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**COMMUNICATION FOR HEALTH LITERACY:  
EVALUATION OF THE PERU PROGRAM  
1984-1985**

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## Executive Summary

In 1984, Peru intensified its integrated public health communication campaign — Alfabetizacion Sanitaria (Health Literacy) — addressing contraceptive demand, immunization and diarrheal disease control. The program worked well, or didn't, depending on the health practice at issue.

Immunization Week during the month of October 1984 was an undoubted success: roughly 250,000 children (about 8 percent of all children between the ages 0-4) were vaccinated according to health system records, more than double the number who are vaccinated in a typical month. This translated into a 12 percent increase in complete immunization coverage (from 34 to 46 percent) according to data from a national nutrition survey. The immunization campaign worked at all ages, for all doses of DPT and polio, and in most, but not all regions of the country.

In contrast, despite a substantial effort including \$350,000 in research and development expense, there is doubt whether a family planning campaign in late 1984 and the first half of 1985 produced an acceleration in already increasing demand for modern contraceptive services. There were inadequate data to evaluate the third element of the campaign, promotion of oral rehydration therapy (ORT).

The Ministry of Health of Peru conducted the campaign in collaboration with a private advertising agency, FORUM. General financial support was provided by the U.S. Agency for International Development (USAID) and UNICEF provided support for some components of the program. The Academy for Educational Development provided technical assistance through its Mass Media for Health Practices Program (now called HEALTHCOM) under contract with USAID.

The campaign in Peru departs from the HEALTHCOM model used in other countries, i.e., Honduras, The Gambia, and Swaziland. Earlier programs emphasized, at their initiation, instruction in oral rehydration therapy

(ORT); in Peru, the campaign included immunization and family planning as well as ORT. Unlike earlier efforts the campaign in Peru delegated major responsibility for the social marketing campaign to private sector organizations supervised by the Ministry of Health. Also, greater emphasis was placed on mass communication channels in Peru and less attention was given to face-to-face communication and links with local activities.

### Structure of the Campaign

The campaign began in a quite limited way with an "umbrella campaign" starting in December 1983. At this stage, the campaign relied upon oral rehydration and immunization materials (such as radio spots, magazine advertisements, and articles) previously developed by the MOH. The umbrella campaign had to be abandoned in March due to the lack of financing, but it left behind an overall theme (A healthy child today, a healthy Peru tomorrow) that would be continued by the MOH when the campaign officially re-opened in September, 1984. The first television spot of the campaign followed a five minute speech by the Minister of Health, at which time the concept of "paternidad responsable" (responsible parenthood) was introduced. The concept provided a frame of reference that would unite the family planning, immunization, and oral rehydration themes.

The campaign relied heavily on broadcast materials. The broadcast messages were carried by the major national television and radio networks, reaching almost the entire population. For example, 87.5 percent of Lima television owners saw family planning spots an average of 27 times each during eight weeks of that campaign. Immunization messages achieved similar levels of exposure. Although equivalent data for outside-of-Lima exposure are not available, that exposure was intense: although television ownership outside of Lima is about 44 percent, radio ownership is quite high, 79 percent. Heavy exposure among television and radio owners can be assumed given the frequent placement of spots on the most popular stations.

campaign to 46.5 percent afterwards with all age-appropriate immunizations. The increases in coverage were essentially parallel for each type of immunization and for children at each age. This was a sharp increase for a single month's campaign; it accounted for less than one fifth of the existing shortfall in total coverage, however.

Clinic data indicate that for DPT and polio, the percentage increase in vaccinations for children under 1 was about 40 percent versus around 90 percent for one year old children. For measles, the percentage increase is almost 125 percent for children under 1, but exceeds 250 percent for one year olds. However survey results did not show a parallel coverage advantage for one year old children. Perhaps some of the one year olds who were vaccinated during the campaign were brought by parents who were unaware that their vaccination series were already complete. Booster shots might count for clinic reports but would not affect survey coverage estimates.

Clinic data also indicate that increases in DPT, polio, and measles immunizations were shared by most regions of the country. However, relatively more urban and economically better off regions were particularly likely to demonstrate campaign success. Survey data indicate that there is no evidence of improvements in coverage rates being concentrated among households who own TV and radio, where exposure to campaign messages would be particularly high.

#### Family Planning Results

The family planning campaign was evaluated by asking whether there was an increase in the number of family planning visits to government clinics among individuals not previously using modern contraceptives. Even before the onset of the family planning campaign, there was a pre-existing trend for clinic attendance and new acceptors of modern contraceptives to grow over time. Using pre-campaign data in which this trend could be observed, regression analysis was used to predict the number of new contraceptive users after September 1984, if no campaign had been initiated that month. There is no apparent difference between the predicted number of users (based on pre-campaign trends) and the observed number of users after the onset of the campaign. Although the number of new family planning visits

tends to increase during the course of the campaign, this increase matches the trend that would be predicted assuming no campaign had taken place.

Although the family planning intervention produced a positive statistically significant effect in three of the nineteen regions when the data are disaggregated, the few successes are still unconvincing. In terms of predicted versus observed success, only eight regions shifted by even a moderate amount, and half of those did better than expected, and half worse. Only four of these shifts were statistically significant, with three of the four showing a greater than expected advantage during the campaign. A conclusion that these results reflect spontaneous change, or locally determined change rather than accomplishments of a national campaign is difficult to refute.

As with the immunization intervention, we found no evidence of media concentration effects. Measures of density of media ownership by region were not associated with the tendency for observed numbers of new acceptors to exceed predicted levels.

### Conclusions

One intervention worked to a limited extent; the other didn't work at all. The question is why?

There are several possible explanations, some less and some more likely. It doesn't appear that the media development processes for the two themes favored immunization. There was far more money spent on the less successful family planning intervention and, as a media product, it was more original. While it is possible different media strategies would have produced different results, there was nothing intrinsic in the process of media development which led to an effective immunization campaign and an ineffective family planning effort.

A more likely difference between the two campaigns concerns field support and coordination of activities at the local level. As far as we know, there was no attempt to provide field support for the family planning campaign. Whatever happened in clinics before the campaign was likely to be happening after the campaign. In contrast, health personnel were

encouraged to prepare for Immunization Week and special efforts were made to provide sufficient vaccination supplies for the campaign. Indeed, some might attribute much of the coverage improvement to the increased availability of vaccines rather than to the campaign alone.

A third explanation for varying success contrasts the health themes, *per se*, rather than campaign strategies. Childhood diseases may worry parents in an urgent fashion; a vaccination campaign promises to solve a perceived problem. In contrast, the goal of limiting family size may have a smaller constituency. Telling people that modern contraceptives are available at government clinics may not satisfy a widely perceived need. Then, the immunization campaign may have had the easier task of satisfying pent-up demand, while the family planning campaign may have faced the additional obstacle of having to generate an initial demand.

We have no useful way of choosing between these last two explanations: the first emphasizing differences in local campaign activity, the second differences in intrinsic susceptibility of the health practices to campaign effects.

In addition to explaining why one intervention worked and the other didn't, it is useful to consider what can be learned from the Peru program for future work. Peru contrasts with other HealthCom sites both in the major role played by private sector advertising agencies and in the emphasis on the mass media component. On the positive side an agency may bring professionalism, energy, and flexibility, all difficult to reproduce in a government agency. At the same time, the agency strategy entails risks: reduced access to public health expertise, lessened coordination between communication activities and health system activities and less development of health communication expertise at a ministry of health. When an agency strategy is chosen, explicit attention to reducing these risks, and in particular to maintaining a close link between agency-controlled communication activities and ministry-controlled health system actions, will be a constant concern.

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## INTRODUCTION

In September of 1984, the Government of Peru began to intensify an integrated public health communication campaign, Alfabetizacion Sanitaria (Health Literacy), that included intervention in the areas of family planning, immunization, and oral rehydration therapy (ORT). The Ministry of Health (MOH) carried out the campaign through its own efforts and in conjunction with a private advertising agency, Forum. Technical assistance was provided by the Academy for Educational Development through its Mass Media for Health Practices program (now called HealthCom) under contract with the U.S. Agency for International Development, which provided general financial support, also. UNICEF also supported some elements of the program.

Although the campaign was scheduled to end in November of 1984, additional financial support from USAID allowed the intervention to continue through July of 1985.

The implementing groups asked the Annenberg School of Communications at the University of Pennsylvania to undertake an evaluation of the campaign.

The evaluation was initiated in January of 1985, after the first major vaccination day, and after substantial public education activities vis a vis diarrheal disease control and family planning had taken place. This timing constrained the evaluation strategy since it was not possible to collect original before-campaign data. We were forced to rely on existing data, including clinic archives and a national nutrition survey, which provided powerful evidence about some campaign effects, but relatively little information about the process through which effects were achieved. There was no useful evidence about the effects of the diarrheal disease control campaign. It was possible to supplement these data sources with descriptive information available in project archives and through interviews with campaign managers in Lima.

The evaluation is able to answer three questions:

- 1) What was implemented, from the perspective of project managers, related to each theme of the campaign? We have relatively good information about the mass communication component of the campaign, some information about the distribution of printed materials, and very little about either the use of printed materials or the implementation of local supporting activities, if any, associated with each of the campaign themes.
- 2) What were the effects of the immunization campaign on vaccinations given and on coverage of the target audience? Did the effects vary by vaccination type (measles, DPT, polio, BCG) or by region of the country, or by age of the child?

3) What were the effects of the family planning campaign on increasing the number of new clients coming to the Ministry of Health facility - the specific objective of the campaign? Did the effects vary with exposure to mass media which was the major channel of communication used for this theme?

This evaluation report is organized around the three evaluation questions. The campaign activities are described in the next chapter, based largely on project archives and interviews with program managers. The following chapter focuses on the results of the immunization campaign, and the last major chapter reports on the outcome of the family planning campaign. Some discussion of the relevance of the Peru experience to future health communication activities can be found in a brief concluding chapter. Appendices include original transcriptions, English translations, and summaries of some radio and television commercials. Also included are relevant sections of the national nutrition survey and copies of Ministry of Health forms on which child immunization and family planning data are reported.

We are grateful for help provided by many individuals in the preparation of this evaluation. These include staff from the Peruvian Ministry of Health who spoke with us about the project and helped with data collection activities. Among others, assistance came from Dr. Efrain Lazo, Dr. Felix Vallenias, Consuelo Alvarez, Isabel Bonelli, Dr. Pompeyo de Hierro, Jorge Martinez and Soledad Blanco. Guadalupe Mendez de Campos ably supervised the data coding process on behalf of the evaluation team.

At the National Population Council, Dr. Sandra Vallenias shared useful information from ongoing research. Jorge Garcia Nunez, advisor to the national statistics office, introduced us to the national nutrition survey. Cynthia Dunn from Project Reach and Susan Zimicki provided helpful comments on an earlier draft, as did Dr. Marjorie Pollack, who helped us understand current perspectives among epidemiologists concerned with immunization. Dr. Norm Staehling and Dr. Phillip Nieburg of the Centers for Disease Control provided readable data tapes for the national nutrition survey, along with helpful advice as to how to make use of them.

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## CHAPTER 2

## IMPLEMENTATION OF THE CAMPAIGN

Peru's Health Situation

The population of Peru (more than 17 million persons in 1981) makes it the fifth most populous country in Latin America. About 25 percent of the population lives in greater Lima and nearly two-thirds live in urban areas. The country's annual rate of growth in 1981 was believed to be about 2.5 percent, with a crude birth rate of 37.2. Forty percent of the population was under 15 years of age, and 14 percent under five. (Consejo Nacional de Poblacion 1984)

Peru is confronted by major problems in public health, particularly in rural areas and for children under five years of age. Malnutrition and poor sanitation contribute to an infant mortality rate that was 101 per 1,000 live births in 1981. But mortality rates in rural areas (135) were nearly 2.25 times the rate for metropolitan Lima (60). (Consejo Nacional de Poblacion 1984) In 1981 half of all hospital beds and 70 percent of all physicians remained concentrated in Lima. While 60 percent of urban houses had potable water supplies, virtually no rural homes had such water access. Ninety-two percent of fecund married women said they did not want a birth in the next year, but only 18 percent of them used modern contraceptives in 1981. (Galway et al, 1987) Vaccination rates estimated for the Pan American Health Organization put DPT & Polio coverage at 26%

and measles coverage at 32%, worse than most other countries in Latin America. Only Haiti recorded lower rates. (Guerra de Macedo, 1986)

### Background to the Campaign

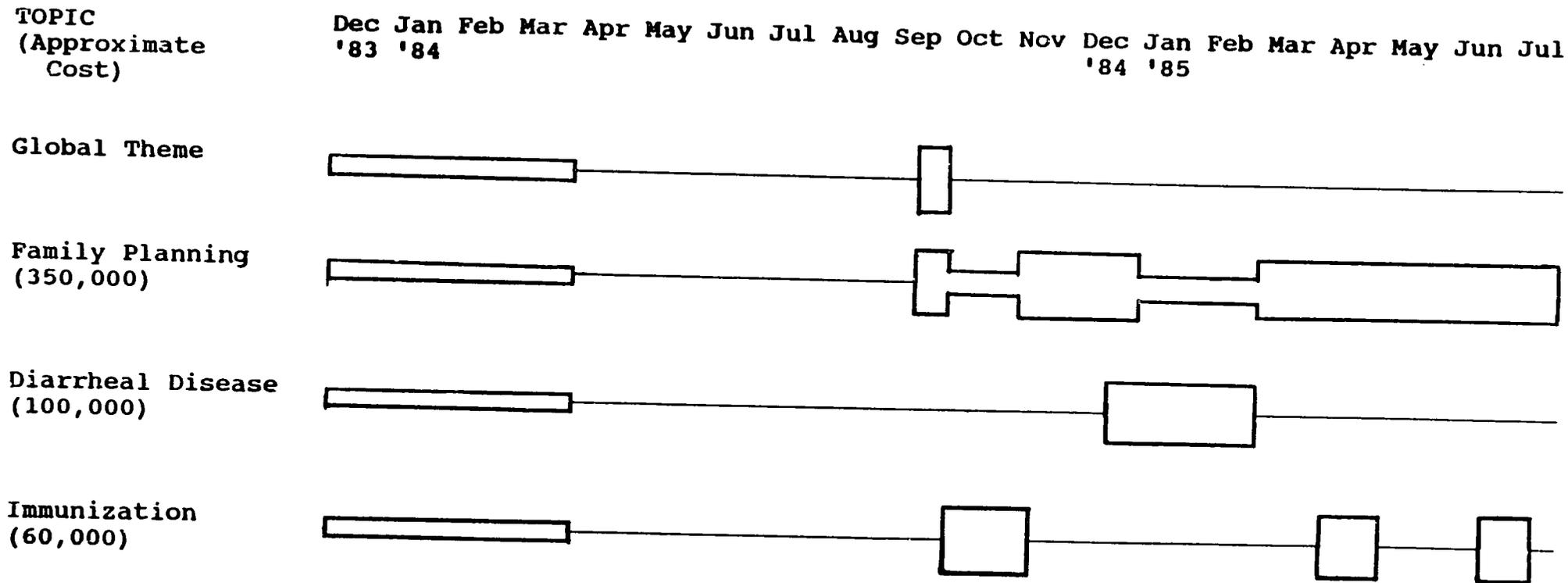
The public health communication campaign in Peru is an example of a recently emerging approach to health education. The approach attempts, in a pre-defined period of time, to change a particular set of health behaviors for a large-scale target audience. Early examples of this approach involved efforts in Honduras and The Gambia to develop and implement a program for the treatment of acute childhood diarrhea in rural areas. In those countries, USAID contracted with the Academy for Educational Development to assist national governments in diffusing information on home treatment of infant diarrhea, including the proper preparation and administration of oral rehydration salts (ORS). Subsequent evaluation of the program, known as Mass Media and Health Practices (MMHP), demonstrated its success and AID signed an extension of the MMHP contract to continue the program in three more countries, (Swaziland, Ecuador, & Peru) and later under a new name HealthCom -- Communication for Child Survival in twelve additional countries.

The HealthCom approach, while it varies from country to country, combines pre-program and continuing research with a multiple channel communication program to attack public health problems on a national level. The approach has three stages: pre-program planning and development, instructional intervention, and ongoing monitoring and evaluation. The

planning phase gathers information so that each project can be tailored to the specific needs of the targeted population. The instructional intervention combines some or all of television, radio, print, and face-to-face communication channels to educate an audience about a specific health theme. On-going monitoring and evaluation contribute feedback about the relative success of different aspects of the program, allowing for adjustments during the campaign. The final evaluation serves as an example for subsequent programs using the public communication approach, in the same country or elsewhere.

In June of 1983, the Ministry of Health approached USAID/Peru with a request to support an aggressive program of mass communications applied to health. By September, the MOH had produced a 60-page plan detailing some 14 health topics to be treated in a comprehensive, year-long program to be called "Alfabetizacion Sanitaria" — Health Literacy. USAID requested assistance from the Population Communication Services project which in turn sent Jack Porter, President of Needham, Porter, Novelli and William Smith, Senior Vice President of the Academy for Educational Development, to discuss the plan with the MOH. During their meeting in Lima (November 1983), Porter and Smith met with representatives of MOH, as well as representatives of five local advertising agencies. It was agreed at the conclusion of this visit that the 14-theme campaign would be reduced to three key themes: family planning, diarrheal disease control, and immunization. Family planning would receive 50 percent of the campaign resources, while the other two themes would receive 25 percent each. Reynaldo Pareja, from the Academy, was asked to serve as part-time

Figure 2.1  
CAMPAIGN SCHEDULES



resident advisor to the project, while continuing to play a similar role in Ecuador.

The campaign in Peru represents a major departure from the HealthCom model used in Honduras, The Gambia, and later in Swaziland. In addition to educating mothers about ORT, the campaign in Peru included a family planning theme, and promoted an immunization week designed to increase vaccination coverage of children below the age of two. Also, major responsibility for the social marketing campaign was delegated to private sector organizations under the supervision of the Ministry of Health. In previous implementations, the MOH had been the implementing agency. Also in contrast to previous projects, relatively greater emphasis was placed on mass communication channels and less on local face-to-face communication.

A commercial advertising agency, Forum, was selected to implement the media component of the Health Literacy campaign. Three market research firms were responsible for a background or developmental investigation and for the pretesting of media material.

### Campaign Structure

The overall schedule of the campaign is captured in Figure 2.1. It began in a quite limited way with an "umbrella campaign" in the period between December 1983 and March 1984, using material previously developed by the MOH for oral rehydration and immunization. A family planning spot was

obtained from the Family Planning Association of Guatemala and adapted and the media package was supplemented by magazine advertisements and articles published in the four major national newspapers. The umbrella campaign had to be cut short in March due to the lack of financing, but it left behind an overall theme that could be continued by the MOH regardless of the specific content that was chosen. The slogan of the umbrella campaign was "Nino Sano Hoy, Peru Sano Manana" -- "Healthy Child Today, Healthy Peru Tomorrow". About \$40,000 was spent on this first phase of the program.

The campaign officially (re-)opened on September 22, 1984 with a five minute speech from the Minister of Health, followed by the first television spot of the campaign, which introduced a second global theme, the concept of "paternidad responsable" (responsible parenthood). The concept gave the campaign a wide frame of reference that would unite the family planning, immunization, and ORT themes. The Consejo Nacional de Poblacion (National Population Council) held primary policy-making authority for all Peruvian population activities and insisted that the responsible parenthood theme be central to the campaign. For this reason, a reference to paternidad responsable was always made in family planning, immunization and oral rehydration spots: "responsible parents love and sustain the children they have decided to have". The references were made either verbally or through the jingle accompanying the spots.

The main media campaign was broadcast, with great frequency and reaching almost the entire population, on the major national television and radio networks. For example, during the eight weeks of the family planning campaign, 87.5 percent of Lima television owners (75 percent of all households) saw television messages an average of 27 times apiece, among 245 spots broadcast. The Lima immunization broadcasts produced only a slightly lower level of exposure: 85 percent of owners were reached with an average of 23 spots per viewer (Forum, 1985). Comparable data for radio and for out-of-Lima television isn't available, but an assumption of intense exposure is credible. While television ownership outside of the cities is less than in Lima (44 percent nationwide) radio ownership is quite high (79 percent). Frequent placement of spots on the most popular stations assured heavy exposure among owners of televisions and radios. (INNSA Survey, 1984) All media time was purchased by the campaign for this part of the program.

In addition, during the January to June 1985 period, one Lima broadcasting group, Channel 4, provided some supplemental media support, offering to produce and broadcast at minimal cost a series of one-minute TV and one-and-one-half minute radio programs in which a well known female doctor (and former soap opera radio actress) appeared in a health center dispensary talking colloquially with mothers about topics drawn from the three themes.

Broadcast mass media activities were complemented by some printed materials, billboards, advertising slides for movie theaters, and in the case of immunization, by local mobilization efforts. A "health bag" was produced for distribution to consumers which consisted of an 11" by 9.5" plastic bag with a pouch having a calendar printed on it. Inside the pouch was a one-liter mixing bag with two oral rehydration packets, a vaccination control card, and various technical booklets. The 1985 calendar printed on the health bag served to remind couples of the next vaccination date, the diarrheal disease season (December-February), and the dates for the mother to come back for a family planning check-up. Some examples of the printed materials may be found in Appendix I.

While each of the separate themes of the health literacy programs were linked by the shared global theme and a similar media strategy, the campaigns were otherwise distinct. For that reason we present each in turn.

### Family Planning

By far, the greatest investment was focused on the family planning objectives. The government of Peru was, for the first time, willing to go public in a daring way with its endorsement of modern contraceptive use. While clinics had offered family planning services for some time, public promotion of these services had been restricted. The messages that Forum developed for the campaign broke that history of quiet support in an unmistakable way.

In part, the campaign strategy came from the pre-campaign developmental investigation. A local research firm, Michelsen Asociados, with the assistance of Dr. Pareja, produced three background documents reflecting a re-analysis of a national contraceptive prevalence survey, additional interviews with samples of women and men, and individual interviews and discussions with family planning professionals and national authorities. A second research firm, Latinoamericano de Investigaciones, supplemented this research with focus group discussions with potential and actual contraceptive users.

Dr. Pareja (1984) has reported that these research efforts had a major impact on the eventual campaign strategy and its specific messages. Two target groups were defined as particularly susceptible to the campaign: 1) couples who did not want any more children and who were using traditional contraceptive methods, and 2) couples who were not using any contraceptive methods although they did not want any more children. Both audiences together represented 28 percent of fertile women (about one-and-one-half million potential users of modern contraceptive methods).

The messages for these audiences were designed to increase knowledge in three areas: 1) family planning is possible and desirable, 2) those in need of family planning should choose a safe, modern contraceptive method, and 3) the information and services are given free at the health centers. The messages were designed to affect behavior by encouraging potential

users to go to a health center to ask about modern family planning methods.

Using data from a previously completed national contraceptive prevalence study conducted by Westinghouse Health Systems for USAID, Michelsen Asociados developed an analysis of women's demographic status, educational level, and knowledge and use of contraceptive methods.

Focus group research suggested some of the themes that campaign messages might address (Pareja, 1984). A "machismo" image was said to be related to men's refusal to use condoms, and to a tendency to forbid their wives to use any modern contraceptive method. They feared their wives might become promiscuous, or that their virile image would be damaged if they appeared incapable of reproduction. Another inference from the focus group research related the quality of family planning services to the desire of mothers to seek it out at the health center. If mothers were not treated well when obtaining this particular service (in contrast to immunization services) they would refuse to return or ask for the service again.

The couples of the first target audience used traditional contraceptive techniques such as herbs and the rhythm method. Men and women of this group, it was thought, had to be approached differently. The spots directed to the women were intended to support them as decision-makers who take the initiative to go to the health center because they want to obtain a sure method. The men were approached from the sexual angle, that is,

they were told that a sure contraceptive method guarantees not having unwanted children, and also increases their sexual activity with their wives insofar as it frees both of them from the fears of unwanted pregnancy. Additional spots approached the couple as a unit: their choice of not wanting to have another child is reinforced by the availability of a sure contraceptive method. To all of them, the health center was presented as the place to go to receive services.

The second target audience did not use any methods of contraception. For this audience, the couple was addressed as a unit because women and men were, according to baseline research, believed to differ very little in their perceptions and behaviors concerning family planning. Two television messages were directed to the couple, but in one instance the man plays the leading role, while in the other spot the woman is the main character. Each one of them takes the initiative to persuade the other to go to the health center in each of the spots, but the message is the same, "change from being non-users to being users of modern contraceptive methods". Although the audience was not differentiated in television spots, men alone were addressed in an extra radio message that confronted their possible jealousy.

The family planning theme was addressed in five television spots (one dealing exclusively with 'paternidad responsable'), nine radio spots, eight one-minute TV miniprograms, and eight radio miniprograms of one-and-one half minutes each. Family planning spots were aired throughout the Health Literacy campaign: in limited fashion during the ORT and immunization campaigns and intensively during other times (Figure 2.1).

The family planning spots were particularly memorable (and controversial) because of their use of quickly reproducing rabbits as a metaphor for couples who did not use contraception. In the first spot, a couple holding two rabbits talk about responsible parenthood - emphasizing the need to give children proper nutrition and education; while they talk, the rabbits escape from their arms, but the couple continues to talk about the need to raise children with love and give them adequate shelter. Finally the narrator declares that responsible parenthood means loving and maintaining the children "one decides to have", while the camera pulls back to show the couple surrounded by rabbits. One of the couple closes with the comment, "Already you know it, remember the rabbits." This tag line was incorporated into all of the media materials, was said to be widely quoted on the street, and made the campaign stand out in the flood of commercial media advertising. On the other hand, it was said that some politically influential individuals found the presentation of rabbits as human stand-ins to be denigrating.

A poster was also designed which reproduced one of the television spot scenes and had the jingle phrase printed on it (see Appendix I.) Ten thousand copies of the poster were distributed, mostly through the health centers. A six-page technical booklet providing information about each contraceptive method (pills, the IUD, spermicides, and condoms) was produced and 200,000 copies were distributed along with the "Bolsa de la Salud" (health bag). (see Appendix I)

### Immunization

The developmental investigation for immunization (Pareja, 1984) suggested that existing poor vaccination levels were to be attributed both to problems associated with clinic services (travel time, availability of vaccines) and to caretakers own perceptions (fear of adverse reactions, confusion about the complex vaccination schedule, belief that measles and whooping cough were not life-threatening).

The campaign was targeted to mothers of children of vaccination age (under two years of age). The campaign sought to increase mothers' knowledge about vaccinations by teaching 1) which diseases vaccinations can prevent, 2) that vaccinations cause normal reactions in children which are not a cause for alarm, 3) that one dose of polio and DPT is not good enough, and 4) that three doses do give protection. The targeted behavior was for mothers to take their children to a health center for the first, second, and third doses of those vaccines. One vaccine, "La Triple" (DPT), had been recognized by some mothers contributing to the baseline research as

the one to be repeated three times. Consequently, a message that vaccines required three doses was built around the name of this vaccine (which suggests three doses).

The television spots concentrated on the mortal risks of the diseases by showing a dramatic burial of a small child, and the protection given by the DPT vaccine. The radio spots offered the same message, although they were extended to include information about reactions caused by vaccination as well as the contagious aspects of the diseases. Four 40-second television miniprograms and three one-and-one-half minute radio miniprograms were also part of the media package.

A poster was designed which showed a child receiving a vaccination and underneath this picture was a rhymed slogan "vaccinate your child, and you will have him healthy". Ten thousand copies of the poster were distributed through health centers. Additionally, 800,000 vaccination recall cards were printed and distributed in the health bag.

Immunization Week, at least for Lima and Callao, was chosen as the second week of October. Consequently, the immunization spots started at the beginning of October in order to have a period of broadcasting prior to initiation on the 13th. Another round of immunization spots was scheduled successively in three-month intervals in order to increase the likelihood that three doses of DPT and polio vaccines would be delivered. However these subsequent vaccination days (January 19 and April 13, 1985) were not

implemented with the same mobilization efforts as was the October campaign. In particular, there were no comparable media barrages.

Originally, the October vaccination week was scheduled only in Lima and Callao, and in Arequipa with UNICEF assistance. However, due to complexities involved in limiting the media campaign, the immunization spots were broadcast nationally. While we lack specific evidence on this issue, it is believed that there was substantial variation in how well each region was able to organize its vaccination campaign, and vaccines may have been unavailable at some health centers during the campaign.

### Oral Rehydration

Oral rehydration therapy does not attack the causes of diarrhea, nor does it cure the disease causing diarrhea, but rather it prevents dehydration and strengthens the child so that he/she can fight off infection and reach a clinic if further treatment is required. A solution of oral rehydration salts (ORS) can be prepared using a pre-packaged concentrate that is mixed with water, or a solution can be prepared at home by mixing together carefully measured quantities of sugar, salt, and water (SSS).

In Peru there had been some promotion of pre-packaged ORS under the name Salvadora in previous years, both through clinics and through mass media. The government wanted to begin promotion of oral rehydration salts again, but for several reasons wanted to do so under a new name. Planning for the new effort began with a developmental investigation.

The investigation suggested (Pareja, 1984) that oral rehydration was well known, although there was restricted understanding about the concepts of loss of liquids and the need for their replenishment. Many mothers believed that milk should not be given during diarrheal episodes. Most solid food was said to be withheld, while softer food was often given during episodes. Common use of antibiotics, antidiarrheals, pills and traditional herbal infusions and massages were also reported.

Reflecting these results, the messages put some emphasis on concepts related to the need to restore liquid and the need to maintain breast-feeding during diarrheal episodes. Additionally, the campaign instructed mothers that the oral rehydration solution had to be prepared in one liter of cool boiled water and had to be given to the child all day long.

Three television spots and six radio spots were produced for the campaign, along with four one-minute television miniprograms and four one-and-one-half minute radio miniprograms. A poster was developed recommending the use of "Salvaoral", the new name for ORS packets, during episodes. In addition, 400,000 plastic mixing bags with ORS packets and rehydration instructions were distributed in the health bag. Ten thousand copies of the poster were distributed, mostly through the health centers.

Unfortunately, the ORT campaign suffered from a scheduling inconsistency between the time of heaviest mass media promotion and the time at which the health bags with ORS packets and mixing bag were actually available in

the field. The television and radio campaign, which included messages about how to use the mixing bag, began in December and continued through part of February. However the health bag, which was to be available throughout the country at the start of the broadcast campaign, was delayed by funding holdups until the end of January. At best it would have been in consumers' hands by the end of the broadcast campaign. There was a continuation of broadcast messages after that time with miniprograms on one channel, but they would have reached only a small proportion of the audience.

Some observers have suggested that the ORT campaign would have had only limited success as the result of this phasing inconsistency. However, we cannot resolve this concern. In contrast to the evaluations of the family planning and immunization campaigns which follow, we found no available data sources which allowed us to evaluate the effects of the ORT program.

## CHAPTER 3

## RESULTS OF THE IMMUNIZATION CAMPAIGN

Immunization Week in Peru took place during the week of October 13th, 1984. The immediate question is, did it work: did it result in sharp gains in vaccinations given, and total coverage achieved? The simple answer is yes, on both counts. It worked to increase coverage of DPT, of polio, of measles, and to a lesser extent of BCG. It worked at all ages and for most, but not all, regions of the country. It worked to increase third doses of DPT and polio, even more than first and second doses. Before presenting the full evidence for these conclusions, we describe the data sources:

- 1) Clinic Records. Data are gathered about the number of vaccinations (DPT, polio, measles, and BCG) given out each month by hospitals and clinics nationwide. Local clinics and hospitals report their data to an administrative unit called the hospital area which is the lowest level reporting unit. Each hospital area is expected to send monthly reports to the Ministry's Statistics Office detailing the number of immunizations administered, broken down by vaccine, age, and dose. (An example of the monthly report form for immunizations is found in Appendix III.)

The Ministry of Health provided the evaluation team with immunization records from all hospital areas on a monthly basis for a 27 month period (January 1983 - March 1985), including 21 months before and 5 months after October 1984 when Immunization Week took place. Using monthly clinic data, we are able to compare vaccination levels prior to October with levels achieved during October and for five months.

In each of the three years for which data is available, there were some changes in the administrative divisions of the health system, with the number of official hospital areas increasing from 61 in 1983, to 67 in 1984, to 69 in 1985. If all of the sites had sent in forms every month, there would have been a total of 1,743 forms. We had a total of 1,722 usable forms including 49 forms which indicated that no immunizations were given out during the month. [1] We assume that the 49 forms recording zero vaccinations do not represent missing values since anecdotal evidence suggests that vaccine supplies may actually have been exhausted at some sites during periods of time. [2]

2) National Nutrition and Health Survey. From April through November of 1984, there was a national nutrition survey of 20,000 homes which obtained data about (among other practices) vaccination against immuno-preventable diseases. There were six separate chronologically-sequential sub-samples drawn to allow seasonality comparisons. Respondents from one sub-sample were to be equivalent

to respondents from any other sub-sample within the limits of sampling error. (Relevant portions of the nutrition survey are found in Appendix III.)

Since the immunization campaign took place in October (primarily) there are equivalent respondents included in the survey who contributed data both before (sub-samples 1 to 4) and after (sub-sample 6) the campaign. The data are used to detect short-term effects of the campaign on self-reported immunization coverage through an interviewed-before, interviewed-after comparison.

We can make comparisons across periods with reasonable confidence that the samples are equivalent. However, because there was some overlap in time (thus sub-sample 6 included people interviewed in October, as well as November, and sub-sample 4 included people interviewed in October as well as in August and September) there is risk that some people counted in the pre-campaign period actually belong in the post-campaign period, and vice versa. A cleaner method of making comparisons (and the method that we generally use) is to compare those April to September respondents who were all interviewed before the campaign and those November respondents who were all interviewed after the campaign.

Estimates of coverage increases are based on a sample of 17,288 households of whom 9,416 had children below the age of six. Those households produced a total of 16,213 children under six, but only

14,196 of them provided sufficient data to determine vaccination coverage levels. On the assumption that missing cases tended to be people who did not have appropriate vaccinations, estimates of coverage based on non-missing cases are probably over-estimates of actual vaccination coverage.

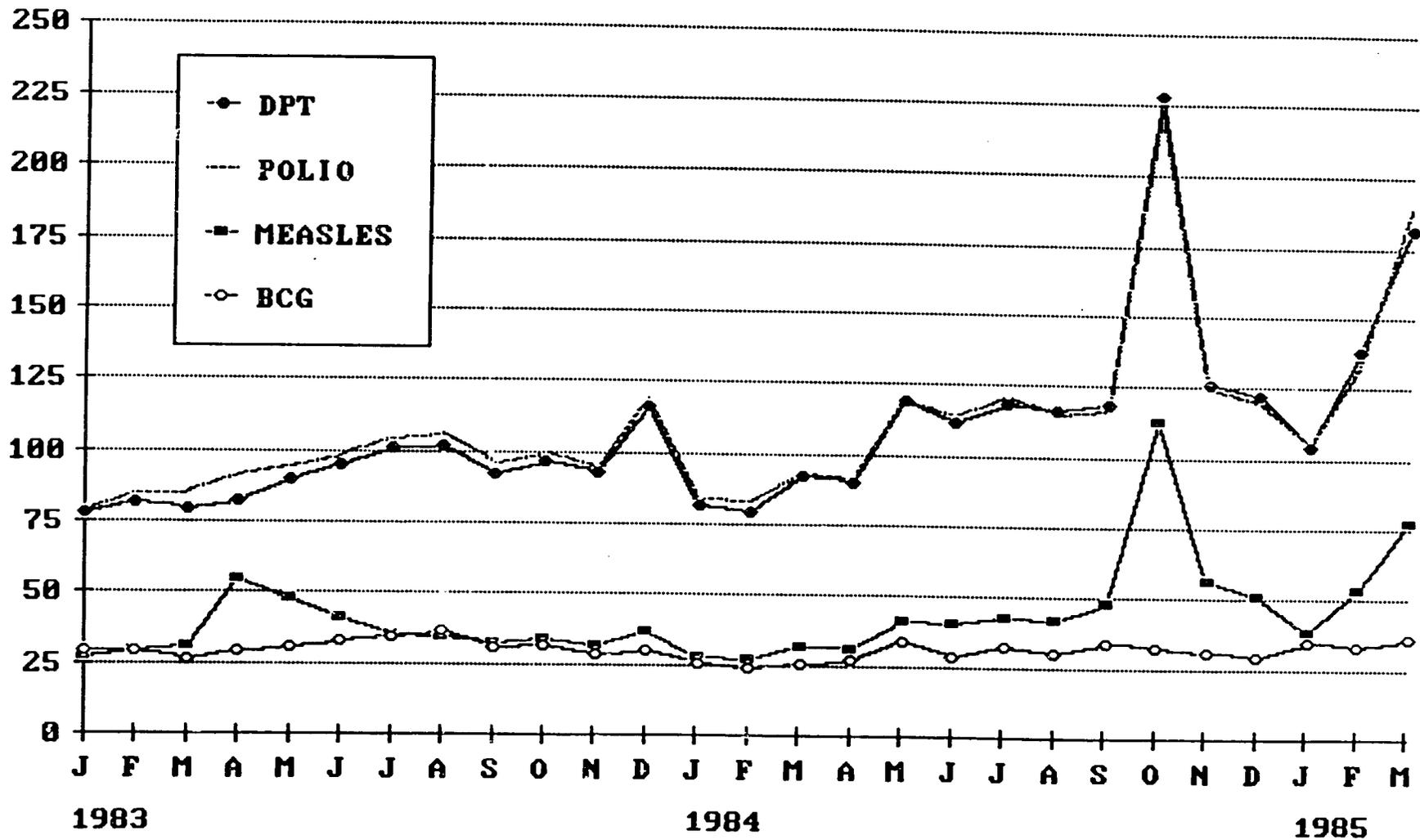
### Overall Effects from Clinic Records

The clinic data show a large, sharp jump in vaccinations given in October: 1984 for DPT, for polio, and for measles (Figure 3.1). Typical levels for surrounding months before the campaign vary between 75,000-125,000 vaccinations for DPT and polio (including all ages and all three doses), about half the October levels of 225,000. Measles vaccinations more than double, from between 25,000-50,000 per month to about 115,000 in October. The effect of the campaign on these vaccinations is unmistakable. We see an apparent lack of campaign impact on BCG dispensations, although data from the national nutrition survey (to be discussed later) indicate that BCG coverage rates increased by about 9 percent. It is clear that sharp October increases are not merely a shift in times of vaccinations with October increases offset by below average dispensation levels in subsequent months. December, January and February levels are at usual levels and an additional sharp increase in vaccinations (other than BCG) occurs in March 1985. [3]

Figure 3.1

(thousands)

TOTAL VACCINATIONS



Overall, and for three of the four types of vaccinations, there is a large absolute increase in the number of vaccinations dispensed. As we will see from the survey results, this vaccines-dispensed increase turned into a major increase in the number of children fully covered, also. Before doing that, however, we can summarize and refine the results pictured in Figure 3.1 by presenting a slightly more complex analysis: one that will allow us to compare the relative effects of the campaign on types of immunizations, while taking into account a slow long-term upward trend in monthly vaccination totals.

If we focus on the pre-campaign period, Figure 3.1 shows that dispensation levels for each immunization experienced monthly fluctuations, but that there is an overall tendency for vaccinations to increase gradually over time, perhaps reflecting the growth of population and/or an improvement in vaccine supplies. We can estimate this pre-campaign tendency by fitting a regression equation to data for immunizations between January 1983 and September 1984. The slope of the regression equation can be used as an estimate of the general tendency for immunizations to increase even before the start of the campaign. Once we have estimated this trend for each immunization, we can use the regression equations to predict vaccination levels that would have occurred in October 1984 had no intervention taken place. Then, by comparing the percentage increase in dispensation levels above the levels that would be expected from data prior to the campaign, we produce a measure of campaign impact that compares each of the vaccinations on a comparable scale.

The second column of Table 3.1 indicates average monthly dispensation of each vaccination between January 1983 and September 1984 (pre-campaign). For DPT and polio, there were an average of just under 100,000 vaccinations per month, while for measles and BCG the averages per month are about 36,000 and 30,000 vaccinations, respectively. Based on data prior to the campaign, regression analysis predicts somewhat higher dispensation levels in October 1984 (column 3) given the tendency for levels to grow over time even without a campaign. The unmistakable impact of Immunization Week is clearly seen in the last two columns of Table 3.1. The recorded number of immunizations administered by clinics jumps about 100 percent for DPT and polio, while for measles the increase approaches 200 percent, almost twice as large. While Figure 3.1 indicates that DPT and polio vaccinations experienced the largest absolute increase, Table 3.1 indicates that measles vaccinations experienced the largest relative increase.

#### Overall Effects from the Survey

A substantial campaign effect is also reflected in a major increase in total coverage, as estimated from the national nutrition survey. There was more than a 12 percent increase in complete coverage from 34 percent before the campaign to 46.5 percent afterwards.

For each child of a family in the survey sample, interviewers asked whether or not there was an available vaccination card. If there was one, the number of times each of the four types of vaccinations had been

Table 3.1

Monthly Clinic Dispensation Before and During Immunization Campaign

VACCINATION	AVERAGE VALUE (Jan '83 - Sept '84)	EXPECTED VALUE (October 1984)	OBSERVED VALUE (October 1984)	% INCREASE ABOVE EXPECTED
DPT	96,924	115,187	227,800	97.8 %
POLIO	99,418	114,672	222,936	94.4 %
MEASLES	36,460	39,266	112,782	187.2 %
BCG	30,025	30,002	32,255	7.5 %

received was recorded. If there was no vaccination card, the respondent was asked to recall what vaccinations the named child had received. The interviewer also obtained data about the age of each child.

The definition of immunization coverage that we use reflects Ministry of Health recommendations concerning which vaccinations children should receive by the time they reach a certain age. Thus, a child between 0-3 months old requires only the BCG immunization to be fully covered. A child aged 4-6 months requires BCG, 1 DPT, and 1 polio vaccination. Between 7-9 months of age, a child requires BCG, 2 DPT and 2 polio vaccinations to be covered. At 10 months of age or older, a child needs BCG, 3 DPT, 3 polio, and measles.

We do not follow the common practice of using estimated vaccination coverage for the single age group of 12-23 month old children as a stand-in for national immunization levels (although that result is found in Table 3.4). Since we were able to estimate coverage levels for the entire target population, we chose to emphasize that result. A child was considered covered if he or she had all vaccinations appropriate to his or her age.

Some authorities would suggest this is a very strict definition of coverage, since substantial protection against polio and DPT diseases can be achieved by fewer than three vaccinations, since some delay in obtaining particular vaccinations may not mean a complete absence of protection, and since the lack of BCG (and even polio) may not greatly increase risk of death since tuberculosis and polio are rare in Peru.

(Hirschhorn, 1986). Nonetheless, we use this criterion for coverage, since it represents current policy in Peru.

In Table 3.2, parallel estimates of campaign effects on coverage are presented with analysis done both by sub-sample and by interview month. On the left side of the table, coverage rates are presented for each of six sub-samples studied during the April-November time period of the survey. There was a substantial shift coincident with the October campaign. However, the effects are clearest when we compare those interviewed during the months April to September before the campaign with those interviewed in November after the campaign (right side of Table 3.2). In that analysis we eliminated those interviewed in October, who may have been interviewed before or after the campaign. As already noted, there was more than a 12 percent jump in total coverage.

For a portion of the sample, coverage data had to be taken on the basis of self-report because people either didn't have vaccination cards or else they could not locate the children's cards. To be sure that the jump in coverage wasn't merely a reflection of the campaign exaggerating self-reported compliance but not actual compliance, we can look at change in coverage rates only among those able to show vaccination cards used to record immunizations. Among those who could show the cards, the campaign was associated with the same absolute shift in coverage (from 54.0 to 65.5 percent), although the numbers are, on average, higher than for the sample as a whole. In addition, we find that there was a 12.5 percent jump (from 37.3 to 49.8 percent) in those who could show the vaccination card

Table 3.2

Coverage by Period and Interview Month

PERIOD	MONTHS	% COVERED	N	INTERVIEW MONTH	% COVERED	N
1	April-May	30.9 %	(1827)	April-Sept	34.11 %	(9407)
2	June-July	36.6	(2062)			
3	July-Aug	33.3	(2102)			
4	Aug-Sept	31.7	(2459)			
5	Sept-Oct	33.9	(3140)			
6	Oct-Nov	44.3	(2606)	November	46.5	(1507)

comparing April to September respondents and November respondents; that is confirmatory evidence of campaign effects.

Table 3.3 indicates that increases in coverage are essentially parallel for each type of immunization. November interviewees have about a 10 percent advantage in coverage for each vaccination. We cannot explain why BCG coverage rates seem to have increased according to survey responses, without clinic data showing a corresponding increase for the month of October.

#### The Age Distribution of Coverage: Evidence from the Survey and Clinic Records

To what extent did the campaign fill in vaccinations for children over one year old versus enhance timely (less than one year) full immunization coverage? Survey results (Table 3.4 and Figure 3.2) show that at every age there is a substantial advantage to November interviewees as compared to April-September interviewees. While the advantage varies with the age of the child, the fluctuation shows no obvious tendency to grow larger or smaller with age. The survey shows a limited difference in response comparing 0-11 month olds, who show a relative gain, comparing November versus April-September of 41 percent, with one year olds who have a gain of 48 percent (Table 3.4). This limited difference between age groups contrasts with clinic results.

Table 3.3  
Coverage By Vaccination

VACCINATION	COVERAGE DEFINITION	APRIL-SEPT % COVERED	N	NOVEMBER % COVERED	N
DPT [1]	1 after 3 months	38.5 %	(9491)	48.7 %	(1491)
	2 after 6 months				
	3 after 9 months				
POLIO [1]	1 after 3 months	37.2 %	(9346)	48.6 %	(1487)
	2 after 6 months				
	3 after 9 months				
BCG	1 after birth	69.9 %	(10,175)	78.9 %	(1594)
MEASLES [2]	1 after 9 months	58.0 %	(8528)	67.2 %	(1342)

[1] Estimated after leaving out those less than 4 months old.

[2] Estimated after leaving out those less than 10 months old.

Figure 3.2

AGE DISTRIBUTION OF COVERAGE PRE- & POST-CAMPAIGN-SURVEY RESULTS

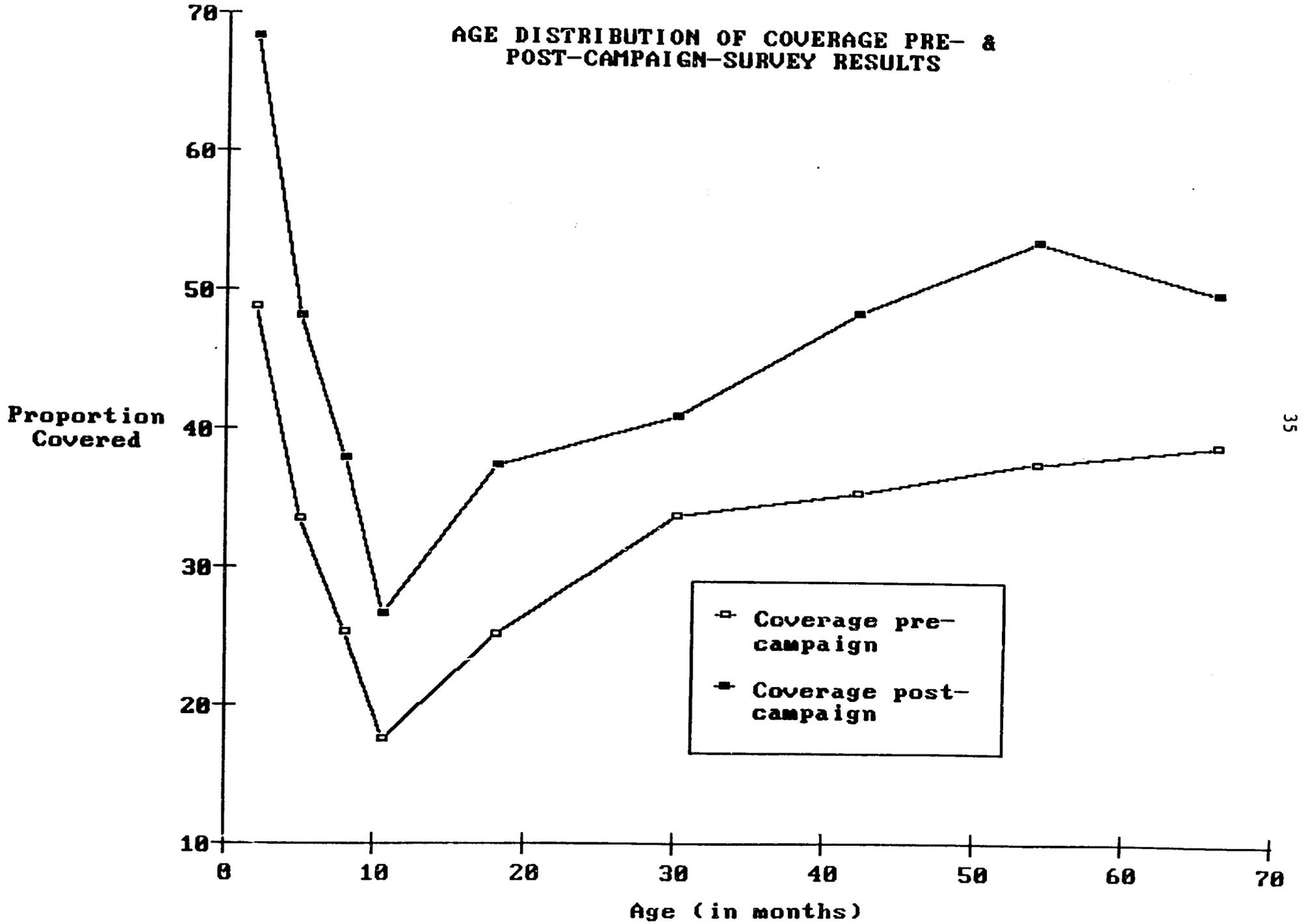


Table 3.4

Age Distribution of Coverage

AGE	COVERAGE DEFINITION	APRIL-SEPT % COVERED	N	NOVEMBER % COVERED	N	% GAIN AS A PROPORTION OF APRIL-SEPT BASELINE
0-3 (mo.)	BCG only	48.8%	(537)	68.2%	(66)	39.8%
4-6 "	BCG, 1 DPT, 1 Polio	33.5%	(355)	48.2%	(56)	43.9%
7-9 "	BCG, 2 DPT, 2 Polio	25.3%	(363)	37.9%	(66)	49.8%
10-11 "	BCG, 3 DPT, 3 Polio, Measles	17.6%	(268)	26.7%	(30)	51.7%
	[All Children less than one year old]	34.1%	(1523)	48.2%	(218)	41.3%
1 (yr.)	BCG, 3 DPT, 3 Polio, Measles	25.2%	(1600)	37.4%	(251)	48.4%
2 "	BCG, 3 DPT, 3 Polio, Measles	33.7%	(1703)	41.0%	(271)	21.7%
3 "	BCG, 3 DPT, 3 Polio, Measles	35.4%	(1561)	48.5%	(266)	37.0%
4 "	BCG, 3 DPT, 3 Polio, Measles	37.7%	(1582)	53.8%	(262)	46.2%
5 "	BCG, 3 DPT, 3 Polio, Measles	39.2%	(1438)	50.2%	(239)	28.1%

Clinic data can be disaggregated by age to determine whether the percentage increase in DPT, polio, and measles vaccinations favored less than one or one year olds. Table 3.5 indicates that for all three vaccinations, the percentage increase for one year olds is more than twice as large as for less than one year olds. For DPT and polio, the percentage increase for children under 1 was about 40 percent versus around 90 percent for children between the ages of 1 and 2. The percentage increase in measles vaccine is almost 125 percent for children under 1, but it exceeds 250 percent for children between 1 and 2 years of age.

The advantage in percentage increase in vaccinations for one year olds from the clinic data is of greater magnitude than, but is in the same direction as relative increases in coverage rates derived from survey data. It may be that some of the one year olds who were vaccinated during the campaign were brought by parents who were unaware that their vaccination series were already complete. They would have received boosters anyway, which would have counted in clinic reports of total vaccinations dispensed without a corresponding improvement in survey-estimated coverage, since the child would already have been considered covered.

Since the clinic reporting form doesn't provide a separate space to record booster shots, it would not be surprising to find that clinic personnel had added booster shots of DPT and polio to the totals for third doses of those immunizations. That would explain the exaggerated advantage for one

Table 3.5

Monthly Clinic Dispensation Before and During Immunization Campaign  
Broken Down By Age

VACCINATION	AVERAGE VALUE (Jan '83 - Sept '84)	EXPECTED VALUE (October 1984)	OBSERVED VALUE (October 1984)	% INCREASE ABOVE EXPECTED
DPT <1 Yr	51,796	59,540	85,657	43.9 %
DPT 1 Yr	25,041	29,414	56,910	93.5 %
POLIO <1 Yr	52,520	59,048	82,746	40.1 %
POLIO 1 Yr	25,608	29,103	54,221	86.3 %
MEASLES <1 Yr	14,449	16,059	35,691	122.2 %
MEASLES 1 Yr	12,324	11,330	41,550	266.7 %

year olds seen in the clinic data versus the survey results. It might also explain the results of the next analysis: the effect of the campaign by dose of DPT and polio.

#### Dose Effects of the Campaign: Clinic Results

An important message of the vaccination campaign was that one dose of DPT and polio vaccine was not good enough and that three doses were required to give protection. Based on clinic data disaggregated by dose, Table 3.6 compares the percentage increase in October vaccinations above the levels that would be expected from data prior to the campaign. The last column of Table 3.6 shows that percentage increases in October are somewhat higher for third doses than for first or second doses. The finding is consistent with moderate success with one of the behavior changes targeted by the campaign: that mothers would bring their children to the clinic for three doses of DPT and polio vaccine. However, our confidence in this result is limited by a fear that third dose reports may incorporate booster (post-third dose) vaccinations.

#### Regional Differences in Campaign Effects: Clinic Data

Clinic data can be disaggregated on a regional basis to examine whether the campaign benefited some areas disproportionately (Figure 3.3). Given inconsistencies in the composition of regions from year to year, the analysis uses only 1984 data to compute the average number of vaccinations for months leading up to the campaign [4]. Regional differences are

Table 3.6

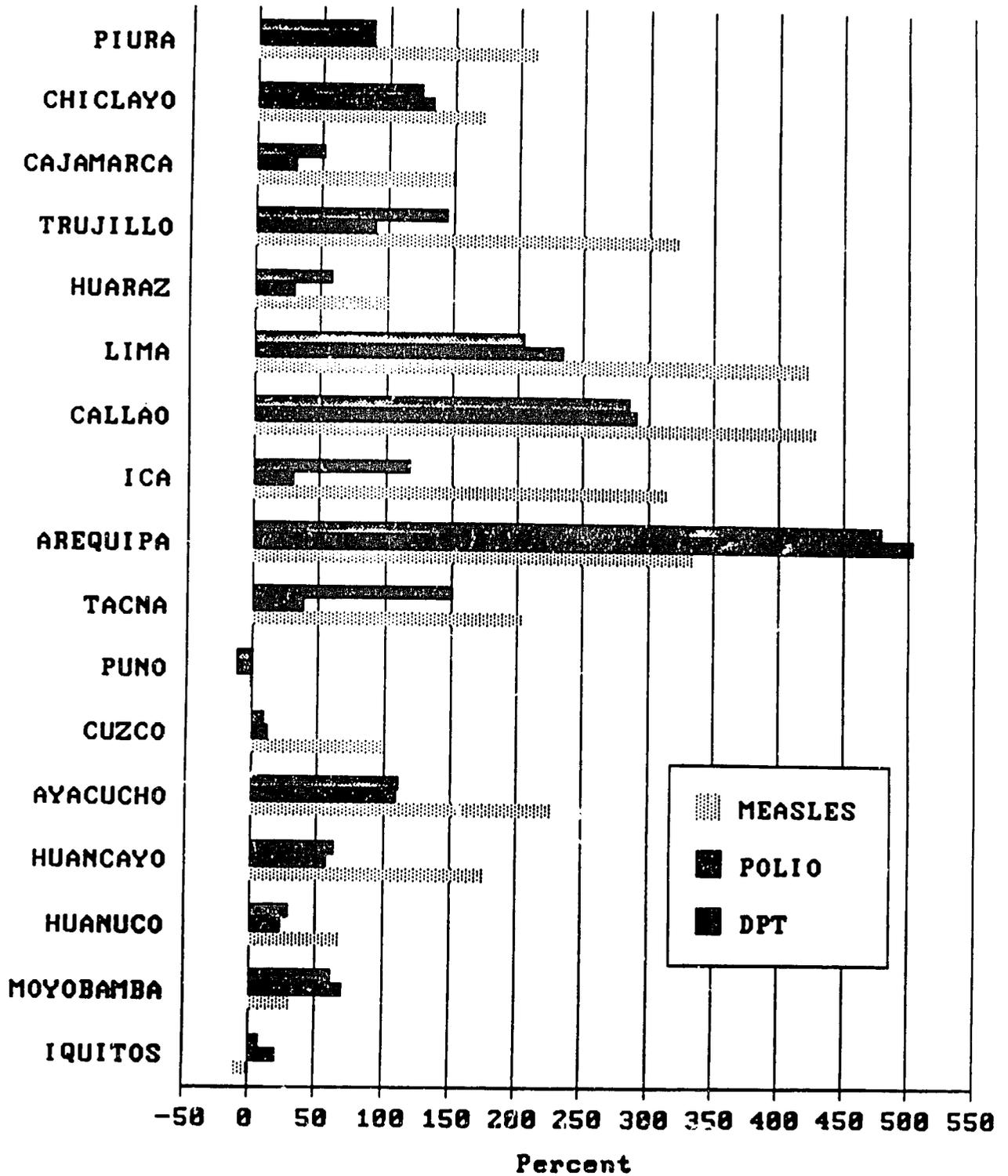
Monthly Clinic Dispensation Before and During Immunization Campaign  
Broken Down By Dose

VACCINATION	AVERAGE VALUE (Jan '83 - Sept '84)	EXPECTED VALUE (October 1984)	OBSERVED VALUE (October 1984)	% INCREASE ABOVE EXPECTED
DPT Dose 1	40,966	47,914	97,587	103.7 %
DPT Dose 2	28,611	34,967	57,550	64.6 %
DPT Dose 3	27,347	32,306	72,663	124.9 %
POLIO Dose 1	41,811	47,553	93,884	97.4 %
POLIO Dose 2	29,087	34,646	56,494	63.1 %
POLIO Dose 3	28,520	32,474	72,558	123.4 %

04

Figure 3.3

Percentage Change in October Vaccinations Compared to Monthly Average (Jan-Sept '84) By Region



evaluated by comparing the percentage increase in October vaccinations compared with the average value (January to September 1984). Although the methodology may be slightly weaker than computing percentage increases based on expected values (as before), we are hesitant to compute expected values given large seasonal fluctuations that cannot be captured by 1984 data alone.

Figure 3.3 shows that October increases in DPT, polio and measles immunizations are shared by most regions of the country. Only two regions (Iquitos and Puno) experienced less than a 50 percent increase in polio, DPT and measles vaccinations. Additionally, Huanuco and Cuzco experienced less than a 50 percent increase in two of the three vaccinations. All other regions experienced rather large percentage increases in at least two and usually all three types of immunizations although the variation among regions is considerable.

In three regions (Arequipa, Lima, and Callao) all October vaccinations exceed average levels by over 200 percent. The increase of nearly 500 percent in DPT vaccinations in Arequipa is partly explained by the fact that UNICEF had projected its own vaccination campaign to be held in Arequipa in late September 1984 [5]. Given plans for the immunization week in October, arrangements were made with UNICEF to initiate a coordinated effort that would avoid duplicating efforts. Apparently it was feasible to synchronize both efforts so that campaign impact was maximized.

Although available documentation is ambiguous, it appears that Immunization Week originally was scheduled only in the Lima-Callao vicinity given shortages in the supply of immunizations nationwide. Nevertheless, constraints on the selective broadcasting of campaign messages in some regions required that the campaign be launched nationwide. It is unclear how well the campaign was coordinated outside of the Lima-Callao area, especially given constraints on the supply of vaccines. Consequently, it is not surprising to find that Lima and Callao seem to have experienced the sharpest rise in vaccinations. What is surprising is to find that most other regions experienced at least a 50 percent increase in vaccinations.

Percentage increases in measles vaccinations tend to be twice as high as increases in DPT or polio vaccinations across regions. In 8 of the 17 regions, measles vaccinations increased by over 200 percent in October. Again we see that Lima, Callao, and Arequipa experienced the largest percentage gains. In general, where the campaign worked to increase DPT and polio vaccinations, it worked to increase measles vaccinations by an even greater percentage.

#### Effects of Media Saturation on Campaign Success

During the two weeks preceding October 13, the launch date for Immunization Week, both television and radio networks were saturated with spots encouraging children's vaccination. We were curious whether for individuals or for regions, ownership of television and radio would be

associated with increases in vaccination coverage. The nutrition survey reported household ownership of television and radio. That data was used in two ways: it served as a predictor of household immunization levels before and after the campaign - to see if effects were concentrated among TV and radio owners. Television and radio ownership data was aggregated by health region and then associated with the clinic data to see if media saturated regions were also places where the percentage gains were largest. We begin with the regional analysis.

There is a strong association between media saturation in a region and its campaign-associated coverage gain for the three major vaccines: polio, DPT and measles. The correlations vary from .50 to .87, and all of them are statistically significant (Table 3.7). The scattergram for the association between DPT coverage gain and television ownership rates is presented in Figure 3.4. The four regions where television concentration is greatest (over 60 percent ownership), Lima/Callao, Arequipa, Tacna and Ica, average 250 percent improvement over the expected number of DPT vaccinations in October. In contrast, the four regions where television concentration is least (under 26 percent), Puno, Cuzco, Moyobamba and Cajamarca, improve, on the average, less than 30 percent during the campaign.

There are two credible interpretations of these associations. One says that radio and television were the focus of campaign efforts and this is evidence for a powerful effect of those channels. The alternative would suggest that the places where radio and particularly television are

Table 3.7

Pearson Correlations: Campaign-Associated  
Vaccination Increases and Media  
Saturation, by Region (N=15)

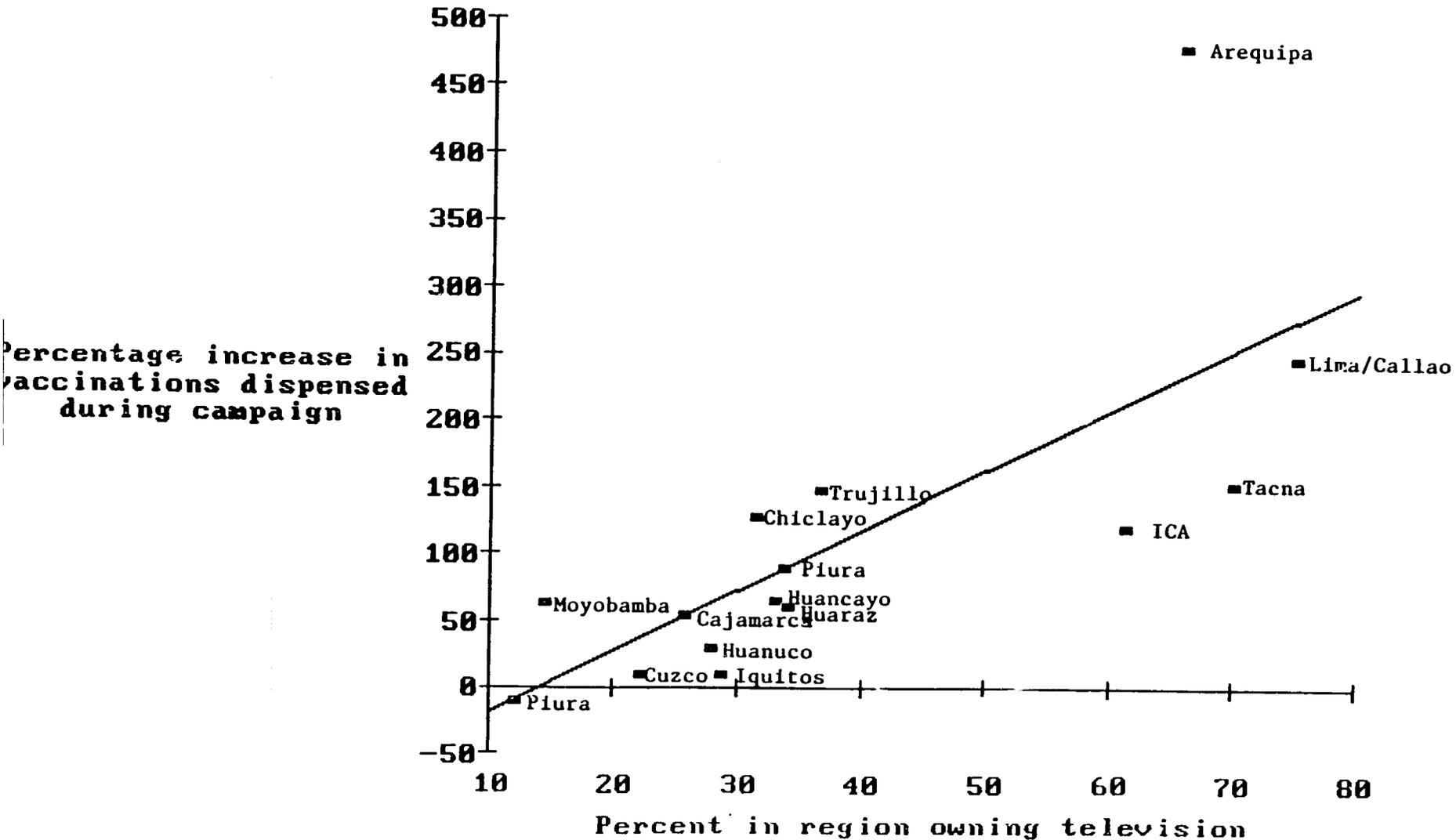
	<u>Media Ownership Saturation</u>	
	<u>Television</u>	<u>Radio</u>
% DPT Increases <sup>2</sup>	.74 <sup>1</sup>	.62 <sup>1</sup>
% Measles Increases <sup>2</sup>	.81 <sup>1</sup>	.57 <sup>1</sup>
% Polio Increases <sup>2</sup>	.58 <sup>1</sup>	.50 <sup>1</sup>

<sup>1</sup> Sig at  $p < .05$

<sup>2</sup> % increases in number of vaccinations over and above average number of vaccinations

Figure 3.4

CAMPAIGN-ASSOCIATED INCREASE IN DPT VACCINATIONS  
BY TELEVISION OWNERSHIP BY REGION



saturated were also places where the Ministry of Health or other agencies provided the best campaign support. We know that Arequipa, which showed the greatest improvement, was the target of a special local mobilization effort under UNICEF sponsorship. It may be that media saturated places tend to be more urban than others and may therefore be able to obtain vaccine supplies and distribute them with greater ease. The regional data then provides a clear association and allows at least two credible explanations. That data doesn't allow us to choose between those explanations.

However the household-level results, associating media ownership with coverage of children in the household, may lead us to be skeptical of the 'media effects' hypothesis and accepting of the 'regions were different anyway' hypothesis.

There is no evidence that campaign-associated improvements in coverage rates were concentrated among those households who own TV or radio and who were particularly likely to be exposed to campaign messages.

Table 3.8 indicates that vaccination coverage was closely associated with media ownership, particularly television ownership. However we must assume that this association is an artifact of other characteristics, like education, urbanization and wealth, which are causes of both media ownership and access to health services. What is of interest in that table is whether or not households with television or radio were

Table 3.8

Coverage Rates, by Media Ownership and Time of Interview <sup>1</sup>

<u>Interview Time</u>	<u>Television Ownership</u>				<u>Radio Ownership</u>				
	<u>Not Owned</u>	<u>(n)</u>	<u>Owned</u>	<u>(n)</u>	<u>Not Owned</u>	<u>(n)</u>	<u>Owned</u>	<u>(n)</u>	
Pre-Campaign (April-Sept.)	24.1%	(3078)	57.4%	(2416)	38.7%	(1172)	41.0%	(4322)	
Post-Campaign (November)	<u>38.7%</u>	(450)	<u>66.1%</u>	(392)	51.4%	<u>46.2%</u>	(171)	<u>52.8%</u>	(671)
	26.0%		58.6%		32.4%		42.5%		

Anova Results:

<u>Main Effects</u>	<u>F</u>	<u>Significance</u>	<u>Main Effects</u>	<u>F</u>	<u>Significance</u>
Ownership	775.91	< .0001	Ownership	45.3	< .0001
Interview Time	48.33	< .0001	Interview Time	48.9	< .0001
<u>Interaction</u>	2.96	.086	<u>Interaction</u>	.8	.366

<sup>1</sup>

This table uses households rather than individual children as the analysis unit. Coverage in the family is based on the status of the oldest child in the family five or under.

particularly likely to improve their coverage status as the result of the campaign. The answer is, clearly, no.

The appropriate statistical test is analysis of variance. We see in Table 3.8 that there is no significant interaction between radio or television ownership and interview time (pre-or post-campaign) in their effects on coverage despite the very large samples in the analysis.

An alternative way of looking at this analysis is to ask what proportion of the children who were not covered before the campaign were covered after the campaign within media ownership groups. Thus among non-owners before the campaign there were 75.9 percent (100 - 24.1) not covered respondents. 14.5 percent more were covered during the campaign (38.7 - 24.1). The proportion of the not covered before the campaign who were covered afterward would be 19.2 percent (14.6/75.9). The comparable number among TV owners is 20.4 percent. For radio non-owners, the proportion of before not-covered who were covered post-campaign was 22.7 percent; for owners the figure was 20.0 percent. Consistent with the results from the analysis of variance, there is no owner/non-owner difference in response to the campaign. Either there was complete diffusion of media messages from owners to non-owners, or non-media channels carried the message effectively to non-owners.

### Summary

The immunization campaign produced an unmistakable increase in the dispensation of vaccinations which translated into increases in complete coverage rates from 34 to 46 percent. Although the campaign emphasized DPT vaccinations, it worked to increase polio vaccinations and produced the sharpest percentage increase in measles vaccinations, although coverage rates for measles increased somewhat less than for DPT and polio. The campaign worked to increase vaccinations at every age and for every dose, and clinic data suggests that the campaign was particularly effective in teaching mothers to come to clinics for third doses of DPT and Polio and to fill in vaccinations for children between the age of 1 and 2. There were large regional differences in responses to the campaign, possibly reflecting different levels of local mobilization and possibly reflecting different levels of vaccine availability. A substantial association between radio and television availability in a region and campaign success may reflect media effectiveness, or more probably was the result of relatively urban regions having greater media access and easier access to vaccines.

The program was a success, if the criterion for success is improvement over the usual performance. However, there are other ways to estimate success. One can, for example, compare achieved performance with a desirable goal.

The post-campaign complete coverage rate of 46% is one-third more than the starting rate, which is impressive. However, it is less than one-fifth of the way toward making up the deficit in children under five years old who needed to be completely covered. If one focuses on timely coverage, that is the proportion of children with a complete vaccination series by their twelfth month, the campaign produced a shift from 18% to 33% (although a small sample of children exactly twelve months old in November makes these estimates imprecise.) However, even this substantial gain is small relative to the shortfall in timely coverage. It also covered only one-fifth of that deficit.

Reports of the number of vaccinations given by clinics can be viewed in a similar light. In October there were almost 36,000 children under one who were given measles vaccinations. This was more than double the number who would have received that vaccination under the usual conditions. However, even that number of vaccinations is only about 65% of the number of children who would need to receive vaccinations every month if timely 100% measles coverage was to be achieved. Since this campaign was not repeated every month (nor could it be) the realized improvement in measles coverage due to the campaign was far less. Thus in 1983, the year before the vaccination program, 168,000 measles vaccinations were given to children under one year old, according to clinic records. This would be about 25.6% of the age cohort. In 1984, including the campaign, about 205,000 children received measles vaccine, roughly 30.6% of the relevant age cohort. Parallel numbers for third dose DPT are 20.6% for 1983 and 24.2% for 1984. Polio results are very close to those for DPT.

The campaign produced a very good month, both with regard to the number of vaccinations given and the proportion of children newly covered. That was a real achievement. However, it produced only a mildly better year when the month's improvements were diluted by the usual rest of the year.

A summarizing view would suggest that the Peru vaccination program represented a moderate effort. For what it was, a one shot media campaign with limited supporting mobilization, it did well. It was much smaller than the Colombia Vaccination Crusades, or the ongoing Brazilian efforts, and appears to have done less. As a moderate effort, its success was also moderate, whether compared with the absolute need in Peru or the success claimed for programs elsewhere.

Endnotes

1. Twenty-four forms from two hospital areas (Huari and Caraz) are listed as "missing" for every month in 1984. Both of these hospital areas belong to the region of Huaraz in 1984. There are also 3 forms included with 1985 data which do not correspond to any of the official hospital areas. Since these additional 3 forms seem to contain valid data, a decision was made to include them in the analysis. We assume that these forms actually belong to one of the official hospital areas but that the data were reported separately due to yearly changes in administrative divisions that may not have been implemented immediately. Consequently, of the 1,743 possible forms (1983-85), when we subtract the 24 "missing" forms in 1984 and add the 3 additional forms in 1985, we are able to analyze a total of 1,722 usable forms.
2. A more serious problem involving missing data concerns individual clinics within each hospital area that may not have submitted forms during some months even though vaccinations were administered. Since our lowest level reporting unit is the hospital area rather than the clinic or hospital, we have no way of knowing whether clinics and hospitals within each area reported data on a regular and timely basis. For example, if a hospital area consisted of four clinics only two of which submitted forms, we would have no way of knowing that 50 percent of the data in that hospital area is missing during those months. Although we do not doubt that reporting irregularities of this nature exist on a limited scale, we assume that missing data would tend to be spread evenly enough among different hospital areas over time that threats to the validity of the strong inferences we make should not be a major concern.
3. We have no explanation for the apparent jump in vaccinations dispensed in March, since there is no central record of any major vaccination effort in that month.
4. In 1983 there were a total of 16 regions and 61 hospital areas. The number of regions increased to 17 in 1984, and the number of hospital areas increased to 67. At the start of 1985, administrative divisions experienced another increase such that there were 19 regions and 69 hospital areas.
5. Data from Arequipa indicated that the sharp rise in vaccinations occurred in the month of November rather than October 1984. The level of vaccinations in October closely resembled months leading up to the campaign while November levels paralleled the sharp increases that were observed for October in other regions. Given the anomalous character of the data, we assume that Arequipa was late in reporting data for the month of October (perhaps because the coordination of campaign activities took precedence over the timely submission of forms). In any case, it is likely that the substantial increase reported in November was associated with the immunization campaign that took place in October. Since the campaign was evaluated by comparing October vaccinations with pre-campaign levels, a decision was made to attribute the sharp November rise in Arequipa vaccinations to the month of October.

To accomplish this, we first computed the average level of monthly vaccinations for the nine months of 1984 leading up to the campaign (A). Then, we subtracted the average level of vaccinations (A) from the level of vaccinations in November (N). This value (N-A) is imputed to be the increase in vaccinations resulting from the campaign. We add this value (N-A) to the level of vaccinations previously reported in October (O) to produce an estimate of total vaccinations for that month: vaccinations reported in October (not including increases caused by the campaign) plus the increase in vaccinations caused by the campaign (N-A) which was reported in November. November vaccination levels are imputed as the average value for months leading up to the campaign (A). In other words:

October vaccinations =  $O + (N - A)$ , and  
November vaccinations = A.

The procedure was repeated separately for each dose of every vaccination for each age group so that data could be disaggregated at various points in the analysis. Although this strategy is simplified and rests upon precarious assumptions, the solution was clearly preferable to inferring that there was no campaign impact in Arequipa simply because the very sharp rise in vaccinations was reported in November rather than October.

## CHAPTER 4

## RESULTS OF THE FAMILY PLANNING CAMPAIGN

For the first time in Peru's history, in late 1984 and the first half of 1985, a limited social marketing program using television and radio was incorporated in the Ministry of Health's program to promote modern contraceptive use. Despite a substantial effort, including \$350,000 worth of research and development expense, production costs and media time purchase, there is doubt whether observed increases in contraceptive demand can be attributed to the campaign.

The timing and the details of the campaign were presented in an earlier section. There was extensive use of both television and radio spots and mini-programs, and given placement in popular programs and widespread ownership of television (44 percent) and radio (78 percent), there is every reason to believe that there was extensive exposure to the campaign. It will be recalled that the fundamental action message of the campaign was to go to the Ministry of Health's clinics to obtain both information about modern methods and free contraceptives. This message, fortuitously, corresponded closely to data that was available in Ministry archives, and allowed reasonably direct evaluation of campaign outcomes. The primary evaluation question became, 'Did the campaign produce an increase in the number of family planning visits to government clinics among individuals not previously using modern contraceptives?' We begin

with a presentation of the data used in the study (which will repeat some material from the previous chapter.)

### The Data

Peru's health services are organized in administrative tiers: in 1985 there were 19 health regions within which were a total of 69 hospital areas. The hospital areas are the lowest level reporting unit, but they serve as administrative centers for additional clinics and health posts in their districts. Each hospital area is expected to send monthly reports to the Ministry's Statistics Office detailing patients served and specific services provided. (A copy of the form is in Appendix III). The report summarizes information from all local service facilities and includes data about the total number of patients seen for any reason and the number of new acceptors of contraceptives served in the month.

The Ministry of Health provided records for a thirty month period (January, 1983 - June, 1985), which included twenty-one months before and nine months after the family planning campaign was initiated. In each of the three years there were some changes in the administrative divisions of the health system, with the number of official hospital areas increasing from 61 in 1983 to 67 in 1984 and 69 in 1985. If all of these sites had sent in forms every month there would have been a total of 1,950 forms. In fact there were only 1,758 forms which were usable for the analysis which follows [1].

## The Results

There are three measures that are used in the analysis of campaign effects. The first, TIME, indicates the month about which the hospital area is reporting: January, 1983 is coded '1' and the final month, June, 1985 is coded '30'. The campaign began in October, 1984, month 22, and continued through month 30.

The second variable, NEW ACCEPTORS, counts the number of visits for family planning information and devices (there is no distinction) by individuals and couples who had not previously sought such services. The third variable, TOTAL CLINIC VISITS, reports the number of individuals treated for all reasons at the clinic during the month. A second version of TOTAL CLINIC VISITS, called TOTAL, subtracts the number of NEW ACCEPTORS to reduce contamination when one variable is used to predict the other.

Over the thirty month period of the campaign, in each month, the average hospital area reported about 4,850 total cases, but that hides a great range, from 90 to 37,222. NEW ACCEPTORS were on average 2.9 percent of the total, about 138 visits. Almost all hospital areas reported that NEW ACCEPTORS made up between 0 percent and 8 percent of their monthly visits. These simple descriptive statistics do not express the great variation in use over time and in relation to the campaign. We turn to those associations next.

The search for an effect of the family planning campaign followed a multi-step path. The justification for the eventual conclusion will be clearest

if we present the analysis step by step. We began by looking at the total number of new acceptors reported by all hospital areas over the thirty months of the campaign (Figure 4.1). There is a clear upward trend presented in that graph. If we simply compared the number of new acceptors in an average month before the campaign (6,937) and afterwards (10,866), the jump in acceptors is substantial, 57 percent. However, a simple comparison of this sort is misleading, if it is used to attribute powerful effects to the campaign.

There are two important problems. First, the upward trend existed before the start of the campaign; it may be that the before/after campaign differences are merely an artifact of a long-term trend, and are no greater than would have been predicted given that there was no campaign. Second, there is substantial month-to-month variation in total clinic visits; there are months when many people tend to visit clinics and months when few of them do. Also there is increasing clinic use over time, as the population increases or as general outreach improves: 275,100 before the campaign and 306,150 after the campaign, per month, an increase of 11 percent. Since the number of new contraceptive acceptors is substantially related to total monthly clinic use ( $r=.82$ ), an increase in new acceptors might reflect generalized increases in clinic use rather than specific campaign effects.

These threats to an inference of campaign effect are substantial; to sort pre-existing trends and total attendance effects from campaign effects, we shifted the focus of analysis from the country as a whole as a single analysis unit to individual hospital areas as analysis units.

Figure 4.1

Total New Acceptors Over Time

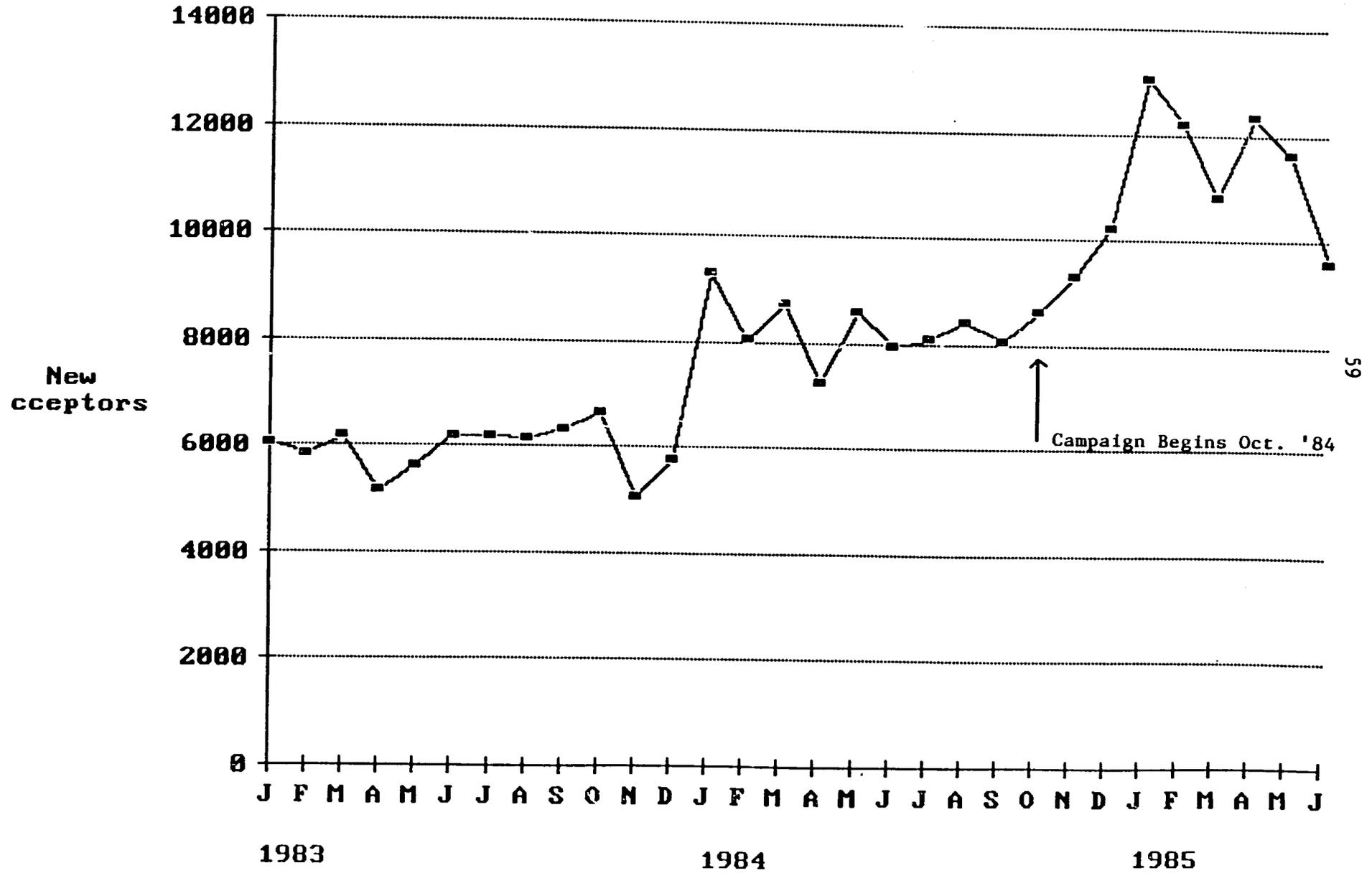
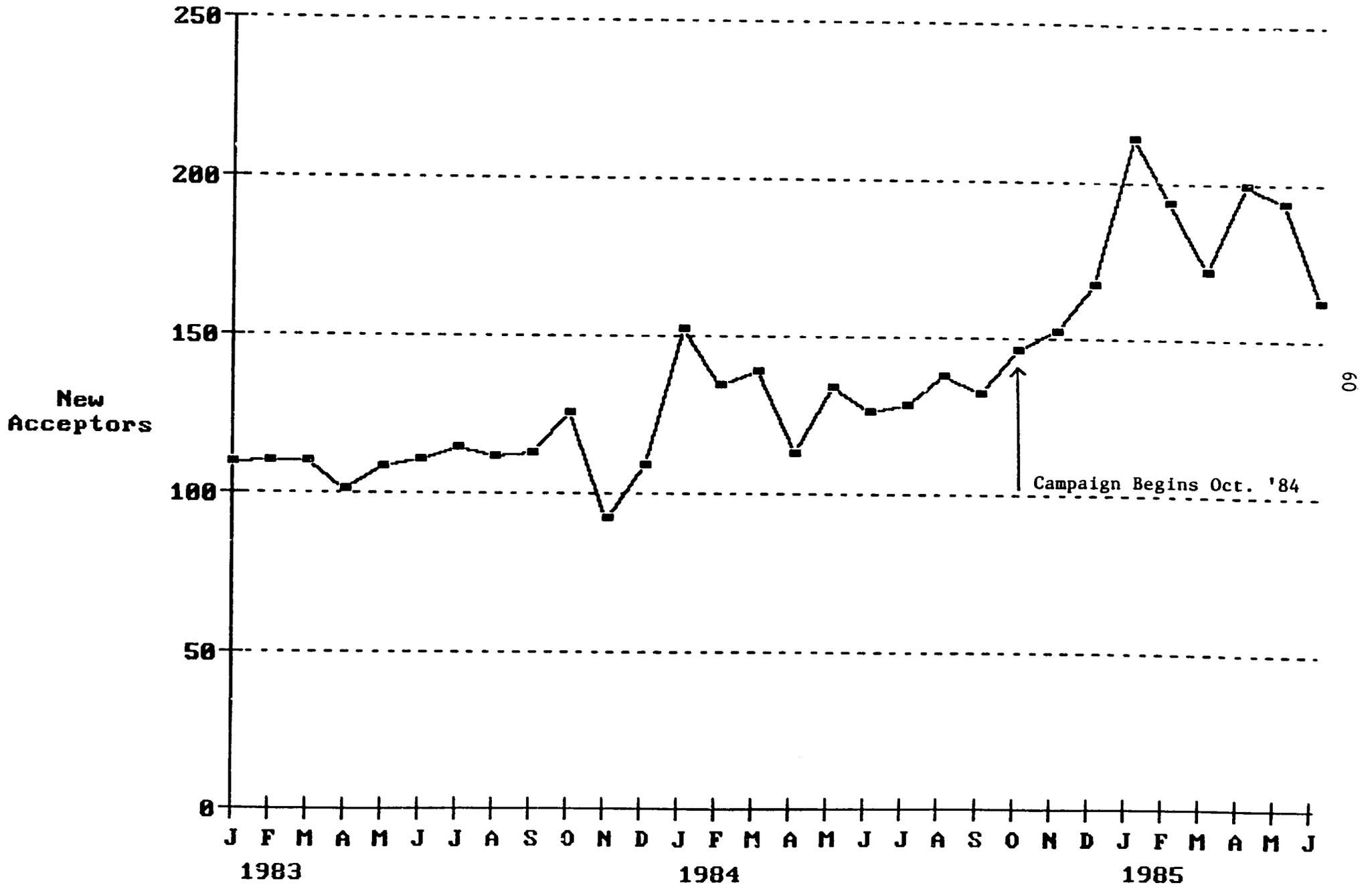


Figure 4.2

New Acceptors per Hospital Area Over Time



In Figure 4.2, data parallel to Figure 4.1 are pictured, but with the number of cases in the average hospital rather than in the country as a whole plotted on the vertical axis. The basic pattern is identical.

The next step was to ask what prediction we could make about the number of new users to expect after September 1984, if no campaign had been initiated in that month. To make that prediction, we estimated, using pre-campaign data only, what the effects of time and of total attendance were on the number of new acceptors. The results were captured in the following equation, based on multiple regression procedures applied to 1,209 pre-campaign cases. The equation accounts for about 70 percent of the variance in the number of new acceptors.

$$\text{NEW ACCEPTORS} = .020 \text{ TOTAL} + 3.724 \text{ TIME} - 50.027$$

(NEW ACCEPTORS: Mean = 120.49, St. Dev.= 159.04)  
 (TOTAL: Mean = 4657.82, St. Dev.= 4947.92)

One interpretation of this equation suggests that, all else being equal, each additional 100 clinic users in a given month produce about two additional new contraceptive acceptors, and that for each additional month after the first, there are approximately 3.7 more new acceptors in the average clinic.

This equation (or a closely related version [2]) was then used to predict how many new acceptors to expect in each hospital area if only those forces operating before the initiation of the campaign still operated during the campaign. For example, in a hospital area with 2,000 total

visits (excluding new acceptor visits) in February 1985 (month 26) this equation would predict about 87 new acceptor visits ( $.02 \times 2000 + 3.724 \times 26 - 50.027$ ). Predicted values can then be compared to observed values to see whether the observed values which reflect the operation of the campaign, are substantially larger than would have been predicted on the basis of pre-campaign trends<sup>[3]</sup>.

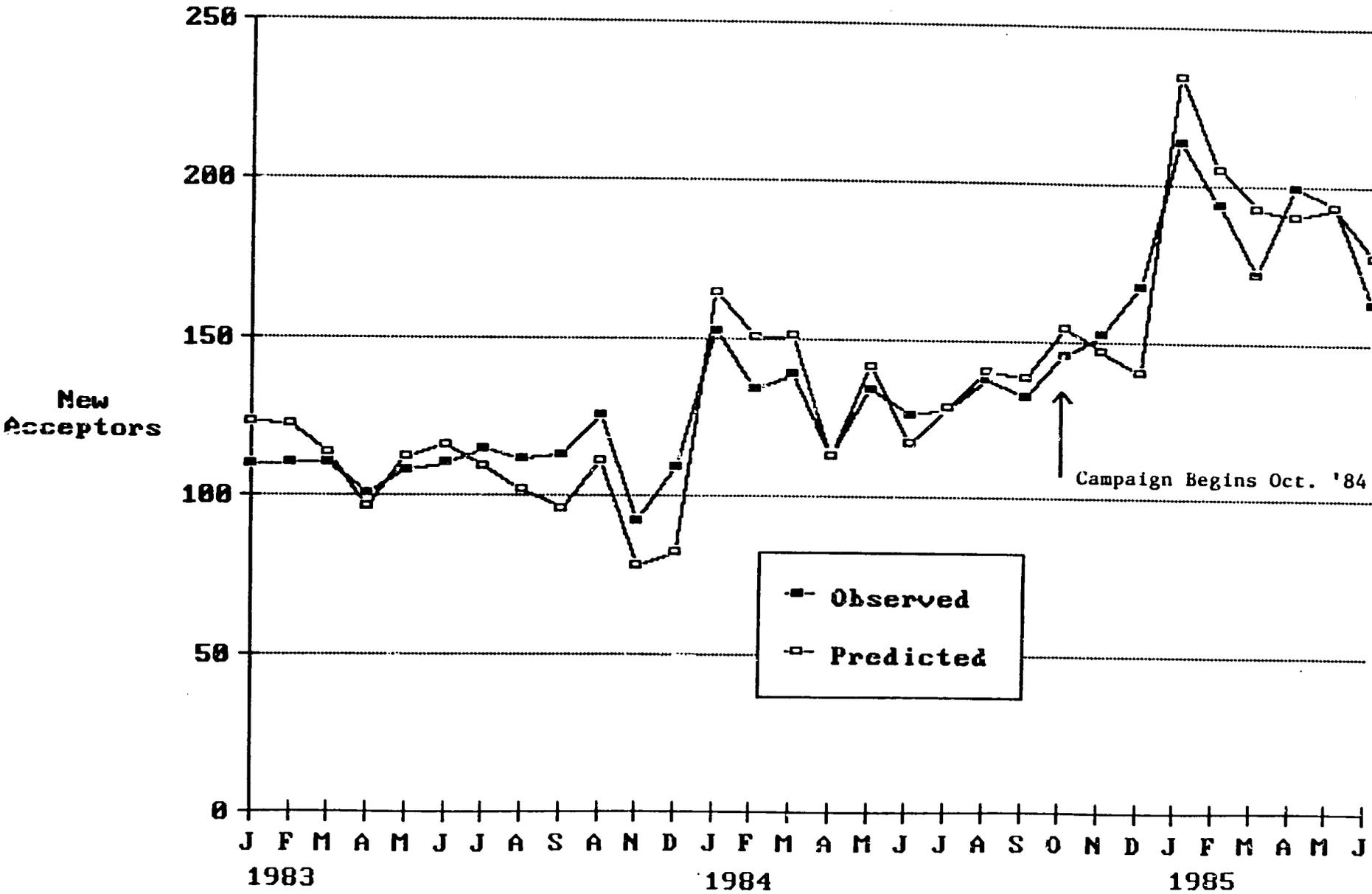
Figure 4.3 presents this comparison straightforwardly. There is no apparent difference between predicted and observed post-campaign scores. They track one another closely. This result is confirmed by a t-test comparing post-campaign observed and predicted scores. Predicted scores are, in fact, slightly higher than observed scores (181.96 vs. 178.13), but there is no evidence of a statistically significant difference. An inference of no campaign effect is unavoidable<sup>[4]</sup>.

### Discussion

The results are consistent with an inference of no campaign effects. In this section we consider two issues: is it possible the evidence is misleading, failing to show an effect when there is one? Then we ask, if indeed the inference of no effect is warranted, what went wrong with the campaign? Why didn't it produce an effect? We begin with the first issue and examine four explanations which might challenge the inference of no effect.

Figure 4.3

New Acceptors: Predicted & Observed



### Challenges to the Inference of No Effect

Was there really an effect?

Is it possible that the observed post-campaign increases, while predicted from pre-campaign data, would not have occurred without the mass communication campaign? Would the observed upward trend have leveled off without the added stimulation of the mass media campaign? This is a possibility, substantively. The upward trend before the campaign may have different causes than the matched upward trend after the initiation of the campaign. However from a statistical point of view, given available data, there is no way of sorting out a single long-term trend from matched but separately caused trends before and after the campaign date. In that circumstance, there is a preference for the simpler explanation - the single long-term trend - and for the interpretation that is conservative about making a claim of campaign effect. While possibly wrong, the conclusion that most outside observers would draw is that the campaign was ineffective.

Did an effect occur in some health regions?

Is it possible that the overall impression of no effects hides the presence of effects some places, but not others? There was a great deal of variation across health regions in the accuracy with which predicted scores matched observed scores. Puno had 50 percent fewer acceptors post-campaign than would have been predicted and Ayacucho and Callao had about

50 percent more (Figure 4.4). Thus, at a superficial level, the campaign did seem to produce effects in some areas but not others.

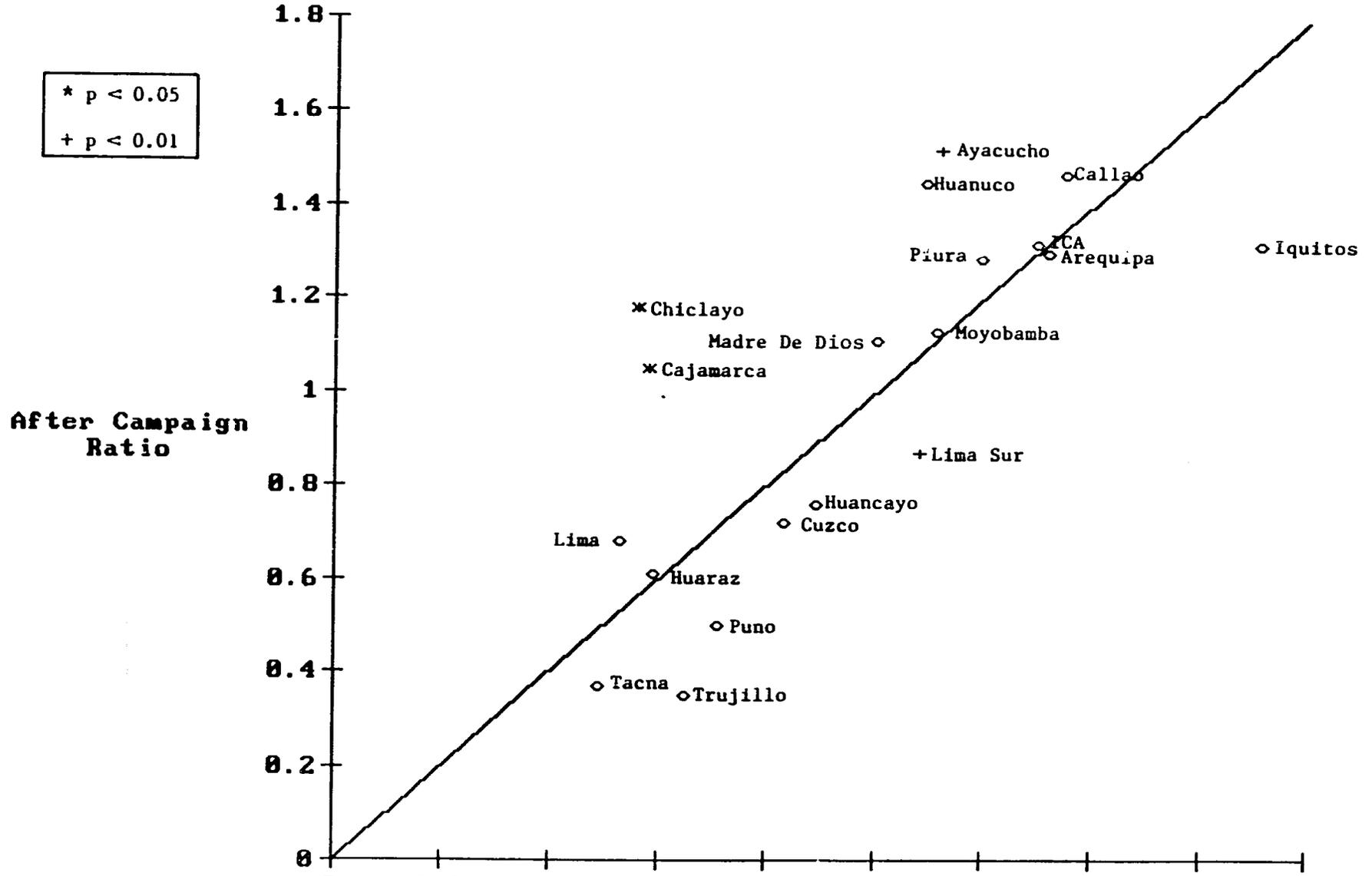
However, a finding that observed scores outstrip predicted scores in a particular region, post-campaign initiation, does not allow an inference of a campaign effect in that region. It may be that some regions were already doing better, that is, obtaining more new acceptors than could have been predicted on the basis of the total number of clinic visits and time, before the campaign started. Their during-campaign advantage might merely be the result of an already existing pre-campaign advantage.

In Figure 4.4, each health region is located on the graph at a point reflecting its before campaign observed/predicted ratio and its during-campaign observed/predicted ratio. Piura, for example, had a before ratio of 1.20 (the observed number of acceptors was 20 percent higher than predicted) and a during-campaign ratio of 1.29. To the extent that a region was doing as well before as during the campaign, it would be located along the major diagonal. To the extent that it did better during the campaign than before it, it would be located above the diagonal; if it did worse than it had been doing before the campaign, it would be found below the diagonal. Distance from the diagonal reflects the degree of movement associated with the campaign.

Figure 4.4 shows that only a few more regions (11 versus 8) did better during the campaign than before it, and that only eight shifted by even a moderate amount — .15. Of those eight, four were doing better and four worse. Only four of the eight shifts were statistically significant<sup>[5]</sup>.

Figure 4.4

Ratio, Observed/Predicted New Acceptors  
Before and During Campaign  
By Health Region



Three of those four (Cajamarca, Chiclayo and Ayacucho) were regions showing a greater advantage during the campaign than before it.

At the end of this analysis, how do we answer the question that started it? Does the overall no effect result hide the presence of effects in some regions? Literally, yes, there are regions which show a statistically significant effect. Subjectively, we have to be hesitant. Only three out of nineteen regions showed such an effect. Two of the three, Chiclayo and Cajamarca where the effects were greatest, are neighboring regions suggesting some local activity rather than the national campaign may have been responsible. Ayacucho, which showed a positive, significant, effect is more or less counterbalanced by Lima Sur which showed a significant negative effect. Given the similar overall number of regions which saw some negative or some positive result, there is a suspicion that some movement in these ratios is essentially spontaneous. With or without the campaign there will be some movement up or down in relative success among regions in attracting new acceptors. In sum, while this is largely a subjective judgement, there aren't sufficient numbers of successes in this regional analysis to declare that the program really did work some places.

Was there some effect where radio and television ownership were high?

A second analysis asked whether there were only effects in places where television and radio ownership were high, since reception of the campaign messages depended substantially on access to mass media. Again there was no evidence of media concentration effects. Measures of density of media

ownership by region (derived from the National Nutrition Survey presented earlier) were not associated with the tendency for observed numbers of new acceptors to outstrip predicted numbers.

Did the campaign affect demand on private agencies, only?

Is it possible that the campaign affected not usage of government facilities, but demand on private physicians and agencies? It is sometimes argued that the audience most ripe for family planning is not predominantly the poorest and most rural elements of the population, but those who are a step up the economic ladder. If these people were those most likely to be affected by the campaign, they might prefer to use private sources to obtain contraceptives. Since most family planning advice and supplies in Peru already come from private sources (Thome, 1986), some portion of increased demand for contraceptives will surely be directed to those agencies. Increased use of private agencies (physicians, pharmacies, family planning agencies) wouldn't have been detected by Ministry statistics. Thus, there is some risk that Ministry statistics would have underestimated campaign effects on overall contraceptive use.

Nonetheless, the fact is that we find no evidence of any campaign effects. To accept the existence of a campaign effect would require acceptance that all extra use was directed to the private system, despite the specific message of the campaign directing new users to the public system. On its face this doesn't seem credible.

Did the campaign affect knowledge and attitude, but not practice?

Is it possible that the campaign changed intervening variables, like knowledge about contraceptives or attitudes towards family planning, without affecting actual practice? One of the weaknesses of an evaluation design which depends on available data is that available data may not match data that would be ideal. In this case, there is no data about knowledge or attitudes; the evaluation depends on evidence of changes in actual practice.

Practice change is always harder to produce than changes in attitudes or knowledge, and while it is the essential criterion of success, it is not the only criterion. Changes in knowledge and attitude in one period may lead to changes in practice subsequently. Attitude and knowledge changes might suggest that an information campaign has had the immediate effect that was expected, but that changes in practice were blocked by factors beyond campaign control - like inadequate supplies of contraceptives. However, this evaluation lacks such data and can only admit ignorance as to the possible campaign effects on non-practice outcomes. Nonetheless, on practice outcomes, we see no effects.

In sum, the challenges to an inference of no effect on practice are logically possible but not really credible. If one had to choose a conclusion on which to base future decisions, it would be that the program didn't have a noticeable effect.

### What Went Wrong?

The next question is why not? What went wrong? Again we present some speculative answers. One set focuses on possible failures in the clinic sites, the other on the mismatch between messages and factors which influence practice.

Is it possible that people were ready to adopt, but clinics couldn't or wouldn't serve them? Some reports suggest that clinic staff are not always supporters of couples seeking contraceptives (Tucker, 1986). It is said that religious scruples or simple social discomfort stood in the way of some nurses helping some couples. The family planning campaign did little work in retraining clinic staff and that staff was the crucial link in realizing adoption.

We have no systematic evidence about the nature of the clinic staff/family planning client interaction; we cannot say how often potential adopters stayed away from clinics because they assumed clinic staff's negative responses or how often they were turned away from clinics by staff unwillingness to help. A more comprehensive evaluation might have addressed these issues directly.

A related speculation is that ready couples and willing clinic staff were both confounded by a shortage of contraceptive supplies. However (in contrast to immunization supplies) there were no reports of contraceptive supply shortages at clinics. We assume this was not an important factor in campaign failures.

Is it possible that the campaign didn't work because its messages were irrelevant to adoption? A technical booklet with some specific information about methods of contraception was printed, however the booklet may not have been widely distributed. The mass media materials, while much more widely available, were far less specific (see Appendix II). For the portion of the audience using "traditional" methods, the materials promised a "sure" method of birth control without mentioning specific methods. Materials assured "macho" husbands that contraception allowed greater sexual activity with their wives. At best this was an indirect way of addressing the husband's fear of the effects of sure contraception on female promiscuity. For all audiences for whom access to contraceptives might be a concern, the messages promised free services and supplies at the clinics.

These messages roughly corresponded to the findings of pre-campaign research. However, there could be no assurance that the concerns they represented substantially explained reluctance to adopt. The prior research, while suggestive, could not be described as producing definitive evidence about the causes of contraceptive use. If other explanations for reluctance to adopt (lack of interest in limiting family size, fear of

side effects, community social disapproval) were paramount, then these campaign messages might have been ineffective.

In addition, even were these concerns the essential ones standing in the way of adoption, it is not clear that all of them were equally likely to be affected by a short-term media barrage. Short-term campaigns might be expected to work to the extent that failure to practice was related to a specific misunderstanding: a belief that contraceptives were expensive, or that clinics would not provide them; a belief that traditional methods were as safe and sure as modern ones. Short-term success would be less likely if reluctance to adopt was either related to knowledge not addressed by the media materials (e.g., health risks associated with pills or IUD) or to deeply rooted social attitudes, like the association of male virility and female pregnancy, or to an expectation of support from children during old age.

If these latter explanations were predominant, and easily corrected misunderstandings less important, one might expect to see "no effect" results. Unfortunately, we are without the elaborated data on individual characteristics, knowledge and social attitudes about contraceptive practices, which would allow tests of this explanation. It can remain only a speculation.

### Endnotes

1. Missing cases were of two types: 111 missing forms were from hospital areas that were listed on official records as operating, but appeared not to be operating in fact. These were areas where 6-13 months of data were missing either before the first non-missing data was available, or after the last non-missing data was available. It appeared that the year-to-year shifts in administrative tier organization were not implemented instantaneously. We assume that these data were not missing, even though the forms were. The data on family planning usage was likely to have been incorporated in the forms from other hospital areas. The remaining missing forms (81 or 4.4 percent of the total of 1758 non-missing forms plus 81 really missing forms) came from hospital areas which provided forms both before and after the date of the form in question. They are assumed to be legitimate missing data.

Only 4.4 percent of the forms were missing; however that is likely to be an underestimate of the proportion of missing cases. We can assume that during busy times in individual clinics record keeping suffers. Some people who are treated are never listed on appropriate forms. Also, since each hospital area report incorporates local clinic reports and every local clinic may not provide data every month, even the hospital area forms that are submitted may not cover all treated cases.

In addition to these sources of bias that create a tendency to underestimate the number of cases, there are additional sources of error, which may produce over- or under-estimates of treatments: incorrect description of cases at the clinic level (e.g., new users confused with previous users), or incorrect transfer of information from clinic records to hospital area report to coding sheet to computer readable format.

2. The actual equation used incorporated both the linear effects of TIME and TOTAL, and the effects of the interaction between them, represented by a multiplicative interaction term, TOTAL\*TIME. The equation incorporating the interaction term was slightly more powerful than the equation using just the linear terms ( $r^2 = .75$  versus  $.72$ ), so the estimation of predicted scores was based on the fuller version. The correct version was:

$$(1) \text{ New Acceptors} = 0.1954755 \text{ TOTAL} - .004352157 \text{ TIME} + 0.000762024 \text{ TOTAL*TIME} - 8.638435.$$

3. There is a slight conservative bias in this procedure. Since the number of hospital areas is smaller before the campaign than afterwards, the predicted effect of TIME, per hospital area, is larger than it should be for the after campaign hospital areas. This inflation in predicted NEW ACCEPTORS scores decreases the likelihood of finding that observed scores were larger than predicted scores. While this effect is present, it could not be large enough to challenge the inference of no campaign effect. Assuming that the 6 percent increase in the number of hospital areas was

passed through the prediction equation, so that the predicted TIME effects were 6 percent smaller and the constant was 6 percent smaller, the effect would be to reduce predicted scores by an average of 2.6 NEW ACCEPTORS. This difference would have had no effect on inferences made.

4. Parallel analyses using proportion of total clinic visits which were new acceptor visits as the dependent variable, and logarithmically transformed versions of the TOTAL and NEW ACCEPTOR variables produced completely consistent results.

5. The test of statistical significance is not precisely analogous to the data presented in Figure 4.4, since those results focus on percent gains and losses, rather than on absolute numbers of new acceptors compared to predicted number of new acceptors which are relevant for statistical judgements. The significance of campaign effects were judged through an analysis of variance, within regions. New acceptors was the dependent variable, predicted acceptors the covariate, and pre- versus during-campaign, the independent variable. The results of the analyses of variance for the eight regions showing apparent campaign effects follow.

Campaign Main Effects on New Acceptors, with  
Predicted Acceptors as Covariate

<u>Region</u>	<u>F (df)</u>	<u>Sig of F</u>	<u>During -Campaign Performance</u>
Chiclayo	7.07 (1,86)	< .01	Better
Cajamarca	9.99 (1,51)	< .01	Better
Trujillo	2.65 (1,82)	n.s.	Worse
Puno	1.35 (1,122)	n.s.	Worse
Ayacucho	5.21 (1,20)	< .05	Better
Huanuco	2.65 (1,116)	n.s.	Better
Iquitos	2.40 (1,27)	n.s.	Worse
Lima Sur	4.05 (1,116)	< .05	Worse

## Chapter 5

### Summary and Conclusions

The evaluation of the Peru campaigns presents two contrasting results: an immunization campaign that vaccinated a great number of children and improved overall coverage rates from 34 percent to 46 percent of the under five year old population in the course of a few weeks, and a family planning campaign which did not accelerate the (already increasing) demand for modern contraceptive services. In this chapter we will explore why the contrasting effects may have been seen, and examine the implications of the Peruvian program for related programs both in Peru and elsewhere.

Why did one campaign work while the other did not?

We consider three hypotheses: 1) the media development processes and realized campaigns were of a substantially different quality, 2) the field actions undertaken in conjunction with the media component were different, or 3) the health practices addressed, immunization versus contraceptive practice, were differently susceptible to short-term communication campaigns.

We don't think that there were important differences in the nature of the media development processes. There was far more money spent on the less

successful family planning activity (\$350,000 versus \$100,000) than on the immunization program. The family planning ads, with their controversial rabbit theme, appear likely to have been more memorable than the immunization spots, which were much more conventional. The family planning research was more extensive than the immunization pre-program research. We have no way of judging whether the transition from research to messages was better in one case than the other, but have no reason to be particularly skeptical about the family planning research-to-message process. It may be that a different media campaign would have produced a different effect on contraceptive demand. That cannot be determined. However there was nothing in the process of media development which favored producing an effective immunization campaign and an ineffective family planning effort.

A more likely difference between the two campaigns points not to their media activities but to their field actions. As far as we know, there was no attempt to provide any field support for the family planning campaign. Nurses who were the distribution agents for contraceptives were not retrained or prepared to deal with a new surge of clients. Whatever happened in clinics before the campaign was likely to be happening after the campaign. If that was discouraging to potential acceptors before the campaign, it was unlikely to have changed.

In contrast, the Ministry of Health did encourage province-level health personnel to prepare for and support the immunization week. In some places, mobilization efforts (beyond the mass media messages) were also in

place. Strikingly, in Arequipa where UNICEF organized such a local mobilization, the campaign produced its largest effects. We know little about just what field actions actually took place, and how many households were reached by them. We only know that there was an effort to develop supportive field action in the case of immunization, while virtually nothing was done for family planning.

Of most importance, among field activities, were special efforts to provide sufficient vaccination supplies for the campaign. Indeed, some might attribute the coverage gains largely to greatly increased availability of vaccines rather than to the campaign per se. While we lack specific information as to pre-campaign availability, consistent reports of shortages were the reason that the campaign was originally to be focused in only a few areas. Apparently supplies were greatly improved at the time of the vaccination week. While public information programs may have been necessary for people to know about new vaccine availability, one speculation would be that they triggered an already primed audience waiting for accessible services, rather than creating substantial demand. This leads to the third hypotheses, contrasting immunization and contraceptive use as health practices.

This hypothesis points not to differences in the campaigns but to intrinsic differences in the target practices. Childhood diseases worry parents in an urgent fashion. They are a problem that parents want to solve and an immunization week provides an accessible solution. In contrast, limiting family size may not be an urgently sought goal for

those not already practicing contraception. Expecting short-term response to a media campaign assumes that there is substantial pent-up demand, only needing the last push into the arms of the clinic nurse. For much of the target audience, it may be that telling them that modern contraceptives are available at government clinics is not satisfying any urgently perceived need.

What are the implications of the Peru program for other health communication programs?

The Peru program was strikingly different than its predecessor programs developed under the Mass Media and Health Practices' banner. The earlier programs had focused on diarrheal disease control; this one added family planning and immunization. The Peru program delegated major responsibility for the development of the communication strategy and materials to the private sector, albeit with Ministry of Health supervision; previous programs had all been implemented within the Ministry. Finally, and perhaps as a reflection of the decision to turn to the private sector, the programs were predominately mass media campaigns and were coordinated with health system field activities in a loose way, at best.

At the time of initiation of this program in Peru, it might be argued that this strategy was the only viable one. The Ministry of Health was going through difficult times, facing intermittent work stoppages and other administrative worries; it also lacked sufficient in-house capacity to

develop media materials of the level required for this program. Building that capacity within the Ministry wasn't considered to be feasible. Whatever the justification, the implemented strategy had the Ministry of Health as a client of Forum, a commercial advertising agency. We can look back now and try to make some judgment about the strengths and weaknesses of that strategy. While using the Peru experience as a base, we seek here to consider the approach per se, rather than the specifics of the Peru campaign. The following comments consider what a typical MOH implementation versus a typical agency implementation would be like. No comment should be taken as specific to particular institutions in Peru.

The utility of the agency approach is clear. A professional agency owns the communication strategy development skills that are rare in any ministry, which has a different function. Without denigrating ministry health education offices, as a result of their institutional location, they cannot offer the salaries, they do not have the production experience, and they do not incorporate the wide range of skills in marketing which agencies can bring to these campaigns.

An agency, which has had to win the right to implement the program in competition with other agencies, is rewarded for enthusiasm and a willingness to respond to client demands and to contribute new ideas. Agencies bring experience in acting flexibly as they are used to making quick and major changes in strategies and materials for commercial clients. They are experienced in dealing with media institutions, buying advertising time and choosing optimum placements.

In sum, agency staff bring professionalism, enthusiasm and flexibility. While individuals in ministries of health may display those characteristics, the institutions in which they work may not value them as do commercial advertising agencies. If one had no prior knowledge of individuals, and one wanted to choose an institution in which these characteristics would be found, one would turn first to an agency rather than to a ministry of health.

However there is some risk to this choice. By choosing an agency whose expertise is in communication, one risks losing some expertise in health, more likely to be found in a ministry of health. Depending on an agency may also loosen the coordination between the centrally-controlled communication activities (radio and television spots and the development of media materials) and what actually does happen in the countryside and in the dispersed health system. Implementation responsibility for health system actions stays in the ministry, but its staff are not responsible for day-to-day communication actions, only for their supervision. The agency works on the specific tasks for which it is contracted; it is not responsible for implementation of the field activities even if the overall strategy demands coordination with communication activities. While it is not inevitable, separation of communication and field implementation responsibilities produces a tendency for autonomy of action also. The risk of communication activities operating out of phase with health system activities is substantial.

While it might be argued that autonomous implementations aren't so terrible -- at least the entire program doesn't fail if one component does -- that is too often a shortsighted view. Few health communication objectives are likely to be achieved without some "fit" between their objectives and the relevant operating practices of the health system. For most observers, immunization, family planning and diarrheal disease control are not exceptions to this need for "fit".

The agency strategy can be somewhat risky, also, if one looks beyond a specific campaign. Agency services are contracted for tasks and time. Once the money is gone so is the agency and its expertise, for all practical purposes. In so far as the goal of a particular technical assistance effort is to achieve an increase in a specific health practice in a limited time, then this is no problem. In contrast, if the goal is to build the capacity to implement a health communication strategy then this agency contracting strategy raises some concern.

However, we do not intend to be trapped in a simplistic "no institution building -- not a useful project" argument. In Peru, the Ministry staff did have the opportunity to learn how to be a client of an agency for campaigns like these. To the extent future campaigns involve heavy purchases of media time and professional materials development, they will only be undertaken if substantial budgets for this purpose are available. In that case, the future contracting of advertising agency expertise remains feasible, and enhancing a ministry's capacity to be a client is no small institution building victory.

A final argument against the agency strategy -- or more particularly, any strategy which involves the purchase of media time for social programs -- seems less worthy of credit. There were some fears expressed by Ministry personnel that once the precedent of buying media time for government programs was established they would no longer be able to obtain donated time from broadcasters. We do not know whether this empirically is the case or not, but suspect it is of no great moment either way. It is the common wisdom that much donated time on a commercial media system is fringe time, reaching only small audiences and infrequently. Unless government rules mandate specific times for social programming, donated time is unlikely to help very much in the realization of serious health communication efforts. Without contrasting empirical evidence, there seems no reason to challenge this conventional assumption.

We can then bring both sides of this dispute together. Favoring an agency implementation strategy are agency professionalism, energy and flexibility and the fact that in some contexts they are the only realistic channel for acting; on the other side are risks that public health expertise will be shortchanged, that the coordination between communication activities and health system activities will be attenuated, and that the ministry will lack the ability to act on its own in the future.

Turning again to the Peru campaign, specifically, the issue of coordination of mass communication activities with field actions looms largest. We suspect that the immunization program worked because it was

possible to link agency-implemented communication programs with local activities in some regions, as vaccines were delivered and local institutions mobilized to some degree. The family planning program did not realize substantial coordination with local activities and seems not to have had much effect. Whether one explains the other we cannot say. For the diarrheal disease control program, we know that the communication campaign was, as the result of administrative problems, out of phase with the distribution of materials (including oral rehydration packets), with what we can only assume were negative consequences.

It may have been that there was no feasible alternative to the agency strategy in Peru, and thus there is no meaning to a question which asks whether it was the best strategy. However, looking back, it is clear that the strategy, as implemented, produced both success and failure. And one plausible explanation (but only one among others) for the contrasting outcomes credits the degree of coordination with field actions that was realized. To the extent this model is used in future program, both its promises and its risks should be understood. In particular there will be a need for constant vigilance and action to reduce the natural tendency towards autonomy of mass communication and health system actions.

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APPENDIX I  
PRINTED MEDIA MATERIALS

APPENDIX I - A  
BOOKLET

**MÉTODOS SEGUROS  
PARA UN CUIDADO  
SEGURO.**

## PATERNIDAD RESPONSABLE

Paternidad Responsable es la decisión de la pareja para tener el número de hijos que puedan amar y mantener, brindándoles educación, salud, vivienda y el bienestar a que tienen derecho.

## PLANIFICACION FAMILIAR

Planificación Familiar es decidir libremente cuándo, cuántos hijos desea tener una pareja.

En los Hospitales y Centros de Salud, Ud. encontrará gratis los siguientes métodos.

### Píldoras

- Para 28 días.
- Debe tomarse todos los días, a la misma hora.

### Condomes

Debe usarse uno para cada relación sexual.

### Tabletas - Espuma Ovulos vaginales

Se debe aplicar antes de iniciar la relación o acto sexual.  
No hacerse lavado vaginal hasta 8 horas después de haberlos usado.

### Dispositivo Intrauterino

- No afecta las relaciones sexuales
- En el Centro de Salud le indicarán el más adecuado para usted.

**IMPORTANTE:** Antes de usar cualquier método, debe hacerse un examen médico y controlarse una vez al año.



El Condón o Preservativo... es una bolsita de hule muy delgado, que el hombre lo usa antes de la relación o acto sexual, y evita que la mujer se embarace al no dejar que pasen los espermatozoides.

Se debe usar uno para cada relación o acto sexual y luego arrojarse a la basura.

#### El Condón o Preservativo:

- Es muy efectivo.
- Debe usarse uno para cada relación sexual



La Crema, la Espuma y los Ovulos... tienen sustancias que matan o dejan sin movimiento a los espermatozoides.

Las Cremas y las Espumas se colocan en el aplicador y se introduce en la vagina de la mujer, antes de la relación o acto sexual.

Los Ovulos se colocan en la vagina de la mujer 10 minutos antes de la relación o acto sexual.

Pero, en cualquiera de los tres, no se debe hacer ningún lavado o ducha vaginal, hasta 8 horas después de haberlos usado.

#### Las Cremas, las Espumas y los Ovulos:

- Son fáciles de usar.
- Se deben aplicar antes de cada relación o acto sexual.



Dispositivo Intrauterino (DIU) o Espiral... es un pequeño aparato de plástico, que se coloca en el útero o matriz de la mujer, evita el embarazo.

Es colocado cuando el cuello del útero o matriz está más abierto (durante la menstruación o después de un parto).

Se debe revisar cuando menos una vez al año, para saber si está bien colocado y se debe retirar cuando la mujer desea embarazarse.

Es normal que durante los tres primeros meses aumente el sangrado menstrual y dure más, así como tener cólicos y goteo entre reglas. Si estas molestias siguen o el DIU se sale de su lugar, acuda al Centro de Salud para su atención.

#### El Diu:

- Es eficaz.
- No se siente durante la relación o acto sexual.

APPENDIX I - B

POSTERS



# CALENDARIO DE SALUD

ENERO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
FEBRERO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28			
MARZO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ABRIL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
MAYO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
JUNIO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
JULIO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
AGOSTO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SEPTIEMBRE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
OCTUBRE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
NOVIEMBRE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
DICIEMBRE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

En este Calendario, lleve Ud. el control de las Vacunas, Planificación Familiar y Rehidratación oral. Para una mayor claridad, marque con el símbolo que corresponde a cada caso:

- Vacuna
- Planificación familiar
- Rehidratación oral (SALVAORAL)

APPENDIX II  
TELEVISION MATERIALS

APPENDIX II - A  
TELEVISION MATERIALS

Synopses of Television Spots

Opening Speech By Minister of Health

Minister of Health speaks on his Ministry's program of producing awareness of health practices. He says that the Ministry, while not promoting abortion or forced sterilization, wants the public to be aware of its family planning, vaccination, and oral rehydration therapy programs through the local health centers. Minister emphasizes children as representing the country's future, and he asks for the people's cooperation to make the campaign successful.

Television Spot #1 (A full transcription of this spot appears at the end of this Appendix given its prominence in the family planning campaign)

Couple is shown holding rabbits while the man compares having children without planning for them, to rabbits multiplying. He goes on to say that being responsible parents means having children one can afford to give proper nutrition, education, shelter, health care, and love. Jingle urges parents to love and take care of the children they desire to have.

Television Spot. #2

Woman visits doctor and finds out that she is not pregnant. Relieved, she tells doctor that she and her husband already have all the children they can afford. Doctor says that she may not be lucky the next time, and the woman asks what she can do. Doctor advises her to go to the health clinic where information and family planning methods are taught and samples are given free. Family planning jingle closes spot.

Television Spot #3

Narrator says that responsible parenthood is loving responsibly and not being jealous. Man asks woman what she is looking at and woman replies that her husband is jealous again. Woman convinces man to go together to the health center where family planning methods are taught and samples are given free. Doctor in the center tells the couple that responsible parenthood is a decision based on the trust of the partner. She says that with the methods, it is easy to take precautions and there is no need for jealousy. Family planning jingle closes spot.

Television Spot #4

Two workers talk about their family planning techniques. One worker tells his friend that he is upset because he and his wife are abstaining from relations according to the method they use. His friend says that he and his wife are also responsible parents but they do not need to abstain. The second worker then advises the first to visit the local health center for free family planning information and samples. Family planning jingle ends spot.

Television Spot #5

A couple talks about how they are going to achieve birth control. Woman takes a daisy and pulls petals off, each petal signifying a refusal for a night. Man says that method would not work and agrees with woman to go to the local health center to ask for free samples and information on birth control methods. Man then takes a daisy and pulls petals off, each petal signifying a "yes" for each night. Family planning jingle closes spot.

Television Spot #6

Funeral scene opens spot. Narrator says that every year in Peru, 20 children die each day of measles, whooping cough, tetanus,, and diphtheria. Spot calls for parents to have their children vaccinated to protect them from these diseases and prevent them from dying. Vaccination jingle ends spot and closing message indicates that vaccinating children will keep them healthy.

Television Spot #7

Child is shown in crib with three figures representing death standing over child. Narrator says that all children are threatened with measles, tetanus, whooping cough, and diphtheria. But this child is protected with the triple vaccine. He is healthy, thanks to the vaccine which is available at the health center. Spot ends with vaccination jingle and message that vaccinating a child will keep him healthy.

Television Spot #8

Two women are shown, one with a child in her arms. Child cries and other woman says that the baby is hungry and should be breastfed. The mother refuses because the child has diarrhea. Her friend says that mother's milk is safe for babies with diarrhea. The doctor at the health center gives the same advice that breastfed babies are protected babies and when they have diarrhea, mother's milk is best. Narrator says that responsible parenthood means taking care of you child. Closing message says that when the child has diarrhea he should be given Salvaoral as soon as possible.

Television Spot #9

First woman tells her friend that her baby has diarrhea. The latter advises former to go to the health center. She continues that the child may become dehydrated because he loses water and salts, like a plant that

dies from lack of water. What the child needs is Salvaoral which restores lost water and salts to the child. Narrator says that responsible parenthood means taking care of your own children. Closing message emphasizes that when a child has diarrhea, he should be given Salvaoral as soon as possible.

Television Spot #10

Doctor shows how to prepare Salvaoral. Viewer is instructed to fill the container with cold water until it reaches the line that marks one liter. Measured water is placed in bowl and contents of envelope are emptied into water. Solution should be mixed well and one teaspoon given to child with diarrhea. Responsible parenthood means taking care of children. Closing message says that when the child has diarrhea, he should be given Salvaoral immediately.

APPENDIX III

REPORT FORMS

## APPENDIX II-B

TRANSCRIPT OF TELEVISION SPOT #1VIDEO

Our prototypes (Andres Poma Zoila Guttierrez de Poma) appearing spontaneous and cordial, speak directly to the viewer. While this happens, their names are flashed across the screen for 2 seconds. Each of them is holding a rabbit.

They stroke the rabbits while they talk persuasively, occasionally interrupting each other.

Camera focuses on their expressions and then on the rabbits. The camera advances. Halfway through the spot, the rabbits escape and the actors look at them momentarily. Actors continue to speak normally.

While clips of parents taking care of children are shown at the end of the spot the camera shows them to be completely surrounded by rabbits.

AUDIOMan On:

Who does not know that rabbits have too many offspring?

Being responsible parents means not having children like rabbits.

Man & Woman Alternating On:

Being responsible parents means giving children proper nutrition and good education, guarding their health and clothing them better

Woman On:

Give plenty of affection, sure shelter and raise them with love.

Narrator & Chorus Off:

Responsible parenthood means loving and maintaining the children one decides to have.

Man On:

Already you know it, remember the rabbits!

MINISTERIO DE SALUD - PERU  
PROGRAMA AMPLIADO DE INMUNIZACIONES

MES: 1-2<sup>82</sup>  
AÑO: 3

INFORME ANALITICO MENSUAL DE VACUNACIONES

Establecimiento: \_\_\_\_\_ Distrito: \_\_\_\_\_  
Zona Hospitalaria N°: 4-5 Provincia: \_\_\_\_\_  
Región o Ambito Administrativo: 6-7 Departamento: \_\_\_\_\_

1. ANTIPOLIO									
Edad	Población Programada	Dosis Aplicadas				Protegidos (1)			
		1ra.	2da.	3ra.	Total	Acumul.	N°	Acumul.	Cobert.
< 1 a.									
1 a.									
sin prog									
Total									

2. ANTIDIFTERICA - PERTUSSIS - TETANOS (DPT) (1)									
Edad	Población Programada	Dosis Aplicadas				Protegidos			
		1ra.	2da.	3ra.	Total	Acumul.	N°	Acumul.	Cobert.
< 1 a.									
1 a.									
sin prog									
Total									

3. ANTISARAMPIONOSA (3)					4. BCG (3)				
Edad	Población Programada	Dosis Aplicadas			Edad	Población Programada	Dosis Aplicadas		
		N°	Acumul.	Cobert.			N°	Acumul.	Cobert.
< 1 a.					< 1 a.				
1 a.					1 a.				
sin prog					sin prog				
Total					Total				

5. ANTITETANICA A GESTANTES (2)					6. OTRAS VACUNAS						
Edad	Gestantes Programada	Dosis Aplicadas			Protegidas			Tipo	N°	Dosis	Acum
		1ra.	2da.	Total	N°	Acum	Cobert				
Total								Fiebre Amarilla			
15-19								Tifoideas			
20-29								1ra.			
								2da.			
								Habia huana			

Forma: \_\_\_\_\_ 1979

Appendix III-B

QUESTIONS FROM NATIONAL NUTRITION SURVEY

11. ¿TIENE LA TARJETA DE CONTROL DE VACUNAS DEL NIÑO?	SI 1 NO 2					SI 1 NO 2					SI 1 NO 2					
	Tiene pero no encuentra 3					Tiene pero no encuentra 3					Tiene pero no encuentra 3					
12. ¿CUANTAS VACUNAS RECIBIO EL NIÑO?	Ning.	1	2	3y+	No sab.	Ning.	1	2	3y+	No sab.	Ning.	1	2	3y+	No sab.	
	ANTIPOLIO	0	1	2	3	8	0	1	2	3	8	0	1	2	3	8
	DPT (TRIPLE)	0	1	2	3	8	0	1	2	3	8	0	1	2	3	8
	ANTI-SARAMPION	0	1	2	3	8	0	1	2	3	8	0	1	2	3	8
	BCG	0	1	2	3	8	0	1	2	3	8	0	1	2	3	8

APPENDIX III - B - Monthly Report of Health Activities  
(including Family Planning Visits)

MINISTERIO DE SALUD

OFICINA SECTORIAL  
DE INFORMACION Y ESTADISTICA

INFORME MENSUAL DE ACTIVIDADES DE SALUD

AMBITO ADMINISTRATIVO

Area Hospitalaria N°

ESTABLECIMIENTO

Hospital General Base Quillabamba

DISTRITO

CONSOLIDADO

CODIGO:

CONSULTAS EXTERNAS

I. CONSULTORIO	CONSULTAS EXTERNAS		II. PROGRAMA	ATENDIDOS EN b) PROGRAMA	ATENCIONES		
	a) Atendidos	b) Atenciones			c) Total	d) Sanos	e) Enfermos
00: TOTAL	1364	2245	00: TOTAL	1364	2245	785	1460
10: MEDICINA	638	1007	10: SALUD DE LA MADRE	199	439	439	-
11: Medicina General	586	933	11: Gestantes	151	362	362	-
12: Neumología	52	74	12: Puerperas	9	14	14	-
13: Cardiología			13: Planif. Fam.	33	89	89	-
14: Neurología			20: SALUD DEL NIÑO	439	628	61	567
15: Gastroenterología			21: Menos de 1	79	115	5	110
16: Dermatología			22: 1-4 años	132	216	1	215
17: Nefrología			23: 5 años	32	34	-	34
18: Otros			24: 6-14 años	196	243	37	186
20: CIRUGIA	186	242	30: SALUD DEL ADULTO	732	1156	269	893
21: Cirugía General	186	242	31: 15-19 años	249	306	73	233
22: Traum. y Ortopedia			32: 20 y + años	457	658	192	566
23: Otorrinolaringología			40: 1364	CONSULTANTES al Establecimiento (nuevos y retornos al Establecimiento por consulta médica)			
24: Oftalmología			50: 216	CONSULTAS de Emergencia			
25: Urología			III. CONSULTA EXTERNA SEGUN TIPO DE PROFESIONAL				
26: Otros			TIPO DE PROFESIONAL	ATENCIONES	ATENDIDOS	HRS. TRABAJ.	
30: PEDIATRIA	268	423	00: MEDICO	1939	1241	474	
40: GINECOLOGIA	272	573	10: OBSTETRIZ	288	123	30	
41: Obstetricia	151	362	20: OTRO (Específicos)	554	160	75	
42: Planificación Familiar	121	211	IV. PLANIFICACION FAMILIAR				

PACIENTE	METODO	TOTAL	DIU	PILDORA	CONDON	OTRO	ACTIV. EN PLANIF. FAM. POR TIPO DE PROFESIONAL	V. SERVICIO SOCIAL 90		
								PROCEDENCIA	ATENDIDOS	ATENCIÓNES
00: ACEPTANTES (Nuevas)		33	18	9	-	6	00: TOTAL			
10: USUARIAS (Continuadoras)		50	47	10	-	8	01: Consulta Externa			
20: CESES		3	3	-	-	-	02: Hospitalización			De Inform.
30: COMPLICACIONES							03: Servicios Periféricos			
40: FRACASOS							04: Planificación Familiar			

VI ATENCION ODONTOESTOMATOLÓGICA

90 HORAS TRABAJO 125

TIPO DE PACIENTE	ATENDIDOS	ATENCIÓNES					
		TOTAL	Examen con Placa	Piezas Extraídas	Número de Obstruções	Atención Preventiva	Occlusiones
00: TOTAL	342	784	343	409		3	29
10: SALUD DE LA MADRE (Gestantes)	3	6	3	-		3	-
20: SALUD DEL NIÑO	74	153	71	74		-	8
2.1: Lactantes (- 1 año)	-	1	-	-		-	1
2.2: Pre-escolar	(1-4 años)	3	3	2		-	1
	5 años	4	11	2		-	3
2.3: Escolar (6-14 años)	65	133	64	68		-	1
30: SALUD DEL ADULTO	263	625	269	333		-	21
3.1: 15-19 años	67	154	68	82		-	6
3.2: 20 y más años	198	471	203	253		-	15

40: 342 ATENDIDOS en el Establecimiento (nuevos y retornos al Establecimiento por Consulta Odontológica)

50: - RADIOGRAFIAS dentales. TOTAL UTOB = 1,237

AV