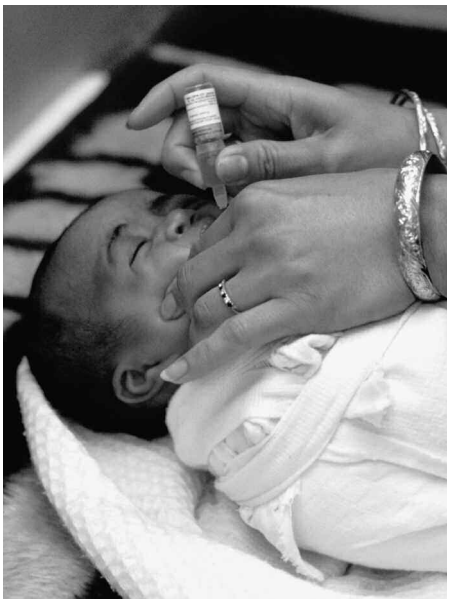
3 Childhood Immunization



The dual goals of childhood immunization are to protect *individual* children from disease by vaccinating them as early as possible and to protect communities from disease outbreaks by vaccinating adequate *numbers*. This goal of "protecting the herd" has highlighted the need for programs at scale for several decades. It has also made immunization a very visible intervention. Even the detection of measles among one or two adoptees flying to the U.S. makes worldwide news. Immunization is completely dependent on both supplies and services. There *is* no intervention without vaccines and vaccinators and without maintenance of a cold chain from central to peripheral areas. Centralization of certain functions, even during this time of health reform, is therefore another characteristic of childhood immunization.

INDIVIDUAL GOOD, PUBLIC GOOD

The need for scale, the coordination required, the supplies and the funds, and the possibility of quantifiable "success" have long attracted donors to immunization.[1] Donors have also influenced priorities.

1 Since 2000, the Global Alliance for Vaccines and Immunization (GAVI) has helped coordinate assistance by governments, donors (UNICEF, WHO, the Bill and Melinda Gates Foundation, and the World Bank), vaccine manufacturers, research institutions, and nongovernmental organizations. GAVI provides financial resources to countries to purchase vaccines and other supplies through The Vaccine Fund.

They have often focused on specific diseases: eradication of smallpox, for example, and more recently eradication of polio and control of measles. This commitment has led to campaign approaches.

Immunization can have high visibility at the community level as well. The social mobilization involved in campaigns and the fact that vaccines are usually greatly valued and a public "draw" have made this intervention a good platform for other ones. Vitamin A and more recently insecticide-treated nets (ITNs)—or vouchers for them—have been "piggybacked" onto vaccination campaigns. The behavioral challenges connected with these events can be multi-leveled.

Despite the centralized focus and much top-down planning, immunization is always local. Community involvement is necessary for outreach. Community coordination is necessary to support both demand creation and problem-solving. Effective "micro planning" (as the inter-agency coordinating committees call it) requires good relations and community leadership.

Immunization's long and comparatively successful history offers many lessons for other interventions—about the power of national leadership and advocacy, about the possibilities of "branding" health practices and creating "umbrella messages," and about opportunities and problems connected with using one behavior or product as a "hook" for others. It has also produced more sobering lessons—about the potential for campaigns to become lightning rods for political and social distrust and about the need for a long-term view.

As governments and donors focused on specific diseases, routine coverage of the primary immunizations stagnated or dropped in many areas. Since the early to mid 1990s, DPT3 rates have declined in sub-Saharan Africa from a high of 60 percent to around 50 percent and stalled in South Asia in the mid 60s.[2] Health systems underwent changes during this time. Immunization suffered in some countries from sector-wide approaches and the trend away from vertical programs. This section looks at how behavior change and communication approaches can help improve coverage as well as strengthen the overall system.

THE BEHAVIORAL OBJECTIVE—"COMPLETING THE SERIES BY AGE ONE"

For parents, immunization should in theory be the most simple child health practice. In most countries the primary vaccinations require five visits before the child's first birthday (see box page 35). Ideally the child is vaccinated at birth and the parents are counseled about when and how the child should get the next vaccinations. The family receives a health card for the child with simple pictures that act as a reminder. The card also informs a health worker if the child visits the clinic and has missed a vaccination, which should then be given on the spot.

The great majority of parents do *value* vaccinations. Research has shown that parents also value the health cards and surprisingly few lose them. If the system works right, both parents and providers have all the cues they need for these behaviors.

In the past, many programs assumed parents needed to understand what their children were being immunized against before they would act. Some put great effort into teaching parents about the various "killer diseases." However, because immunization *per se* is valued by families, most will take their children simply if told when and where to go. Parents equate vaccinations with good health (despite the short-term

2 WHO 2003.

RECOMMENDED SCHEDULE FOR PRIMARY CHILDHOOD VACCINATIONS

Visit & Age	Vaccines
Visit 1: Birth	BCG OPV0 Hep B*
Visit 2: 6 weeks	DPT1 OPV1 Hep B Hib 1
Visit 3: 10 weeks	DPT21 OPV2 Hep B Hib 2
Visit 4: 14 weeks	DPT3 OPV3 Hep B Hib 3
Visit 5: 9 months	Measles Hep B Yellow Fever **

* Only three doses of hepatitis B vaccine are needed for full protection. Schedules vary by country.

** In countries where indicated

Recommended by WHO for developing countries.
Source: USAID 2003.

negative consequences of a child in tears). UNICEF's massive support for Universal Child Immunization in the 1980s also helped brand vaccinations as a public health good. People often recognize the immunization logo.

The key behavioral concepts for parents are the notion of *completing a series* of visits and (in most countries) finishing the series *before the child's first birthday*. In many communities, the under-one-year old is considered particularly vulnerable so parents may be reluctant to subject an infant to vaccinations early enough. In addition to the vaccination card, communication programs have therefore devised various creative ways of motivating *completion* in a *timely* way (see box page 36). Completion is made a cause for celebration. A central communication focus is to reward *individual* parents for finishing a child's series, and communities for covering large *numbers* of children *by a particular age*.

On the surface, this does not sound like a difficult demand creation task. Nevertheless, immunization offers complex behavioral challenges.

IMMUNIZATION IS LOCAL

Knowledge (about when, where, and how often to get a child immunized) is a prime determinant of immunization. Another is *access*. In any given community, ideal practices are linked to the delivery strategies for the local area. Services might be delivered:

- Regularly, according to a schedule, at a **fixed health facility**
- Periodically, by vaccinators who come to a local **outreach site**
- Intermittently, by **mobile teams**

Elements of access include *distance* to the service, *frequency* of service, and *reliability* of service. These are major health system and supply issues. Public *confidence* in the system is a crucial determinant of action. Synchronizing demand with supply is one of the challenges of this intervention. However, good *community involvement* (as well as accurate information) can help lessen and even resolve some access problems.

TWO CONCEPTS: Timeliness and Completion

To promote *completion* of the immunization series, many programs award handsome certificates or diplomas to the parents of a child who has "graduated."

Ecuador Timeliness can also be rewarded. Some programs only give certificates to children who complete the series before age one. In Ecuador, vaccinators in the PREMI program originally gave certificates to parents whenever the child completed the series. However, they found that children were often completing the series very late. Research showed parents were afraid of immunizing their "vulnerable" infants.

The communication program (supported by USAID's HEALTHCOM Project from 1985-87) shifted the creative emphasis in all of its materials to the under- one-year-old. It added a gold star to immunization certificates of children who graduated before the age of one. Many mothers of children who qualified came back to the clinics to get their stars.

After two years of combined service delivery/ demand creation efforts, on-time completion rates more than doubled. Improvements were as high or higher among the lowest socioeconomic levels.

Madagascar Communities can also be rewarded for graduating targeted numbers of children on time. The BASICS and Jereo Salama Isika projects (funded by USAID beginning in 1995) publicized the success of communities that immunized 80 percent of infants on time in a given year. School children helped by identifying younger siblings and making sure they got all their vaccinations on time.

Sources: Rasmuson et al. 1988; Seidel 1992; Republic of Madagascar, Ministry of Health 2003.

In addition to "routine" services, delivery strategies in some areas also include special campaigns to vaccinate children specifically against polio and/or measles. They may include "mop-up" campaigns for high risk groups and "catch-up" campaigns (for measles) targeting children up to age 15.[3] On some occasions these may involve house-to-house visits. Any supplementary strategies add to the parents' challenge of understanding *how many* vaccinations a child needs and *when and how* these should be obtained. Confusing or contradictory messages make it difficult for families to act, undermine trust in services, and even create doubts about the product itself (see also page 47).

Communication strategies have included creative ways of letting people know when vaccinations are available. A program in Madagascar developed a system of community flags to count down the number of days before vaccinators were scheduled to arrive. In Tamil Nadu, India, where vaccination is provided one day a month in rural villages, the community nutrition center organizes children's parades to announce the arrival of the vaccinator. (The vaccinator is scheduled for the same day each month, but the celebration alerts the community and also motivates and encourages responsibility on the provider's part.) In sub-Saharan Africa, the town criers and other traditional media have been used successfully to mobilize communities.[4]

When delivery is standardized, it is easier is for parents to show up. One study of polio

3 Mop-up strategies target high-risk and/or hard-to-reach or transient groups. Catch-up campaigns are specifically for measles and target a wide age range in order to "catch" children up to around age 15 who may have missed being vaccinated earlier (USAID 2003).

4 Favin 2004.

campaigns[5] found it was especially important in slum locations to set up vaccination booths in the same place for every campaign because people quickly became accustomed to those spots, despite their transitory existence. Although top-down planning allows communities little flexibility, regimentation of delivery has been a hallmark of some successful programs. In Nepal, immunization was supported by the King in the 1980s and vaccination dates were fixed all over the country and consistent year after year. This system collapsed under decentralization but the idea of fixed dates and times remained. Now in Parsa district, for example, a single booklet gives the schedule for services in each local development community. The booklet is distributed to school teachers and others at the village development committee (VDC) level who can alert the community. The booklet also serves as a tool for checking the accountability of providers in different communities.

Whatever the delivery approach, information to the community about location and timing is vital. Equally important is that services must actually take place as announced.

Understanding Who is Being "Left Out"

Those who are "left out" of the intervention (children who never receive the first dose of DPT) are one priority for behavior change and communication programs.[6] This is the first challenge of assuring scale. As always with issues of scale, the problem is not just to reach *more* children, but to reach those who are *different* from the majority and face special barriers. Those who are left out are likely to include remote or mobile populations, ethnic or religious minorities with special concerns about the services, high-risk children (for example girls) in high-risk families (those who face extreme poverty and/or have many children). Communication programs classify these as both the "hard to reach" and the "hard to convince" because their barriers may fall into two different categories: *access* or *beliefs*.

Only research can determine who is left out and why. Assumptions about what is going on can be dangerous. Poor access among some groups is just one possible reason. In one country many upper class families in urban areas with good access to services did not respond to a polio campaign because they thought only the poor were vulnerable.[7] In another country where many people were known to think vaccinations invited evil spirits, an assessment showed they nevertheless intended to vaccinate their children and their chief barrier was distance to the vaccination locations.[8]

Many programs have not done a good job grappling with such segmentation issues. Some do not have good audience data. Even those that have carried out KAPB (knowledge, attitude, practices, behavior) surveys may not use the results.[9] Communication programs can help design streamlined audience surveys or analyze existing data to clarify barriers.

Immunization is Individual

Every child's schedule is unique. Every family needs to know when that *particular* child should be vaccinated.

---

5 Ibid.

6 In most countries dropouts are a bigger problem, but these two coverage rates should be calculated on a district wide or lower basis to determine the nature of actual problems.

7 Favin 2004.

8 Sheldon et al. 2003.

9 Favin 2004.

IMMUNIZATION–RELATED BEHAVIORS

Mothers and Other Primary Caretakers

- Bring children to immunization service delivery points at the ages recommended in the national schedule.
- Bring each child's health or vaccination card to each health visit.
- Treat side effects as recommended.
- Seek tetanus toxoid immunizations for yourself (mothers and other women of childbearing age).
- Look for and report any new case of acute flaccid paralysis (AFP). If a child develops AFP, bring the child to health facility immediately and encourage the child to produce two stool samples.
- For campaigns, bring children of the recommended ages to immunization sites on the day(s) recommended. For a house-to-house strategy, keep those children around the home and have them immunized when the team arrives.

Fathers

- Bring children to immunization service-delivery points yourself, or encourage their mother to do so.
- Provide mothers with money for transport or other expenses related to immunizing children.

Health Workers

- Perform immunization tasks correctly, including those that ensure safe injections.
- Give mothers and other caretakers essential information on when to return and side effects.
- Schedule and organize services to make them convenient for parents. Be reliable with services.
- Treat families well on each visit and praise families whose children are fully immunized by one year of age.

Political and Public Health Leaders

- Allocate sufficient financial and human resources to immunization services.
- Show personal support for immunization services.

Community Leaders

- Describe the benefits and safety of vaccinations to others in the community.
- Remind families when children need to receive the next dose(s) of vaccine.
- Encourage families to complete each child's basic immunizations in their first year of life.
- Inform families when and where outreach services and supplemental immunization activities are taking place and about new vaccines or other improvements in the immunization program.
- Assist health facility staff in planning and monitoring services.
- Provide logistical support, e.g., by transporting vaccines, supplies, and staff.

Source: Adapted from USAID 2003.

The highly visible social mobilization side of immunization (especially campaigns) has tended to obscure this important fact.

The most useful, even necessary channel for communicating *tailored* messages is interpersonal. Even where mass media, local animators, or other media activities have been launched, health workers are often still cited as a major source of information about immunizations. The quality of provider interactions with families is also a very strong factor in utilization of services.

THE PROVIDER MAY BE PRIMARY

Many experts believe the provider should be the major focus of behavior change efforts in immunization programs.[10] The many roles of the provider and his or her influence on the immunization status of children are often overlooked. This influence is very strong. In fact, *most parents will do what the health worker tells them*, as far as immunization is concerned. However, communication programs rarely pay adequate attention either to understanding provider behaviors or planning strategies to improve their practices. Program managers also tend to assume that families are the sole or at least major targets of communication. The next three sections look specifically at provider behaviors.

Initiating the Series

Counseling about vaccination should be part of birth preparation. As we saw in the last section, vaccination can actually serve as the motivation for a postpartum visit.

The first immunization is crucial and has many implications for subsequent behaviors. If the mother delivers in a health center or a maternity ward, her infant should receive BCG and polio (and in some

NEVER FORGET THE CARD

The child's immunization card (or child health card) is the premier communication tool. Some experts think it should be included on the essential drug list so that clinics never run out of these supplies.

Madagascar Vaccination cards used to be available only in clinics, but in 2002 the Municipal Offices started disseminating and promoting them so that when a couple came to register their marriage or the birth of their child, they could get the booklet right away. The cards are illustrated booklets that follow the child through different ages and include messages for each age.

Ecuador A study in 1986 to find out the reasons for dropouts discovered that a quarter of children's immunization cards had no dates written on them and half of the mothers could not interpret what was on the cards. Observations also showed that often no verbal instructions were given on when to return. Although the study was originally designed to find out how to improve *demand* for services, the conclusion was health workers needed better training in *using* and *explaining* the cards.

Honduras In rural areas, observations in the early 1980s showed mothers were bringing in children who had already been completely immunized. Mothers had vaccination cards but could not read them, and health workers did not explain when children "graduated." Instead, they berated the mothers for bringing children in unnecessarily. The communication program revised the card and included pictorial messages pretested with mothers.

Source: Rasmuson et al. 1988.

10 There was surprising consensus on this point among those interviewed for this paper.

cases hepatitis B) vaccinations before leaving. The provider should fill out the child's immunization card, explain it, and emphasize the importance of going for the next in the series. A study in Mozambique found that children of mothers who were *counseled* about the *importance of vaccination* at the time of their child's birth were more likely to complete the series than other children. Receiving the vaccination alone was not sufficient to have an effect on future behaviors.[11]

A small number of exit interviews at facilities where women give birth can help determine whether they have received the first vaccinations and related counseling. Quick assessments can also identify problems and whether they have to do with supply, policies, knowledge, or attitudes.

The mother who delivers outside a facility faces several constraints. One is that she may return to her parents' community for the birth and end up out of her child's catchment area. Neither she nor the infant will appear on the local health provider's register or map. A simple referral slip provided at her antenatal visit can empower the mother to seek postpartum services (including vaccination) wherever she gives birth. Providing a concrete link for the mother to services at her place of delivery is a communication task for both newborn and immunization programs. The local vaccinator should also have a record of infants born to mothers in the community so any who later seem to be "left out" are "sought out." Both of these simple information tools require communication between the antenatal program and the immunization program.

Continuing the Series—Preventing Dropouts

Many more children *drop out* of the immunization series after receiving one or more vaccinations than are left out entirely. WHO considers a dropout rate of more than 10 percent a problem. Any level of dropout indicates a problem, however.

Dropout problems may involve access issues but are usually an indication something else is going wrong. These are families who were motivated and successful in starting the series. What happened? Analyzing and understanding this problem is usually one of the *primary research tasks* of a communication program. The task should be appreciated and taken on by the overall program. However, communication experts may have to instigate this, and should in any case be knowledgeable about the dropout data. Problems may vary by district and even by community. Coverage data can help locate problem areas. In addition, a combination of simple exit interviews, observations, and "doer- non-doer" assessments (views of parents who return, and of parents who do not) can help illuminate what the underlying problems are. Each of these techniques has different strengths and weaknesses, so use of multiple methods is best if possible.[12]

Common reasons for dropping out are:

- ***Demeaning or Punishing Experience for the Parent:***
  Many providers treat families badly or even abuse them. Parents often report that health workers yell, criticize them, and discourage questions.[13] Unfortunately this is one of the most commonly cited barriers to immunization. Combined with

11 Sheldon et al. 2003.

12 Shafritz et al. 1994.

13 Sheldon et al. 2003.

the frustration of long lines, late openings, or even cancelled services on announced days, ill-treatment can discourage return visits. Poor vaccination techniques can also cause anxiety in parents. Health workers may be poorly trained or use needles that are old and blunt.

- ***Lack of Information:***
  Parents may not be counseled on *when* to bring the child back for the next vaccination. Many health workers do not fill out immunization cards, either because they're too busy or because they think parents can't read them. Often health workers don't know how important it is to make sure parents know when to return or to ask if they understand.
- ***Poor Synchronization of Supply and Demand:***
  The delivery system loses credibility if it does not provide services as advertised. Failure of scheduled services to materialize, late openings, long lines, and shortages of supplies are common complaints.
- ***Concern About Side Effects:***
  Many children have minor side effects (fever, temporary redness). Parents should be told this is common, what to do about it, and not to worry.

The nature of each vaccination experience clearly affects whether a child will or will not be brought back. Some factors are structural and supply-related: e.g., delayed or failed openings and long waiting times (see also discussion on health system-community relations page 45). However, the first three issues are directly related to health provider behaviors.

Besides giving the injection, the ideal provider practices are to:

- Emphasize the importance of vaccination
- Fill out the health card and explain it
- Explain where and when to return for a next immunization, and how many in the series remain
- Explain common side effects and what to do about them
- Respond to doubts and fears
- Respond to questions
- Congratulate the parent.[14]

These behaviors are rarely emphasized in a supervision visit or assessed in any way (see box page 42). Many vaccinators have not been trained for a number of years and supervision is almost always weak. Communication programs can provide materials and improve training.

The All-important Child Health Card

The card is a vital record for parents and a communication tool for the health provider. If it is not well designed, the provider may think the parent won't be able to understand it anyway. Many experts believe the card should have the status of and be supplied as reliably as an essential drug.

Basic Job Aids

Every health worker should have a simple job aid with message guidelines. A vaccinator usually has only a few seconds with a child and time for just a brief exchange. Creative reminders of the priority messages—what to do about side effects, when to return, how many vaccinations remain, and the absolute imperative to congratulate the parent—will help them focus on the key "doable" actions in this short amount of time.

Training

Any opportunities to train vaccinators should include attention to counseling skills. Improving positive

[14] Ibid.

IDENTIFYING BARRIERS FACED BY PROVIDERS

Small-scale studies using multiple methods can illuminate the reasons for dropouts. Sometimes underlying problems can be traced to barriers faced by *providers* and communication experts can often devise solutions to address these.

Analyzing dropouts In 1992 USAID carried out a measles initiative in Kenya, Burkina Faso, and Niger combining communication and quality improvement approaches. The first step was qualitative research to understand dropout rates. Studies in all three countries revealed poor communication in the clinic. But the *barriers faced by health workers* were quite different.

Three countries, three barriers In one country, health workers had an average of only 15 seconds to communicate with a mother. The program needed to devise a training program that helped them convey a few key messages. In the second country, the chief problem was that health workers were not following norms. Any child with a mild fever was sent home without a vaccination. Health workers had heard of the official protocol but said they wanted technical information to assure them it was safe to vaccinate a sick child, and *evidence* of the norm to back them up.

In the third country, the problem was purely one of health worker attitudes toward the clients. Mothers simply did not want to attend a second vaccination session once they had experienced ill treatment at a first.

Sources: Sheldon et al. 2003; Shafritz et al. 1994.

interpersonal interactions—indeed, changing the norm for how providers treat parents—requires more than job aids. Health workers need to understand their clients' concerns and perspectives. The results of audience research should be fed back to them. What are parents' concerns? Why don't some return? How many of them understand or worry about side effects? Health workers should understand that their own behavior affects dropouts. Many observation studies have also shown health workers giving information but mothers not hearing it. Training has to address cultural issues, as well as good listening skills and how to answer questions. Training should be based on behavior principles: modeling and practice of skills, positive reinforcement, and competency testing.

Many vaccinators have not received refresher training in years. Communication programs may not have the opportunity to improve the basic system. However, polio and measles campaigns always include orientation for vaccinators. At a minimum, basic communication skills should be discussed in this preparation.

Work Flow

Time constraints are sometimes a function of workflow organization in a clinic. Health facility assessments can be an opportunity to look at time available for counseling and how this can be improved.

Supervision

Supervisors also have little time and their visits are irregular. They are usually concerned with filling out checklists. These checklists should include questions about whether the parent is counseled and on what key messages. Supervision should also cover professional behavior. Does the provider congratulate parents—or criticize them? Similarly, does the supervisor congratulate the provider? Regularizing simple questions like this in formal checklists and reviews are a first step.

Avoiding "Missed Opportunities"

A child who has dropped out of the immunization series or who is late can be caught up whenever he or

she is brought to a clinic. This is part of the IMCI protocol. However, health providers often miss these opportunities. Observations and exit interviews can help reveal what the problems are. Lack of supplies might be one reason. Other common reasons are behavioral. Key factors and related communication tools include:

- ***Mistake In Protocol:***
  A provider may decide not to vaccinate a child who is sick or may give only one vaccination when several are due. These common mistakes may be due to lack of *time* or *equipment*, lack of *knowledge*, or lack of *confidence* in being able to explain procedures or reassure parents. A vaccinator may also be unsure how to interpret waste reduction policies.

  Job Aid to Clarify Norms and Justify Action:

  A simple job aid clarifying contraindications (when *not* to give a vaccination) and other norms serves as a reminder and also empowers the health worker in communicating with parents. Many health workers also want something "official" stating the ministry policy to justify and support their actions in case questions are asked.

- ***Problem With Protocol:***
  Sometimes protocols are simply unsupportive. If vials are large and should only be opened for a weekly vaccination day, opportunities to vaccinate may be missed. Gathering information about missed opportunities can reveal such problems and the data should be passed to those in a position to review policies.

  Feedback:
  Feedback from observations or from a health facility study will give those in charge of policy an opportunity to assess implications and decide whether and when flexibility should be allowed. Also, the supervisor often has to give explicit instructions on how to balance waste reduction with patient flow.

- ***Overlooked Opportunity:***
  The health worker should check the vaccination status of any child who comes to the health center (for growth monitoring, for treatment of an illness). However, he or she may not know this, may forget to check the card, or may be too busy to give a vaccination.

  Reminder Materials:
  The health worker needs reminding but so too does the parent. Print materials posted in the health center can remind the parent to "Ask about your child's immunization status" and thus also remind the health worker. If dropouts and missed opportunities are a major problem in some region, one strategy is a "reminder campaign" on the radio and through other media.

Preparing Providers for the Front Lines

The health worker's role in answering questions and concerns can be critical when a new vaccine is introduced (such as hepatitis B), a new technique is used (such as auto-disable syringes), or rumors begin to fly. This is particularly true during mass campaigns when immunization draws public notice and attention from the press. Research has shown that many uncertainties and suspicions about vaccines can be resolved through information from a trusted health worker.

When a new vaccine is introduced, simple technical briefing and Q&A sheets should provide health workers with information and confidence that they can answer questions. Programs need to anticipate community concerns and update this information quickly if necessary. Providers also need to be reminded that their role in reassuring parents is very important.

MAKING SURE EVERYONE'S ON BOARD

In 1990, the Philippines MOH integrated *emphasis on measles* with regular service delivery, rather than launching a full-fledged measles campaign. The Ministry called special attention to the dangers of this disease through a mass media campaign. The goal was to improve measles coverage but also to use measles as a "hook" to bring children into the system who might also be missing other antigens.

Preparing the Providers The program, which received assistance from USAID's HEALTHCOM Project, conducted a launch phase with "sales conferences" for the health workers to prepare them for the expected rise in demand, and also to answer questions. It also provided an opportunity for a "review" of clinic guidelines, although the reality was that many health workers never had a chance to discuss immunization norms. Previous studies showed that even physicians and nurses often turned away infants with colds or slight fevers.

Feedback Systems to Assure Cohesiveness Providers received monitoring forms for recording immunizations but also for sending comments and questions to the central level. One center reported private pediatricians were spreading rumors about the vaccines. Another reported problems with supplies. Another suggested the secretary of health should visit a few low-performing centers as a morale booster. The department was able to respond promptly to the problems. The opportunity to provide feedback to those in charge was itself a strong support.

Results The six-month nationwide urban campaign in 1990 increased measles coverage of 9- to 23-month olds from 54 to 68 percent. Complete immunization coverage for 9- to 11-month olds increased from 33 to more than 56 percent. Timeliness of completion also increased sharply.

Source: Cabañero-Verzosa et al. 1989.

Some countries announce new combination vaccines with public promotions. Depending on the local context, another effective strategy may be to simply continue promoting the concepts of *completion* and *timeliness* without highlighting specific vaccines—just as past program experience has taught us. However, in either case, programs need to *prepare* health workers to *answer* questions.

These preparations and materials do not have to be elaborate. But they should be timely and they should anticipate questions and problems *before* they require "damage control."

MOTIVATING AND SUPPORTING CLIENT-HEALTH WORKER RELATIONS

The general atmosphere in clinics is a concern for all health interventions (or a "gateway factor," as mentioned in the introduction). Relations between health providers and clients are inevitably a challenge because of differences in status and often in ethnic and cultural background (and sometimes language). Most providers work under dismal conditions. They are underpaid, paid late, and overworked (especially since the AIDS epidemic, which has left large numbers of positions unfilled). They often lack essential supplies. Many are sent to places far from their homes and suffer from a sense of isolation. They may feel that they have little in common with their clients. They also have little opportunity for professional development. Supervisors rarely visit and may be critical rather than constructive.

It is difficult to demand a client-friendly atmosphere under such conditions. However, behavior change interventions *must* look at ways to provide incentives and positive motivation to health workers for performance. For workers involved in routine vaccination, the task is complicated by the fact that accelerated disease control programs (polio and measles) have funds for per diems and other incentives, whereas clinics do not.

IMPROVING RELATIONSHIPS TO IMPROVE COVERAGE

"I talk with the community now, and more children are being brought for immunization. Before, I was telling people what to do. Now I am discussing with them."

-Health Worker, Koboga

During the last decade EPI coverage has been low in much of Uganda despite documented community interest. One of the problems identified was "growing mistrust by communities toward operational level health workers."

The Reaching Every District (RED) initiative included Community Problem Solving and Strategy Development (CPSSD) training to help workers understand their communities' perspectives and encourage them to work together.

CPSSD includes district training teams that help health workers learn to interview parents about their knowledge and views of services. The workers also learn to create a simple EPI monitoring chart and use it to present information to the community.

The next step is outreach through community meetings and home visits. The health workers meet with leaders and mobilizers in their communities to identify both demand and supply problems and come up with solutions. Both local and district-wide plans are developed based on what is learned.

After the program (which received assistance from USAID's BASICS Project) was introduced in Kiboga District, DPT3 coverage rose dramatically from the first to the third quarter of 2003, almost doubling the number of children fully immunized.

Source: BASICS II 2003.

The focus should be on sustainable approaches that make the vaccinator's job *easier*, reward *performance*, and engage the community in *showing appreciation*. Health workers also have to be empowered to send accurate information up the system—to complete monitoring forms and to report stock-outs—and to be rewarded rather than punished for sharing helpful information. The fundamental issue, however, is that the health system and communities must be focused on *solving problems together*, so that they can also celebrate together. This is discussed in the section that follows.

USING DATA TO BRIDGE THE COMMUNITY/HEALTH SYSTEM GAP

Stagnating *routine coverage* in some regions has led to a new initiative promoted by WHO and UNICEF known as RED, or Reaching Every District. RED is a strategy for helping programs advance toward the 2010 Millennium Development Goal of ensuring full immunization for 90 percent of under-ones nationwide, and at least 80 percent in every district. RED aims to reduce both "leftouts" and "dropouts."

The initiative uses data as a tool for bringing together the health worker and the community to solve problems and to reflect on achievements. It involves regular meetings between community and health staff. Two important tools include:

- A map of the community to identify left-outs and dropouts
- A community-wide EPI Monitoring Chart posted in the health facility

As part of the training under RED, health workers learn to use these tools to track problems and progress and to provide information to their communities. Collecting the data is not enough—health workers learn to interpret the data and share information with leaders and community members. RED focuses on four

SETTING GOALS AND CELEBRATING

In Madagascar, community mobilization as part of the BASICS and Jereo Salama Isika projects focused not only on demand for services but on community relationships with the health system. The program also established an atmosphere of achievement and celebration under a scheme of "Champion Communities."

Community Health Action Committees (CASC) were established in each commune, consisting of various local officials including the mayor, health providers, and schools. The local mayor or the President of the Fokontany (group of neighborhoods) was asked to sign a "contract" of participation to improve the health of the community. The idea was for the health workers to become responsible to the community—but not specifically for social mobilization. That was left to the CASC.

The Champion Community Programs set specific goals: 80 percent of all children under 12 months completely immunized; 65 percent of parents of newborns using the child health card. The community also agreed to hold a mini-festival three times a year.

The Child-to-Community Component awarded special status to "Beacon Schools." A school could qualify if 80 percent of infant siblings of students were immunized by the age of one. In one district immunization rates increased 15.7 percent from 1998-2001 during the child-to-community interventions.

In urban areas where the concept of community was less developed, the program linked with churches.

Public recognition was an important part of the program. Festivals were held to award Champion Community status, and the names of communities were publicized on the radio.

Source: Republic of Madagascar MOH 2003.

indicators and ways of making these meaningful to the community. The indicators are overall coverage (number of children reached), completeness, timeliness, and quality of the data.

The tools promote self-monitoring and interaction with the community. They also provide a new focus for the supervision system.

As a first step, health workers learn to interview parents about their knowledge and views of services. This information is used as a basis for group meetings with leaders and mobilizers. The goal is for the community to discuss problems and identify solutions. Outreach strategies—such as the scheduling of mobile brigades and the timing of services—are then planned (or replanned) with the community.

The goal is for communities to work with the health system to find solutions to both supply and utilization/demand issues. There are many ways for communities to support the system: by helping with transportation, supplying kerosene for the refrigerators, or housing outreach workers. They can also help identify dropouts and bring them to services. If a community's needs are being listened to, they are more likely to help support the system.

Although the initiative has a new name and funding, these strategies are not essentially new and need not be costly (see box at left). The two important principles are simple community monitoring tools and working together.[15] Immunization programs that are not receiving funds from RED should also be able to institute these principles, particularly with help from local NGOs.

15 Two aspects of RED are atypical of some community/communication programs. Many people believe health workers should not be responsible for interviewing families because people will not respond candidly; many also believe that health workers simply don't have time to mobilize communities and that local leaders should play this role (see box above on Madagascar for example.)

Health communication programs often look at discrete "audiences" and not specifically at the relations between them. The ability, and the regular practice, of meeting to discuss and resolve problems, however, should be a major goal of all child health interventions.

ACCELERATED DISEASE CONTROL—BEYOND ROUTINE BEHAVIORS

For more than a decade, donors interested in immunization have focused on campaigns to eradicate or control single diseases. One of the challenges has been to improve routine or "primary" immunization in this context. Polio and measles campaigns have produced important best practices but also highlighted problems related to behavior change at many levels. We cover these briefly here because campaigns are a reality of immunization programs and affect other child survival interventions.

Advocacy and Planning

At the national level, immunization planning begins with the Interagency Coordinating Committee (ICC) and its various working groups. One of these may deal with Communication and Social Mobilization. ICCs have been very successful in national advocacy efforts. They have mobilized the media and religious bodies, the army, the education and agriculture sectors, commercial partners, and nongovernmental organizations to contribute to polio campaigns. Heads of state and their wives personally launched National Immunization Days in many countries. This advocacy has had a cascading effect through lower institutional levels in different sectors. With help from international organizations, collaboration has also led to Days of Tranquility (for example, ceasefires in the Democratic Republic of Congo) during scheduled campaigns. Polio eradication was identified not just as a health issue but an issue of national pride. NGO involvement was strong and crucial.

Gaps in communication activities have been predictable. The Communication and Social Mobilization Working Group is usually functional at the national level but very weak at lower levels. *Communication* planning usually begins too late to look at *behavioral* issues. Activities are not sustained throughout the year. The focus is on campaigns rather than strengthening child immunization generally.

Communication and behavior experts can support changes in the planning processes to address these gaps.

Communication and Social Mobilization in the Context of Decentralization

Campaigns have taught important lessons about how to combine national leadership with decentralized implementation:

- Data can be used to inspire performance and friendly competition (among provincial governors as well as NGOs).
- A useful strategy is a national umbrella campaign (through mass media and the press, for example) coordinated with production of materials at district levels. Clear guidelines (and prompt funding) are necessary to assure message consistency. Actual implementation at lower levels allows materials to be appropriately adapted. This also avoids the familiar bottlenecks associated with centralized distribution.
- Local leaders can move mountains. In Mozambique, community leaders walked hours to inform people when teams would be arriving. In Mali, traditional chiefs of nomadic populations were effective in coordinating logistics and mobilizing their groups. Women's groups were also effective mobilizers.

- Local leaders can also be involved in *planning* interventions as well as mobilizing populations. And local planning need not be left only to remote ethnic groups.
- Planners need to spend more time looking at behavioral issues—as opposed to just demand creation. To date, social mobilization efforts have far exceeded activities in support of "program communication"(UNICEF's term for analyzing and supporting specific behaviors).

Campaigns in the Context of "Completion and Timeliness"

For parents, campaigns can cause confusion about what *completion of the series* and *timeliness* mean. A child may receive numerous polio vaccinations up to the age of five. Measles catch-up campaigns target children up to 15 years of age. None of these extra vaccinations are marked on the child's card. Campaign delivery may also confuse the parent. For example, if a vaccinator comes to the house for one round, the family may decide any important vaccinations will be brought to their door.

Demand creation is therefore not the only communication task of a campaign. Rather, *clarity of message* in the context of the series is critical. Many campaigns have provoked confusion. This confusion can also feed into rumors.

Although vaccinators in a campaign setting have little time, they should explain to each parent that they still need *to complete the series*. They should also explain that families must return to their *regular delivery system* for additional vaccinations. Community volunteers, if well-organized and -oriented, can also counsel caregivers at campaign vaccination sites.

Impact on the Routine System

Campaigns can deplete the regular service delivery system. They require extra work from staff and consume local resources. Fatigue is also a problem among partners. In Bangladesh, some NGOs stopped participating in polio mobilizations after several rounds.

Less obvious behavioral challenges relate to the mixed blessing of "piggybacking" on immunization events. Both polio and measles campaigns have been powerful platforms for other child survival services. Vitamin A capsules have been delivered with polio vaccinations on national immunization days (NIDS). ITNs and retreatment kits have been distributed during measles campaigns.

Programs must study how public expectations (and communication messages) will either complement or confound each other when services are combined. In these settings huge efforts are needed to manage logistics, deliver services and products, and keep records. Staff and volunteers have little time to communicate with parents. Communication experts must analyze what the key messages are, what materials will help, and how providers will be oriented to their roles.

The scale of programs that combine services also has to be considered. In Ghana, a measles campaign that distributed ITNs in just certain communities found that parents were refusing to come for immunizations in some nearby areas that promised no nets.[16] A campaign in India met with a near stampede when nutritional biscuits were distributed with vaccinations. Parents brought children back multiple times and there was a public outcry when the biscuits were discontinued. Communication experts should help anticipate problems that relate, for example, to providing and withdrawing (or inequitable provision) of *incentives*.

16 Marfo et al. 2003.

WHAT MAKES A DIFFERENCE?

Zambia's routine polio coverage rate of over 80 percent (as of 1996) was relatively high for the sub-Saharan region. A number of factors for this success were identified:

Grassroots Mobilization Local political and religious leaders, mayors, women's groups, and village chiefs were involved in social mobilization. In particular, the participation of Neighborhood Health Committees elected by the community was important because they were trusted by the community and "live with them."

A Plan for Rumors Rumors were successfully handled through community-level strategies including:

- Written guidelines to support district-level planners
- Interpersonal communication by outreach workers and door-to-door vaccinators
- Involvement of community/religious leaders
- A centralized spokesperson: inquiries from the various levels were funneled to one person when any official comment was needed.
- Guidelines for working with the local press

Messages to Strengthen Routine Service Even during the polio campaign in 1998, 85 percent of volunteers reminded mothers to come back for regular immunization. (Although 53 percent of mothers interviewed did not remember the information.)

Sources: Favin 2004; UNICEF et al. 2000.

Preventing Campaigns from Becoming Lightning Rods

The high visibility of campaigns, the government sponsorship, and the donor backing can all produce a lightning rod for rumors. The extreme example is Nigeria, which in 2003-2004 effectively exported polio to other countries because of one state's opposition to the campaigns.

Common rumors about vaccinations are that they contain anti-fertility drugs; that they are actually blood contaminated with HIV; and that they are unsafe and will spread the disease rather than prevent it. People also have questions about campaigns: Why all the resources on *this* disease when it kills few or no people? Why is the vaccine different from the one given to children in western countries?

The Nigeria case raises concerns about the vulnerability of health programs to anti-government efforts of different types. Communication planners can often take effective steps to avoid rumors or control damage, however. Many problems can be avoided with foresight and good planning. In Uganda, for example, a polio campaign was scheduled during the malaria season. Many children died right afterwards. At a minimum vaccinators should have been impressed with the importance of giving a clear message that parents might expect a little fever as a side effect, but should seek treatment immediately if the fever continued. The program could also have anticipated the unfortunate temporal overlap of increased deaths during this time and been prepared to communicate appropriately with the press. In Kenya, a polio campaign was held at the same time as a campaign to stop AIDS. Some people thought the vaccine was laced with contraceptives; a high profile Bishop insisted the vaccine was unsafe.

Officials have to be prepared to answer questions and they should also prepare health providers to answer questions. Adequate information can resolve many

STRENGTHENING THE SYSTEM

WHO and UNICEF agreed on a checklist of actions that should be taken during *campaigns* to strengthen *routine* delivery. Below is a selection of the 17 actions most pertinent to behavior change programs.

Advocacy

Compare Performance When reporting polio coverage, compare with DPT3 and measles (for example), publish tables comparing district coverage.

Troubleshoot Use the high visibility of campaigns to solve administrative and technical bottlenecks around routine immunization (e.g., slow release of funds, staffing).

Information, Education, Communication

Generate Demand Include messages in campaign training, material, or media events about other EPI vaccines and the need for children to be fully immunized.

Social Mobilization

Use the Organizations, Leaders, Media, and people mobilized for disease eradication to support the delivery of routine services in all areas.

Service Delivery and Supervision

Build capacity Use disease eradication training opportunities to refresh routine immunization skills and knowledge.
Work Together Combine surveillance and routine supervisory visits.

Source: WHO 2001.

concerns and dispel many rumors as they emerge. Some rumors will be started by disgruntled politicians or other leaders in order to purposely discredit a campaign. However, an analysis of lessons learned in several East African countries concluded that in most cases people come for vaccination even when they hear rumors, that they trust health workers, and if their questions can be answered, damage can be controlled.[17] Simple Q&A sheets, updated as rumors begin to circulate, and engagement of local community leaders are crucial.

Immunization is local. Rumors must be countered locally. A national response may or may not be appropriate. Giving rumors national attention can sometimes be hazardous, while addressing them locally is critical. The local press are especially important partners. This relationship needs to be cultivated over the long term.

Working with Donors to Strengthen the System

Governments and donors agree that disease eradication efforts should be planned in ways that will strengthen the routine systems and promote timely completion of the basic child immunizations. WHO and UNICEF created a checklist for ways to use campaigns to strengthen *routine* delivery. It includes 17 specific actions and nine indicators for monitoring the process (see box at left). In reality these actions are rarely given much attention. Communication experts should refer to these whenever they are involved in vaccination campaigns.

17 UNICEF no date.

Summary

Childhood Immunization

Immunization according to a recommended schedule in a child's first year of life protects against infection and possibly death due to a range of diseases including tetanus, diphtheria, pertussis, polio, measles, hepatitis B, *haemophilus influenzae* type b (which causes some meningitis and pneumonia), yellow fever, and tuberculosis.

PREVENTION

Audiences and Actions in a Nutshell

Families

- Complete the series of routine or "primary" vaccinations by the child's first birthday *(five visits beginning at birth or as specified on the child's health card)*
- During any supplemental campaigns, take a child of the recommended age to a vaccination post *(or assure the child is at home during a house-to-house campaign)*
- Treat side effects as recommended
- Take the child's vaccination card whenever visiting a vaccination post or health center

Health Workers

- Fill out the vaccination card and explain what is being written. *(Tell caretaker when to return for the next vaccination; explain how many visits remain.)*
- Explain what to do in case of side effects
- During a campaign, explain that the routine vaccinations are still necessary at the health facility or outreach site

Communities

- Work with health staff to plan convenient times and locations for vaccinations
- Provide logistical support *(help with transport or supplies for the cold chain)*
- Help mobilize families and help track down the hard-to-reach or dropouts

Policymakers

- Increase funding and program support for routine immunization *(in addition to single disease campaigns)*
- Ensure that messages about routine immunizations are reinforced during campaigns
- Ensure synergy between immunization and any "piggybacked" interventions during campaigns

What are the Key Challenges?

Routine immunization rates have stalled or dropped in many countries during the last decade. Immunization has suffered in some countries from sector-wide approaches and the trend away from vertical programs. And donors interested in immunization have focused

on campaigns to eliminate specific diseases (polio, measles) rather than on strengthening basic services.

- Every child's immunization schedule is unique to that child; a parent must understand *when* and *where* to go for *that child*.
- If a woman goes to her parents' home to give birth ("out of catchment area") her child may not receive a timely first vaccination or a vaccination card.
- Immunization cards indicating a child's schedule are rarely designed for low-literate parents.
- A health worker may not explain what is written, or may not fill it out at all.
- Children who are completely *left out* may be "hard to reach" or "hard to convince," or face other barriers. Good segmentation data may not exist, or may have been collected but not used to address these problems.
- *Dropouts* may be a bigger problem than *leftouts* but research is rarely done to analyze dropout problems.
- "Missed opportunities" to vaccinate are linked to a number of health provider issues (both logistical and behavioral).
- Communication programs generally focus on "demand creation" even though many barriers center around the vaccination experience and *health worker* behaviors.
- Campaigns may cause confusion in parents' minds about when and how they should complete the child's primary vaccinations.
- The "piggybacking" of other interventions on immunization campaigns reduces the time available for sharing critical information.
- Campaigns can become lightning rods for rumors or for political conflict.

How Can Communication Approaches Contribute?

Research

- Use coverage data and qualitative research to target children who are "left out." Conduct exit interviews and observations to analyze "dropout" problems as well as missed opportunities, and to understand health worker-client communication. Doer-nondoer research (in-depth interview or group discussions) may also be helpful.

Providers

- Strengthen role of the health worker as a primary communication channel: Create job aids that address identified problems, such as updates on protocols to prevent missed opportunities, Q&As on new vaccines.
- Strengthen training in interpersonal counseling. At a minimum, supply simple guidelines on key messages.
- Collaborate with antenatal programs to assure antenatal contacts include emphasis on where/when/how to obtain the first vaccination—use the vaccination "benefit" to promote early postpartum contact.
- Design vaccination "referrals" and "cross referrals" for providers to give mothers whose babies will be born away from their catchment areas/assure information reaches local vaccinators.
- Motivate vaccinators to send accurate information up the system: complete monitoring forms, report stock-outs.
- Find opportunities to reward health workers and communities for *routine* vaccinations as well as campaign achievements.
- Add specific communication messages/skills to supervision checklist for providers.

Demand Creation or Personal Attention?

We usually think of the family as the primary "audience" for behavior change interventions. But for immunization, *health worker* behaviors are especially critical.

Although we often think of immunization as a "mass" activity requiring intensive mobilization, completion of the primary vaccinations is a highly individual behavior. Each parent needs to know how many times to vaccinate his or her child and when.

Many children "drop out" of the immunization process because health workers don't explain when they should return, may fail to warn them about side effects, or may make the parent uncomfortable. A health worker may also "miss the opportunity" to vaccinate a child who comes to the health center.

Exit interviews and clinic observations help reveal the reasons for dropouts and missed opportunities. Simple job aids and training can make a difference.

Families and Communities

- Design vaccination cards that can be interpreted by non-literate parents. Provide these to parents as early as possible (during antenatal care for example).
- Promote the concepts of *completing a series of visits* and finishing the series in a *timely way* (for example, by the child's first birthday if appropriate).
- Highlight and reward "timely completion" (e.g., give diploma); design activities to reward communities/celebrate coverage of large numbers of "completed" children.

Health System and Community Linkages

- Encourage health system/community problem solving. Empower communities to negotiate convenient times for vaccinations, support vaccination teams, mobilize citizens (town criers, etc.)
- Create simple data collection and mapping tools to inform communities about problems, engage them in tracking down leftouts and dropouts.

Campaign Coordination

- Early in campaign preparation, draw attention to key behavior issues, rather than just demand creation.
- Balance "generic" national level communication with support for community-level mobilization as well as community-level *planning*.
- During planning, analyze total integrated "message" package and design/pretest how these will be delivered by available providers/volunteers.
- Design messages that reinforce/clarify messages related to routine immunization visits.
- Use training opportunities in campaigns to model/role-play interpersonal communication skills.
- Prepare health workers and local leaders for common rumors; supply Q&A and guidelines related to dealing with rumors.

Advocacy and Press Relations

- Cultivate ongoing relations with the national as well as local press. Supply basic facts and Q&As in advance of campaigns, introduction of new vaccines, and periodically for the routine program. Make contact quickly in case of rumors, especially at the local level.