

CHILD SURVIVAL BASICS

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Monitoring and Evaluation: Tools for Improving Child Health and Survival

An essential component of any health program is monitoring and evaluation — collecting and analyzing health information that is accurate and reliable and can be put to practical use. In child survival, monitoring and evaluation focuses on information about home practices (how parents and other caretakers prevent and recognize illness and how they care for sick children), the availability and use of health services, and the quality of care provided by health facilities.

Monitoring and evaluation activities related to child health should be:

- **Integrated:** Information should be collected and analyzed about all major causes of childhood illness and death, especially diarrheal diseases, acute respiratory infections (ARI), malaria, measles, and malnutrition.
- **Useful for local planning:** The activities should be targeted to district-level health managers and should emphasize data that is immediately useful.
- **Rapid, simple, and cost-effective:** Monitoring and evaluation should consume a minimum of time and resources and should focus on data that is essential for decision-making.
- **Effective in building local capacity:** Local health workers should be able to use the methods and tools on a regular basis without external assistance.

This issue of **CHILD SURVIVAL BASICS** outlines various methods and tools for monitoring and evaluating child health and survival programs, including some early lessons from the development and application of these methods and tools. Because they were developed in collaboration with ministries of health and other groups working to improve primary health care in particular communities or countries, they represent solutions to unique sets of priorities and conditions and should not be considered blueprints for other child health interventions. Each will benefit from continuous updating and revision based on practical experience.

Also included in this issue is a bibliography of other resources on monitoring and evaluating programs in child health and survival. For more information about the material covered in this newsletter, contact the BASICS Information Center, or visit our web site at <http://www.basics.org>. ■

quickly analyze and use this information. Some of these tools are described briefly below and in more detail throughout this newsletter.

PROGRAM MONITORING

Program monitoring is the collection of routine data about processes and outputs, using such sources such as Health Management Information Systems, health workers' self-assessments, or health facilities' supervisory records.

Effective program monitoring requires the frequent collection of valid, accurate data on activities and outputs that are useful for making program decisions.

Some of the methods and tools that can be used for program monitoring include:

Supervisory Performance Monitoring: The Ministry of Health in Niger complemented its periodic health facility assessments with a quality-oriented

mechanism for monitoring the day-to-day performance of health workers. The new system helped managers confirm that health workers who received training in clinical skills showed continuous improvements in performance. However, early experience also showed a need to validate the data collected against a "gold standard," such as the regular facility assessments, to more reliably distinguish between good and poor performance. District health management teams that are incorporating these lessons are improving their supervisory practices and training their health workers to self-assess their performance.

Health Management Information Systems (HMIS): Policymakers, facility managers, and health workers rarely use HMIS data to identify and address potential problems, in part because the data are notoriously irrelevant for decision-making, outdated, or inaccurate. Health officials in Zambia and Eritrea are giving special attention to improving the effectiveness

of their HMIS by taking a participatory approach to design and implementation, reviewing the indicators used (for example, adding measures of the quality of services), reducing errors, streamlining data processing through (selective) computerization, and emphasizing the practical uses of the data during training.

EVALUATION RESEARCH

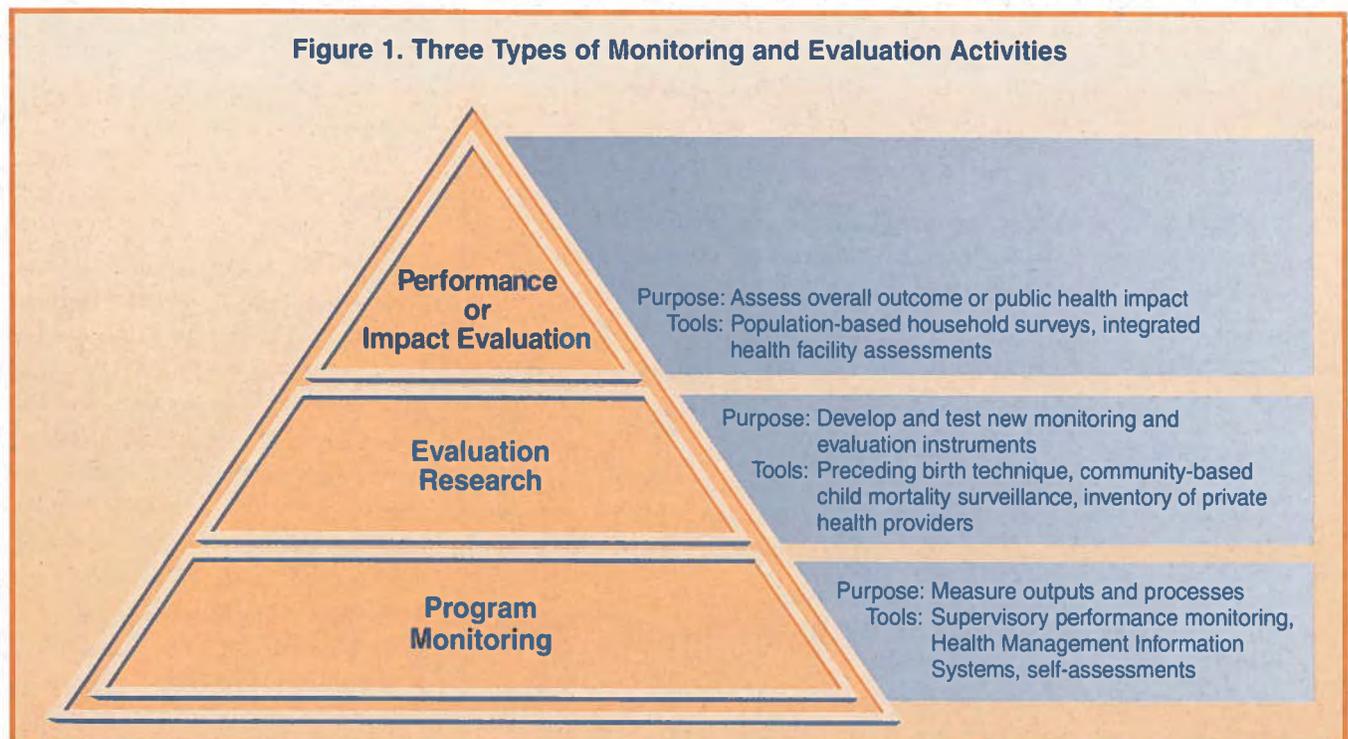
Evaluation research is undertaken to develop and test new instruments for measuring key health indicators and demonstrating changes over time or among various locations.

To facilitate good decision-making, evaluation tools should be accurate, rapid, inexpensive, and applicable to a variety of primary health and population programs.

Evaluation research tools have included:

Preceding Birth Technique: This tool helps health workers evaluate a child's

Figure 1. Three Types of Monitoring and Evaluation Activities



TOOLS FOR ACTION

Thomas Huxley, a 19th-century British biologist, once said, "Evaluation heaps mountains of data on the plains of human ignorance." Some may consider Huxley's appraisal valid today because, despite an exponential increase in data and information, we still often rely on our "gut feelings," guesses, or external pressures when making decisions. Yet, effective monitoring and evaluation have always been tools for action, and this is more true than ever.

In recent years, the focus of monitoring and evaluation has shifted away from which information to collect, toward what purpose the information will serve — the decision to be made or action to be taken. Greater attention is also being given to sharing information more widely and making it easier to understand.

In child survival, monitoring and evaluation is being used to identify the areas of greatest need, to develop and test interventions to address those needs, and to measure the impact and effectiveness of the interventions. The focus on action will intensify as the body of data on outcomes and impact grows. The challenge is threefold:

- to quantitatively and/or qualitatively assess similar outcomes and distill lessons about how best to improve the health of young children and women at risk
- to measure, using evaluation research, the impact and cost-effectiveness of specific technical interventions such as IMCI
- to evaluate the impact of interventions on individual children, families, and communities by working in concert with others agencies and organizations involved in child health and survival programs. ■

Eckhard Kleinau, DrPH, MD

*Former Director, Evaluation/
MIS Division, BASICS*

The Pathway to Survival: A Conceptual Framework

The Pathway to Survival is a conceptual framework for developing and monitoring integrated programs that deliver simple and effective — but powerful — solutions to the most common child health problems. The framework outlines the processes by which a child who is well develops and then survives an illness (see Figure 2).

Enabling families and communities to more effectively prevent and treat childhood illness in the home offers the best opportunity for improving child health and reducing child mortality. Nonetheless, health facilities such as clinics and hospitals play a critical role in providing primary health care, and when children must receive care outside the home, their survival may depend on the ability of the health system to deliver appropriate, high-quality care. Improving the performance of health workers and the capacity of health systems is therefore also important, as the Pathway demonstrates.

The Pathway illustrates how the following key steps affect children's health and survival:

- Preventing illness among well children: A number of simple strategies have been demonstrated to prevent childhood illness, including exclusive breastfeeding, appropriate complementary feeding practices, basic hygiene practices (handwashing), and receiving a full course of vaccines during the first year of life. Delaying the first pregnancy, birth spacing, and limiting family size have been demonstrated to reduce the likelihood of infant and child death.
- Recognizing illness: In order to appropriately manage a sick child, caretakers must recognize when the child becomes ill.
- Seeking care from an appropriate provider outside the home: When necessary, caretakers must seek care from an appropriate health care provider. Health workers must provide quality care before the child becomes severely ill, including instructions for caretakers about how to correctly administer medication and when to bring the child back for follow-up care. Care can be provided by public or private facilities, including pharmacies, rural drug vendors, and traditional healers.
- Providing quality care to sick children in the home: Caretakers must be able to correctly manage children's care in the home during an illness, whether or not they have sought care from a health care provider. For example, caretakers should be able to correctly administer medications prescribed by health care providers as well as to appropriately give food and fluids (including oral rehydration salts, ORS) during and after illness.

EMPHASIS BEHAVIORS

The concept of "emphasis behaviors" helps guide public health programs and communities that want to improve child health by focusing on the behavior of caretakers. Emphasis behaviors are those caretaker practices that have a demonstrated public health impact and can be changed in a relatively cost-effective manner. Focusing on a limited number of emphasis behaviors can help program planners target limited resources for maximum effectiveness. Figure 3 lists the 16 emphasis

- guidelines on counseling to improve feeding problems, home management, and compliance with medications
- appropriate immunization for all sick children.

In addition, this approach requires that a number of other program elements be addressed, including national primary health care policies and guidelines, drug and vaccine supplies, clinic organization, and health worker supervision. In communities, IMCI will be implemented by focusing on integrated household and community practices, similar to the emphasis behaviors.

Caretakers often seek treatment in health facilities that are outside the public health system, including private clinics and hospitals run on a for-profit or non-profit basis. Utilization of private providers may be particularly extensive in areas where the reach or the effectiveness of the public health system is limited.

IMCI can be used by health planners to target interventions to communities, identify potential private sector partners, and develop and implement programs to improve the quality of care provided by private providers.

CONCLUSIONS

The Pathway to Survival is a framework for developing integrated primary health care programs that target the health problems that cause the majority of childhood illness and death in developing countries. The Pathway is also a framework for monitoring and evaluating the impact of such programs. In particular, the 16 emphasis behaviors provide building blocks for developing tools to monitor and evaluate community-based programs. The IMCI approach can be used to select indicators for monitoring and evaluating the quality of care children receive at health facilities. ■

Figure 3.

The Emphasis Behaviors for Maternal and Child Health: Building Blocks for Monitoring and Evaluation

REPRODUCTIVE HEALTH PRACTICES: Women of reproductive age need to practice family planning and seek antenatal care when they are pregnant.

1. All women of reproductive age should delay their first pregnancy, practice birth spacing, and limit family size.
2. All pregnant women should seek antenatal care at least twice during their pregnancy.
3. All pregnant women should take iron tablets.

INFANT AND CHILD FEEDING PRACTICES: Mothers need to give age-appropriate foods and fluids.

4. Mothers should breastfeed exclusively for about 6 months.
5. From about 6 months, mothers should provide appropriate complementary feeding, and they should continue breastfeeding until 24 months.

IMMUNIZATION PRACTICES: Infants need to receive a full course of vaccinations; women of childbearing age need to receive an appropriate course of tetanus vaccinations.

6. Caretakers should take infants for measles immunization as soon as possible after the age of 9 months.
7. Caretakers should take infants for immunization even when they are sick and should allow sick infants to be immunized during visits for curative care.
8. Pregnant women and women of childbearing age should seek tetanus toxoid vaccine at every opportunity.

HOME HEALTH PRACTICES: Caretakers need to implement appropriate behaviors to prevent childhood illnesses and treat them when they do occur.

PREVENTION

9. Caretakers should use and maintain insecticide-treated bednets to prevent malaria.
10. Caretakers should wash hands with soap at appropriate times.
11. All infants and children over 6 months should consume enough vitamin A to prevent vitamin A deficiency.
12. All families should use iodized salt.

TREATMENT

13. Caretakers should continue feeding and should increase fluid intake during illness and feeding after illness.
14. Caretakers should correctly mix and administer ORS, or appropriate home-available fluids.
15. Caretakers should administer treatment and medications according to instructions pertaining to amount and duration.

CARE-SEEKING PRACTICES: Caretakers need to recognize when an infant or child is sick and must know when to take the infant or child to a health worker or health facility.

16. Caretakers should seek appropriate care when an infant or child is recognized as sick, i.e., looks unwell, is not playing, is not eating or drinking, is lethargic, or experiences a change in consciousness, vomits frequently, has high fever, or has fast or difficult breathing.

Second, the introduction of standard case management for a number of major illnesses makes it necessary to measure health workers' conformity with standard practices. Coverage data are useful for judging the current extent of a given practice in a population, but process-type data provide local health workers and district-level health officials with standards by which to measure performance and identify where health workers need to improve.

Cost-Effectiveness

There is also a gap in our knowledge about how best to meet the growing need for data on cost-effectiveness. In a study for the Overseas Development Institute, Roger Riddell found that hardly any nongovernmental organizations (NGOs) based in the United Kingdom undertake cost-effectiveness analysis and that a large majority do not even regularly collect basic cost information and are unaware of cost-effectiveness measures.¹ He concluded that the terms "cost-benefit" and "cost-effectiveness," which describe several standard techniques for linking data on project inputs (costs) and project results (benefits), are actually used to refer to different concepts by various donors and NGOs. Riddell also observed that many NGOs lack the commitment to undertake cost-effectiveness and cost-benefit studies because they fear it may distort their missions to address the health needs of the poor and to build the capacities of communities.

This problem is certainly not limited to NGOs. There is an inability or unwillingness to undertake cost-benefit analysis on the part of many health service programs, private and public and in developed and developing countries alike. Furthermore, the few experts in the field can't agree on a universal method for analyzing cost-effectiveness.

A Single Measure of Performance

Donors and public health officials are keenly interested in identifying one statistic that can summarize the progress of broad programs comprising many components. For example, USAID must report annually to Congress on the progress of its overall Child Survival Program, which encompasses many grants and contracts in numerous countries.

The idea of having one overall statistic to summarize current performance levels and measure progress over time is not new — it is the impetus behind the use of standardized educational achievement tests. However, there is disagreement about the validity of using this approach to assess health programs, particularly using coverage data to extrapolate overall changes in morbidity and mortality. Can coverage achieved by one PVO or in one country be lumped together with coverage achieved by another PVO or in another country? Is the impact of a given coverage rate for a particular intervention on morbidity or mortality the same from one country to another? From one project to another?

CHALLENGES FOR THE FUTURE

Although the search will continue for a set of indicators that can accurately predict health outcomes and program performance, including cost-effectiveness, it is clear that three of the indicators will be coverage, quality of care, and cost.

Measuring these variables will make it necessary for health projects to collect more and different types of data and for their field staffs to be familiar with basic management and financial accounting principles and with general techniques for gathering economic data. Their task will be complicated by the lack of a stan-

dardized approach and the significant amount of staff training required.

This raises some very interesting questions: How many projects have the personnel or financial resources to plan, collect, analyze, and use data from different assessment methodologies? How many schools of public health or international development are preparing their graduates to do this as a *routine* part of their jobs?

In the end, the solution will likely be to combine a few monitoring and evaluation methodologies to provide data on a limited set of standard indicators. We need to choose those indicators wisely to ensure that they are useful to health workers and policy-makers at all levels. We also need to be very careful to document what works and what does not — there will be successes and failures, and we must be honest about both. ■

1. Roger Riddell, *Linking Costs and Benefits of NGO Projects*, London: Overseas Development Institute, 1996.



public health or clinical importance, the feasibility of change, and the resources required to bring about change. The prioritized indicators are used as the initial focus for program activities. The emphasis is on strategies that can be implemented with available personnel and financial resources.

LESSONS LEARNED

Four key lessons have emerged from the use of this tool to date:

- ✓ This approach can help district teams evaluate the quality of care in their areas and plan activities based on their assessments.
- ✓ Routine supervision of local health workers is feasible in most countries. The action plans developed using this approach have generally used a simple integrated checklist to improve health workers' skills and solve problems at health facilities.
- ✓ The process — collecting simple information using direct observation and then using the information to make decisions — is as valuable as the data produced because it strengthens local capacity for program planning.
- ✓ Further work is needed to ensure that district staff members can replicate this method routinely. In particular, the tool uses a PC-based software to enter and analyze data, which makes it impractical in many areas; allowing hand tallying would make the tool more practical. ■

John Murray, MD, MPH
*Technical Officer, BASICS, and
Research Associate, Johns Hopkins
University School of Hygiene and
Public Health*

Serge Manoncourt, MD
Technical Consultant, BASICS

Figure 4.
Indicators Measured by the Integrated Health Facility Assessment

ASSESSMENT

1. Proportion of children screened for severe illness
2. Proportion of children whose caretakers were asked all key history questions
3. Proportion of assessment tasks completed for sick children with a complaint of ARI
4. Proportion of assessment tasks completed for sick children with a complaint of diarrhea
5. Proportion of assessment tasks completed for sick children with a complaint of fever

NUTRITIONAL SCREENING

6. Proportion of sick children who had nutritional status assessed
7. Proportion of sick children whose weight was plotted on a growth chart

VACCINATION SCREENING

8. Proportion of children who had their vaccination card checked at the time of the sick child visit
9. Proportion of sick infants and children needing a vaccination who received it on the day of the facility visit or who were referred to the next vaccination clinic
10. Proportion of women who had their vaccination cards checked at the time of the sick child visit

TREATMENT

12. Proportion of sick children who were treated appropriately for the diagnosis made by the health worker
13. Proportion of children with diarrhea who were treated appropriately
14. Proportion of children with ARI who were treated appropriately
15. Proportion of children with malaria who were treated appropriately

COUNSELING

16. Proportion of treatment counseling tasks completed for sick children
17. Proportion of sick children whose caretakers were given counseling on the need to give fluids at home
18. Proportion of sick children whose caretakers were given counseling on the need to continue feeding both during and after illness
19. Proportion of sick children whose caretakers were given appropriate counseling on danger signs that require them to return immediately

HEALTH WORKER SUPPORT

20. Proportion of health workers seeing sick children who received training in a child health topic in the previous one to three years
21. Proportion of health workers seeing sick children who received at least one supervisory visit in the previous six months
22. Proportion of health facilities that experienced no stockouts of essential drugs in the previous month
23. Proportion of health facilities with all essential equipment available
24. Proportion of health facilities able to provide immunization services

CARETAKER KNOWLEDGE

25. Proportion of children receiving oral treatment whose caretakers knew correctly how to administer the treatment
26. Proportion of caretakers of sick children who knew at least two signs for seeking care immediately

VALIDATION INDICATORS

27. Proportion of sick children needing referral who are referred correctly
28. Proportion of sick children needing an antibiotic and/or an antimalarial who are prescribed the drugs correctly

USING THE RESULTS

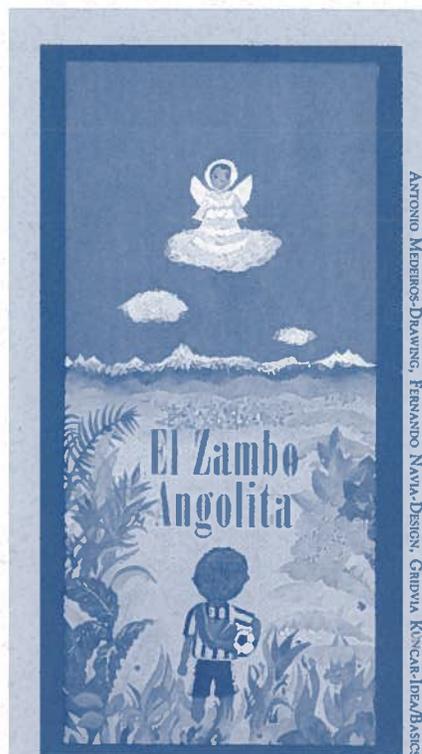
BASICS used the findings of the survey to design "El Zambo Angolita," a weekly, 50-episode radio drama that includes educational messages about providing quality care inside the household and seeking appropriate care for children who become ill. For example, the first ten episodes discussed recognizing and acting on the signs of pneumonia (fast breathing); practicing exclusive breastfeeding; recognizing danger signs for newborns and caring for newborns on the way to a health center; and practicing proper nutrition and hygiene.

LESSONS LEARNED

- ✓ The mortality surveillance approach helps engage members of the community in diagnosing and monitoring their own problems and is a useful way to deliver one-on-one counseling to those at high risk.
- ✓ Focusing on the path that leads to the death of infants and children, rather than on specific diseases, helps target program interventions to change practices.
- ✓ Implementing the mortality surveillance process is labor-intensive and requires ongoing commitment from communities and local health officials. In some areas, it will be feasible to use the approach as a routine program planning tool; in others, it will only be possible to use it periodically, as an operations research/program planning tool. ■

Ana Maria Aguilar-Liendo
Technical Officer, BASICS, Bolivia

René Salgado
Technical Officer, BASICS



My son began to get sick more or less around the end of last November with diarrhea. I gave him home remedies, bought some herbs from the women, and he got better. Later, I had him "shaken" just a little. My friends told me that because he had fallen, the earth had "gotten" him. He recuperated, but he wasn't growing. My son had cold hands and feet, and at the end he also forgot how to walk.... Two days before he died, he worsened. On May 25, I "wrapped" him with some herbs.... My son talked to me, and it seemed that he was getting better. ...We gave him tea in spoonfuls. I went out of the room to tell my sister he was better, and she told me to have faith in the Lord. I went to see him, and he was already dead.

—Mother of Blademir,
who died at age 29 months

Figure 5.
Management of Children Who Died in El Alto, Bolivia, 1994-1995

	Number of Deaths	Mother recognizes illness	Mother provides quality home care	Mother seeks outside care			Provider gives quality care
				Informal community services	Formal community services	Mixed use of services	
% OF TOTAL DEATHS							
All Causes	271	40.2	1.1	22.4	18.1	17.3	14.7
ARI/Diarrhea	146	43.2	0.8	25.3	18.5	25.3	19.2
Neonates (age < 1 month)	85	52.0	23.0	13.0	15.0	5.0	n/a
Boys	146	45.9	1.4	23.3	22.6	17.1	21.9
Girls	125	33.6	0.8	20.8	12.8	17.6	12.8

An Inventory Of Private Health Providers

Increasing private sector participation in public health activities can improve the availability and quality of health care services and health-related products. Private sector health providers include nongovernmental organizations, private for-profit providers, and commercial manufacturers, marketers, and distributors. In some countries, the private sector already provides a large and growing proportion of total health care. The role of the private sector is particularly important in countries where public sector health services are unavailable, inaccessible, inadequate, or of poor quality.

That is the case in Nigeria, where public health services and infrastructure have deteriorated significantly since June 1993, when the military annulled civilian elections and took power. In fact, the private sector expanded to fill the void created by the decline in public sector services. In the capital city, Lagos, up to a third of health services are provided by the private sector.

In 1994 the USAID mission in Lagos refocused its child survival efforts on strengthening the capacity of the private sector to provide quality health services and better educate communities to adopt sound health practices. Another goal was to increase the demand for quality health care services, primarily in underserved, high-risk urban areas.

The first task was to systematically gather information on the extent, role, and characteristics of the private health sector. This involved identifying the types and locations of private health facilities, gauging the size of private practices and the range of services

available, and determining who was utilizing these services.

METHODS

The Urban Private Sector Inventory (UPSI) was used to identify and map private providers in Lagos in order to locate potential partners for specific program interventions, develop criteria for selecting partners, and establish a baseline for monitoring changes in the private health sector.

The UPSI focused on a broad range of providers, including for-profit and nonprofit health facilities, private practitioners, traditional healers, pharmacies/chemists, and patent medicine vendors (PMVs), as well as community-based organizations (CBOs). The members of the survey teams used three methods to identify private sector providers:

- They reviewed existing registries of providers kept by governmental or professional organizations (although these were rarely available and difficult to access).
- They conducted interviews with key informants in the community, including health facility workers, community development officers, local ward leaders, traditional and religious leaders, representatives of professional organizations, and health providers themselves.
- Team members conducted a rapid street assessment (RSA) and visual survey. This process (see Figure 7) produced a comprehensive picture of the private health sector, including the type, locations, and organizational

characteristics of potential private sector partners.

Three surveys that comprise the UPSI were administered when the private providers had been mapped: one survey for health facilities (including for-profit and nonprofit entities and Western-style and traditional practices); one for pharmacies/chemists and PMVs; and one for CBOs. The forms were used to record general information about the providers such as name, location, principal, licensing/registration, for-profit/nonprofit status, and years in operation. The surveys also collected more detailed information on the physical characteristics of the facilities, staffing, services provided, referral patterns, client profiles, and administrative/financial systems.

RESULTS

The data produced were immediately useful for designing program interventions, particularly when combined with existing data about population size and public health needs. For example, the data allowed planners to determine whether health facilities or private providers were or could become part of a provider network, whether they had links or could build links with CBOs, whether they could deliver certain services, and whether they had effective management and administrative structures.

In settings where the public sector wants to establish better links with private providers, the private sector inventory can be used to identify gaps in service, select private sector partners for collaborative health programs, or formulate public policies to support private providers. ■

Diana R. Silimperi, MD, MPH

Technical Officer, BASICS

Rose Macauley, MD

Technical Officer, BASICS

Child Survival Literature
UPDATE

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Monitoring and Evaluation

The journal articles, working papers, conference reports, and other documents listed below offer further information about monitoring and evaluation of child health and survival projects in general and about the particular topics covered in the issue of **Child Survival BASICS**, the BASICS Project's technical newsletter, devoted to this subject (Number 5, Spring 1998). These materials are published by a variety of organizations active in child health and survival research and field work, and they should be ordered directly from the publishing organization, unless otherwise indicated (a list of ordering addresses is included below).

These materials do not necessarily reflect the views or opinions of the U.S. Agency for International Development (USAID) or BASICS.

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