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What Are We Learning from The Evaluation of the Communication for Child Survival Project?

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The Communication for Child Survival Project (HEALTHCOM) is a part of a long-term effort funded by the U.S. Agency for International Development through a contract with the Academy for Educational Development. The activity began in 1985 and will continue through 1994 and provides technical assistance to national governments and other agencies in fifteen Third World countries which are trying to use communication as part of their efforts to improve rates of child survival. The Center for International, Health, and Development Communication, Annenberg School for Communication at the University of Pennsylvania holds a subcontract to provide research and evaluation assistance as part of the overall HEALTHCOM program.

This brief paper emphasizes eleven major areas which the evaluation is addressing and for which tentative answers are now emerging. It is a sampling of the fuller range of research that has been and will be reported in extended versions of this discussion.

Under HEALTHCOM, two projects have completed data collection (Ecuador, a major site, and Paraguay, a site for a narrative case study evaluation); two sites have outcome data from first phase studies (Indonesia-Garut and the Philippines-Manila) and eight have had baseline studies which await after-intervention data collection (Indonesia-Central Java, Indonesia-West Java. Philippines-National, Jordan, Nigeria, Lesotho, Zaire and Guatemala.) The evaluations for two other sites in which major work was completed under MMHP were finalized during HEALTHCOM (Peru and Swaziland). In addition to this work, HEALTHCOM also sponsored additional data collection in Honduras and The Gambia, as a follow-on to the major evaluations of MMHP.

Under the HEALTHCOM I contract it was assumed that each site would operate for an average of two years, and that the evaluation would take place within that time frame. In practice, almost all sites have remained in operation for a longer period; as a result, the after-intervention data collections have been delayed. The remaining eight after-intervention studies are scheduled between August, 1989 and June, 1990, with evaluation reports due before end-of-contract in September, 1990.

At this stage, with limited cross-national final data, we can put forward tentative notions, inferences suggested by the data collected thus far, and outline work that will be done in the final year of the evaluation to confirm, deepen and expand those inferences. We have chosen eleven major emphases; some substantive and some methodological, which represent the work we are doing and what we expect to produce; some of the findings we report should be taken as exemplary or intriguing; further dissemination of them depends on formal peer review and publication. In some cases the results reflect only exploratory analyses. They are a sample of the types of questions being asked and results being found rather than a comprehensive statement of findings.

Immunization:

1. Communication programs have affected immunization levels. Clearly, communication programs, in combination with improvements in service delivery, can produce substantial increments in timely vaccination coverage. From all the sites from which data are currently available (Peru, Ecuador, and Manila), there is credible evidence of 12-20% or more increases in the absolute level of vaccination coverage and 33-100% increases in relative coverage compared to baselines (Table 1)[2]. There is evidence from Ecuador that the improvement is equal or better among less advantaged people than among more advantaged ones.

Table 1
Communication programs have affected immunization levels

Peru: Single Immunization Day:	Before (Sept. 1984)	After (Nov. 1984)
Card verified 12-23 month complete coverage	25%	37%
Manila: 3 month measles campaign:	Before (Jan. 1988)	After (May 1988)
Card verified 12-23 month measles coverage	21%	45%
Ecuador: 4 campaigns over 18 months:	Before (Oct. 1985)	After (Apr. 1987)
Card verified 12 month old measles coverage	15%	35%
Verified 12-23 month coverage		57%

[2] These are based on reasonably conservative measures of coverage, but vary from site to site. Depending on the measure chosen: coverage by 12 months, measles coverage, coverage among children between 12-23 months, the exact estimates of absolute and relative change vary.

2. Access to good service and stimulation of timely consumer demand matter more than detailed knowledge about immuno-preventible diseases. There is little evidence that low vaccination rates reflect resistance to the idea of vaccination. From the data analyzed thus far, major problems appear to be in:

a) encouraging appropriate practices among staff at service sites including avoidance of missed opportunities for vaccination when children come to a clinic (e.g. in Manila more than half of the opportunities to give measles vaccination along with other antigens were missed), and easing physical access to services (e.g. in Nigeria, children served largely by infrequently appearing mobile teams were one-third as likely to have full age-appropriate coverage compared to children taken to clinics) (Table 2).

Table 2
Access to health services makes a difference

Manila

	Before	After
Missed opportunities to give measles vaccination	77%	54%

Nigeria

Source of Vaccinations:	Mobile teams	Clinic Attendance
Complete coverage at baseline	19%	61%

b) cueing timely behavior by parents; being sure that parents know where and when they need to go and know that their child still requires vaccination (e.g. in Manila, knowledge of when to start and when to finish the basic series was associated with timely practice; in Niger State, knowledge of how many vaccinations were required was associated with level of coverage) (Figures 1a and 1b).

Figure 1a

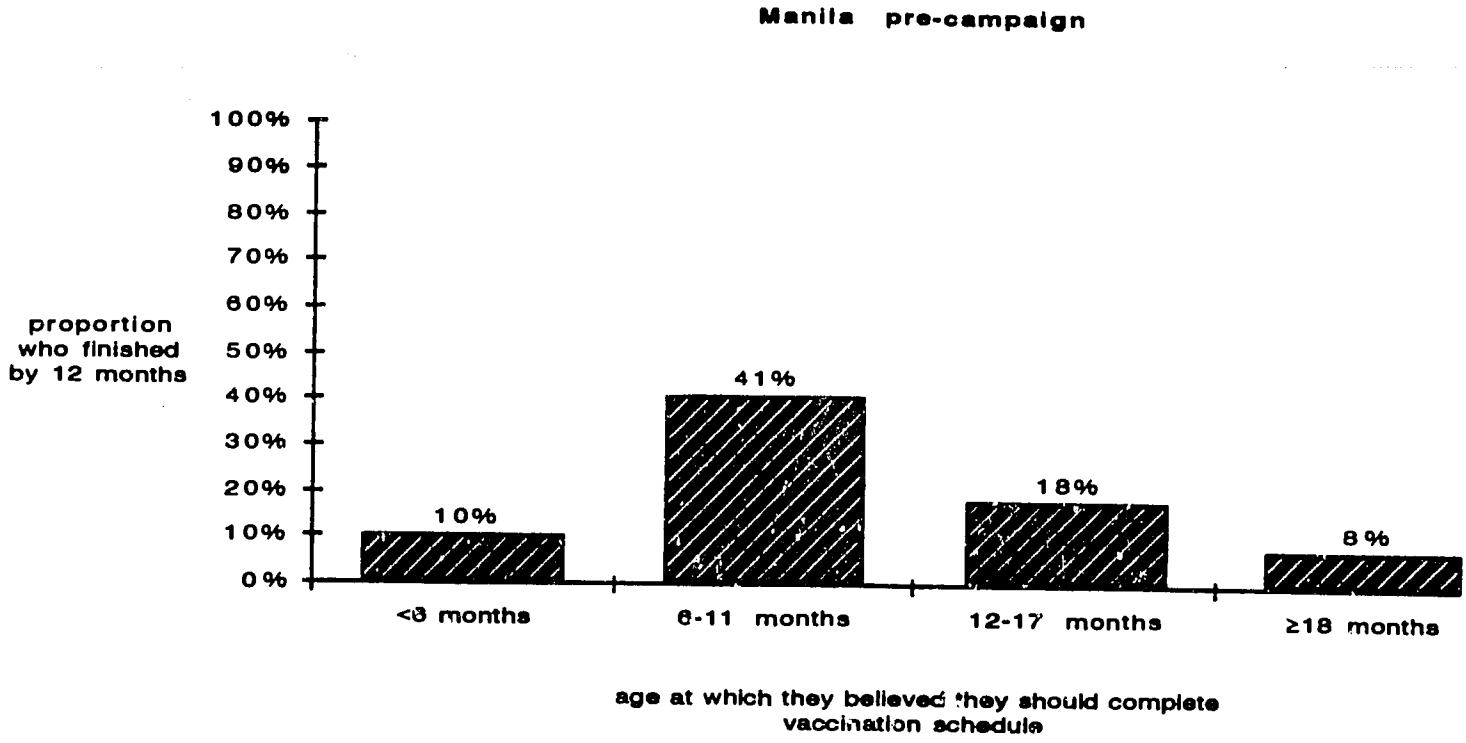
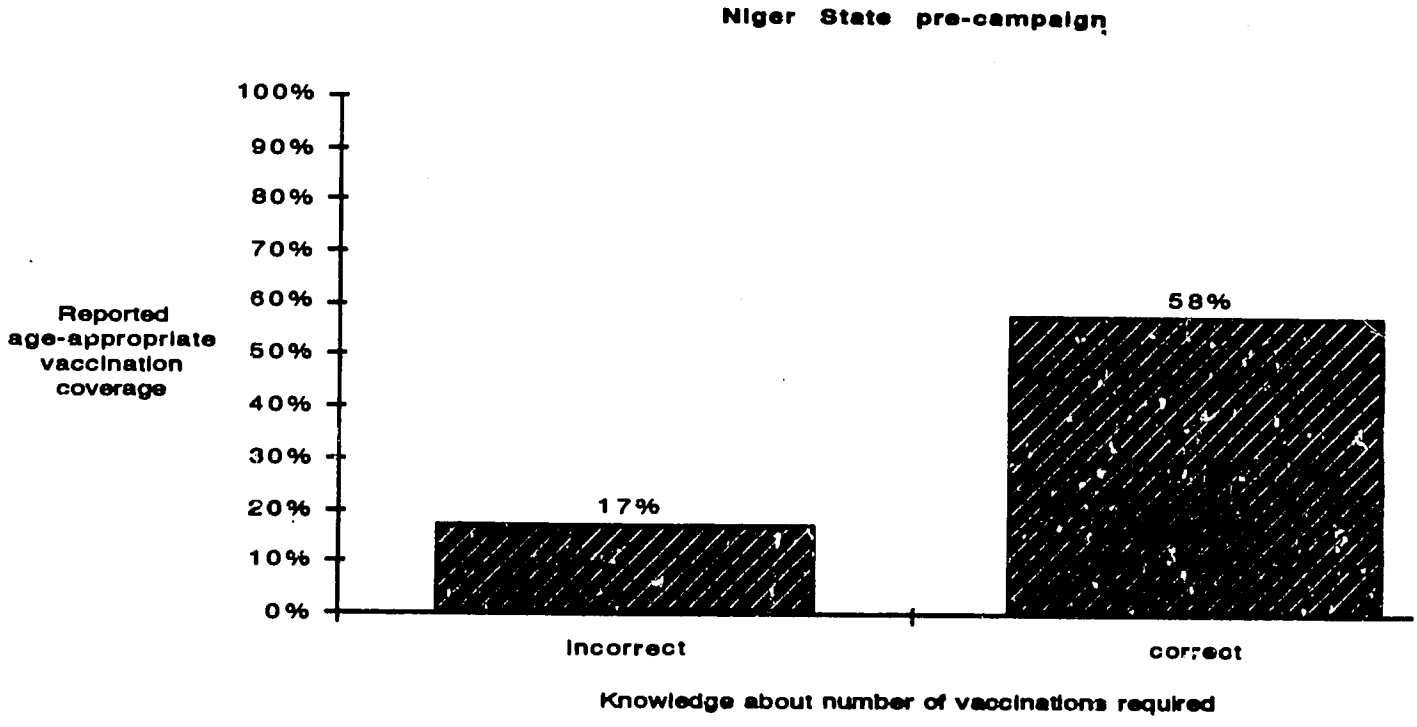


Figure 1b



3. Although communication programs can succeed in immediately increasing vaccination rates, certain issues remain unresolved. Major questions as yet unresolved include:

a) Will it be feasible to move beyond relative improvements in rates and achieve absolutely high vaccination rates on a timely basis? Will card-verified complete vaccination coverage rates of 30-40% at 12 months[3] (in Peru and Ecuador and the Philippines) reach 80% with refined versions of these programs?

b) Whatever improvements are achieved, will it be feasible to maintain them over succeeding cohorts of children? In some cases, the communication programs have been a central element in large-scale immunization day mobilizations, which make extraordinary demands on health and other infrastructures. It is unlikely that all countries will be willing to dedicate that level of resources on a continuing basis; the policy question is what strategy, including communication strategy, will support a long-term maintenance vaccination program -- achieving objectives while spending resources at a level consistent with other financial and logistical obligations.

Diarrheal Disease.

4. Communication Programs have affected diarrheal disease control practice but significant concerns remain. There is strong evidence for the effect of communication programs on shifts in treatment patterns for diarrheal disease. Both The Gambia (4 to 50%) and Swaziland (36 to 48%) evaluations showed increases in self-reported home use of sugar-salt solutions as the result of promotion through mass and face-to-face channels. Honduras (0 to 36%) and Ecuador (7 to 17%) results show shifts in use of packaged ORS, reflecting both communication efforts and changes in supply (Table 3).[4]

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[3] These low rates are surely conservative: In Ecuador, an estimated rate of 32% based on card-verified coverage among those exactly 12 months old compares to an alternative, more generous, rate estimated for 12-23 month olds, including card-verified and caretaker claimed vaccinations, of 65% .

[4] Estimation procedures for each of these comparisons vary. Each estimate of change can be justified, and they reflect data collection limitations in each site, but they should be used only tentatively to make cross-country comparisons.

Table 3
Shifts in self-reported home use of sugar-salt solutions and use of packaged ORS

Honduras

	Before (Feb. 1981)	After (June 1983)	Follow-up (May 1987)
Packets of ORS -last case	0%	36%	45%

Ecuador

	Before (Oct. 1985)	After (Apr. 1987)
Packets of ORS -last case	approx. 7%	17-20%

The Gambia 3 year program

	1981	1984	1987
SSS last case use	4%	50%	10%

Swaziland 6 month program

	Before (Sept. 1984)	After (Oct. 1985)
SSS last case use	34%	48%

However, there is evidence from The Gambia that new practices are short-lived without continued reinforcement, from Swaziland that confused practice may result from mistakes in message development, and from Indonesia-Garut that few practice changes will result if few messages are disseminated.

In Ecuador, an upper limit of 20% last case use for packaged ORS was achieved, even though knowledge and trial continued to increase after regular practice had plateaued. Supply limitations may have constrained use.

In a number of countries, reduced eating during episodes of diarrhea usually reflects a child's reluctance to eat rather than the caretaker's deliberate withholding of food. Also, breastfeeding is maintained during diarrhea according to most respondents.

5. Quality of ORS use remains a problem to be solved in some countries. There is substantial cross-national variation in the quality of ORS use, even after the communication interventions. Correct mixing of ORS packets has been widely achieved (e.g. 85% of caretakers who said they had mixed ORS before were able to mix it with a reasonable degree of accuracy in Ecuador), but volumes that caretakers claim to have administered to children vary greatly. A minority of mothers in Indonesia (31%) claimed to have given children more than a glassful of the liquid at the last episode, and one-third of the children who were given ORS in Ecuador in the last case were said to have rejected it altogether. Quality of use may be the appropriate focus of next stages -- either to recognize that relatively few cases may require rehydration and thus not to expect a substantial volume to be ingested often, or to focus communication strategies which stimulate greater volumes, as well as other correct use practices.

6. Evidence about mother's perception of diarrheal disease suggests strategies for message design. Communication programs depend on the ability of message designers to identify cues which are recognized by the target audience as significant in their choice of treatments. Those cues then can be used to suggest treatment shifts. For example, research in the Philippines and Ecuador suggests that perception of weakness -- a child tending to play less than usual -- appears to be more often associated both with severity of the case and with a tendency to seek higher level of treatments (e.g. in Ecuador, in one study, 31% of caretakers who claimed a case wasn't serious said that their child was weaker ['perdida de animo'] than usual but 84% of those who saw a case as quite serious noted weakness.

In contrast, medical signs of dehydration (sunken fontanelle, etc.) are not always associated with perceived seriousness of diarrheal cases, or with treatment choices. They may not serve as a basis for cueing treatment (giving a child any treatment -- or instigating a shift from home treatment to ORS packet treatment to clinic attendance.) In the Ecuador study, increased thirst was noted for 71% of the 'not serious' cases and 86% of the 'quite serious' cases -- a much less substantial differential.

People's perception of diarrhea cases and the treatments they choose are reflected in the naming of the disease, at least in some contexts. In Zaire, for example, 52% chose ORS or

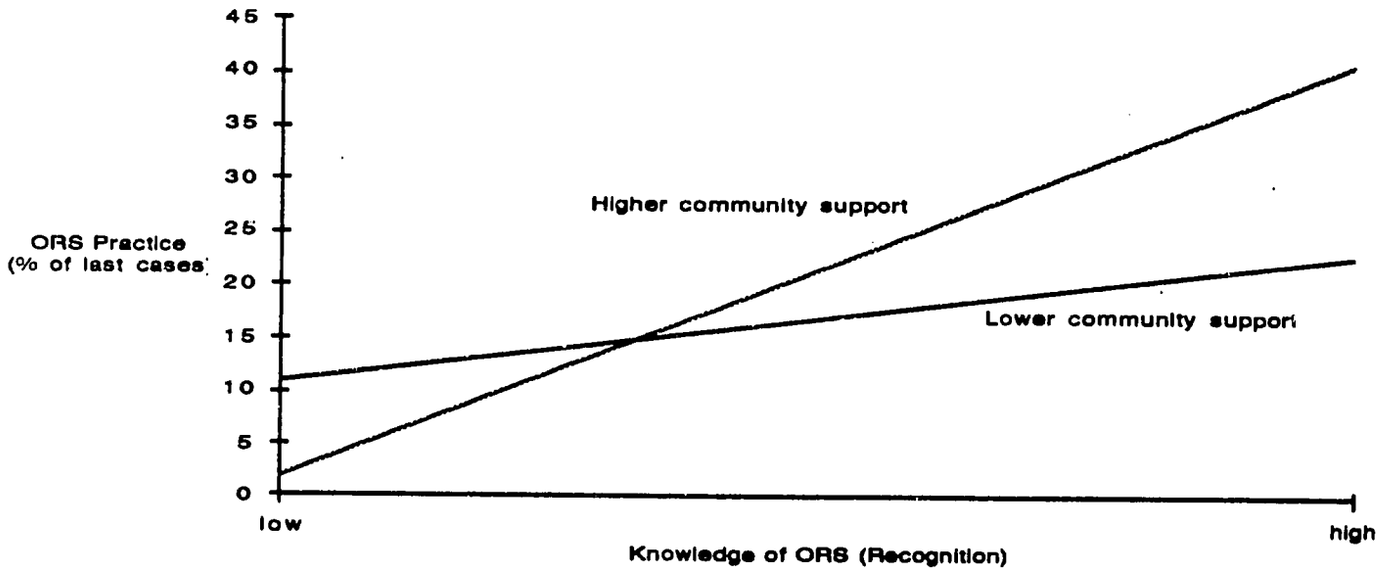
SSS if the case was considered 'kuhara' (ordinary diarrhea), but only 14% chose ORS or SSS if the case was called 'lukunga' (although 'lukunga' was the type of diarrhea most likely to exhibit symptoms of dehydration).

Applied Health Communication Theory.

7. Community influence matters both as a direct influence on individual practice and as a mediator of communication effects on individuals. Health practices may be appropriately seen as belonging to the community as well as to individuals. In Ecuador, in preliminary analyses, about two-thirds of the variation accounted for in individual immunization coverage (about 10%) was predictable from measures of overall community practice and characteristics (in wealth and levels of development). Only one-third of the variation in practice was associated with individual differences in knowledge and media exposure and other characteristics. Also, caretakers who had some knowledge about ORS were twice (40% versus 20%) as likely to have used it for a last case if they lived in a community where last case use was common rather than in a community where it was less common (Figure 2).

Figure 2

Social Network Support, Knowledge and ORS Practice in Ecuador



8. Efficacy of mass media and interpersonal channels is often presented as a theoretical battle, but is best viewed as a problem in practical feasibility. Face-to-face communication channels, despite a likely advantage in persuasive power, may be quite difficult to organize and maintain, and may reach only a small proportion of the target audience, particularly if volunteer field workers are a mainstay. Mass media channels, particularly radio, may sometimes both reach a larger portion of target audiences and serve to persuade. Thus, in Swaziland, yellow flag volunteers were quite effective when they were operating, but reached only one-sixth of the population; in contrast, radio was slightly less effective in stimulating practice change for any individual, perhaps, but reached more than three-fifths of the population (Table 4).

Table 4

Combined Effects of Reach and Effectiveness of Each Channel on Knowledgeable Use of SSS.

Channel	% Exposed Channel	B-Coeff.	Points Shifted	Effectiveness
CLINIC	22%	.181	1.00	4.2%
OUTREACH	16%	.201	1.00	3.2
LISTEN	60%	.034	4.00*	8.2

* Point shift between non-listeners and the average score of those considered substantially exposed.

Methodological Development

9. Effects of vaccination programs are more clearly seen with newly developed coverage measures. Three highly sensitive measures of vaccination coverage developed by

HEALTHCOM have proved quite useful as alternatives to standard WHO 12-23 month coverage.

a) The first, backdated coverage at 12 months of age for successive monthly birth cohorts, can be used to demonstrate program-induced changes soon after they occur.

b) The second, vaccinations per week of eligibility in the population, offers a clear picture of how well a program is doing compared to the number of vaccinations which must be given per week if a program is to reach the level cf coverage it seeks.

c) The third, a standardized, age-residual vaccination score, provides a vaccination measure for each individual for use in analysis of vaccination practice as a function of other variables. It controls for some biases of raw, or simple age-appropriate coverage measures.

10. The measure of ORS practice that a study uses has a substantial effect on its estimation of use. Interview estimates of ORS practice are assumed to vary with the 'real' behavior. However they will also vary with what case is referred to ("ever use", "last case", "last case in previous two weeks") with the name given to the disease or symptom asked about, with whether the question is open or closed ended ("what did you do?" versus "Did you use ORS"), with the sample (children under one versus children under five) and with other characteristics of how and by whom the question is asked. While there may be no perfect solution to being sure a study is estimating 'real' behavior, it is important that within-project and across-project comparisons involve identical measures (Table 5).

Table 5
THE ORS USE MEASURE MATTERS

TIME PERIOD

	day of survey	last two weeks	3-4 weeks ago	over 1 month ago
% using ORS	16%	21%	24%	40%

SAMPLE

	children less than one year old	children less than three years old
% using ORS	24%	18%

PHRASING

	last case unaided recall	aided recall
% using ORS	36%	47%

11. The effect of cluster sampling procedures on sampling error varies from country to country and variable to variable. Most sample surveys in developing countries make use of two-stage sampling procedures, choosing a specific number of clusters and a specific number of people within clusters to interview. The sample design effect, rather than being more or less constant across countries and across variables and across numbers of people interviewed in a single cluster, shows substantial variability in practice. In some places, for some variables, the design effect is essentially one; there is no loss of power for using a cluster sampling procedure rather than a simple random sampling procedure. In other places, for the same variable, the design effect can be four or even more. Estimates of project effects need to be adjusted for sample errors reflecting the implemented sample design.