Application of multiple methods to study the immunization programme in an urban area of Guinea

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During 1988–89, studies were conducted to evaluate the immunization system in Conakry, Guinea. The first, a health facility survey, found that health staff screened the vaccination status of only 30% of children who presented for curative care. A sterile syringe and needle were used for less than half of the injections.

In the second survey, key informant interviews with vaccinators and health centre chiefs showed that there were minimal lines of communication between health workers and the community, but that health workers did not perceive this to be a problem. Focus group discussions in the community revealed a high level of general knowledge about vaccine-preventable diseases. However, mothers did not know how many vaccinations their children should receive or by what age they should be completed. They complained of long waiting times in health centres, the high costs of vaccination, poor rapport with health workers, and the occurrence of abscesses after vaccination.

The final study, a “knowledge, attitudes, and practice” community survey, showed that missed immunization opportunities and inappropriately timed vaccinations reduced potential vaccine coverage by almost 30% among children with vaccination cards. Higher socioeconomic status, delivery in hospital, and whether mothers perceived the vaccinations to be affordable affected whether the child began the immunization series. Once a child had entered the immunization system, completion of the series was determined by the mother’s education level, employment status, and experience with vaccination services.

Introduction

Over the last decade, vaccination coverage rates have improved dramatically throughout the world (1). None the less, the sustained provision and use of high quality vaccination services by all population groups have not yet been achieved. Since 1974, the WHO Expanded Programme on Immunization (EPI) has developed and documented management, training and evaluation techniques to gather baseline data, initiate immunization activities, and guarantee a reliable cold chain (2). To complement the progress made in the technical aspects of EPI, operational research is required to evaluate service characteristics (accessibility, management, personnel skills, knowledge and attitudes); user characteristics (demographics and sociocultural factors); and the interaction between users and service providers.

For this purpose, the operational research methods used have been based on social science research techniques such as surveys, key informant interviews, and focus group discussions (3, 4). Recently, these methods have become more rapid to carry out and more specific, and their potential to be integrated with traditional epidemiological approaches has become recognized (6, 7). Here, we describe four studies of the immunization programme in Conakry, Guinea. Discussed are the strengths and weaknesses of the different study methods, and it is illustrated how they provided complementary information to improve the programme.

In 1979 an EPI programme was established in six primary health care centres in the capital of Guinea, Conakry. In 1986, the African Child Survival Initiative/Combatting Childhood Communicable Diseases (ACSI/CCCD) project, funded by the United States Agency for International Development, began to support vaccination and other child survival activities in Guinea. A survey conducted for ACSI/CCCD in 1986 showed that only 4% of 12–23-month-olds in Conakry had been fully vaccinated according to documented records (8). A series of mass campaigns was conducted in 1986–87, and over 50 temporary vaccination posts were set up throughout the city. Following the campaigns, the proportion of fully vaccinated children was 57%.
A further seven health centres began vaccination activities in Conakry in 1987–88. However, by early 1988, after the campaign, routine monitoring of vaccination activities showed that coverage was as low as it had been before the campaigns started. As a result, the Ministry of Health urged health centres to conduct additional activities such as outreach vaccination or home visits to refer children to health centres for vaccination. These community activities produced a sharp increase in the use of services—which was, however, not sustained (Fig. 1). Although Conakry does not suffer from the low service access and difficult logistics found in rural areas, it presented other problems—migration rates were high, housing was expensive, and unemployment and homelessness were common. Also, competition from private pharmacies made it difficult to establish the essential drugs programme that was used in rural areas of Guinea to attract families to health centres. Conakry was thus an appropriate setting for the use of an operational research approach to develop a comprehensive strategy for achieving and sustaining high vaccination coverage.

The studies and results

Four studies that combined anthropological, sociological, and epidemiological research methods were conducted from October 1988 to April 1989 in Conakry. The first two were carried out in health centres, and the results were used to plan qualitative and quantitative community-based studies. Each study built on knowledge and experience gained in the previous ones. A brief outline of the methods and major findings of each study is given below.

Health facility survey*

The first study, which was conducted in November 1988, evaluated the service provided and the quality of care supplied by the vaccination programme. It consisted of a combination of observations of health workers’ practices, exit interviews of mothers, and checks of the equipment in six health centres in Conakry. Among the topics studied were the degree to which health workers followed the national policy to vaccinate children with all antigens for which they are eligible at every contact and to correctly sterilize equipment. According to this policy, children with mild illnesses during visits to health centres, for either curative or preventive services, had also to be vaccinated. This also requires the use of a correctly sterilized syringe and needle for each injection. In addition, the study examined to what extent health workers systematically provided information about vaccination to parents.

The results showed that although all children who attended preventive services received the vac-* Stone, R. *Trip report, Guinea, 31 October–December 1988* International Health Program Office, Centers for Disease Control, Atlanta, GA, 1988.
cines for which they were eligible, the health staff in
the curative services only screened the vaccination
status of 30% of children who presented for treat-
ment of diarrhoea or malaria. The proportion of
mothers whose vaccination status was checked dur-
ing these same visits was only 4.8%. A sterile syringe
and needle were used for less than half of injections.
A total of 97% of mothers whose children were
vaccinated were advised to return the following
month, but only half received information about
vaccine reactions or about the disease being vaccin-
ated against. Health workers rarely asked questions
about whether mothers had understood the informa-
tion provided.

Key informant interviews at health centres
The second study, based in the health centres, which
was carried out in December 1988, assessed the
providers' attitude towards vaccination services (9).
The health centre chief, the individual responsible for
vaccination, and the individual responsible for oral
rehydration therapy were interviewed in depth in
each of Conakry's 13 health centres, using key infor-
mant techniques. Questions, based on a network
analysis approach, investigated the flow of information,
goods, and services between the Ministry of
Health and health centre workers, and the communica-
tion links between health workers and the sur-
rounding communities. Lists of individuals and
potential problems were presented to the inter-
viewees, who ranked them according to their impor-
tance.

The health workers perceived that vaccination
supplies and support from the Ministry of Health/
CCCD programme supervisors were adequate. Al-
though there was communication between the Minis-
try of Health and health workers, that between health
centre staff and the communities they served was
minimal. This was not perceived to be a problem by
the health workers, who complained only of the lack
of materials and drugs for curative care, and did not
recognize the importance of involving community
leaders in the immunization programme.

Focus groups
This study, conducted in January 1989, employed
focus group methods to determine users' perspec-
tives on vaccination services (9). The issues assessed
included parents' knowledge about vaccinations,
attitudes towards vaccinations and service delivery,
experiences with vaccination services, and sugges-
tions for improving the services.

A total of 24 focus groups (12 for men and 12 for
women) were interviewed by trained national health
education staff in 12 neighbourhoods dispersed
throughout the city. Half were served by health
centres where the level of vaccination activity was
low and half by those where it was high. Groups
consisting of 10–20 participants were interviewed
using a semi-structured format. The interviews
(usually lasting 40–60 minutes) were conducted in
Sussu, the major local language, and were recorded
on audio-cassettes. The responses were then trans-
lated into French and analysed to detect major
patterns.

Knowledge about vaccine-preventable diseases
was high. Parents knew where vaccinations were
carried out, the importance of vaccination cards, and
the need for newborns to be vaccinated. They per-
ceived the vaccines to be effective. However, they did
not know that sick children could be vaccinated or
that a child needs to attend for vaccination five times
by the age of 1 year. Attitudes towards vaccination
services varied: while most persons expressed satis-
faction, some complained of long waiting times, lack
of rapport with health workers, and high costs. The
occurrence of absences and other reactions were
cited as deterrents to seeking further vaccinations.

Radio and television were the most commonly
cited sources of information about vaccinations,
while word of mouth was second. Health workers
played only a minor role in the education effort.

Interviewees readily suggested how the vaccina-
tion services could be improved, including ideas
about reducing costs, shortening waiting times, more
courteous reception of mothers at health centres, and
supplying more information to mothers who attend-
ded them. In summary, the results indicated that the
population was well informed about vaccination, but
had misgivings about the services provided.

Knowledge, attitudes, and practice (KAP) survey
This study had the following perspectives. It obtained
data on indicators of service delivery (vaccine
coverage and missed immunization opportunities)
from home-based health records and vaccination
records; it assessed users' attitudes to service delivery;
and it used data on sociodemographic and sociocul-
tural characteristics, knowledge, and attitudes of
mothers, as well as on vaccination services in logistic
regression equations to predict the receipt of first and
third doses of diphtheria-pertussis-tetanus/oral
poliomyelitis vaccine (DPT/OPV).

In March 1989 a 40-cluster sample (35 house-
holds per cluster) was taken with probability propor-
tional to the estimated population size (10), to give a
total sample consisting of 377 mothers of children
aged 12–23 months. The child's home-based health
records were requested and dates of vaccination and
of visits for acute care were extracted. A question-
naire was administered to the mother by teams that included the personnel who had conducted the focus group interviews.

The results obtained are reported in a forthcoming publication, and only a summary is presented here. Altogether, 19% of the children had documented evidence of having been fully and correctly vaccinated. Of 204 children with vaccination cards, 19 (9%) had received all vaccines but vaccination had at least once been administered prematurely or with too short an interval between doses. An addition 39 children (19%) had a sufficient number of documented contacts with health services to be fully vaccinated, but had missed at least one immunization opportunity.

A model that included the following variables explained best the receipt of the first dose of DPT/OPV: mother’s ability to speak French; maternal age <35 years; household possession of a television; child born in hospital; mother’s perception of the affordability of vaccination; as well as interaction terms between the ability to speak French and the possession of a television, and between the ability to speak French and attitude to the expense of vaccination. Table 1 shows the odds ratios and confidence intervals for variables included in the model, where appropriate for each of the subgroups formed by the interaction terms. In the first group, for example, the odds ratio for the child receiving the first dose of DPT/OPV is shown for French-speakers compared to non-French-speakers, in each of the subgroups who did or did not possess a television and did or did not consider vaccination to be expensive. Among persons who owned a television and considered vaccination to be affordable, the adjusted odds ratio of receiving the first dose of DPT/OPV for French speakers compared to non-French-speakers was 14.2. Owning a television increased the likelihood of the child being vaccinated, particularly among French-speakers; among non-French-speakers, considering vaccination to be affordable increased the likelihood of the child being vaccinated.

The model that best explained receipt of the third dose of DPT/OPV by children who began the schedule included maternal ability to speak French, employment status (for French-speakers only), and past experience with vaccination services (short waiting times at the health centre, never having been refused vaccination, and either not knowing a child with a postvaccine abscess or considering the abscess to be a normal reaction). Table 2 shows the odds ratios and 90% confidence intervals for the variables included in the model.

Except for attitudes towards costs or post-vaccination abscesses, attitudes towards vaccination were not associated with receipt of vaccination. In response to open-ended questions on the reasons for not attending a vaccination session, one-third of mothers said they did not know that vaccinations were required or the date when they should return.

Table 1 Determinants of receipt of the first dose of diphtheria-pertussis-tetanus/oral poliomyelitis vaccine (DPT/OPV), for children aged 12–23 months, Conakry 1989, controlling for child’s age

<table>
<thead>
<tr>
<th>Variable*</th>
<th>Subgroup*</th>
<th>Odds ratio</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaks French</td>
<td>Owns TV, vaccination affordable</td>
<td>14.2</td>
<td>(4.1, 48.2)</td>
</tr>
<tr>
<td></td>
<td>Owns TV, vaccination expensive</td>
<td>95.0</td>
<td>(9.4, 990.0)</td>
</tr>
<tr>
<td></td>
<td>No TV, vaccination affordable</td>
<td>0.8</td>
<td>(0.4, 1.6)</td>
</tr>
<tr>
<td></td>
<td>No TV, vaccination expensive</td>
<td>5.2</td>
<td>(0.9, 30.4)</td>
</tr>
<tr>
<td>Owns a television</td>
<td>Speaks French, vaccination affordable</td>
<td>1.4</td>
<td>(0.2, 12.4)</td>
</tr>
<tr>
<td></td>
<td>Speaks French, vaccination expensive</td>
<td>9.6</td>
<td>(2.4, 39.2)</td>
</tr>
<tr>
<td></td>
<td>Does not speak French</td>
<td>0.5</td>
<td>(0.3, 1.2)</td>
</tr>
<tr>
<td>Considers vaccination affordable</td>
<td>Speaks French, owns TV</td>
<td>5.5</td>
<td>(0.3, 91.4)</td>
</tr>
<tr>
<td></td>
<td>Speaks French, no TV</td>
<td>0.3</td>
<td>(0.1, 1.7)</td>
</tr>
<tr>
<td></td>
<td>Does not speak French</td>
<td>2.0</td>
<td>(0.8, 5.1)</td>
</tr>
<tr>
<td>Maternal age &lt;35 years</td>
<td></td>
<td>3.5</td>
<td>(2.0, 5.9)</td>
</tr>
<tr>
<td>Child born in hospital</td>
<td></td>
<td>3.1</td>
<td>(1.6, 5.7)</td>
</tr>
</tbody>
</table>

* Referent groups (in order for each variable). mother does not speak French, household does not own a television, mother considers vaccination expensive, maternal age ≥35 years, child born at home

* For variables included in interaction terms, the odds ratios and confidence intervals are calculated for specified values of each component of the interaction term, thus forming the subgroup shown. TV = Television
Study of immunization programmes in Guinea

Table 2  Determinants of receipt of the third dose of diphtheria–pertussis–tetanus/oral poliomyelitis vaccine (DPT/OPV) for children with vaccination cards who had received their first dose, Conakry, 1989

<table>
<thead>
<tr>
<th>Variable*</th>
<th>Subgroup compared</th>
<th>Odds ratio</th>
<th>90% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaks French</td>
<td>Mother works</td>
<td>16.8</td>
<td>(3.6, 78.7)</td>
</tr>
<tr>
<td></td>
<td>Mother does not work</td>
<td>15</td>
<td>(0.7, 3.2)</td>
</tr>
<tr>
<td>Mother works</td>
<td>Speaks French</td>
<td>4.2</td>
<td>(1.4, 12.9)</td>
</tr>
<tr>
<td></td>
<td>Does not speak French</td>
<td>0.4</td>
<td>(0.1, 1.2)</td>
</tr>
<tr>
<td>Turned away from vaccination</td>
<td>—</td>
<td>4.4</td>
<td>(1.8, 10.6)</td>
</tr>
<tr>
<td>Short waiting time</td>
<td>—</td>
<td>3.1</td>
<td>(1.6, 6.1)</td>
</tr>
<tr>
<td>Knows child with postvaccination abscess</td>
<td>—</td>
<td>2.2</td>
<td>(1.1, 4.6)</td>
</tr>
</tbody>
</table>

* Referent groups for each variable, in order: mother does not speak French, mother does not work; mother has been turned away from vaccination, long waiting time for vaccination at health centre; mother knows a child with a postvaccination abscess that she considers abnormal.

Discussion

The above-mentioned studies evaluated all aspects of the immunization programme, from the perspective of both the providers and the users. Fig. 2 illustrates the overlap of the perspectives. Where there was overlap, both divergence and convergence of study findings occurred, as discussed below. Convergent results (those that were similar across studies) validated the study methods and gave confidence to programme managers to use them to design interventions. In contrast, divergent findings indicated those areas of the programme that require further exploration, and revealed the strengths and weaknesses of the different study designs.

Results diverged for the effects of vaccination-related costs and mothers' knowledge of the specifics of the vaccination schedule. The focus group study showed that mothers were concerned about high vaccination costs. However, in the KAP survey, the amount of money spent on vaccination was directly related to the number of vaccinations already received. This paradoxical finding may be due to recent increases in prices, which had the effect that mothers who had attended health centres most recently cited higher vaccination costs. However, among less-educated mothers the KAP survey did confirm the importance of attitude towards the affordability of vaccination.

The health facility survey found that mothers were well informed about when to return for further vaccinations, whereas the KAP survey showed that one-third of mothers lacked such information. This difference probably arose because of the study locations. Interviews in health centres are not representative of interviews of the general population; also mothers interviewed immediately after their children had been vaccinated are more likely to retain information than mothers in a random community sample. Alternatively, since the KAP survey was retrospective and the health facility survey observed the current situation, practices could have improved recently.

The results for the quality of health service delivery exhibited striking convergence. Deficiencies in delivery were shown by both objective research methods (observation of health worker practices in the health facility survey and estimation of missed immunization opportunities from documented health centre visits in the KAP study), and by qualitative and quantitative methods that assessed providers’ and users’ attitudes towards the services.

The emphasis placed by health workers on pro-
viding curative services and their failure to perceive vaccination as a priority, which were identified in the key informant interviews, were reflected in the missed opportunities documented in the health facility and KAP surveys. The poor sterilization techniques observed in the health facility survey were reflected in the focus groups and KAP studies by mother's complaints of postvaccination abscesses. Finally, inadequate patient education and the absence of communication channels between health workers and the community were identified in the health facility study and the key informant interviews. These findings in turn were reflected in the lack of specific knowledge about vaccination (dates to return, number of times to return, and age at which vaccination should be complete) found in the focus groups and KAP studies.

Other aspects of the vaccination system were addressed by the individual studies; for example, the health facility survey revealed the poor quality of vaccination techniques; and the key informant interviews showed the failure of health workers to recognize the problem of poor communication with the communities they served.

Each study had its strengths and weaknesses. The health facility survey was rapid, inexpensive, and served as a means of training programme supervisors to observe critically health worker practices; however, it had limited scope. The key informant interviews provided insights into the attitudes of the health care providers. However, the interviews required anthropological expertise and only examined a small segment of the vaccination system.

The focus group studies were useful for investigating the attitudes of the users, and were employed to follow up problems such as the costs associated with vaccination, which had not previously been suspected. The results of such studies made it easier to formulate questions in the KAP survey and facilitated the design of future health education activities. Their major limitation was sampling bias (the focus group respondents may have overrepresented socially dominant and more educated persons, rather than marginalized or poor persons) and the difficulty in quantifying the problems identified. Sampling errors can be important in focus groups studies. For example, while our focus group study suggested that television was an important communication channel for informing the public about vaccination, the KAP survey detected the failure of television to reach uneducated mothers, the group most at risk of not completing vaccinations.

The KAP survey assessed both provider and user factors. It was particularly useful to assess service delivery and sociostructural issues and their interaction since problems could then be quantified and prioritized. However, the cross-sectional survey design is of limited use for assessing the role of knowledge and attitudes, which are better evaluated using qualitative methods (7). This shows the compromise between sample surveys, which can be representative of the community but where nonsampling errors may be large, and qualitative methods, where sampling errors are likely but where interview techniques are better controlled (11–13).

None of the study techniques was able to determine whether a mother's knowledge about vaccination had any influence on her child's receipt of vaccine. Qualitative studies do not measure the strength of associations, and a cross-sectional KAP survey cannot distinguish cause from effect. For example, mothers whose children were fully vaccinated may have known more about vaccination because either they learned when attending the health centre or knowledgeable mothers may have been more motivated to attend vaccination sessions (14, 15).

The evaluation of the vaccination system in Conakry used a grounded approach (16) that was directly linked to programme objectives. The studies provided complementary information, and the analysis was rapid, allowing timely feedback of results. The health facility survey and key informant interviews were analysed on site by national personnel and consultants, while preliminary analyses of the focus group and KAP surveys were conducted on site. Audio-tapes from focus group interviews were played to the staff of Conakry health centres during the month following the study, and the CCCD project coordinators discussed the findings with them. The final report of the KAP survey was distributed to all participating health centres within 3 months of survey completion.

The studies were framed within the ongoing CCCD project, which provided the infrastructure for their integration, and they were part of ongoing attempts by CCCD to develop viable field evaluation strategies.

The key informant interviews suggested that there is a need to encourage health workers to recognize problems and participate in finding their solutions. In July 1989 a one-day workshop was therefore held that involved three participants from each health centre (the health centre chief and heads of the EPI and mother and child health programmes), city medical officers of health, and CCCD project supervisors. Participants worked in small groups to determine why the problems identified in the studies had arisen and to propose solutions for the major ones. The workshop was followed by on-site training of health workers by city medical officers and CCCD supervisors.
At the workshop, two strategies to increase coverage were selected: avoiding missed vaccination opportunities; and conducting home visits to identify and refer defaulters. To standardize charges and motivate health workers, a uniform fee of 200 Guinean francs (about US$0.30) will in future be made for vaccination cards. Half this money will be used to replace the stock of cards, and the remainder will be distributed among health centre staff. No charge will be made for vaccination.

Many developing countries have achieved moderately high vaccination coverage levels. Further increases in coverage will, however, be more difficult to achieve and will require the identification of subgroups of unvaccinated children and development of the means to reach them. No one study methodology is ideal. In Conakry, the KAP survey consumed most resources and entailed a complicated analysis by external consultants. In contrast, the quicker and simpler qualitative studies provided much of the same information which, in conjunction with a manager's appraisal of the programme, would probably have led to the design of the same interventions, since many of the problems were easily identifiable. Though epidemiologists tend to rely on “objective, quantifiable data”, countries may not always wish to invest resources in a KAP survey. Such countries should choose from the different methods according to the time and resources available and the complexity of the problem under study.

As health programmes mature, large-scale or national surveys become less useful. Instead, data from small-scale studies are required that examine different aspects of a programme (17). A series of complementary and integrated studies provides a flexible alternative to large one-off studies, and can furnish data for action within a short period of time. The method that we used in the health-centre-based and qualitative studies is being further refined, and the CCCD project is currently developing training manuals for national programme personnel on how to conduct such studies. The challenge is to combine epidemiological and sociological techniques with the principles of good management and to ensure that the information obtained is properly used.

Résumé

Application de diverses méthodes à l'étude du programme de vaccination d'une région urbaine de Guinée

En 1988–1989, on a effectué quatre études différentes associant des méthodes anthropologiques, sociologiques et épidémiologiques, pour évaluer le système de vaccination en place à Conakry, en Guinée. Dans la première d'entre elles, une enquête dans un centre de santé, on s'est servi des résultats de l'observation des méthodes employées par les agents de santé, des entretiens avec les mères à leur sortie et des vérifications du matériel, pour évaluer la prestation de service et la qualité des soins. Ces résultats montrent que le personnel de santé des services curatifs ne vérifie l'état vaccinal que chez 30% des enfants se présentant pour diarrhée ou accès palustre. Moins de 50% des injections sont faites au moyen d'une seringue et d'une aiguille stériles.

Dans la seconde étude, des entretiens avec les directeurs des centres de santé et le personnel infirmier chargé de la vaccination ont permis d'évaluer l'attitude des prestataires vis-à-vis des services de vaccination. On observe une mauvaise communication entre le personnel des centres de santé et les communautés, qui toutefois n'est pas perçue par les agents de santé comme un problème. Dans la troisième enquête, des discussions avec des groupes indicateurs de la communauté ont permis d'évaluer le point de vue des consommateurs sur les services de vaccination. Les parents savent où faire vacciner leurs enfants et considèrent les vaccinations comme efficaces. Toutefois, ils ne savent pas qu'un enfant malade peut être vacciné, ni que la série de vaccinations doit être terminée avant l'âge d'un an. Les mères se plaignent de la longueur de l'attente, de l'absence de communication avec les agents de santé, du coût élevé de la vaccination et des accidents post-vaccinaux.

Enfin, la dernière étude, une enquête sur les "connaissances, attitudes et pratiques", a eu recours à la méthode de l'échantillonnage par grappes mise au point par le Programme d'élargi de Vaccination de l'OMS. Les résultats montrent que seuls 19% des enfants de 12 à 23 mois ont été entièrement et correctement vaccinés. Sur les 204 enfants possédant une carte de vaccination, 9% ont reçu tous les vaccins, mais une vaccination au moins n'a pas été considérée comme valable parce qu'administrée trop jeune, ou sans respecter un intervalle suffisant entre les doses. Trente-neuf autres enfants (19% de ceux possédant une carte) ont été suffisamment en contact avec les services de santé pour pouvoir être entièrement vaccinés, mais au moins une occasion de vaccination a été manquée. Des analyses multivariées ont été menées pour évaluer les facteurs de risques de la non-vaccination et de la vaccination incomplète. Le meilleur modèle pour rendre compte de l'administration de la première dose de vaccin antidiptérique-anticoquelucheux-antitétanique/
antipoliomyélitique buvable (DTC/VPO) comporte les variables suivantes : mère parlant le français, âgée de moins de 35 ans, télévision au domicile, enfant né à l'hôpital, mère sachant que la vaccination est financièrement abordable, interaction entre le fait de parler français et celui de posséder une télévision, et entre le fait de parler français et l'attitude vis-à-vis du prix de la vaccination. Une fois l'enfant entré dans le système de vaccination, l'achèvement des séries de vaccins DTC/VPO est déterminé par le niveau d'instruction de la mère, l'occupation ou non d'un emploi et l'expérience qu'elle a des services de vaccination (temps d'attente courts, ne jamais avoir été renvoyée d'une séance de vaccination et pas d'absences après vaccination). Les résultats concordants provenant de différentes études confirment pour les responsables du projet l'intérêt des interventions visant à diminuer les occasions manquées, à améliorer l'organisation des centres de santé et la supervision des agents de santé, ainsi qu'à rechercher activement les absents aux séances de vaccination.

Une série d'études complémentaires et intégrées, comme celles décrites ici, offre davantage de souplesse que les grandes études uniques, et peut fournir rapidement des données permettant d'agir. Il faut que les pays qui envisagent d'effectuer une recherche opérationnelle pour augmenter leur couverture vaccinale choisissent entre différentes méthodes d'étude en fonction du temps et des ressources disponibles, ainsi que de la complexité de leur système de vaccination.

References