributions intended for an institution's endowment are treated as a capital inflow, and do not affect measurement of income; however, endowment earnings used for operating expenses are reported as revenue in the period used. Contributions to cash reserves intended for capital expenditure are treated as liabilities (within the balance sheet) when received and reported in the contributed capital account when the expenditure takes place. An amount equal to depreciation is reported as (offsetting) revenue each year.

Fig. 1 and 2 summarize valuation and accounting for in-kind and cash contributions, respectively.

### **Capital investment (assets)**

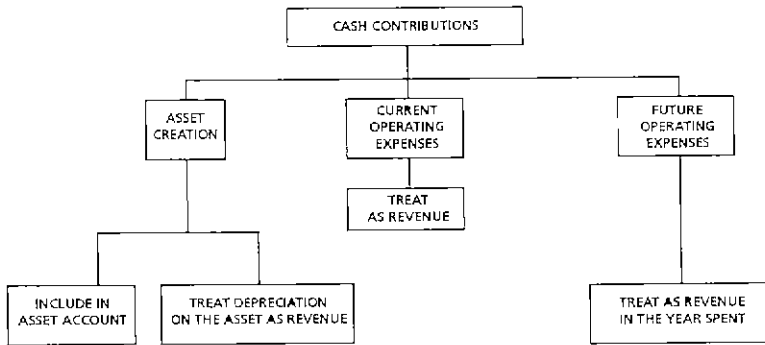
It is of interest to document the level of capital investment used in producing programme outputs, including contributed capital. Physical plant assets, their type, quality and quantity, are vital to the capability and cost structure of an institution. Investment in physical plant infrastructure involves the following: land, including development costs; buildings, including support systems such as power generators and water supply; building fixtures and furnishings; equipment; and vehicles. For these items, both depreciated book value and the current market value (replacement cost) are of interest (land is not depreciated under standard accounting practices). The original book value of a capital asset is the acquisition cost (or market value at the time of donation for a donated asset). The depreciated book value, or current book value, is this original acquisition cost less accumulated depreciation (plant assets decline in value over time, i.e. are consumed, and this depreciation in value is treated as an operating expense). For donated pieces of equipment and other capital

Fig. 1. Flow chart for valuation of in-kind contributions.



WHO 98244

Fig. 2. Flow chart for accounting for cash contributions.



WHO 98245

items that may not have been entered into the assets account, the records necessary to establish book value may not be available. In this instance, current market value could be substituted for current book value.

Table 2 shows the current book value of physical plant assets (also termed fixed assets) at the Fateh-Bal and Lumbini hospitals. These assets pertain to the entire physical plant, not just those pertinent to cataract surgery. The asset values reflect the

larger physical plant in Lumbini than in Fateh-Bal (2578m<sup>2</sup> versus 2052m<sup>2</sup>) and the greater amount of equipment in Lumbini (e.g. four operating microscopes versus one).

It should be noted that the financial resources of an organization include, in addition to physical plant or fixed assets, also its current assets, i.e. cash plus other assets that are expected to be converted into cash or to be consumed during the current accounting period, such as inventories. For both Fateh-Bal

Table 3: Revenue in the fiscal year 1994-95 for Fateh-Bal and Lumbini hospitals

Revenue source	Fateh-Bal (in NPR) <sup>a</sup>	Lumbini (in NPR) <sup>a</sup>
Patient revenue	2 036 733	12510 830
Cash contribution (operating expenses)	6 943 301	990 690
In-kind contribution (materials and supplies)	207 180	2 512 010
Contributed capital (equipment, physical plant) <sup>b</sup>	160 181 <sup>c</sup>	3 255 52 <sup>d</sup>
Interest	82 826	1 713 309
<b>Total</b>	<b>9 430 221</b>	<b>16 510 391</b>

<sup>a</sup> US\$ 1.00 = NPR 50 00

<sup>b</sup> Since data were not available, contributed capital does not include revenue associated with capital contributions in prior years. Therefore, the amounts shown for contributed capital are underestimates

<sup>c</sup> The amount shown reflects depreciation on NPR 4 004 529 received and expended for construction in the fiscal year 1994-95

<sup>d</sup> The amount shown reflects depreciation on NPR 861 664 in cash contributions used for equipment purchases and NPR 1 308 682 in in-kind equipment contributions in the fiscal year 1994-95

and Lumbini hospitals, the current assets are minimal and are not included in Table 2.

### Revenue (income) accounting

Revenues are payments received or promised in exchange for the delivery of goods or services to customers. Revenues may be broken down broadly by service or product line. It is important to recognize that service/product revenues represent sales, not payments received. The payment for the service or product may not be received until a subsequent accounting period. Sales revenue for which payment has not yet been received is also reported as "accounts receivable" within the (current) assets account. Health care services in most developing countries tend to be on a cash basis and, thus, the "accounts receivable" are likely to be insignificant.

Table 3 shows the revenues for both hospitals. Although revenues exceed expenses at both hospitals, neither one has achieved financial self-sufficiency. Fateh-Bal is being sustained by cash contributions from the Swiss Red Cross. Patient revenues, associated with all services and product/drug sales, cover only a quarter of total expenses (Table 4). Although the Lumbini facility is much closer to financial self-sufficiency, i.e., patient revenues approach total expenses, substantial in-kind contributions of materials and supplies are necessary. Revenue from cataract patients, although not reported separately, accounts for most of the patient revenue.

Some facilities or programmes may report the value of free or subsidized services as revenue, while simultaneously reporting the amount as an offsetting expense (i.e., an expense that is in addition to that

incurred in providing the service). In effect, this results in expense double counting. In such instances, both revenue and expenses in the income statement should be reduced by the appropriate amounts if accurate information is to be obtained.

As already noted, capital contributions are treated as revenue when the asset is depreciated. Cash contributions for current operating expenses are revenue when received, as is the market value of contributed services and materials and supplies used in the current period.

### Cost of cataract surgery

Fateh-Bal hospital carried out 3598 cataract operations (197 with intraocular lens (IOL) implantation) in the fiscal year 1994-95 (July 1994 to June 1995). Over the same period Lumbini hospital performed 7542 cataract operations (6689 with IOL implantation). The costs involved are shown in Table 5.

The salary cost per case was relatively high at Fateh-Bal. Three ophthalmologists are employed, although only one was available for service in the

Table 4: Revenue sources, as a proportion of total operating expenses (excluding depreciation) in Fateh-Bal and Lumbini hospitals

Revenue source	Fateh-Bal	Lumbini
Patient services/products	25.8%	88.7%
Cash contributions (operations)	88.0%	7.0%
In-kind contributions (materials/supplies)	2.6%	17.8%
Interest	1.0%	1.2%
<b>Total</b>	<b>117.4%</b>	<b>114.7%</b>

Table 5: Cost per cataract surgery case in Fateh-Bal and Lumbini hospitals for the fiscal year 1994–95

Expense	Cost in Fateh-Bal (NPR) <sup>a</sup> (n = 3598 cases)	Cost in Lumbini (NPR) <sup>a</sup> (n = 7542 cases)
Staff salary and allowances	428.39 (31.8) <sup>b</sup>	308.15 (18.8)
Medical supplies	263.08 (19.6)	922.84 (56.2)
Administrative materials and supplies	153.06 (11.4)	118.07 (7.2)
Patient subsidies	62.21 (4.6)	0.22 (0.0)
Travel/transportation	40.09 (3.0)	20.60 (1.3)
Staff training	172.45 (12.8)	20.28 (1.2)
Maintenance and repair	29.50 (2.2)	47.64 (2.9)
Depreciation	195.97 (14.6)	204.09 (12.4)
<b>Total</b>	<b>1344.74 (100.0)</b>	<b>1641.89 (100.0)</b>

<sup>a</sup> Official exchange rate, US\$ 1 = NPR 50.00 Purchasing power parity (US\$ 1 = NPR 7.69)

<sup>b</sup> Figures in parentheses are percentages.

fiscal year 1994–95, the other two being absent on training. Indeed, in view of the approximately 3600 operations, ophthalmic surgery time is clearly a throughput bottleneck. The volume cannot be increased (or maintained) without more ophthalmologists being available for cataract surgery. The relatively high salary costs also suggest that support staff sufficient for a substantial increase in volume are in place.

Medical supplies costs are much higher at Lumbini than at Fateh-Bal; this is accounted for only in part by the higher proportion of cases who received an IOL implant (89% versus 5%). The cost of an implant (US\$ 6.19) is NPR 200–250 more than the aphakic spectacles received by Fateh-Bal cases.

As discussed above, Fateh-Bal hospital experienced a tenfold increase in patient subsidy for food and transport during the fiscal year 1994–95. This patient subsidy is reflected in the data in Table 5.

The somewhat higher travel/transportation costs at Fateh-Bal are due, in part, to the extensive community outreach efforts practised there. Also, staff training costs were unusually high because of two special nonrecurring circumstances. In the absence of the atypical patient subsidy and staff training expenses at Fateh-Bal, the cost per case would have been about NPR 1200.

Administrative materials and supplies, building and equipment maintenance, and repair and depreciation costs were very comparable in both hospitals. The efficiency with which the facilities were being used was therefore similar. However, it is reasonable to assume that the efficiency at Fateh-Bal could be increased if additional ophthalmologists were available. Indeed, the facilities in this hospital were designed to support three ophthalmologists and two medical officers, and the number of paramedics and

other support staff is sufficient to double the volume of cataract operations

The total investment (including that for noncataract services) per cataract operation in the fiscal year 1994–95 was similar in the two institutions: NPR 4064 (US\$ 81.3) in Fateh-Bal versus NPR 4489 (US\$ 89.8) in Lumbini.

It is of interest to note that the estimated cost per cataract operation in Lumbini (US\$ 32.84) compares with an estimate of US\$ 21.71 from a previous study for the fiscal period 1991–93 (4). This previous study separately estimated in-county recurring costs (US\$ 13.91, excluding intraocular lenses), capital costs (US\$ 2.42, excluding hospital space) and donor agency administrative costs (US\$ 5.38).

## Discussion

As discussed above, the financial performance of not-for-profit, nongovernment organizations in providing a health care service or product can be evaluated using information generally available from standard financial statements. It may be necessary in some instances to obtain supplementary information on valuation and accounting for gifts and in-kind contributions. Caution must be exercised to overcome any tendency to treat special one-time capital gifts as not part of regular revenue sources or their use as real costs in the delivery of services. Ignoring the depreciation associated with these assets understates true costs, and not reporting an offsetting amount as revenue unfavourably distorts the income picture.

The fixed assets account, based on depreciated valuations, is not necessarily an accurate reflection of the required investment for replicating a particular

facility or programme. The replacement cost of the investment (i.e. the market value) may be considerably greater. The same weakness holds for comparisons of one facility with another, particularly if one is new and the other is old. An up-to-date market valuation is needed to ensure that any comparison is made on similar terms. Operating expenses, on the other hand, are a more accurate reflection of the true situation. Facilities operating under similar levels of efficiency and in a comparable economy may be expected to have comparable operating costs (as is essentially the case with the Fateh-Bal and Lumbini facilities). It is important to recognize, however, that a significant discrepancy between facilities could arise if there are substantial differences in what is "on-the-books." For example, if patients are expected to purchase on the outside market (and bring items with them) IOLs, sutures, and other medicines, such costs would not be reflected in the expense account. It is important that a consistent definition of what is included in the product or service be used and understood. A straightforward approach is to account for all expenses, whether incurred by the facility or directly by the patient.

The proposed top-down approach to costing a product or service is advocated as a means of ensuring that relevant costs are not inadvertently overlooked. With a bottom-up approach, costs stemming from activities such as staff development, public outreach, general administrative support and fundraising, as well as capital depreciation, may go unrecognized. Since a top-down approach may be practical only if the product/service represents a substantial, if not dominant, output of the facility, it may be desirable to undertake a costing of the entire portfolio of major products/services. In this way no costs are left unallocated or redundantly allocated (i.e. the portfolio total equals that for the institution as a whole).

Differences in cost between institutions will clearly arise if there are substantial differences in facility utilization and structure. An efficient facility operating at full capacity will have lower per unit costs than an inefficient, underused one. One facility may be capital intensive, while another is not. A low capital investment implies low start-up costs, low maintenance, and low depreciation costs. However, an increased capital investment may be preferred if it has offsetting economic advantages, such as lower manpower requirements, or produces a higher quality, higher valued output. Thus, an institution operating with a low capital investment does not necessarily have a cost advantage over one that has a substantially higher investment.

Cost comparisons can also be useful for examining the overall affect of technological differences.

For example, conventional wisdom holds that because extracapsular cataract extraction (ECCE) surgery with IOL implantation requires more ophthalmologist's time, more expensive equipment, and the IOL is itself costly, an institution emphasizing such surgery would have higher per unit costs than one using intracapsular cataract extraction (ICCE) and aphakic spectacles. In reality, however, the situation is not as straightforward (Table 5). Salary costs were higher at Fateh-Bal even though almost all cases involved ICCE. A longer operating time for ECCE is relevant only if available ophthalmologists' time and operating room time are used at full capacity. The cost of equipment, as reflected in the depreciation amount, was essentially the same at both facilities. The per unit cost is driven as much by utilization levels as by resource costs. Medical supply costs, including the IOL, were higher at Lumbini. As already noted, however, the extra cost cannot be explained by the additional IOL cost alone; other medicines must be used more often or in greater amounts at Lumbini.

Comparative appraisal of costs across countries faces several difficulties, including that posed by the use of official exchange rates to convert border prices into the currency of a particular country. The United Nations Statistical Division (UNSTAT) is coordinating an ongoing International Comparison Programme to determine appropriate conversion factors, labelled purchasing power parity (PPP), based on the number of units of a country's currency required to buy a fixed basket of goods and services in the domestic market compared to that in the USA. The use of official exchange rates markedly undervalues domestically produced and consumed goods and services in developing countries, and grossly overvalues imported goods and services (5). For example, the value of a Nepali rupee in PPP terms is US\$ 0.13, which contrasts with the US\$ 0.02 (US\$ 1.00 = NPR 50) used in official transactions.

Use of PPP exchange rates, permits more realistic comparisons to be made of cost across countries; for example, on this basis the cost of cataract surgery at Fateh-Bal and Lumbini is US\$ 174.87 and US\$ 213.51, respectively (Table 5).

A critical issue in the financial viability of a facility or programme is the long-term sustainability of revenue sources. Cost containment is not the only issue. The proportion of expenses that are covered by sustainable revenue sources, whether from patient fees, in-kind contributions, and international or local fund raising, must reach 100%: indeed, it must exceed 100% if cash reserves and other assets are to increase to meet the developmental needs and the expectations of the community served by the programme. It should also be recognized that failure to



achieve financial self-sufficiency from internally generated revenue may be acceptable, particularly when the programme or facility serves other purposes. For institutions such as Fateh-Bal, the interests of the Swiss Red Cross as a donor institution go beyond the direct provision of hospital-based services. Rather Fateh-Bal hospital is seen as a focus for strengthening Nepal Red Cross structures and general development efforts in the area surrounding the hospital, which include water supply, sanitation, and nonformal education for women.

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### Résumé

#### Détermination du coût des prestations de service à partir des informations tirées des états financiers standard

Pour qu'un programme soit financièrement viable, il faut que les recettes correspondant aux prestations de service et aux produits soient supérieures aux dépenses engagées. Les recettes proviennent de l'encaissement des prestations de service et des produits auxquels viennent s'ajouter les dons

en espèces et en nature. Les dépenses, quant à elles, couvrent les rémunérations (honoraires ou salaires), les achats et l'amortissement des installations et des biens d'équipement de l'entreprise (coût d'utilisation). Les états financiers récapitulent les informations relatives aux recettes et aux dépenses engagées, et le cas échéant le montant des contributions en nature. Du fait que les états financiers sont établis conformément à un référentiel de normes comptables, il est possible de dresser des états comparatifs par année ou par organisation. Cet article illustre qu'il est possible d'utiliser les informations financières pour déterminer le coût unitaire d'une opération de la cataracte dans deux hôpitaux du Népal. On remarque alors que la valeur du coût unitaire représentée par les frais de personnel, par les fournitures médicales, par le matériel de bureau et par l'amortissement varie grandement d'une institution à l'autre. On peut expliquer ces variations en étudiant les différences d'organisation et d'utilisation des ressources.

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