# Utilizing the Potential of Formal and Informal Private Practitioners in Child Survival :

## *Situation Analysis and Summary of Promising Interventions*

**February 2002**

**USAID, Bureau for Africa, Office of Sustainable Development**

Foreword written by the Child and Adolescent Health Division, World Health Organization

# Utilizing the Potential of Formal and Informal Private Practitioners in Child Survival:

## *Situation Analysis and Summary of Promising Interventions*

February 2002

Youssef Tawfik, MD, MPH*, Robert Northrup, MD**, Suzanne Prysor-Jones, Ed.D***

** Senior Child Survival Advisor, SARA (Support for Analysis and Research in Africa) Project, Academy for Educational Development.*

*** Senior Technical Advisor, Project Hope.*

**** Director, SARA Project, Academy for Educational Development.*

This publication was produced by the Support for Analysis and Resarch in Africa (SARA) Project, operated by the Academy for Educational Development with subcontractors Tulane University, JHPIEGO, Morehouse School of Medicine, and Population Reference Bureau. SARA is funded by the U.S. Agency for International Development through the Bureau for Africa, Office of Sustainable Development (AFR/SD/HRD) under Contract No. AOT-00-99-00237-00.

For additional copies or information, contact:

Support for Analysis and Research in Africa (SARA) Project
Academy for Educational Development
1825 Connecticut Avenue, NW
Washington, DC 20009 USA
Tel: 202-884-8000
Fax: 202-884-8447
E-mail: sara@aed.org

## Table of Contents

**List of Tables**

## Acronyms

| | |
|---|---|
| AED | Academy for Educational Development |
| ARI | Acute Respiratory Infection |
| BASICS | Basic Support for Institutionalizing Child Survival Project |
| IMCI | Integrated Management of Childhood Illness |
| INFECOM | Information Sharing, Feedback, Contracting and Ongoing Monitoring |
| KAP | Knowledge, Attitudes, Practice |
| NGO | Non-governmental Organization |
| ORS | Oral Rehydration Salts |
| ORT | Oral Rehydration Therapy |
| PRACTION | Private Practitioner Treatment Improvement Intervention |
| SARA | Support for Analysis and Research in Africa Project |
| UNICEF | United Nations Children's Fund |
| USAID | United States Agency for International Development |
| VCR | Verbal Case Review |
| WHO | World Health Organization |

## Acknowledgements

This article was made possible through support provided by the Support for Analysis and Research in Africa (SARA) Project funded by the United States Agency for International Development, Bureau for Africa, Office of Sustainable Development. The authors appreciate the cooperation of the Basic Support for Institutionalizing Child Survival (BASICS II) Project's Information Center. We would like to acknowledge the valuable contribution of Dr. V. Chandra-Mouli (WHO/Geneva), Dr. Elizabeth Mason (WHO/AFRO), Ms. Mary Ettling (USAID), Ms. Paula Tavrow (Quality Assurance Project, USAID), Ms. Victoria Marsh (Wellcome Trust, UK), Dr. Remi Sogunro (BASICS II, USAID), Ms. Kim Cervantes (BASICS II, USAID), Dr. Mariam Claeson (World Bank), Dr. Flavia Bustreo (World Bank), and Ms. April Harding (World Bank).

## Foreword

Over the past decade, significant progress has been made in reducing childhood mortality in developing countries. Childhood mortality rates have declined from 97 per thousand live births in the early 1980s, to 67 per thousand live births in 1999. But in developing countries—especially those in sub-Saharan Africa and South Asia—children continue to die in large numbers. An estimated 10.9 million childhood deaths occurred in the year 2000.

Strategies such as maternal and childhood immunization and the Integrated Management of Childhood Illness (IMCI) have contributed to this reduction in childhood mortality. The IMCI strategy was developed by WHO and UNICEF in 1996, working in conjunction with several partner organizations. Five years later, it is being applied in over eighty countries around the world.

There is a widespread acknowledgement that increased efforts are needed to scale up the application of these effective strategies. Alongside this, there is growing recognition that this cannot be done by the public sector alone. There is emerging consensus that efforts to strengthen public sector health systems to provide essential packages of health services need to be complemented with efforts to harness the growing strength and reach of health care providers in the private sector.

Virtually all the world's countries have a range of private practitioners providing health services to children and other segments of the population. Studies suggest that these private practitioners are used by both the rich and the poor. Studies also suggest that especially in developing countries, mechanisms to ensure information exchange and collaboration between government bodies and practitioners in the private sector are weak, and need to be strengthened. As a result, in these countries there is a huge, largely unregulated resource which is not being utilized effectively to contribute to national child survival initiatives.

This review and discussion paper by Dr. Youssef Tawfik is a timely one. It highlights the important role that private practitioners are already playing in providing health services to children in many countries, and the far greater contribution that they could be called upon to make. It provides a synthesis of experiences gained and lessons learned in initiatives around the world, to reach out to private practitioners and to work with them to improve and sustain the quality of care that they provide. And it points to what could be done by national authorities and international agencies to actively involve private practitioners as partners in child survival initiatives. This is clearly an area in which much more country-level research and action are needed. This paper represents an important step forward in moving the agenda in this area.

Dr. Hans Troedsson
Director
Department of Child and Adolescent Health and Development
World Health Organization (WHO)
Geneva

## Executive Summary

Studies from different parts of the world show that formal and informal private practitioners are popular sources of treatment for diarrhea, acute respiratory infection, and malaria, which combined are estimated to cause over half of childhood mortality in developing countries. Private practitioners are generally perceived by the community to be more accessible, more sensitive to client needs and more willing to spend time with their clients, compared to the service given in the public sector. However, because of the wide evidence of their substandard clinical services, most national health policies prohibit the practice of unqualified practitioners and ignore them in national child survival programs. Health authorities fear that involving unqualified private practitioners could be perceived as formal recognition and encouragement to continue their substandard practices. The complex factors influencing their practices and the unclear channels of contacting them make it challenging to include them in child health programs.

This paper analyzes interventions to improve private practitioners' case management of childhood diseases. It concludes that most interventions have only been tested on a small scale; few been adequately documented or evaluated. This review found that interventions that only address practitioner knowledge are unlikely to succeed. Yet, realistic interventions that focus on improving a limited number of key practices, consider the multiple factors influencing practitioners' practices, use local entities that are trusted by the targeted practitioners, and treat practitioners as health "partners" are more likely to succeed.

Considering the high proportion of sick children treated by formal and informal private practitioners, often ineffectively or unsafely, continuing to ignore these providers is no longer acceptable. Child health programs, in general, should be based on the community's health care seeking practices. Investment in child survival programs needs to consider the sources of care used by caretakers of sick children, not just public facilities. National health policies should allow for interventions that improve the quality of practice of both formal and informal private practitioners. Further testing of pilot interventions to improve the effectiveness of private practitioners' case management of childhood illnesses should be conducted. Interventions should be conducted with sustainability and large-scale implementation in mind. Thus, these interventions need to mobilize locally available resources and avoid, to the extent possible, injecting temporary resources. Adequate evaluation and documentation are needed to assess the impact of interventions in achieving a lasting change in the practice of private providers. This paper offers guidance for designing effective strategies to maximize child survival by improving the ability of private practitioners to provide effective treatment, counseling, and referral of sick children.

## I. Why Private Practitioners?—The Emperor's New Clothes!

Studies from Eritrea, Kenya, Nigeria, and Uganda to India, Pakistan, Bangladesh, Nepal, and Indonesia show that people select private practitioners to treat their common illnesses. Drug vendors, pharmacists, licensed and unlicensed doctors, nurses, midwives, and traditional healers are, for better or worse, popular sources of treatment for potentially fatal child diseases, especially diarrhea, acute respiratory infection (ARI), and malaria, which combined are estimated to cause over half of childhood mortality in developing countries *(1, 5, 6, 7, 12, 30, 33)*. One contact with a formal or an informal private practitioner, for counseling or to purchase medicine, could be the only interaction between a caretaker of a sick child and the health system. Such an interaction could be, if quality of care is adequate, key in identifying and treating seriously sick children.

Despite the wide use of private practitioners, it has been documented that some of the practicing private providers, such as traditional healers and drug vendors, are providing sub-standard or even harmful health services. However, the reality is that such providers are in demand by the community and are treating many sick children. The proportion of cases of childhood diarrhea seen by private practitioners varies between one-third and more than two-thirds of cases *(1)*. Similar findings point to the high proportion of acute respiratory infection and malaria cases seen by private practitioners *(2)*. Hence, ignoring their role would be, as Dr. Robert Northrup says, ignoring the obvious, such as in the children's story of the emperor's new clothes, where people caught up in their fear of authority refused to admit the obvious reality: the emperor was actually wearing no clothes!

Despite the role of private practitioners as important health care providers, national programs have usually ignored them. This is mainly because national policies prohibit the practices of informal private providers and ministries of health usually lack experience in involving private practitioners in national health programs. Hence, private practitioners are not considered "partners" in achieving national health targets.

## II. Purpose and Methodology of the Analysis

This paper attempts to analyze available information about the role of private practitioners in child health and the quality of treatment they offer for potentially fatal childhood diseases. Particular emphasis has been given to summarizing field interventions that focus on improving the quality of private practitioners' treatment for childhood illness, to provide a rationale, or even a mandate, for including formal and informal private practitioners in child survival programs. The paper also offers guidance for designing effective strategies to maximize child survival by improving the ability of private practitioners to treat, counsel, and refer sick children effectively.

The methodology included a literature review and an online search of relevant published and unpublished materials. Interviews were conducted with several professionals who have experience working with private practitioners in the U.S. and in developing countries on quality of care issues.

## III. Where Do Caretakers Seek Care for Their Sick Children?

The Pathway to Survival, developed by the Basic Support for Institutionalizing Child Survival (BASICS) project, summarized key decisions made by the sick child caretaker that can make a difference between life and death. First, caretakers must be able to recognize that the child is sick. Once the child's illness is recognized, caretakers have a number of choices: to try home remedy, or to seek care from a variety of governmental, NGO, and private practitioners. The effectiveness of care provided at home and by a health practitioner can determine a child's survival.

Health care seeking behavior is a popular research topic and has a growing body of literature. Researchers have investigated health care seeking behavior for diarrhea, acute respiratory infection, and fever/malaria separately. For example, the Special Program on Research and Training in Tropical Diseases has invested substantial resources in studying and understanding the treatment-seeking behavior for childhood malaria in Africa *(3)*. In the 1980s, a concentrated effort was made to study health care seeking for diarrhea followed by numerous studies investigating health care seeking for acute respiratory infections in the 1990s *(1, 20)*. This separation of research reflects the nature of funding mechanisms that traditionally supported vertical programs for malaria control, diarrhea disease control, and acute respiratory infection control separately.

Health care seeking for childhood illnesses is usually studied through interviews with caretakers of children sick during a two-week period preceding the interview. A common limitation of the questionnaires is that they neglect to identify the sources of health care outside the household with enough precision. For example, the source of care outside the home is often described as "a health facility" without specifying whether the health facility is government-, NGO-, or privately-operated. Similarly, the description of home care often lacks important details. For example, the term "self-treatment" is frequently used, but is not well defined. Many studies consider those using medicine that a parent has purchased as "self-treatment," hence underestimating the role of pharmacists, unlicensed drug vendors, and shopkeepers. This lack of precision made "self-treatment" and the role of drug sellers vary considerably from one study to another *(2)*.

This paper does not intend to present an exhaustive literature review of health care seeking behavior. However, the following illustrative results show the extent to which different types of formal and informal private practitioners are used by the community to treat childhood illnesses:

- In Nigeria, over half of children's caretakers did not seek care outside the home for child illnesses. For those who did, the important sources of consultation were: government hospital/clinic (40%), drug vendor/pharmacy (33%), and mission/private physician (25%) *(4)*.

- In Uganda, 60 percent of caretakers sought care outside the home for childhood diarrhea and acute respiratory infection from the following sources: informal private provider (24%), NGO clinic (18%), and government clinic (18%) *(5)*. A more recent extensive study involving 14,000 households revealed that the sources of care outside the home for sick children in Uganda were: public and NGO health facilities (17%), private clinic and pharmacies (41%), and shopkeepers (38%) *(6)*.

- In Kenya, a study in Kilifi District demonstrated that 60 percent of all childhood fevers are first treated through shopkeepers *(7)*.

- In Eritrea, drug purchasing data show that in 1996, approximately 2.2 million contacts were made with private providers compared to 1.8 million contacts made with public facilities *(8)*.

- In Pakistan, a study conducted in various areas between 1984 and 1988 showed that 20-26 percent of all respondents interviewed at their homes reported an illness during the last two weeks and of these nearly two-thirds sought care from a private clinic or hospital *(9)*.

- In India, a nationwide study showed that, of children with diarrhea taken outside the home for treatment, 93 percent were treated by private practitioners, and only 7 percent by government facilities. These private practitioners included a wide range of types, including unregistered and often untrained "village doctors," often practicing some form of western style medicine, drug sellers at general household good shops or specialty drug shops, practitioners of formal systems of indigenous medicine, traditional healers, local herbalists, and birth attendants *(1, 10)*.

- In Indonesia, a baseline household survey in four districts indicated that drug sellers are the source of outside care for 53 percent of child illnesses, private midwives (Bidan), 27 percent; and private doctors, 6 percent *(11)*.

- A study conducted in nine districts of Nepal to identify treatment practices for common problems in 900 households including children revealed that the private sector (drug sellers and private practitioners) was the source of care for diarrhea and ARI in 65 percent and 60 percent of cases respectively, for households that sought outside care. Public sector utilization was only 23 and 40 percent *(12)*.

- In Myanmar, a study investigating health care seeking practice for acute respiratory infection revealed that private practitioners were identified as the favorite health providers in urban areas *(13)*.

## IV. Problems with Private Practitioners' Quality of Care for Common Childhood Illnesses

The quality of received health care has been investigated through household surveys, exit interviews, simulated visits to drug vendors (mystery shoppers), or direct observation of practitioner-patient contacts. Direct interview with service providers is not an effective way to learn about actual practices. A discrepancy often exists between what respondents say they do and what they actually practice. A study in Nigeria revealed that most retail pharmacies and medicine shop operators say they would recommend oral rehydration therapy (ORT) for diarrhea, yet very few of them actually prescribed any form of ORT *(14)*. In Pakistan, a study showed that private practitioners working in the slums of Karachi had sound clinical knowledge of how to assess and diagnose a case for three out of four conditions presented to them. Their knowledge regarding the use of drugs for specific situations

was also fair although their practice was poor *(15)*. This discrepancy, referred to as "**the KAP Gap**," between knowledge and practices is particularly worrisome for the management of simple diarrhea and acute respiratory infection. It points to the complexity of factors influencing the interaction between private practitioners and caretakers *(15, 16, 17)*.

Several studies have shown that private providers' practice is far from acceptable. For example, in Nigeria, ORT was recommended to only 7 percent of childhood watery diarrhea cases presented at the private retail pharmacies. Similarly, in Kazakhstan, a simulated purchase survey revealed that most drug vendors did not take an adequate case history or investigate the severity of disease. Oral rehydration salts were recommended only in 13 percent of diarrhea cases. Antibiotics were misused and little explanation was given to caretakers on how to administer medicine (*14, 18).*

The following is a summary of important problems that are considered missed opportunities in preventing childhood mortality. They relate mainly to the ineffective treatment given by private practitioners for childhood diarrhea, acute respiratory infection, and malaria.

**Diarrhea**: The prevalence of private practitioners managing diarrhea cases inappropriately or undesirably is widespread. Oral rehydration salts (ORS) is among the last treatments to be offered, while unnecessary drugs of various sorts, including antibiotics, are often recommended. Advice on feeding during diarrhea is rarely offered by private practitioners. Case assessment rarely goes beyond hearing a mother's chief complaint *(19)*. Similarly, physical examination is rarely performed. Drug vendors perceive that their role in treating diarrhea is to deliver a drug; how the drug is used is up to the purchaser. Few drug vendors make an effort to ask about blood in the stool *(1, 14).*

**Acute Respiratory Infection**: In general, the quality of care provided by private practitioners for childhood acute respiratory infection is poor, with gross deviations from the standard treatment. Cough syrups and antibiotics are widely overused. Counseling for feeding during and after illness is inadequate or non-existent. No advice is given to caretakers about signs that would indicate deterioration of the child's case or when to return for medical care. A recent assessment of private practitioners' case management practice showed nearly universal absence of the critical practice of counting the respiratory rate and observing chest indrawing to diagnose pneumonia. Ineffective antibiotics were frequently prescribed *(20, 21)*. It is important to note that some of these documented quality of care problems for acute respiratory infection among children exist also with public sector providers *(20)*.

**Malaria**: The purchase of over-the-counter antimalarial and antipyretic drugs has been documented by many studies as the most common action taken by caretakers when malaria is suspected. Evidence shows that drug vendors often do not know the correct dose of antimalarial drugs and private providers rarely examine children to verify other causes of fever besides malaria *(2).*

Table 1 summarizes key problems with private practitioners' quality of care for diarrhea, acute respiratory infection, and malaria that can affect child survival.

**Table 1: Key Problems with Private Practitioners' Quality of Care that Can Affect Child Survival**

| Diarrhea | Acute Respiratory Infection | Malaria |
|---|---|---|
| • ORT is rarely recommended<br>• No advice on feeding<br>• No inquiry on blood in stools or diarrhea duration<br>• Skin pinch, to verify dehydration, is not done | • No counting of respiratory rate<br>• First line antibiotic is not given in correct dose for pneumonia cases<br>• No counseling on feeding | • Inappropriate/incorrect dose of antimalarial drugs<br>• No verification of other causes of fever |
| • No advice on danger signs that require urgent medical care | | |

Documented deficiencies in the quality of care provided to sick children by private practitioners may emphasize the concerns raised by some authors who have described private practitioners as "detrimental" to primary health care *(22)*. Subsequently, officials in ministries of health use this evidence to exclude private practitioners from national programs, arguing that the proper intervention is to direct the community to seek care from "appropriate" sources, referring mostly to public facilities. This argument has two main flaws. First, it ignores the reality that caretakers extensively seek care from private practitioners. Thus, given the high proportion of sick children being treated by private practitioners, often ineffectively or unsafely, continuing to ignore private practitioners in national programs is no longer morally defensible. Second, it implies that the care for childhood illness given in public facilities is of superior quality, which is often not the case. Table 2 shows that, in governmental health facilities in selected African countries, while ORT was recommended relatively often for childhood diarrhea, skin pinch to verify the presence of dehydration was not performed routinely, and counting respiratory rate for children presenting with acute respiratory infection was rarely performed *(23)*.

**Table 2: Management of Child Pneumonia, Diarrhea, and Fever at Government Health Facilities before Training on Integrated Management of Childhood Illness *(23)***

| Country | Survey date | Respiratory rate counted for children with ARI | | Skin pinched for dehydration assessment in children with diarrhea | | ORT given/ recommended for diarrhea | | Chloroquine given for fever (malaria) | |
|---|---|---|---|---|---|---|---|---|---|
| | | n | (% yes) | n | (% yes) | n | (% yes) | n | (% yes) |
| Benin | 7/98 | 48 | (6) | 61 | (39) | | | | |
| Eritrea | 7/95 | 102 | (4) | 127 | (40) | 72 | (77) | 12 | (91) |
| Ethiopia | 11/98 | 5 | (0) | 14 | (57) | 6 | (83) | 13 | (92) |
| Ghana | 8/98 | 42 | (0) | 67 | (7) | 26 | (26) | 156 | (75) |
| Madagascar | 4/96 | 266 | (1) | 67 | (47) | 44 | (79) | 36 | (97) |
| Niger | 1/95 | 84 | (13) | 44 | (34) | | | | |
| Senegal | 6/96 | 63 | (5) | | | 42 | (88) | 63 | (89) |
| Togo | 9/97 | 51 | (12) | 14 | (50) | 14 | (57) | 75 | (77) |
| Zambia | 3/96 | 291 | (10) | 123 | (40) | 123 | (76) | 68 | (50) |

Source: BASICS, Health Facility Assessment Surveys—Unpublished data.

## V. Factors Influencing Private Practitioners' Quality of Care—It Is Not Simple!

Designing effective interventions to improve the quality of services provided by private practitioners requires a thorough understanding of the factors that influence their behavior. Interventions that take into account the needs, motivations, and expectations of providers, patients, and their communities—in the contexts in which they live and work—are more likely to be effective than those that seek only to increase the knowledge and skills of providers *(24).*

The treatment recommended by private practitioners is influenced by four main factors: their knowledge and clinical skills, client expectations, profit margins, and pharmaceutical companies promotion. Regarding knowledge, many unlicensed practitioners have no formal basic medical education on which to build. Unreliable or biased sources of information thus become the basis for treatment practices. Added to this is the failure to maintain awareness of recent technical updates, especially among less recently qualified practitioners *(25).* While these problems will affect both public and private providers, the latter are more likely to be isolated, working alone, and less exposed to current scientific information. Many private practitioners have few incentives to shift their behavior toward "good practice." Representatives of pharmaceutical companies can influence the prescribing practices of private practitioners through free drug samples and well-prepared materials *(26, 27).*

Client expectations are among the most powerful yet most subtle factors influencing quality of care provided by private practitioners, particularly with regard to the overuse of drugs

and injections. Practitioners realize that the unsatisfied client can choose to go elsewhere and select another provider. Real or perceived client pressure interacts with providers' prior experiences, their perceptions of the expectations of patients' families, and their concerns about maintaining professional and social prestige as good practitioners *(25)*.

Practitioners who operate in both public and private settings often behave differently, depending on the sector in which they are working. Practitioners who prescribe ORS for diarrhea in their public sector work may prescribe antibiotics in their part-time private practice. This can be partly attributed to perceived client expectations and low profit margin on ORS *(1)*.

## VI. Why Are Private Practitioners in Demand?—Even Among the Poor!

Despite the widely documented defects in the technical quality of care provided by private practitioners, the community's perception of their services is favorable. Families report that local private practitioners typically spend more time with them than public sector doctors. Private sector providers are often said to be more sensitive to patients' needs, more accessible, and their working hours are more convenient *(28, 29)*. In rural India, for example, village "doctors" are usually only a few steps away, and are almost always available *(1)*. The community seems to find the cost of services rendered by private practitioners acceptable. Even poor slum dwellers in urban Bangladesh frequent drug sellers. Clients value the fact that drug sellers do not charge fees for consultation, only for purchased drugs *(30)*.

In some areas, poor access to governmental health facilities may explain the high use of private providers. For example, only 30 percent of the population in Niger live within five kilometers of a governmental health facility. However, underutilization of governmental health facilities is not always an access issue. A study of fatal pneumonia cases in Indonesia found that 80 percent of homes where children died were within two kilometers of a governmental health post, but 42 percent of children had been taken only to traditional healers prior to their deaths *(11)*.

## VII. Who Are the Private Practitioners? How Can We Reach Them?

Private practitioners are a heterogeneous group of health providers. Strategies to improve private practitioners' quality of care must be tailored to the different types of practitioners that vary from certified physicians, registered nurses, and pharmacists to unlicensed drug vendors and traditional healers. Formal private practitioners can be reached through their professional associations, e.g., medical syndicate. However, informal practitioners are harder to reach. Interventions need to target the educational level of the private practitioner and should be conducted through suitable channels. Table 3 lists the types of formal and informal private practitioners and the possible channels for contacting them.

## Table 3: Private Practitioner's Types and Channel of Contact

| Type | Potential Channel of Contact |
|---|---|
| **Formal Private Providers** | |
| Public sector physicians (who have private practice) | Public sector jobs<br>Professional associations<br>Visits to the private practice (detailing) |
| Full-time private physicians<br>- full-time ambulatory<br>- hospital-based | Professional associations<br>Detailing visits<br>Hospital training<br>Professional publications |
| NGO/mission physicians | Hospital or association courses<br>Detailing visits |
| Nurses, nurse assistants, and midwives | Public sector jobs<br>Professional associations |
| Pharmacists | Drug manufacturers<br>Distributors' sales force<br>Professional associations |
| **Informal Private Providers** | |
| Drug sellers, shopkeepers | Drug manufacturers<br>Distributors' sales force |
| Uncertified doctors | Drug suppliers |
| Non-western practitioners | Professional associations<br>Detailing visits |
| Traditional healers | Usually, no established direct channel<br>Occasionally, professional associations |

Adapted from Northrup, Reaching the Private Practitioners, PRITECH, 1993.

**Physicians:** In many developing countries, public sector physicians are also private practitioners. Government physicians often have a late afternoon or evening private practice, to augment their meager government salaries. These physicians may be reached through their public sector positions in the morning or in their private clinics in the evening. Interestingly, the physician's practice can be different in the public facility from the private clinic, depending on the availability of space, equipment, and drugs in the two settings *(1)*.

Many physicians in certain countries have only private practices, with working hours throughout the day and evening. In some cases they are hospital-based or have hospital activities, in others they are entirely office-based. The hospital presents opportunities for physicians to update their knowledge through training or presentations, however, the only way to reach all office-based practitioners is through promotional visits ("detailing") to their private practices and through professional associations.

Physicians working for religious missions in Africa or other non-governmental organizations are similar to hospital-based physicians, in that they usually have a health-facility base. Also, in some countries (e.g., Zambia), non-governmental organizations, including missions, have joined together in associations that could provide an avenue for interaction with member physicians *(27)*.

**Nurses and midwives:** Nurses and nurse midwives often work in health facilities as employees during the day and serve as private medical care providers in the evening. Nurses retired from public service sometimes establish private practices. Access to nurses and midwives, as in the case of private physicians, may be through professional associations, through their jobs for public institutions, and through detailing visits *(1)*.

**Pharmacists and other drug sellers:** Drug sellers, including pharmacy dispensers and operators, unlicensed drug sellers, and general shopkeepers who sell drugs, represent a major source of care for common child illnesses in most countries. The fact that most western medicines, including antidiarrheal drugs, cough syrups, antibiotics, antimalarial drugs and antipyretics, are sold over the counter in many developing countries, and that drug sellers do not charge fees for consultation, make their services particularly attractive to the community.

Pharmacists can be contacted through their professional associations. However, informal drug sellers do not routinely belong to professional associations, nor do they register with local authorities, hence they are much harder to reach. In Kano State, Nigeria, for example, only 15 percent of practicing drug sellers are registered with the Federal Government *(31)*. Drug distribution mechanisms are important channels to reach shopkeepers and drug sellers, though the mechanisms vary widely. Rural practitioners in India purchase drugs from drug suppliers and pharmacists in nearby cities *(32)*. In Kenya, intermediate distributors, including mobile vendors, purchase drugs from wholesalers and resell them to rural shopkeepers *(33)*.

Contrary to the common perception that drug sellers are only attracted to urban areas, drug vendors provide services in rural areas as well. A study in Eritrea revealed that drug sellers are the main source of medicine in rural areas *(16)*.

Drug vendors are consulted for common childhood illnesses such as diarrhea, acute respiratory infection, and malaria. Because caretakers may or may not take the sick child with them while they are seeking consultation, the drug seller may have no chance to examine the sick child. In this case, history taking is the only way to classify the child's sickness and identify a treatment.

**Uncertified practitioners:** These providers practice western medicine and comprise a large proportion of the care providers in rural India and other countries. Many lack formal clinical training or fail to pass the qualifying examinations, while others receive only apprenticeship training from other uncertified practitioners. This group of practitioners could be reached through drug distribution channels or detailing visits to their clinics.

**Certified alternative practitioners:** Alternative practitioners or non-western medicine physicians are certified in some countries. In India, Ayurvedic physicians are certified in a manner similar to western physicians. Hakims in Pakistan receive formal training and are

similarly certified. These practitioners may belong to professional associations, and can be approached through that channel, otherwise, the only direct route is through visiting their practices.

**Traditional healers:** These providers engage in a wide range of activities. Some practice a pure traditional medicine, as do certain African healers. Others mix western and traditional approaches to satisfy their clients. Traditional healers as a group may be the most difficult to reach because they rarely belong to organized associations and they may not be part of the drug distribution network. Healers that use locally prepared remedies from herbal sources are not reachable through commercial channels.

All private practitioners are part of the general population. Therefore, mass media or other communications efforts aimed at the general public can reach them. In addition, mailings might be feasible in some countries to contact some of the practitioners' categories, if individuals can be identified *(1, 34)*.

Finding and contacting the wide range of private practitioners in a given community can be difficult. In urban Nigeria, the most practical way to find the private practitioners has been to carry out an "inventory," walking the streets of the community to list all practitioners who displayed sign boards *(36)*. An alternative approach is to ask the mothers in the community to name and locate the practitioners they know and use for their own sick children. Such a survey can also provide the quantitative data needed to prioritize types of practitioners by volume of their use by the community *(45)*.

This analysis suggests that the channels for contacting different types of private practitioners vary widely depending on the type of practitioners, whether they practice in urban or rural areas, and what channels exist in their particular location. Thus, before implementing an intervention to improve the quality of private practitioners' practice, channels for contacting the targeted practitioners must be identified and assessed. Then the most effective strategies for approaching them can be selected.

## VIII. Strategies for Action and Their Effectiveness—Regulate, Motivate, Educate, or Negotiate?

Considering the widespread private practitioner's poor quality, and sometimes harmful practice, a desperate need exists to develop successful strategies to improve the effectiveness of case management of childhood illness provided by private practitioners. At the International Conference on Improving Use of Medicines, Thailand, April 1997, Prof. Mark Nichter, University of Arizona, urged participants to pursue the "politics of the possible," emphasizing the importance of finding practical interventions that are sensitive to the complex factors influencing the interaction between practitioners and their clients.

Dr. Robert Northrup, in his paper *Reaching the Private Practitioners (1)*, stresses the importance of having a realistic strategy focusing on improving the key practices that may make a difference between life and death, rather than aiming to achieve a "perfect" treatment package.

> The search for the perfect should not get in the way of the merely good. Should programs choose to promote the complete package of ideal case management methods, practitioners may well throw up their hands and reject it all. As is true in any marketing campaign, the program must plan a limited package of practices which has a high likelihood of successful adoption.

Scant literature exists that describes interventions to improve private practitioner practices and their effectiveness. The few available interventions can be categorized in five strategies: regulation, motivation, education/persuasion, negotiation, and others.

### *Regulation*

This review has identified two main types of regulatory approaches: first, those that include instructions or laws intended to limit the availability of harmful or commonly misused drugs; and second, those that regulate the practice of private practitioners.

**Regulations to limit the availability of harmful, or commonly misused, drugs:** Drug regulations in many developing countries prohibit the sale of antibiotics without prescription and prohibit the use of unregistered drugs. A famous example of this type of regulatory approach took place in Pakistan, in 1990, where the Federal Ministry of Health's Drug Registration Board banned all pediatric formulations of antimotility drugs when several children died of paralytic ileus after having been given drops of "loperamide"—a brand of antimotility drug used widely for diarrhea. Although subsequent research data suggested that the incidence of paralytic ileus in children suffering from acute diarrhea had fallen, cases continued to be recorded. A small scale survey conducted in 1993 to assess the effectiveness of the regulatory intervention conclusively proved that, while the deregistered products had been successfully withdrawn from the majority of retail outlets, illegal imports and marketing of pediatric antimotility drugs were still taking place. The results also indicated that throughout the country the deregistered drugs were being substituted by other irrational therapies, including antibiotics *(37)*.

Deregistration of harmful drugs creates scarcity of the targeted drugs and indirectly raises demand, encouraging illegal marketing and smuggling. Consumers may be willing to pay stiff prices to purchase familiar drugs. From Indonesia, it was reported that after a manufacturer withdrew a popular clioquinol-containing antidiarrheal drug in 1985, high quality counterfeit imitations continued to supply the market *(38)*. When a drug is banned or withdrawn, prescribers and patients look for replacements. Drop formulations may be replaced by syrups, antimotility drugs by adsorbents or antimicrobials, and adult formulae may replace pediatric formulae. Such alternative medications can be equally, or even more hazardous than the original drug. In addition, private companies have a way to circumvent the government regulations by renaming new formulations of banned drugs. The Philippines drug regulation authorities allowed the reformulation of an antidiarrheal product called "Guanamycin," containing an antimicrobial agent, to be reformulated as "New Guanamycin," containing attapulgite only. Similarly, the popular Indonesian antidiarrheal drug "Diatabs," containing clioquinol, phthalylsulfathiazole, papaverine, kaoline, and various vitamins, was reformulated to "New Diatabs," containing attapulgite only *(39)*.

**Regulation of private practitioners practice:** National policies of many developing countries prohibit unlicensed or "unqualified" practitioners to practice. In India, the Bombay Nursing Home Registration Act issued in 1949 prohibits unregistered nurses from practicing. This regulation is not enforced by health authorities and ignored by the public. A High Court of Justice hearing a medical malpractice case commented that implementing the Act in Greater Bombay had not been satisfactory because unlicenced nurses still practiced widely *(40)*.

Health authorities often lack the trained personnel and/or funds to enforce regulations governing private practitioners, especially the informal providers in remote areas. Expecting governmental health authorities to control the behavior of a village doctor in a remote rural area, or a drug seller in a crowded urban setting does not seem realistic. Enforcing laws governing private practitioners is low priority because the demands on government health systems are high and private practitioners are widely spread. This is may be due, in part, to a tacit recognition that the government's facilities and those of the formal licensed private sector cannot possibly meet the demand for care.

Accrediting health facilities is beginning to take place in developing countries to improve the quality of care. Accreditation may improve the practice in private hospitals and clinics belonging to a network, but is unlikely to affect the quality of care provided by most freestanding clinics or solo practitioners and drug sellers practicing from their houses or independent shops *(29)*.

### *Motivation*

Contrary to regulation strategies that attempt to control private practitioners' behavior, the motivation strategy tries to make it advantageous for private practitioners to practice in the desired way. Experience with using incentives to modify provider behavior is limited. So far, little systematic evaluation of the impact of such strategies has been undertaken.

In Malaysia, the Ministry of Health promoted Hepatitis B immunization for children under one year by providing the vaccine at a fixed, subsidized rate to private practitioners, and allowing them to charge fees through which they made a profit *(28)*. In Pakistan, the government provides tax exemptions for private practitioners setting up practices in rural areas *(9)*.

Providing financial incentives to practitioners requires resources that are difficult to mobilize in developing countries. However, if profit maximization is identified as an important incentive in determining retail pharmacies' sales behavior, and the economic loss associated with changing behavior is significant, then providing financial incentives to private practitioners, through subsidized products, could be justified *(41)*.

Other forms of incentives have been used to motivate private practitioners to adhere to quality practice. In Kenya, certificates were given to shopkeepers who successfully demonstrated certain skills acquired through training *(7, 33)*. The Private Practitioner Treatment Improvement Intervention (PRACTION) model described below was applied in India where appropriate practices were "advertised" to mothers, making it difficult for the provider to practice in a different manner. In addition, data were collected at the household level about the private practitioners' quality of care and results were presented to the prac-

titioners. This provided an incentive for the private practitioners to adhere to the correct practices since they believed they were being monitored *(34)*.

### *Education / Persuasion*

Improving the practitioners' knowledge is a commonly used strategy to improve case management behavior. Attempts to educate practitioners include: dissemination of clinical guidelines; training sessions; small group meetings; and one-on-one detailing. Once again, few systematic evaluations of the impact of such interventions on the actual practices of private providers exist *(24, 26, 44)*.

Due to the observed "KAP Gap" mentioned earlier, interventions based only on improving knowledge of private practitioners are unlikely to be effective in changing their practices. Training conducted in the traditional sense of simply passing information along to practitioners is easier to implement and less costly, comparatively, than other interventions. Such training is often under-evaluated and when evaluated usually focuses on the change in knowledge of participants at the end of the training course. A major review of studies on changing primary care physicians' behavior in developing countries revealed that this strategy is weak in influencing the actual practices of practitioners *(26)*. However, when training is practical, focused on key practices, and supplemented with simple tools, the likelihood of positive impact is greater.

In a recent training of shopkeepers in Kenya, wholesale owners trained shopkeepers (vendor-to-vendor training) using well-prepared posters with specific case scenarios focusing on malaria. The intervention included a three-hour orientation of wholesale owners, a one-day training of shopkeepers, and posters with specific case scenarios given to shopkeepers. The intervention resulted in significant improvement of knowledge about correct antimalarial treatment, the ability to give advice for sick children who do not improve, and the correct dose of antimalarial drugs as verified by "mystery shoppers" *(33)*.

Another training intervention was tested in Kilifi District, Kenya, between 1998 and 2000, where 200 shopkeepers, serving a population of 70,000, were trained in groups of 15-20 in participatory, skill-based four-day workshops. The training focused on improving malaria treatment and communication skills. Trainers included government community-based health workers and several community health or development workers. Trainers were given allowances, but shopkeepers were not. Instead, shopkeepers who demonstrated adequate skills after the training were given a certificate of competence. Refresher training workshops were provided annually. Results showed that the proportion of correct use of antimalarial drugs bought from the targeted shopkeepers rose from 9 to 34 percent after one year of training and to 50 percent after two years *(7)*.

In the city of Kano, Nigeria, an initial attempt was made to train patent medicine vendors, an important source of consultation for childhood diarrhea. The training included a very limited number of vendors with no evaluation of impact *(31)*. In another study conducted earlier in rural Nigeria, patent medicine vendors received a two-hour session for eight weeks on recognition and treatment of malaria, guinea worm, sexually transmitted diseases, respiratory infections, and malnutrition. The trained group scored higher at post-test over the control group. Yet, no evaluation was conducted on impact of training on actual practices of the trained group *(42)*.

Training of traditional healers (berbolarios) in rural Philippines, where more than half the villagers were found to seek the services of traditional healers first, included lectures, discussions, demonstrations, and practical case review. Results showed an increase in knowledge acquisition, yet no evaluation of the impact on actual practices was conducted *(43)*.

Persuasion is defined as a successful, intentional effort to influence attitudes through communication in a setting in which the target audience has a measure of freedom *(26)*. Successful persuasion is relatively complex as it requires a thorough assessment of current behaviors and the factors underlying those behaviors. It also requires the development of multiple approaches, underlying messages, printed materials, and training programs to address the factors identified.

Drug "detailing" is a successful persuasion technique used by pharmaceutical companies to influence physicians to prescribe certain brand named drugs. Pharmaceutical companies realize that one-on-one detailing visits are important for marketing their products. The ratio of pharmaceutical company representatives to physicians has reached one to three in certain developing countries *(27)*. In the U.S., a study showed how detailing can be employed to promote rational prescribing. Following the implementation of a drug detailing intervention, expenditure for target drugs prescribed by these physicians decreased by 13 percent *(26)*. The intervention was adapted and implemented in Indonesia and Kenya to improve practices for diarrheal diseases. Face-to-face outreach visits to targeted practitioners were conducted using scientific evidence to support the prescription of oral rehydration salts and the dropping of anti-diarrheal drugs. An evaluation documented success in achieving target prescribing practices *(44)*. However, the cost of outreach visits to each targeted practitioner raises questions about the feasibility of "detailing" in achieving a large-scale improvement in the treatment pattern of private practitioners in developing countries.

### *Negotiation*

PRACTION is a multi-component approach that emphasizes negotiating with private practitioners as "equal partners" and combines a number of interventions to improve the effectiveness of their treatment for childhood conditions. It has been tested in India, Indonesia, and Pakistan by applying two methodologies: first, a Verbal Case Review (VCR) conducted at the household level collects essential data to document, with certainty, the type of practitioners the community actually consults and to assess the specific problems with the quality of treatment of childhood illnesses; second, **In**formation Sharing, **Fe**edback, **Con**tracting and **O**ngoing **M**onitoring (INFECOM), is a process of interaction between a selected community entity and the private practitioners. The approach is supportive in nature and involves information sharing regarding standard guidelines and feedback on results of VCR. Then a negotiation process is conducted to reach a "contract" with private practitioners to adopt agreed upon target behaviors. On-going monitoring of practitioners' behavior is conducted by establishing continued contact between the selected community entity and private practitioners and repeated VCRs followed by feedback to the included practitioners *(34, 35, 45)*.

The intervention is meant to achieve a continuing and sustainable improvement in private practitioners' treatment of child health diseases, especially diarrhea, acute respiratory infection, and fever. It is promising and requires further testing in different settings.

### *Combined Approaches*

A number of the above described interventions combined more than one strategy to improve the practice of private providers. PRACTION, in addition to negotiating the desired practices with the target practitioners, included education and persuasion, through feedback to practitioners about their own practices learned from the VCR. PRACTION puts particular importance on assessing the current practitioners' case management practices to identify specifically the problems and subsequently to monitor improvements *(34, 35, 45)*. In Kenya, education and motivation approaches were combined. Shopkeepers were trained and then given certificates of competence in a public ceremony. They were also given posters for their shops so the public could identify trained shopkeepers *(7, 33)*.

Interventions taking the form of national campaigns usually include multiple approaches. For example, the national campaign to promote oral rehydration salts in Bolivia targeted mothers and pharmacists through mass media announcements. In addition, detailing visits were paid to pharmacists by representatives of the oral rehydration salts' manufacturer *(48)*. The campaign led to a drastic increase in oral rehydration salts' sales and use. However, no evaluation documented whether the increase was sustained with time after the end of the campaign.

### *Other Strategies*

**Prepackaging or Course of Therapy packaging:** This strategy aims to improve compliance of practitioners and patients by including the exact amount of medicine needed per one episode in a separate packet. In child survival, this strategy has been used to improve compliance with taking the appropriate dose of antimalarial drugs. For example, in Ghana, a district-based study that introduced prepackaged chloroquine and paracetamol reported 82 percent of patients complied with the full course of chloroquine tablets compared to 65 percent in control communities. The corresponding figures for chloroquine syrup were 54 percent and 33 percent. Packaging seemed to reduce under or over-prescribing by providers *(3)*. Similar interventions are intended to improve compliance with malaria treatment in Burkina Faso, Nigeria, and Uganda.

**Customer education:** This strategy empowers consumers/patients with information so that they can demand quality care from providers. It has been most successful in family planning services where clients are made aware of their right to be counseled on different methods of family planning. In Yogyakarta, Indonesia, a module for consumers about the rational use of drugs was developed. The training used information materials from the package inserts of common over-the-counter drugs. It was carried out in small groups facilitated by a pharmacist or a health professional and was implemented by women's grassroots organizations. The training reduced inappropriate use of over-the-counter medications at the household level *(27)*.

Table 4 presents a summary and examples of strategies and interventions to influence private practitioner practices.

## Table 4: Summary of Strategies and Selected Interventions to Influence Private Practitioner Practices

**Regulation:**

| Intervention | Country/ year | Result | Source (examples) | Comment |
|---|---|---|---|---|
| Deregistration of anti-motility drugs to reduce cases of paralytic ileus. | Pakistan, 1990 | A small scale survey in 1993 suggests success in withdrawal of anti-motility drugs from retail outlets, yet an illegal market was created. Also the use of antibiotics for diarrhea increased. | Butta & Balchin, 1996. | The intervention did not address the demand for anti-diarrheal drugs. The target practice was replaced with another harmful practice. |
| Banning the practices of unqualified practitioners: legislation to prohibit unregistered nurses from practicing (Bombay Nursing Home Registration Act, 1949). | India, since 1949 | Weak implementation of the law with continuation of poor quality services. | Bennett, 1994. | Governments do not have the means to enforce such legislation.<br><br>Regulation measures could be effective where supervision is possible, e.g., in a hospital setting. |

**Motivation:**

| Intervention | Country/ year | Result | Source (examples) | Comment |
|---|---|---|---|---|
| To expand hepatitis B vaccination, the vaccine was given to private providers who were allowed to charge a fee to make a profit. | Malaysia, late '80s & early '90s | Private practitioners were encouraged to use the vaccine, yet there was no formal evaluation. | Bennett, 1994. | Take into consideration the effect of the promoted change in private practitioners' practices on their profit. |
| To increase the availability of licenced practitioners in rural areas, tax exemptions were offered for private practitioners setting their practice there. | Pakistan, on-going | No evaluation of impact. | Goel, 1996. | No literature is available on other means to motivate private providers. |

**Education/Persuasion:**

| Intervention | Country/ year | Result | Source (examples) | Comment |
|---|---|---|---|---|
| Training unlicensed drug retailers through a 45-hour training course plus 6 months in-shop practice. The course was not focused on specific target practices. | Nepal, late '80s & early '90s | No formal evaluation on change in target groups practices. | Kafle, 1992. | A number of studies documented a "KAP gap" discrepancy between providers' knowledge and practices. This suggests that interventions aiming to improve practitioners' knowledge may not lead to changes in their practice. |
| Vendor-to-vendor training: wholesale owners targeted drug vendors with specific messages on malaria treatment. Posters with key information were given to drug vendors.<br><br>Training of shopkeepers on correct dose for malaria treatment. | Kenya, Bungoma District, on-going<br><br>Kenya, Kilifi District, on-going | Preliminary results show significant improvement of target vendors' practices in malaria treatment.<br><br>Unpublished preliminary results suggest adequate chloroquine treatment increased from 4% to 75%. | Tavrow, 2001.<br><br>Wellcome Trust, Kenyan Medical Research Institute, 2001. | When training is focused on specific practices and supplemented with simple, clear tools, it is more likely to result in improving private practitioners' practices. Cost analysis is needed to help in planning for wider applications. |
| Detailing: face-to-face outreach visits, using prepared printed materials including scientific evidence, to private practitioners to persuade them to prescribe more effective, less expensive drugs. | U.S., 1984 & 1985<br><br>Kenya & Indonesia, 1995 | Well-documented impact in improving prescribing practices. | Soumerai, 1989.<br><br>Ross-Degnan, 1996. | Convincing evidence of effectiveness exists, yet sustainability for large-scale application has yet to be demonstrated. |

**Negotiation:**

| Intervention | Country/ year | Result | Source | Comment |
|---|---|---|---|---|
| PRACTION (Private Practitioner Treatment Improvement Intervention): starts with a Verbal Case Review at household level to identify sources and effectiveness of care for sick children. Followed by INFECTOM: (**In**formation Sharing, **F**eedback, **C**on**t**racting & **O**n-going **M**onitoring) an intervention to close the gap between private practitioners' practices and IMCI standards through negotiation that leads to establishing a "contract" with practitioners. On-going monitoring is provided by a locally-selected entity. | India, Pakistan, Indonesia, '96 - '98 | A baseline and on-going monitoring provides evidence of changing case management practices for childhood diarrhea, ARI, and fever. It also identifies practitioners who have had difficulty changing their practices and need more attention. | Northrup, 1997.<br><br>Chakraborty, 2000.<br><br>Luby, 2001. | The intervention was tested in rural & urban settings targeting unlicenced village doctors, licensed & unlicenced doctors, midwives, and nurses.<br><br>The intervention raises the important issue of on-going monitoring to allow for a continuing behavior change process. |

**Other Interventions:**

| Intervention | Country/ year | Result | Source | Comment |
|---|---|---|---|---|
| Prepackaging: Also known as Course of Therapy packaging, aimes to improve compliance with treatment by dispensing the correct number of tablets needed for one episode in a separate packet. | Ghana, on-going | Preliminary unpublished data suggest improvement in compliance with dispensing correct dose of chloroquine for malaria treatment from 52% to 82%. | Resources for Roll Back Malaria, Report on first Meeting, 1999. | Attempts to test this intervention beyond malaria treatment are not available. |
| Customer education: aims to empower customers with information so that they can demand the correct treatment. | Indonesia, 1995 | Improvement in rational use of over-the-counter medicine. | Management Sciences for Health, International Network on Rational Use of Drugs, 1997. | No information on specific application in child survival. |

This analysis reveals that the interventions to improve the practices of private practitioners are in different stages of maturity. Few interventions have been adequately tested or evaluated to demonstrate their potential impact. Yet evaluations that were conducted, consistently focused on the effectiveness of the intervention without analyzing its cost. Such omissions make it difficult to draw conclusions as to the replicability of the intervention on a large scale to achieve the desired public health impact. Table 5 summarizes the analytic results of the presented strategies and interventions regarding whether they have been adequately tested and evaluated, or whether they have been proven effective. The cost and the likelihood of replicability on a large scale are also included.

## Table 5: Level of Testing, Evaluation, Effectiveness, Cost, and Replicability of Strategies and Interventions to Influence Practitioners' Practices

| **Strategy:**<br>- Intervention | **Adequately tested?** | **Impact adequately evaluated?** | **Proved effective?** | **Cost** | **Replicable on large scale?** |
|---|---|---|---|---|---|
| **Regulation:**<br>- Deregistration of harmful drugs | Yes | Yes | Limited, with serious draw backs | Low | Not proved effective |
| - Banning the practice of un-qualified practitioners | Yes, most national policies restrict the practice of informal practitioners | No formal evaluation | No, generally ignored by practitioners and public and not enforced by authorities | Low, if not enforced | Not proved effective |
| **Motivation** | No | No | Not adequately tested | Profit motivation may need resources to subsidize the desired practice | Likely, needs further testing |
| **Education/ Persuasion:**<br>-Knowledge-based training | Yes | Yes | No impact on practice | Relatively low | Not proved effective |
| -Training focused on limited number of specific practices | Limited trials | Preliminary evaluation only | Yes, in pilot areas | No information on cost analysis | Potentially replicable |
| -Face-to-face detailing visits to practitioners | Yes | Yes | Yes, in pilot areas | No specific cost analysis, likely to be costly | To be proven. Cost could be prohibitive |
| **Negotiation:**<br>- PRACTION (Private Practitioner Treatment Improvement) (includes education, persuasion & motivation) | Limited trials | Yes | Yes, in pilot areas | No information on cost analysis | Potentially replicable. Needs further testing |
| **Other:**<br>- Prepackaging | Yes, for malaria treatment | On-going | Yes, for preliminary results | Relatively low | Needs to be tested |
| - Customer education | No | No | Not adequately tested in care of sick children | Not known | Needs to be tested |

## IX. Improving Private Practitioners' Practices—Selecting Suitable "Change Agents"

The challenge of improving private practitioners' quality of treatment is not just in finding an effective methodology to modify their behavior, but also to ensure that the target behavior will continue after the intervention. Hence, a continuous contact with private practitioners needs to be established to manage the process of behavioral change including information sharing, performance feedback, motivation, and support. A suitable "implementer" or "change agent" needs to be identified. Such an "agent" needs to be credible, trusted by the targeted private practitioners, and locally based. To invite the confidence and cooperation of the targeted practitioners, the "change agent" should not be threatening to the practitioners. Depending on the targeted private practitioner, professional associations, non-governmental associations, ministry of health staff, such as district health teams, and/or community leaders could be change agents.

This review identified very few studies that described how the process of monitoring and improving private practitioners' practice is supposed to continue beyond the study intervention. In addition, the credibility of the implementer is very important in designing persuasion interventions. This credibility depends on the target audience's perceptions of the sponsor's competence and trustworthiness *(41)*.

In Bihar, India, targeted "village doctors" attended information sharing sessions at the headquarters of a local, non-governmental organization. The sessions were facilitated by trained doctors, and the informal format gave providers ample opportunity to interact with each other. Following the information sessions, community health workers visited each private provider to enter into a contractual agreement, provide feedback on results of previously conducted verbal case reviews, and facilitate further behavior changes. Hence, the sponsorship was divided between a local NGO, selected trained doctors, and community health workers *(34, 45)*.

## X. Integrated Management of Childhood Illness (IMCI) and Private Practitioners

The WHO-UNICEF Global IMCI initiative was created to achieve further reduction in child mortality by minimizing missed opportunities for identifying and treating sick children. The initiative focuses on five conditions that cause most child mortality: diarrhea, acute respiratory infection, malaria, measles, and malnutrition. IMCI started with an exclusive focus on clinical training of primary health care staff, with a priority given to very sick children. When it became clear that such clinical training is essential but not sufficient, two components were added to IMCI. The first addresses the child in the household and community, since many caretakers elect to try home remedies before seeking care outside. The second is aimed at strengthening the health care systems that support primary health care, such as drug logistics management and supervision *(49)*. The IMCI initiative has not yet addressed private practitioners as an important source of treatment of child illness, especially diarrhea, acute respiratory infection, and malaria.

Based on the IMCI protocol, a list of "target behaviors" can be identified as standards for monitoring the performance of private practitioners. This list, as mentioned before, should

not ignore the complex factors that influence the behavior of private practitioners; it should try to assure that very sick children will be identified, examined, and treated. Ambitious attempts that aim to turn private practitioners to "model providers" are unlikely to succeed.

Based on BASICS work in India reported by Chakraborty, Table 6 presents an adapted list of target behaviors for private practitioners *(45)*.

## Table 6: Private Practitioners' Target Behaviors for Child Survival

**All cases:** Information Giving and Counseling:

1. Give information about danger signs to look for and where to seek care
2. Inform caretakers on how to give each medicine to a sick child
3. Recommend exclusive breastfeeding for all children under 6 months old
4. Give the caretaker a chance to ask questions
5. Refer very sick children to an appropriate health facility

**All diarrhea cases:**

6. Ask about use of sugar-salt solutions or oral rehydration salt at home before consultation
7. Recommend ORS and give information about how to mix it
8. Recommend fluids if ORS is not available
9. Recommend continuing feeding as usual, or more often than usual

**All acute respiratory infection cases:**

10. Use a watch or a timer to count respiratory rate. For fast breathers, recommend the correct dose of cotrimoxazole
11. Examine chest for signs of chest indrawing
12. Take temperature with a thermometer

**All fever cases:**

13. Take temperature with a thermometer
14. Give correct dose of anti-fever medicine
15. Recommend giving lots of fluids
16. In malaria endemic areas, give correct dose of appropriate antimalarial drugs and recommend sleeping under insecticide-treated nets

Adapted from: Chakraborty S., et al., 2000.

## XI. Is There a Role for Private Practitioners in Achieving National Child Survival Goals?—It Is Not Either/Or!

Ministries of health in developing countries are under pressure to achieve ambitious health goals with modest, and sometimes shrinking, resources. In real terms, government health budgets in sub-Saharan Africa and many Latin American countries have shrunk by as much as 50 percent during the 1980s. A recent estimate of health sector resources in Zambia suggests that the cost of providing an essential package of health services at the district level will require more than double the health resources actually available to districts *(46)*. Meanwhile, demand for health services is increasing. For example, the newly industrializing countries and other Asian countries have found that income growth has led to an explosion in health care demands that government services have been unable to meet. At the same time, many developing country governments face the reality that their public health services are overextended, and are offering services of dubious efficacy. Calls for improved government accountability have been accompanied by suggestions to reduce the role of the state and give freer rein to market forces *(46)*.

In particular, the adjustment programs of the World Bank have emphasized the need to allow market forces to determine the production and allocation of health care. The World Bank position is clearly articulated in *Financing Health Services in Developing Countries: An Agenda for Reform*. In addition to the argument that the private sector can produce most types of health care more efficiently, promoting the private sector can generate extra resources and allow governments to redistribute existing resources to the urban and rural poor *(46)*.

The position of the World Bank has been questioned on a number of points, however, the purpose of this review is not to pursue this debate. Whatever one may think of the relative efficiency and inefficiency of the public and private sectors, the debate has at least drawn into sharp focus the relatively neglected question of the role of the private sector in achieving national health goals.

While this analysis did not study in depth the national policies addressing private providers' practices, in general, most national policies prohibit unqualified practitioners from practicing and, hence, indirectly discourage efforts to include them in child health programs. Private practitioners are criticized for being expensive and motivated by profit rather than the welfare of their clients *(46)*. Other experts comment that private providers are concentrated in urban areas, whereas the greatest care need is in rural locations; and that they provide only curative services, and ignore prevention in primary health care. Nonetheless, private providers practice in rural areas as well as urban areas, and in countries such as Pakistan, Malaysia, India, and Papua New Guinea, they do provide aspects of preventive medical care, particularly immunization for children. As noted earlier, the Ministry of Health in Malaysia promoted Hepatitis B immunization for children under one year by providing the vaccine at a fixed, subsidized rate to private providers, and allowing them to charge a fee and make a profit *(34, 40)*.

A review of Demographic and Health Surveys from 11 developing countries in Africa, Asia, and Latin America has shown that, overall, private sector use reflects the expected pattern: lower use for the more 'public' goods with significant demand-side market failures such as immunization and family planning, and higher use for more private goods such as treat-

ment of childhood diseases *(47)*. In some countries the levels of private sector utilization are quite high; often more than half of the treatments for diarrhea and acute respiratory infection are provided by the private sector *(1, 5, 6, 7, 12, 30, 33, 47)*.

The debate regarding the role of public versus private sector needs to move beyond comparing the advantages and disadvantages of health services provided by either sector to finding practical ways to work together constructively. Who provides child health services should not be an "either/or" question anymore. Experience of constructive partnerships developed between public and private sectors to achieve public health goals has been documented *(40)*. Effective partnerships could include quality improvement to assure basic compliance to case management standards, referrals of severely ill children, health counseling, and disease surveillance.

## XII. Summary and Conclusion

This review and analysis of published and unpublished literature, as well as personal discussions with researchers and experts in health care seeking behavior for childhood illnesses and in improving private practices, reveal the following:

**1. Health care seeking behavior for childhood illnesses is frequently studied, yet has common omissions.** Many studies address health care seeking behavior for childhood illnesses, however, most do not precisely identify the sources of care consulted outside the household. Studies often refer to the source of care outside the household as "a health facility," without specifying whether the facility was run by the ministry of health, an NGO, or a private practitioner. Another common omission concerns the term "self-treatment," which is often used without investigating the source of medicine/herbs obtained. Such omissions underestimate the role of pharmacists, informal drug sellers, shopkeepers, and traditional healers as child health providers.

**2. Private practitioners play an important role as a source of health care for children.** Private practitioners, formal and informal, are important sources for treating diarrhea, acute respiratory infection, and malaria. They provide half or more of the care of sick children in developing countries. Studies show that the role of private providers is prominent in rural and urban areas. Their services are in demand among the rich and the poor.

**3. Private practitioners often provide sub-standard quality health care for children, yet they are in demand.** Methods used to document the quality of care provided by the private practitioners have included household surveys, exit interviews, simulated client interviews, and direct observation of practitioner-patient interaction. Invariably, public health officials are seriously concerned about the poor quality of services offered by private practitioners. Private practitioners rarely conduct appropriate case management for diarrhea, acute respiratory infection, or malaria. Thus they waste an important opportunity to avert child mortality. However, the community generally perceives private providers to be more accessible, more sensitive to client needs, and more willing to spend time with their clients, compared to the services given in the public sector.

**4. Many factors influence private practitioners' practices.** Some of these factors are: their knowledge and clinical skills; their perception of client expectations; pressure from phar-

maceutical company representatives; and the margin of profit they obtain from their practices. When designing effective interventions to improve private providers' practice, these influencing factors need to be considered.

**5. National public health programs that address child survival generally ignore private practitioners**. National policies generally prohibit the practice of informal or "unqualified" private practitioners. Hence, ministries of health are discouraged from including private practitioners as partners in achieving public health goals. Moreover, health authorities sometimes fear that involving unqualified private practitioners could be perceived as formal recognition and encouragement for them to continue their sub-standard practices. However, given the high proportion of sick children being treated by formal and informal private practitioners, often ineffectively or unsafely, inaction is no longer morally defensible. Strategies are needed to improve the quality of private provider practices and to increase child survival rates. Studies show that private practitioners provide financially sustainable services that are demanded by the community, and that they reach remote populations having poor access to government health facilities.

**6. Few interventions to improve private practitioners' treatment practices have been documented.** Few studies adequately describe attempts to improve the practices of private providers. In particular, the impact of the tested interventions on improving actual practices is poorly documented. Cost analyses of applied interventions, needed to guide the design of large scale implementation, are particularly neglected. Strategies attempting to influence private practitioner practices can be divided into five main categories: regulation, motivation, education/persuasion, negotiation, and combined approaches.

**Regulation for behavior change:** This includes banning the use of harmful drugs or prohibiting the practice of unqualified personnel. The success of regulatory measures depends on the ability of the country to enforce its regulation. Experience from Pakistan shows that such regulatory measures alone did not succeed in correcting the overuse of drugs in treating childhood diarrhea.

**Motivation:** The motivation strategy tries to make it advantageous for private practitioners to practice in the desired way. This is done mostly through subsidizing a product, for example a vaccine, and allowing the practitioner to charge a fee and make a profit. Giving financial incentives to practitioners requires inputs that may be difficult to obtain in developing countries. However, if profit maximization is identified as important in determining retail pharmacies' sales behavior, or if the economic loss associated with current behaviors is significant, then providing financial incentives and/or subsidized products may be justified.

**Education:** Strategies that focus only on improving knowledge of private practitioners are unlikely to be effective in changing the target practitioners' behavior. Literature exists to prove the existence of a "**KAP gap**," where private providers have adequate knowledge yet poor practice. However, when training is focused on specific practices and supplemented with simple, clear tools, the training is more likely to result in improving private practitioners' practices.

**Persuasion:** "Detailing" through person-to-person encounters has been proven effective in changing physicians' behavior in the United States, Indonesia, and Kenya. The sustainability

of such interventions in developing countries, especially when implemented on a large scale, has not yet been demonstrated.

**Negotiation:** Private Practitioner Treatment Improvement Intervention (PRACTION) is a multi-component approach including negotiation that starts with assessing current private practitioner practices and then negotiates with them a "contract" for modified behaviors. It has been tried successfully in India, Indonesia, and Pakistan. The intervention is promising and merits wider testing in different settings.

**Combined approaches:** These include more than one of the above strategies. For example, PRACTION combines assessment with persuasion, negotiation, and motivation. Attempts to improve practices of shopkeepers in Kenya combined education and motivation.

**Other interventions:** Prepackaging medicine to include the correct number of tablets needed per episode has been tried successfully to improve compliance with malaria treatment. Education of consumers to seek quality care and comply with correct treatment has had limited application in family planning and other areas, but has not been tested in child survival.

7. **Results must be sustained and replicated on a large scale.** After the intervention is completed, on-going monitoring and management of the "behavior change" process is essential to maintain and continue improving the private providers' practice. Implementation reveals that choosing an "implementer" or a "change agent" for the intervention is as important as the intervention itself. The "change agent" needs to be credible to private practitioners, locally accessible, and trusted by them. Depending on the target practitioners, professional associations, non-governmental organizations, ministry of health staff, and community leaders could be implementers.

Most of the documented interventions to improve private providers' practices have been tested only in a pilot setting. Replicability on a large scale, to achieve the desired public health impact, has not been demonstrated.

## XIII. Recommendations

### *National Health Policies*

1. Private practitioners should no longer be ignored as sources of care for sick children. Their potential in child survival should be recognized and they should be included in strategies and programs that aim to reduce child mortality.

2. National policies, which generally prohibit the practice of informal practitioners, need to be reviewed and modified to allow some room for interventions that aim to improve the quality of their services.

3. Models of partnerships between public and private sectors should be documented and shared across countries to stimulate discussion and influence national strategies to benefit from the private sector in achieving public health goals.

### *Child Health Programs*

4. Child survival programs should be based on the community's health care seeking practices. All the sources of advice and treatment, including home treatment, must be clearly identified. Subsequent investment in child survival programs needs to take into consideration the sources of care that are actually used by caretakers of sick children, not just public facilities.

5. Global and regional conferences should be used to advocate for including private practitioners in child health programs and to solicit the support of national decision makers and international organizations.

### *Preparing and Implementing Interventions to Utilize Private Practitioners' Potential in Child Survival*

6. To prepare for interventions to utilize the potential of private practitioners in child survival, comprehensive assessments are needed to achieve the following:

   - Compile national policies that attempt to regulate the practice of formal and informal private practitioners.
   - Assess health care seeking behavior that includes identifying all sources of child care. Tools and questionnaires used to investigate health care seeking practices for childhood illness should investigate the source of child care with more specificity. Particularly, "self-treatment" needs to be probed to reach the source of medicine or herb used. Also, describing the source of child health care as "a health facility" needs to be more specific.
   - Identify types and distribution of practicing formal and informal private practitioners.
   - Assess and analyze the possible channels available to reach formal and informal private practitioners, such as organizations and professional associations, mass media, and drug distribution channels.
   - Assess the quality of care given by formal and informal private practitioners for childhood illness to identify key problems with examination, treatment, and counseling.
   - Understand the factors influencing private practitioners' practices, including margins of profit for current practices versus desired ones.

   To conduct such assessment, a comprehensive tool, drawing on existing tools, should be developed. (See Annex 1: Guidelines for conducting an assessment of formal and informal private practitioners for child survival.)

7. A specific strategy should be developed, based on the assessment, to utilize the potential of private practitioners in child survival programs, recommend appropriate policies, select entry points for working with private practitioners, and design specific interventions to improve the quality of care offered by them.

8. Interventions that aim to improve the effectiveness of private practitioners' management of childhood illnesses are more likely to be successful when they are:

- targeting private practitioners' practice not just knowledge;
- realistic, not over-ambitious, and focused on key practices that could make a difference in saving children's lives;
- taking into consideration the complex multiple factors that influence the practices of private practitioners;
- conducted by an entity that is credible, trusted, and suitable to the targeted formal or informal private practitioners' level;
- conducted in a non-threatening manner;
- practical and respectful of private practitioners' limited free time.

9. Further testing of pilot interventions should be carried out, especially for the promising interventions described under the education/persuasion and negotiation strategies. Most of the described interventions have been inadequately tested, and none have been tested at scale.

10. Interventions should be piloted with sustainability and large scale implementation in mind. Implementers need to rely mainly on locally available resources and avoid, to the extent possible, creating additional resources or structures. Adding artificial resources or structures may enhance the intervention's impact in the pilot area, but will compromise its feasibility for a large-scale application. To assure the continuity of the improved private practitioners' practices, the intervention needs to be implemented, from the beginning, by a suitable local entity.

11. Adequate evaluation and documentation of tested interventions need to be conducted. Evaluation should not be limited to documenting the interventions' process and impact but also its cost. It needs to include documentation of the methodology used, inputs, and roles of different implementers.

## Annex 1: Guidelines for conducting an assessment of formal and informal private practitioners for child survival

Key information is needed to develop a strategy for improving the effectiveness of private practitioners' case management practices.

1. Compilation of national policies:

   Compile national policies that regulate the practice, including prescribing, of formal and informal private practitioners.

2. Assessment of health care seeking behavior for childhood illnesses:

   Assess mothers'/caretakers' actual practice when their children get sick with diarrhea, ARI, and fever. This includes action taken at home, all sources of advice/care outside the home, and the effectiveness of treatment and advice given by each source of care.

3. Description of private practitioners' profile:

   Document the type of practicing practitioners, their level of education, and their pattern of geographical distribution among population (urban, rural).

4. Assessment of the available channels to reach formal and informal private practitioners and their sources of information:

   Identify professional associations, organizations, and drug distribution networks that have access to formal or informal practitioners. Identify source of technical information for formal and informal providers.

5. Assessment of the effectiveness of care given by formal and informal private practitioners for childhood illness:

   Assess key deviations from IMCI clinical standards of current practices related to history taking, examination, treatment, and counseling for childhood diarrhea, ARI, and malaria.

6. Understanding the factors influencing private providers' practice and investigating private practitioners' willingness to participate in an intervention:

   The factors that play an important role in influencing private practitioners' behavior include margin of profit, client expectation, and pharmaceutical companies' visits. Before starting a program, the following information should be collected from private practitioners: willingness to participate in an intervention, preferred method, availability of time to participate, most suitable times to participate.

## Methods of collecting the key information and approximate time estimate

| Method | Activities | Estimated duration |
|---|---|---|
| Interviews with health officials | Collect information on national policies relevant to the practice and prescribing of private practitioners. | Two weeks: one week for collecting information and one week for summarizing policies. |
| Household survey/ Verbal Case Review | Interview mothers to identify actions taken, if any, at home and outside home regarding the recent sickness of their child. The sources of care/medicine outside the household should be identified with precision. The effectiveness of case management should be investigated. | Four months: one month for tool design (or to adapt existing tools) and field testing; one month for data collection; two months for analyzing data and summarizing results. |
| Mystery client visits or exit interviews | If the above household survey does not include information on the effectiveness of case management provided by different sources of child care, conduct mystery client visits or exit interviews.<br><br>Mystery client visits are structured visits by trained interviewers who "pretend" to seek advice for their sick child who has a specific condition, e.g., watery diarrhea for two days, no fever or blood in stools.<br><br>Exit interviews include waiting outside the private practitioner practicing place and interviewing clients who have completed their visits. | Four weeks: however, this will depend on the geographic distribution of the target private practitioners.<br><br>Mystery client visits are faster than exit interviews since they do not include waiting time. |
| Interviews with professional associations and community leaders/ informants | Interview active professional associations, such as medical syndicates and nursing associations, to learn about the geographic distribution and level of education of formal practitioners. Interview selected community leaders and informants to learn about the distribution and level of education of informal practitioners such as shopkeepers and traditional healers. | One week: for interviews with professional associations.<br><br>One week: for interviews with community leaders and informants.<br><br>One week: for summarizing results. |
| Interviews with selected private providers | Interview selected formal and informal providers to learn about their participation in professional groups, factors influencing their practices (profit, client pressure, level of knowledge and skills,...), willingness to participate in an intervention related to child survival, preferred method, day of the week, time of the day.<br><br>Note: interviewing providers is not a recommended method to obtain data about the quality of service they offer. | Three weeks: preparing semi-structured questions and conducting interviews.<br><br>Two weeks: summarizing results. |

## References


1. **Northrup R.**, *Reaching the private practitioner*, Issues Paper #2, PRITECH (Technologies for Primary Health Care) Project, Management Sciences for Health, Boston, July 1993.
2. **McCombie S.C.**, Treatment seeking for malaria: a review and suggestions for future research, *Social and Economic Research in Tropical Diseases,* Resource Paper No. 2, 1994.
3. **Resources Network for Roll Back Malaria**, *Improving the quality of care at home, Report of first meeting*, 1999.
4. **Federal Ministry of Health, Nigeria**, IMCI Unit, *Edo State Study*, 1998 (unpublished document).
5. **Statistics Department, Uganda, and Macro International Inc.**, *Uganda Demographic and Health Survey*, Calverton, Maryland, 1995.
6. **Ministry of Health, Uganda**, IMCI Unit, 2001 (unpublished document).
7. **Wellcome Trust, Kenya Medical Research Institute**, Collaborative Research Programme, *Changing home treatment of childhood fever by training shop keepers in rural Kenya,* 2001 (unpublished document).
8. **Orobaton N.**, *The role of rural drug vendors in health services in Eritrea: discussion paper*, Ministry of Health, Eritrea, BASICS, Arlington, Virginia, October 1997 (unpublished document).
9. **Ferrez-Tabor L.**, *Forging new partnerships: PRITECH's Pakistan experience in involving the commercial sector in ORS marketing*, PRITECH Project, Management Sciences for Health, Boston, 1991.
10. **Viswanthan H.**, **Rohde J.**, *Diarrhea in Rural India*, Vision Books, 1990.
11. **Sutrisna B., et al.**, Care seeking for fatal illnesses in young children in Indramayu, West Java, Indonesia, *The Lancet*, 1993, 342:787-789.
12. **Kafle, K.**, *Community treatment practices for common problems in Nepal,* INRUD (International Network for Rational Use of Drugs), Management Sciences for Health, Boston, Vol. 8, No. 1, February 1998.
13. **Thien A.**, KAP of mothers on childhood ARI, *Southeast Journal of Tropical Medicine and Public Health,* September 1994.
14. **Igun U.A.**, Reported and actual prescription of oral rehydration therapy for childhood diarrheas by retail pharmacists in Nigeria, *Soc. Sci. Med.,* 1994, Vol. 39, No. 6, pp. 797-806.
15. **Inayat H.**, Private practitioners in the slums of Karachi: what quality of care they offer?, *Soc. Sci. Med.,* 1998, Vol. 46, No. 11.
16. **Murray J.**, *Rural drug vendors in Eritrea: a study of practices and training needs*, BASICS, Arlington, Virginia, February 1998.
17. **Bruga R., Zwi A.**, Improving the quality of private sector delivery of public health services: challenges and strategies, *Health Policy and Planning*, Vol. 13, Issue No. 2, June 1998.
18. **Ickx P.**, *Central Asia Infectious Diseases Program, Simulated Purchase Survey,* Rational Pharmaceutical Management, Kazakhstan, BASICS, Arlington, Virginia, 1996.
19. **Bates J.**, *Where has the Tetracycline gone?,* Management Sciences for Health, Boston, 1987.
20. **AHRTAG** (Applied Health Resources and Technologies Action Group Ltd.), *ARI News*, Issue No. 18, November 1990.

21. **National Acute Respiratory Infection Control Program of Egypt**, *ARI Newsletter*, Issue No. 11, December 1994.
22. **Roemer**, Private medical practice: obstacle to health for all, *World Health Forum* 1984, No. 5: 195-210.
23. **BASICS** (Basic Support for Institutionalizing Child Survival) Project, *Health Facility Assessment Surveys*, 1995-1998, Arlington, Virginia (unpublished report).
24. **Avorn J., et al.**, Improving drug-therapy decisions through educational outreach: a randomized controlled trial of academically-based detailing, *N Engl J Med,* 1983, 308:1457.
25. **Paredes P., et al.**, Factors influencing physicians' prescribing behavior in the treatment of childhood diarrhea: knowledge may not be the clue, *Soc. Sci. Med*., 1996, Vol. 42, No. 8, pp. 1141-1153.
26. **Soumerai S., et al.**, Improving drug prescribing in primary care: a critical analysis of experimental literature, *Milbank Q.*, 67, 268, 1989.
27. *Managing Drug Supply*, Second Edition, Management Sciences for Health in collaboration with WHO, Kumarian Press Books on International Development, 1997.
28. **Bennett S.**, Promoting the private sector: a review of developing country trends, *Health Policy and Planning,* 1992, 7(2):97-110.
29. **Bennett S., McPake B.**, *Private health providers in developing countries, serving the public interest?*, Zed Books Health/Development, 1997.
30. **BASICS** (BASICS Support of Institutionalizing Child Survival*), Verbal Case Review, Bangladesh,* Arlington, Virginia, 1998 (unpublished document).
31. **BASICS** *(*BASICS Support of Institutionalizing Child Survival*), Comparison of community based organization health facilities and patent medicine venders in Lagos, Kano and Aba, Nigeria,* Arlington, Virginia, 1997 (unpublished document).
32. **Rohde J.**, *The Rural Private Practitioner,* Oxford University Press, 1995.
33. **Tavrow P., et al.**, *How rural vendors reduced harmful anti-malarial practices in Kenya's private sector,* Quality Assurance Project, Bethesda, Maryland, 2001 (unpublished document).
34. **Northrup et al.**, *Working with private sector to achieve child survival goals—Evidence from operations research study in rural Bihar, India,* BASICS (Basic Support of Institutionalizing Child Survival), Arlington, Virginia, 1997.
35. **Luby S., et al.**, *Improving private practitioner sick child case management in two urban communities in Pakistan,* 2000 (unpublished document).
36. **Silimperi D.**, *The urban private health sector inventory, Nigeria,* BASICS (Basic Support for Institutionalizing Child Survival), Arlington, Virginia, 1995.
37. **Bhutta, Balchin**, Assessing the impact of a regulatory intervention in Pakistan, *Soc. Sci. Med.,* 1996, Vol. 42, No. 8, pp. 1195-1202.
38. Membongkar skandal obat palsu, Indonesia, *Tempo 21,* 60, May 1998.
39. **Haak H., Claeson M.**, Regulatory actions to enhance appropriate drug use: the case of antidiarrheal drugs, *Soc. Sci. Med.,* 1996, Vol. 42, No. 7, pp. 1011-1019.
40. **Bennett S.**, Carrot and stick: state mechanisms to influence private provider behavior, *Health Policy and Planning*, 1994.
41. **Goel P., et al.**, Retail pharmacies in developing countries: a behavior and intervention framework, *Soc. Sci. Med.,* 1996, Vol. 42.
42. **Frederick O.**, Primary care training for patent medicine vendors in rural Nigeria, *Soc. Sci. Med.*, 1992, Vol. 35, No. 12, pp. 1477-1484.

43. **Caragay R.**, Training of indigenous health workers: a Philippine experience, *World Health Forum,* 1982, 3(2):159-163.
44. **Ross-Degnan D., et al.,** The impact of face-to-face educational outreach on diarrhea treatment in pharmacies*, Health Policy and Planning,* 1996, 11(3):308-318.
45. **Chakraborty S., Sister Ann D'Souza, Robert Northrup**, Improving private practitioners' care of sick children: testing new approaches in Bihar, *Health Policy and Planning,* 2000, 15(4), pp. 400-407.
46. **Bennett S.***,* Promoting the private sector: a review of developing country trends*, Health Policy and Planning*, 1992.
47. **Berman P.**, The role of private providers in maternal and child heath and family planning services in developing countries, *Health Policy and Planning*, 1996.
48. **Saade C.**, *Mobilizing the commercial sector for public health objectives in Bolivia*, BASICS (BASICS Support of Institutionalizing Child Survival*),* Arlington, Virginia, 1998 (unpublished document).
49. **Lambrechts T., Bryce J., Orinda V.**, Integrated management of childhood illness: a summary of first experiences, *Bulletin of the World Health Organization*, 1999, 77 (7).

This publication was prepared by the Support for Analysis and Research in Africa (SARA) project, operated by the Academy for Educational Development in collaboration with the BASICS project, funded by USAID, Global Bureau. SARA is funded by the U.S. Agency for International Development (USAID), Bureau for Africa, Office of Sustainable Development, under contract number AOT-C-00-99-00237-00.