

## Can Activity-Based Costing Work in Developing Countries?

Healthcare organizations use cost accounting to estimate the unit costs of services they provide, for example, the cost of delivering a baby at a hospital. Such information helps establish realistic budgets and prices, identify inefficiencies, and project the effect that changes in demand would have on resource requirements.

However, traditional cost accounting methods do not accurately reflect the contribution of indirect costs to individual services. They pool all indirect costs and then allocate them to the various services in proportion to service volume or direct costs. This approach tends to overestimate the unit cost of high-volume services and underestimate the cost of low-volume services. When indirect costs are large, often the case in healthcare, the cost of services may be seriously misrepresented. Activity-based costing (ABC) solves this problem by estimating the cost of the work activities that consume resources and by linking these costs to the services that are provided.

Although valuable, ABC can be difficult to implement, even in the U.S. Is it practical for developing countries? As a first step in testing the feasibility and usefulness of ABC in a developing country setting, the Quality Assurance Project (QAP) collected ABC data and calculated unit costs at the MaxSalud Institute for High Quality Healthcare in Chiclayo, Peru. A private, nonprofit organization funded by USAID, MaxSalud provides health services to a low- to mid-income population of about 20,000 through two clinics and a central management support unit (MSU).

### Methodology

The project team formed and defined all the services provided and activities undertaken in each department of MaxSalud. Costs of each activity were estimated and then traced to the many services provided by MaxSalud in departments throughout the organization. Data were obtained from MaxSalud records and staff interviews (see Figure 1). Special software was used to assist with the calculations and tracing process.

For example, the unit cost of delivering a baby includes the cost of the delivery itself plus related activities, such as preparing the birth package, evaluating the patient, and neonatal monitoring. The unit cost also includes indirect activities by the delivery department (e.g., attending meetings) and by other departments (e.g., cleaning the delivery rooms).

### Cost Data from MaxSalud

The ABC team identified 107 distinct major activities performed at MaxSalud. At the time of the study, fully loaded unit costs at MaxSalud were fairly high. This was due in part to low usage of services as a result of the economic problems caused by recent flooding and to higher than normal indirect costs related to adding two new clinics.

#### Figure 1. The ABC Procedure: Steps to Collect Data and Calculate Unit Costs

1. Form implementation team at MaxSalud.
2. Identify all departments and services. (*team*)
3. Define activities by department. (*staff interviews*)
4. Estimate the distribution of staff time among activities and services. (*staff interviews*)
5. Estimate unproductive staff time. (*interviews*)
6. Organize cost data by department and category, e.g., wages, supplies. (*accounting records*)
7. Estimate value of all resources used for each activity. (*accounting records, interviews, team*)
8. Trace activities and costs within and across all departments to services provided. (*interviews, computer program, team analysis*)
9. Estimate service volumes. (*MaxSalud records*)
10. Calculate unit costs = Total cost of service / service volume. (*team analysis*)



Table 1 shows unit costs and fees for several services. It illustrates disparities between the clinics both in unit costs and fees. It also shows the tendency for costs to exceed fees. Although some services were profitable (root canals at Balta Clinic), most required subsidies, some quite large. Table 2 shows the unit cost of activities that contribute to delivering a baby at Balta Clinic. The primary activity (delivering a baby) accounts for only 23 percent of the total unit cost, while 42 percent is from secondary activities at the clinic and 35 percent from secondary activities at the MSU. Services with such a high percentage of their costs from secondary activities are candidates for efficiency improvement. ABC also provided information on activities associated with unproductive time (e.g., repeating a lab test).

## Is ABC Feasible? Results of the Study

This study demonstrated that it is possible to collect the data needed to implement ABC at a medium-sized healthcare organization in a developing country. The study team was able to define a comprehensive list of activities, derive estimates of activity costs based largely on staff estimates of work time devoted to the different activities, obtain service volumes, and relate these costs to services to obtain unit costs. However, this achievement was not easy, and four requirements became apparent:

- ABC requires complementary accounting systems that provide reasonably accurate costs organized by cost category and department. The special software was useful, but probably not essential.
- ABC requires accurate information on the volume of services provided.
- Access to and strong cooperation from personnel are important. Interviews took one to two hours per staff member. Staff must be assured that the interviews are not part of a performance evaluation.
- Technical assistance and guidance on the ABC methodology may be necessary initially.

The usefulness of ABC in developing countries probably depends on its incorporation into an ongoing information and management decision-making system. One-time data collection efforts are unlikely to result in information that will be useful over time. Furthermore, a major advantage of ABC is the trend data it provides on unit costs, but this requires an ongoing information system. Thus, while the potential benefits of ABC in developing country healthcare organizations remain to be demonstrated, the MaxSalud experience provides substantial evidence that ABC is feasible.

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This summary is based on the *Operations Research Results* report, "Application of activity-based costing (ABC) in a Peruvian NGO healthcare system" written by Hugh Waters, Hany Abdallah, Diana Santillán, and Paul Richardson. To order the report, please access our Website: <[www.qaproject.org](http://www.qaproject.org)>, or write to <[qadissem@urc-chs.com](mailto:qadissem@urc-chs.com)>.

**Table 1. Unit Costs and Fees for Selected Services**

Department	Balta Clinic	Urrunaga Clinic
Type of service	Unit Cost (Fee)	Unit Cost (Fee)
<b>Ambulatory department:</b>		
General medical consultation	8.16 (5.50)	13.40 (2.39)
<b>Dentistry:</b>		
Root canal	37.04 (49.30)	not offered
Dental cleaning	13.27 (7.35)	17.72 (5.50)
<b>Preventive care:</b>		
Healthy child consultation	2.54 (1.47)	4.02 (0.92)
Immunization	1.44 free	1.30 free
<b>Emergency department:</b>		
Delivery of baby	187.30 (45.11)	not offered

**Table 2. Unit Cost of Delivering a Baby at Balta Clinic**

Activity	Unit Cost*	Total
Primary activity (at clinic)		\$ 43.00 (23%)
Deliver a baby	\$ 43.00	
Secondary activities (at clinic)		79.00 (42%)
Waiting and coverage time	46.00	
Neonatal monitoring	10.00	
Training	9.00	
Meetings	5.50	
Birth package preparation	5.50	
Nursing support	2.00	
Patient evaluation	1.00	
Secondary activities (of MSU)		65.00 (35%)
All related MSU activities	65.00	
<b>Total</b>	<b>\$187.00</b>	<b>\$187.00 (100%)</b>

\*Figures subject to rounding errors.