

CLASSIFICATION
PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE <p style="text-align: center;">Health Sector I</p>	2. PROJECT NUMBER <p style="text-align: center;">517-0107</p>	3. MISSION/AID/W OFFICE <p style="text-align: center;">Santo Domingo</p>							
4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 82-1 <p style="text-align: center;">Final</p> <input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION									
5. KEY PROJECT IMPLEMENTATION DATES <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">A. First PRO-AG or Equivalent FY <u>-75</u></td> <td style="width: 33%;">B. Final Obligation Expected FY <u>-79</u></td> <td style="width: 33%;">C. Final Input Delivery FY <u>-81</u></td> </tr> </table>	A. First PRO-AG or Equivalent FY <u>-75</u>	B. Final Obligation Expected FY <u>-79</u>	C. Final Input Delivery FY <u>-81</u>	6. ESTIMATED PROJECT FUNDING <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">A. Total</td> <td style="width: 50%;">\$ <u>5,475</u></td> </tr> <tr> <td>B. U.S.</td> <td>\$ <u>5,475</u></td> </tr> </table>	A. Total	\$ <u>5,475</u>	B. U.S.	\$ <u>5,475</u>	7. PERIOD COVERED BY EVALUATION From (month/yr.) <u>10/1975</u> To (month/yr.) <u>10/1981</u> Date of Evaluation Review <u>Feb. 24, 1982</u>
A. First PRO-AG or Equivalent FY <u>-75</u>	B. Final Obligation Expected FY <u>-79</u>	C. Final Input Delivery FY <u>-81</u>							
A. Total	\$ <u>5,475</u>								
B. U.S.	\$ <u>5,475</u>								

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIQ, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. A review of the statistical objectives used in Health Sector I and Health Sector II to determine if changes are needed for Health Sector III.	O. Rivera	August 1982
2. A follow-on evaluation of the population component of the Health Sector Program.	O. Rivera	January 1983
3. A review of PL-480 Title II MCH activities, and consideration of linkages of this MCH program with the nutrition component of Health Sector III Loan.	O. Rivera J. Francis	August 1982
4. As a result of this evaluation, we will review the Lessons Learned in the areas of nutrition and administrative reform, and take these into consideration in implementing the Health Sector II Loan and in designing the Health Sector III project.	O. Rivera	August 1982

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Project Paper</td> <td><input type="checkbox"/> Implementation Plan e.g., CPI Network</td> <td><input type="checkbox"/> Other (Specify) _____</td> </tr> <tr> <td><input type="checkbox"/> Financial Plan</td> <td><input type="checkbox"/> PIO/T</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> Logical Framework</td> <td><input type="checkbox"/> PIO/C</td> <td><input type="checkbox"/> Other (Specify) _____</td> </tr> <tr> <td><input type="checkbox"/> Project Agreement</td> <td><input type="checkbox"/> PIO/P</td> <td>_____</td> </tr> </table>	<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____	<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____	10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT A. <input type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project
<input type="checkbox"/> Project Paper	<input type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify) _____											
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	_____											
<input type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify) _____											
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____											

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles) Dr. Oscar Rivera Rivera, Chief Health & Nutrition Div. Dr. José M. Herrera Cabral, Loan Coordinator Secretariat of State for Public Health	12. Mission/AID/W Office Director Approval Signature _____ Typed Name Philip R. Schwab Date _____
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PROJECT EVALUATION SUMMARY (PES) PART I
HEALTH SECTOR LOAN I (517-U-028)
ADMINISTRATIVE AND NUTRITION COMPONENTS
DOMINICAN REPUBLIC

13. SUMMARY

The National Health Policy of the Government of the Dominican Republic (GODR) aims at making primary health care accessible to the rural poor population, reducing the morbidity and mortality of children under five years of age and sustaining the decline in the population growth through fertility control.

In October 1975, GODR initiated a \$11.6 million health program of which \$4.7 million (AID-U-028) was financed by USAID to improve and make health and Family Planning services more widely-available to the poorest sector of the country. Under the initial design of the Loan, the program had three primary objectives: (1) To develop a low-cost rural health delivery system (SBS) which would, when established, reach some 1.8 million persons not covered by the existing public health system; (2) To improve the performance of the Secretariat of Health (SESPAS) in managing the Public Health System and fulfilling health policy and planning role; and (3) Develop a nutrition program which would provide the basis for a long-term improvement in the nutrition status of the country.

Prior to the Loan intervention, the rural population now served by the health system had little or no access to any form of organized health services. Today, through a cadre of 5,400 health promoters, a low

cost rural health delivery system has been established which provides services to approximately sixty percent of the rural population of the country. Promoters provide basic health care services, including family planning advice and contraceptives; preventive health services, including immunizations against major infectious diseases; and refer persons with more complicated health problems to a network of rural clinics and hospitals. The promoters also provide health education, promote proper nutrition, encourage better sanitation practices, and collect information on vital statistics from the communities in which they work.

The objective to improve the capability of SESPAS to manage the health system was not as successful as the SBS. Nevertheless, among the accomplishments of this component were the restructuring of the Human Resources Division, the reorganization of the Department of Personnel, the establishment of a Medical Attention Division, the creation of the Division of Financial Administration, including internal auditing and accounting units; and the establishment of an Office of Administrative Reform. Not all of the jointly developed management interventions (delineated under items 15 and 18) designed to increase institutional capability were implemented by SESPAS. Unfortunate delays were encountered as a result of the implementation approach chosen (a single contractor) and further confounded by a change in Administration. Nevertheless, the Government is now considering instituting earlier suggested administrative changes which would strengthen the delivery of health services.

Health Loan I also included a nutrition component which among its activities, provided for the establishment and operation of nutrition recuperation centers. These centers, in addition to providing for proper feeding of malnourished children and nutrition orientation of mothers, are of great value for the training of health promoters in nutrition. Nutrition seminars, including one on breast feeding; nutrition surveillance (using health promoters), and mass media promotion of proper nutrition practices are activities initiated under the nutrition component. Problems caused by the lack of coordination among all agencies and institutions dealing with nutrition in the Dominican Republic have hindered the timely implementation of all conceptualized nutrition interventions.

The Secretary of Health strongly supports the Rural Health Delivery System (SBS) and has taken action to expand and improve it. He has also announced intention to train additional promoters and to build and staff additional rural health clinics.

14. EVALUATION METHODOLOGY

The rural health delivery component (SBS) has been the subject of a variety of assessments which generally acknowledged this component as successful in reaching its intended objectives. In addition, the SBS component has undergone a final evaluation, the results of which follow as Part II of this final PES.

Therefore, this report primarily consist of a summative assessment of the nutrition and administration components of the Loan, and, in addition, elucidate the extent these two components have contributed to the success of the SBS. The methodology employed a judicious reexamination of previous evaluation reports and other important documents contained in the project files. Relevant information on those project interventions actually implemented was then re-assessed with respect to specified indicators in the Health Loan's logical framework matrix. Additionally, the purpose of this review was not so much to ascribe success or failure to the Loan but to reveal factors that helped or hampered the achievement of all of its objectives.

15. EXTERNAL FACTORS

The Dominican Republic has no definitive national development plan, as such. The lack of such a plan is a serious constraint to the efficient allocation and utilization of resources and has been a contributing factor to the extent of poverty and lack of improvement in the socio-economic conditions of the poor. The lack of such a plan also makes it difficult to determine precisely what priority the health sector has in the GODR economic development strategy.

Administration policies (before 1978) reflected a preoccupation for economic growth via public investment in infrastructure and, despite rhetoric to the contrary, did not emphasize economic and social programs which benefitted the poor. As a result, government support for public health and family planning was at very low levels--especially in areas other than health infrastructure investment.

Emphasis on assisting the poor and increasing support for health is the political philosophy of the current Administration. It is anticipated that there will be continuing GODR support for the health sector, particularly for primary health care. Such has been demonstrated by the creation of SESPAS' Rural Health Directorate which has already incorporated the SBS into that structure.

The GODR has also taken other actions which demonstrate their support for primary health care in rural areas. Medical doctors (interns) are now required by law to serve for one year in hospitals or clinics in rural areas. Although this law has been in effect for some time, it has only been strictly enforced by the current government.

Stricter enforcement was needed because doctors were reluctant to practice medicine in poor rural areas which lacked modern facilities, and the life styles of the major cities.

A.- Nutrition

The primary objective of the Nutrition component of the Health Loan was to provide a basis for long-term improvement in the nutrition status of the country. The assumption was that GODR would support development of the nutrition program in light of its past indifference in this area. Confirmation of SESPAS capacity to deal with malnutrition was to be substantiated in terms of output indicators such as the number of health services provided, the number of promoters and supervisors trained in nutrition, and the extent of the reduction in infant and child mortality rates. Since infant mortality rate has generally been assumed to provide a relatively sensitive measure of the outcome of a number of types of health related programmatic interventions, including nutrition, potable water, sanitation, and MCH services, it was considered particularly useful.

In order to deal more effectively with the magnitude of malnutrition problem, a decision was made to create a government organization with a specific nutrition focus and purpose. This led to the establishment of an Office of Nutrition Coordination (ONC). The Secretariat of Agriculture was selected as the location for ONC and as the first implementing sub-agency for the nutrition element of the Loan, primarily because of that sector demonstrated interest in the problem of malnutrition at the time of the Health Loan development.

The ONC was to be responsible for central policy formulation and coordination to control the execution of project activities. Although ONC was to be located in the Secretariat of Agriculture, it was to work

especially close with the Secretariat of Health and the Secretariat of Education on related project activities (education, dietary habits, foods production, training, research, etc.).

When the Health Loan Program began, the Nutrition Coordination Office was established in the Secretariat of Agriculture as originally planned. However, after several months of little action, and because ONC functioned rather independently of the main work of the Agriculture Secretariat, ONC was officially transferred to the Secretariat of Health where it is presently incorporated into the Nutrition Division.

B.- Administrative Reform

Institutional weakness was identified in the 1975 Health Assessment Report as the single most critical constraint to any effort to improve the well-being of the poorest members of the Dominican society, and that progress in the health sector depended on substantial management reform. The report asserted that management reform would lead to improve health planning and provision of health services to all Dominicans.

In the project papers, the Secretariat of Health was characterized as not fulfilling its functions to persons it was currently serving. Therefore, the strategy was to develop and strengthen the administration of SESPAS so that the Rural Health Delivery System (SBS), once established, would continue to function effectively after being fully absorbed by SESPAS.

In order to provide a suitable basis to steer and monitor reform activities as well as to receive the external technical advice, a Technical Office for Administrative Reform (OTRA) was established within the Secretariat, the head of which reported directly to the Health Secretary. The Technical Office was also charged with performing all planning and evaluation functions in connection with the reform. The establishment and effective functioning of OTRA was stated as being of vital importance to the success of the administrative component.

A key approach to the implementation of the Administrative Reform objectives was to have the GODR contract technical assistance in the following areas:

- (a) Systems for human resource development and personnel administration;
- (b) Planning, programming, and evaluation systems;
- (c) Information systems, including biostatistics and audit procedures;
- (d) Hospital administration systems; and
- (e) Maintenance, transportation, and supply systems.

The consultants and the Technical Office for Administrative Reform were to jointly work to assist the various operational offices of SESPAS in a variety of complex technical areas. The project papers indicated that because of the complexity of the work (cited above), a single institutional contract was the only practical and efficient means for providing the technical assistance.

Problems with the Administrative Reform component surfaced almost from the time it was proposed. The component suffered not only from implementation delays caused by the change in GODR administrations, and the ensuing priority status the reform package was assigned, but also from the inability of the U.S. contractor to provide technical assistance in some key areas: statistics, transportation, maintenance. In addition,

the in-coming government viewed many of the proposed administrative changes as low priority concerns. SESPAS made a determination that because of the politically sensitive environment surrounding the administrative reform activity, the assumption that one foreign consulting firm should provide all the inputs required was also unacceptable. The Secretariat chose to use a more "low-key" approach by the contracting with carefully selected health specialists, and the use of other GODR entities to provide the technical assistance desired. The Secretariat also acquired some outside assistance (specifically in planning) from PAHO.

In spite of the implementation problem of the U.S. contractor, some of the contractor's management recommendations to the Secretariat, as stated earlier, were adopted. Other suggestions are presently under review for possible future implementation.

The SBS program and the Office of Nutrition Coordination (ONC) have been integrated into the SESPAS framework. This integration occurred despite the disappointment experienced with the general Administrative Reform project element. Thus the component basic assumption that the establishment of the Low Cost Health Delivery System would be contingent upon the implementation of the Administrative Reform package was not entirely valid.

Management improvements in the Health Secretariat have not been made as fast as desirable. However, SESPAS has made some administrative changes which have greatly improved its ability to manage the public health delivery system.

16. INPUTS

According to the project papers, the time-frame and financial allocations for the three components of the Loan were estimated as follows:

(\$000)

(1) Low Cost Health Delivery System

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Total</u>
AID				
Dollars	140	472	513	1,125
Pesos	122	223	176	521
GODR				
Pesos	<u>586</u>	<u>1,732</u>	<u>2,443</u>	<u>4,743</u>
	830	2,427	3,132	6,389

(2) Nutrition

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Total</u>
AID				
Dollars	94	176	168	435
Pesos	130	129	62	321
GODR				
Pesos	<u>151</u>	<u>258</u>	<u>264</u>	<u>673</u>
	375	560	494	1,429

(3) Institutional Development of SESPAS

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>Total</u>
AID				
Dollar	788	593	410	1,791
Pesos	206	207	119	532
GODR				
Pesos	<u>543</u>	<u>528</u>	<u>432</u>	<u>1,503</u>
	1,537	1,328	961	3,826

(1,000s)

<u>Program Element</u>	<u>GODR</u> <u>Pesos</u>	<u>AID*</u>		<u>Equivalent^{1/}</u>
		<u>US\$</u>	<u>Pesos</u>	
1. Low Cost Health Delivery System	4,743	1,125	521	6,389
2. Nutrition Program	673	435	321	1,429
3. Institutional Development of the Secretariat of Health	1,503	1,791	532	3,826
4. Unbudgeted AID Contribution		75		75
TOTAL	6,919	3,426	1,374	11,719

^{1/} Peso amounts are on the basis of RD\$1.
Dominican Peso equals US\$1.00

* Total planned AID contribution \$4,800,000.

A.- Nutrition

The financial plan outlined for the Nutrition component was modified several times. Modifications were due to a combination of factors: failure of GODR to allocate funds in a timely manner (delinquent GODR counterpart contribution), GODR power shift, the low GODR priority status assigned nutrition, and delays in the nutrition implementation schedule.

Total financing for the nutrition component amounted to \$1.43 million, of which \$756,000 (52.9%) was to be derived from the AID share of the Loan. The total amount ultimately disbursed from AID funds for the Nutrition component however, was \$663,760 or 87.8% of the original amount. The Government of the Dominican Republic share was programmed at \$673,000 (47.1%), but only \$461,230 (68.5%) of this amount was ever disbursed. The balance, \$92,240 of the AID share of the Loan and \$211,770 (31.5%) of the GODR share, were reprogrammed to the Low Cost Rural Health Care Delivery component. The total expenditure for the Nutrition component was \$1,124,990 or 78.7% of the amount originally budgeted.

B.- Administrative Reform

The institutional development or administrative reform component included human and financial resources to improve various administrative and management practices of the Secretariat of Health. Most of the technical manpower inputs under this project component was provided by a U.S. consulting firm. Provision of this assistance was delayed due to a long contracting process that finally resulted in the execution of a two-year contract for \$1.4 million on June 3, 1977 (20 months after the signing of the Loan Agreement).

In September 1976, due to delays encountered in securing technical assistance for the administrative reform package, Mission extended the original Terminal Commitment and Disbursement date (TCD) and Terminal Disbursement Date (TDD) by one year each to April 1979 and October 1979 respectively. The TCD and TDD were each extended an additional year to provide sufficient time for procuring services and commodities to complete the project. A subsequent extension of the TCD and TDD was approved on March 28, 1980 in order to provide additional time to resolve two contracting problems. One involved the purchase of 4,500 scales and the other concerned a legal dispute between the GODR and the consultant firm contracted to implement the Administrative Reform package. These contracting problems were not resolved until the first trimester of 1981. Consequently, it was necessary to again extend the final TCD and the TDD to July, 1981.

After settlement of the contracting problems, AID and the Secretariat of Health found it necessary to reschedule and reprogram Loan

funds, from the Nutrition and Administrative Reform components, to the Rural Health System (SBS) component. This decision resulted in a final USAID fund disbursement as follows:

	<u>Programmed Amount</u>	<u>Increase (Decrease)</u>	<u>Revised Amount</u>
SBS	\$1,645,000	\$ 757,416	\$2,402,417
Nutrition	756,000	(92,240)	663,760
Administrative Reform	<u>2,323,000</u>	<u>(589,177)</u>	<u>1,733,823</u>
	\$4,800,000		\$4,800,000

As indicated above, the total disbursed from AID funds in support of Institutional Development (Administrative Reform) was \$1,733,823 which represent 75% of the planned (\$2,323,000) AID Loan contribution for this component.

Total GODR disbursement of counterpart funds for all components of the Loan Program amounted to \$6,919,000. In addition, GODR has been financing the SBS (since March 1980) from its National Budget. To date, the Government has disbursed more than \$2,000,000, above its programmed contribution for expansion of the SBS coverage to additional communities.

17. OUTPUTS

A.- Nutrition

The Project Paper outlined seven activities that would be undertaken to reduce the incidence of malnutrition in the general population, particularly infant and children. These were: (1) the establishment of a nutrition coordination office within the Secretariat of Agriculture; (2) the establishment of nutrition recuperation centers to assist in the training of promoters and dietition auxiliaries; (3) mass media promotion campaigns; (4) training of nutritionists; (5) seminars; (6) development of a food supplement; and (7) nutrition research. As mentioned previously these activities were to lay the foundation for improvement in the long-term nutritional status of the Dominican Republic.

The office of Nutrition Coordination (ONC) was established as planned, but remained only partially staffed. The staff was trained in and completed several nutrition assessments, as well as a food/behaviour study. ONC also issued a nutrition statement. Nevertheless, there has been little evidence of ONC's ability to coordinate its program activity with other sector having roles in the nutrition (i.e., agriculture, education).

There are currently 20 nutrition recuperation centers in the Dominican Republic. Five of these were established under the Loan. The nutrition centers provide proper nutrition and health care to malnourished community children. In addition, promoters received one week training in nutrition at the centers. The centers also provide nutrition education to mothers who bring their malnourished children to

the centers. No measure of changes in the knowledge, attitude and practice (KAP) of these mothers has so far been conducted.

All of the promoters (5,400 as July 1981) received one week of training in nutrition and about 25% have received refresher courses. Their nutrition tasks include recording of weight, height, and arm circumference of all children under five years old; encouraging breast feeding of infants throughout the first year of life; promoting the introduction of solid foods in infants' diet at the age of six months; referring seriously malnourished children to nutrition recuperation centers; and providing basic nutrition orientation to mothers.

Under the Nutrition component, radio broadcasts of nutrition messages were instituted and reinforced by nutrition pamphlets as a public service effort. Several nutrition education seminars and planning workshops were conducted. Mass media promotion of good nutrition practices were mostly confined to radio. The radio was selected as the primary means of communicating the nutrition message to the public because it was determined that in the Dominican Republic as much as 83 percent of the heads of family listen to the radio daily, while 24 percent read newspapers, and 15 percent watch television daily. Development of radio messages were accomplished through contract.

Informal evaluations by Health officials point out increased awareness and understanding of the nutrition problem on the part of GODR sector officials, public and private decision makers, and the general public. Additionally, it is believed that radio messages substantially reinforce the teaching of proper nutrition by the health promoters in their respective communities.

A formal evaluation of the impact of these messages has been conducted, but the contractor performing the baseline study failed to provide the original sample information to SESPAS for review and follow-up. The Secretariat of Health has programmed additional studies, and plans to continue adapting educational messages as experience and audience dictate.

The scarcity of professional personnel trained in nutrition was in our opinion, a constraint to carrying out comprehensive nutrition programs. The present Office of Nutrition Coordination currently consist of a pediatrician, an administration officer, three nutritionists, an information officer, and a clerical support staff. At the regional levels medical doctors (six) are assigned as chief of the regional offices with assistants referred to as "nutritionist" (these people have received some in-service nutrition training, but are not university trained). Three position changes at the Director level of ONC, the priority status assigned the nutrition by GODR, and lack of a university level nutrition program in the Dominican Republic all contribute to the continuing nutrition deficit.

Four nutrition seminars were held as planned. As stated previously, one of the four seminars exclusively addressed the subject of breast feeding. The seminars have been credited with increasing GODR awareness of the nature and extent of the malnutrition problem. Another important outcome has been the establishment of the nutrition surveillance program utilizing health promoters.

A commercially marketable food supplement for young children and for nursing and pregnant women was to be developed through the Loan, but the project was abandoned after feasibility studies disclosed the developmental cost to be very high and that the government would not financially support the effort. A resurgence of the food supplement idea within the SESPAS' Nutrition Division, however, has recently emerged.

The nutrition component also included a research element. Among the proposed scientific studies was a food/behavior study which has been completed. Nutrition assessments of children in the rural areas were also conducted. Research into the causes of malnutrition and the cost effectiveness of current and future nutrition programs were also to be conducted, however such efforts have not been carried out due to inadequate GODR funding support.

B.- Administrative Reform

The 1975 assessment of the Dominican Republic health-care system indicated the need for substantial administrative and organizational reform. Prior to that time, emphasis had been toward urban-based, curative services. In an effort to improve SESPAS management performance, AID provided \$1.7 million. A consulting firm reviewed the organizational structure of the government health-care system and offered recommendations. Although there were problems in implementing most of the recommendations, some management changes were eventually accepted.

Among the major recommendations adopted by the Secretariat of Health were: the reorganization of the Division of Human Resources and the Personnel Department, installation of an internal auditing system, and redesignation of the Hospital Division to the Medical Attention Division. In addition, there has been substantial progress in implementing the consultant's recommendations in the areas of personnel administration and information system.

Notwithstanding to the above accomplishments, problems associated with delays in the implementation of reform activities, the change of administration, SESPAS opposition to various recommendations of the contractor, and the contractor's inability to provide SESPAS with detailed implementation plans in a timely manner finally forced AID, in consultation with host-government officials, to discontinue expenditures for this component. Subsequently, the undisbursed budgeted amounts both in the Administrative Reform and the Nutrition components were reallocated to the Rural Health Delivery component (SBS).

18. PURPOSE

The Health Loan contained three complementary, parallel purposes: "(1) to reduce infant and pre-school child mortality rates and the crude birth rate in the geographic areas subject to the Loan program interventions; (2) to improve the performance of SESPAS in managing the public health system and in fulfilling health policy and planning roles; and (3) to develop a nutrition program to provide a basis for long-term improvement in the nutrition status of the Dominicans."

A.- Nutrition

The Dominican Republic has a relatively high per capita Gross National Product compared to most developing countries. Yet its nutrition status remains deficient. In a nutrition study conducted in 1969, it was found that approximately 75% of children from low to middle class families, under six year of age, were moderate to severely malnourished. Three contributing elements thought to be related to the nutrition problem are: (1) an inadequate food supply; (2) traditional food habits; and (3) a highly skewed or unequal income distribution. These factors are particularly pronounced in the rural areas where the Health Loan target population reside.

To implement the nutrition component, the Office of Nutrition Coordination (ONC) was established as the organizational body where leadership, program coordination, and evaluation of nutrition efforts were to take place. The Secretariat of Agriculture was originally selected as the location where ONC would function best. However, for reasons explained earlier, including a lack of interest, this

organizational unit was moved to the Secretariat of Health jurisdiction, where it has been absorbed by the Division of Nutrition, but remain relatively ineffective in the coordination of nutrition interventions. ONC has not been able to provide the communication and cooperation with other institutions (education, agriculture, etc.), required to substantially improve the general nutrition status.

Only four of five planned programs were implemented under the Health Loan: (1) establishment of an Office of Nutrition Coordination, which formulated a national nutrition statement* and instituted some nutrition programs; (2) a national education program, through which nutrition training is conducted, and which also provide for nutrition education to the target populations; (3) a rural nutrition recuperation program, which established educational centers for training of SBS personnel and rehabilitation of malnourished children; and (4) a research activity. The objective to develop a food supplement, was abandoned after a feasibility study characterized the program as being too expensive and unwarranted in view of the fact that nutritive food products, suitable for the country's program needs, were commercially available and that the use of these food products would be more cost effective.

* By decree, this responsibility is mandated to the Office of National Planning.

The Office of Nutrition Coordination failure to acquire such key professionals as an agro-economist, statistician, and marketing specialist, hindered the timely implementation of many of the planned nutrition activities and, perhaps, overburdened the limited ONC professional staff (only about half of the proposed ONC staff positions were ever filled). The Office was further unsettled by the frequent changes in the Director of Nutrition Coordination position (a total of three position changes).

In spite of the above ONC was able to develop a nutrition statement as a first step toward a nutrition policy. Additionally, ONC was also able to complete the food/behavior and the nursing patterns studies as well as provide for training of promoters and other health personnel in nutrition education.

The only End of Project Status (EOPS) or condition noted in the logical framework as an indicator of the achievement of the nutrition objective is the statement: "increased GODR capacity to deal effectively with malnutrition". Unquestionably, SESPAS made some improvements in its capacity to deal with certain aspects of the nutrition problem: rehabilitation of malnourished children, mass media education, and nutrition education of mothers.

Malnutrition, as stated earlier, may also result in increased infant mortality. One apparent expectation of the nutrition component was that a substantial reduction in infant and child mortality rates would be indicative of the improvement in nutrition status. As revealed in the evaluation of the Low Cost Health Delivery System (Part II of this

Report), the infant mortality rate declined from the pre-project rate of 127.9 to 82.4, a reduction of 35.6%, (if 1974 nationwide rural infant mortality rate are compared to the 1980 project level). Likewise, the pre-project age specific, 1-4 years, mortality rate dropped from 19.6 to 10.4, a 46.9% reduction. Although the use of the mortality rate may be less sensitive as a nutrition indicator for children over three years of age, and acknowledging that it is even more difficult to verify that the mortality rate change was the results of the Health Sector Loan activities alone, Mission believes it does seem reasonable to assert, in the absence of other measured events that the project health interventions have positively influenced the nutrition status of the target population. Moreover, we note that the 1974 Health Sector Assessment report as well as the Project Paper attribute much of the pre-school child mortality to malnutrition.

A most important aspect of the nutrition component has been the nation-wide program of nutrition education by a radio outreach intervention. Radio messages are used to reinforce the teaching activity of the promoters in their respective villages, emphasizing the importance of breast feeding, solid foods supplementation of infant diets at age of six months, and improvement in the diets of pregnant women.

Preliminary information from a project study conducted by the Universidad Nacional Pedro Henriquez Urena, research center, indicates that 91.4 of the mothers interviewed breast-fed their babies, although only 64.4% did so beyond a six months period. The report also stated that 97.3% of the mothers surveyed were introducing solid foods (family meals) into the diets of infants under one year of age, although only

60% were doing so at the six months age interval. The study also substantiates the continuing need for reinforcement of sound nutrition practices.

As discussed previously, commercially marketable food supplements specifically designed for the consumption of children 0-2 years of age and pregnant and nursing women were to be developed under the Health Loan. These food supplements (one for small children and one for mothers), were to be a low-cost, highly nutritive food products, made available through commercial distribution channels. One of the food consultants who assisted the Mission in analyzing the costs of developing and distributing food supplements, estimated the chance of a successful food supplement as being about one in a hundred. Based on his recommendations and the estimated cost, it was decided that the expense for such a program was too high to expect the GODR to support, at that time, and that supplemental food products sufficient to the needs of the Dominican Republic could be made available through the local market and that locally produced food supplements would not be, necessarily, critical to the success of the nutrition program.

Mission believes that two interventions appeared to have had the greatest influence on the nutrition status of the target populations (infants, children, and nursing mothers): (1) the mass media nutrition and health education campaigns especially the radio campaign, and (2) the direct services and education promotion efforts (SBS) of promoters to encourage commitment on the part of the mothers to adopt recommended changes in dietary habits. We do not wish to imply that the nutritional changes in the target populations are due principally to ONC/SBS activities, or to suggest a seemingly better program impact than actually

has been achieved. Certainly, nutrition changes, however slight, were influenced by factors outside of this project activity. We do emphasize however, that the Loan Program has had some positive results and we concede that for additional changes to occur in the general nutrition status, greater top level commitment and coordination must take place.

B.- Administrative Reform

The stated purpose of the Administrative Reform package was "to improve the performance of SESPAS in managing the public health system and in fulfilling health policy and planning role". Institutional weakness of SESPAS was cited as a critical constraint to any effort to improve the public well-being. Additionally, it was hypothesized that management reforms would lead to improve health planning and increased provision of health services to the Dominican public.

In the project papers, indicators of the priority need for management improvement in SESPAS were cited as: "(1) low levels of GODR expenditures in health; (2) low levels of expenditures in preventive health programs; (3) low access to SESPAS health services; (4) long length of stay in hospitals; (5) high percentage of doctors assigned to SESPAS clinics but not working full time there; and (6) too much time needed to repair equipment".

In June 1977, a contract was signed between the Secretariat of Health and a private U.S. consulting firm to develop administrative reform activities. The first year of work was dedicated to making detailed organizational diagnosis to determine the specificity of the management problems, and the second year was devoted to the actual implementation of recommendations.

Work plans for specific programs to be implemented in the second year included: organization of the Office of the Secretary, Planning and Evaluation, Human Resources, Personnel, Financial Administration, Health Services Administration, Physical Resources, Statistics and Information Systems, the Psychiatric Hospital, and Licensing and Certification of Health Facilities and Professions.

The Program plans contained activities to be implemented both at the regional and central levels. A pilot region was selected to test the proposed reforms and activities were coordinated with the World Bank's clinic construction program being implemented in the test region. Each Program plan contained activities to be implemented, the personnel responsible, and the respective time limits for delivery of completed products.

To provide a central coordinating and focusing point for planning, monitoring, and evaluating and implementation of management changes, the Technical Office for Administrative Reform was established within the Secretariat of Health. This office also served as the central contact point for personnel contracted to assist the various operational units of SESPAS to implement the reform activities. The specific functions of the Technical Office were:

(1) The development of a detailed yearly operational plan and budget for the reform;

(2) Informing the Secretary on a regular basis of the progress of the program; and

(3) Periodic evaluation of the progress of the reform.

The Technical Office consisted of an Office Director and two aids, plus supporting clerical and secretarial staff. The Director of the Technical Office reported to and was responsible to the Secretary of Health. The Secretariat also received advice and counsel from a three-man coordinating committee consisting of key Health Secretariat executives. However, this committee apparently created major operational bottlenecks and was soon abolished.

GODR commitment to improving the management of the public health system, according to the project logical framework, could be confirmed by regular increases in SESPAS share of GODR expenditures. Increased expenditures of 5% in the first year of the project (1976), 6% by the second year, and 7.5% the third year were assumed to be suitable benchmarks.

The following information is derived from the National Budget for the period 1975 through 1980 and may provide some insight as to GODR allocations for health programs (as a factor of the gross domestic product and the total government budget):

<u>Year</u>	<u>(RD\$ in Millions)</u>			<u>Health Exp. as % of GDP and Total Gov. Budget</u>	
	<u>Gross Domestic Product (GDP)</u>	<u>Government Budget</u>	<u>Health Budget*</u>		
1975	3,599.9	665.0	32.0	0.9	4.8
1976	3,951.6	580.6	41.9	1.1	7.2
1977	4,547.7	631.3	45.1	1.0	7.1
1978	4,695.0	689.8	54.2	1.2	7.9
1979	5,464.6	1,018.9	67.3	1.2	6.6
1980	6,300.0	1,010.7	73.7	1.2	7.3

* Actual budgeted expenditures.

As can be determined from the above fiscal data, GODR health expenditures for the period of the Loan Program, (1976-1979) rose by 30.9% in 1976; 7.6% in 1977; 20.2% in 1978; and 24.2% in 1979. Although these figures are impressive, they are considerably below the amount actually appropriated for health for the same periods:

<u>Year</u>	<u>(RD\$ in Millions)</u>			<u>Percent of Appropriation Expended</u>
	<u>Total Government Budget</u>	<u>Health Appropriation</u>	<u>Health Budget Expenditures</u>	
1975	665.9	65.9	32.0	48.6
1976	580.6	83.6	41.9	50.1
1977	631.3	76.1	45.1	59.3
1978	689.8	77.8	54.2	69.7
1979	1,018.9	102.3	67.3	65.8
1980	1,010.7	106.5	73.7	69.2

The following summary figures were extracted from the 1975-1979 National Budget (1980 expenditures unavailable) and indicate SESPAS expenditures by health activities:

<u>Distribution of SESPAS Expenditures</u> <u>by Program Activities</u> (RD\$000)					
<u>Program Activities</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
1) General Administration	1,655.1	1,085.7	1,355.8	1,376.2	3,152.2
2) Basic Health Services	1,930.7	2,271.3	1,498.5	1,599.5	2,805.5
3) Health Prevention Services	1,132.3	1,715.8	1,440.7	1,198.3	1,964.3
4) Maternal Infant Care	604.1	609.6	444.6	485.6	201.4
5) Health Recuperation Services	19,232.7	20,509.7	22,951.2	23,479.3	40,170.2
6) Social Assistance Program	1,710.8	1,882.6	1,932.7	2,198.7	10,702.7
7) Family Welfare Program			198.6	1,455.8	912.2
8) Health Sector Development Program		189.4	577.2	931.0	3,752.4
9) Support to Institutions	<u>4,991.8</u>	<u>5,543.5</u>	<u>5,788.1</u>	<u>8,860.2</u>	<u>19,942.9</u>
Total*	31,257.7	33,807.5	36,187.4	41,587.6	83,603.8

* In 1979 SESPAS expenditures for health exceeded the government's budgeted amount for health. The substantial increase in SESPAS expenditures was primarily due to increased foreign financial assistance.

SESPAS expenditures include general health services, administrative and institutional support, as well as social assistance and family welfare programs. Estimated SESPAS expenditures for health activities only (less Institutional support and social services), amounted to (RD\$ millions) 24.5 in 1975; 26.4 in 1976; 28.3 in 1977; 29.1 in 1978; and 52.0 in 1979.

Thus it appears that SESPAS expenditures for direct health activities increased by 7.8% and 7.2% in 1976 and 1977 respectively, but only 2.8% in 1978. There was a major increase in health expenditures in 1979, more than 78.7% over that of 1978, principally due to a 129% increase in the 1979 general health administration expenditures and a 71.1% increase in expenditures for health recuperation services . The latter two health activities, in fact, accounted for 83.2% (RD\$43,332,400) of the total "direct" health expenditure (\$52.0 million) for 1979.

Increased expenditures of 10% per year (1976-1978) for preventive health programs was thought to be an appropriate indicator of improved management performance of SESPAS. In 1976, the first year of the Loan, SESPAS preventive health expenditures rose 51.5% or RD\$1,715,800 above that of 1975. However, in 1977 the amount expended for preventive programs fell by 16.0%, and declined still further (16.8%) in 1978. Interestingly enough, the 1979 expenditure for preventive health programs was 73.4% above the 1975 pre-project level (from RD\$1,132,300 to RD\$1,964,300). Thus it would appear that SESPAS

expenditures for preventive health programs over the project life increased, but less than was anticipated. However, it must be noted that these yearly totals represent expenditures for preventive health services specifically, and do not include preventive health expenditures possibly included under direct curative health services.

The third major indicator set forth in Sector Loan I centered on "Health Coverage". The assumption was that if the number of people receiving at least one service from SESPAS increased by 5% over the project life, it would be indicative of not only more widely available health services, but evidence of better health planning and improved management performance as well.

An August 1979 evaluation of the coverage and costs associated with the Rural Health Service (SBS) estimated the population covered by the SBS based on the number of promoters and the average number of persons (400) per promoter as 1.3 million. Using the same base a computed estimate for 1976 - 1981 is shown below.

<u>Years</u>	<u>Number of Promoters</u>	<u>Estimated Population Coverage</u>
1976	867	346,800 ^{1/}
1977	1,242	496,800 ^{2/}
1978	1,449	579,600 ^{2/}
1979	3,270	1,308,000 ^{3/}
1980	4,700	1,880,000 ^{3/}
1981 (Aug)	5,400	2,160,000 ^{3/}

^{1/} Include Region I and IV.

^{2/} Include Region I, II, and IV.

^{3/} Include Region I, II, III, IV, and V.

The above estimated population totals compares somewhat favorably with population totals censused at the time the rural health care system (SBS) became fully operational.

<u>Operational Year</u>	<u>Region</u>	<u>Target Population</u>	<u>Cumulative Total</u>
1976	(IV)	(142,299)	142,299
1977	(I) IV	(395,890)	538,189
1978	I, (II), IV	(639,928)	1,178,117
1979	I, II, IV, (V)	(245,439)	1,423,556
1980	I, II, (III), IV, V	(716,765)	2,140,321

(Region or population target).

Other sub-indicators included in the logical framework concerned benchmarks to measure (1) the high average length of stay in SESPAS hospitals, (2) the time required for SESPAS to repair a piece of equipment, (3) the percentage of doctors assigned to SESPAS clinics, and (4) the quality of supervision given health promoters. The appropriateness of some of the indicators (i.e. average length of stay; utilization of physician time) as measures of administrative improvement, in the absence of specific project activities, may not have been good reflectors of the end of project status.

The percentage of the GODR budgeted and unbudgeted amounts going to SESPAS may be considered an indirect indicator of SESPAS effectiveness and a reflection of greater confidence in SESPAS by the present administration, as well as increased capability on the part of

SESPAS' planners, programmers, and managers to make a case for obtaining greater central government health allocations.

The problem of inadequate supervisory performance at levels above promoters has been addressed in earlier evaluations. With respect to the indifferent performance of nurse auxiliaries as immediate supervisors of promoters, the decision to change the administrative structure of the SBS program and place promoters under the guidance of health workers trained specifically for this purpose, proved to be a wise move not only in terms of health direction and supervision of promoters' activities, the move also provided for more comprehensive health services to the rural communities to include increased preventive and promotional health coverage.

As to physician time spent in rural health clinic, in 1979 SESPAS instituted administrative changes pertaining to assignment of doctors to rural health clinic, including changes in contractual procedures, so that responsibilities of interns as well as SESPAS' regular physicians, were more clearly delineated and binding. This has resulted in 100% coverage at the clinic level with some three hundred (300) doctors assigned to two hundred and eighty one (281) health clinics. The distribution of clinics are as follows:

<u>Health Regions</u>	<u>Urban</u>	<u>Rural</u>	<u>Total</u>
Metropolitan Areas*	32	15	47
I	14	15	29
II	28	48	76
III	20	29	49
IV	8	22	30
V	23	27	50
Total	125	156	281

* Santa Domingo/Santiago

Although no study was conducted as to SESPAS improvement in the time required for repair of medical equipment, additional personnel were hired and the maintenance repair operation decentralized with an engineer assigned service responsibility at the regional level. In general, it is believed that the capability of this support service has improved, and that there has been a reduction in "down-time" for a piece of medical equipment. In regards to the acquisition of equipment, for example, SESPAS has estimated such expenditures for 1980 at RD\$3,600,000. For the period covered by the Loan Agreement, capital expenditures for equipment is provided in Part "B" below:

Economic Classification
of SESPAS Expenditures
(RD\$ 000)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
A. <u>Current Expenditures</u>	<u>32,576.2</u>	<u>35,062.1</u>	<u>38,112.0</u>	<u>64,130.8</u>
1) Operating Expenditures	27,248.4	29,353.2	31,723.0	53,777.9
(a) Personnel Cost	16,536.5	18,341.9	20,762.0	34,866.8
(b) Other	10,711.9	11,011.3	10,961.0	18,911.1
2) Current Transfers	5,327.8	5,708.9	6,389.1	10,190.7
3) Interest Repayment	-	-	-	162.2
B. <u>Capital Expenditures</u>	<u>1,231.3</u>	<u>1,125.3</u>	<u>3,472.6</u>	<u>19,473.0</u>
1) Direct Investments	1,231.3	1,125.3	3,472.6	4,996.4
(a) Construction	421.2	554.2	2,262.0	3,473.6
(b) Equipment and Others	810.1	571.1	1,210.6	1,522.8
2) Capital Transfers	-	-	-	14,476.6
<u>Total Expenditures</u>	<u>33,807.5</u>	<u>36,187.4</u>	<u>41,584.6</u>	<u>83,603.8</u>

19. GOAL/SUBGOAL

The approved goal of Health Sector Loan I was "to effect a reduction in the rate of population growth in the Dominican Republic". This goal was to be accomplished by improving the health and well-being of poor Dominicans (approximately 1.8 million), particularly infants and children under five, and rural families not having access to health and family planning services.

At the Program purpose level, the objectives were:

- (a) to reduce infant and preschool child mortality rates and the crude birth rate in those geographic areas subject to program activity;
- (b) to improve SESPAS performance in managing the public health system and fulfilling its policy and planning role; and
- (c) to develop a nutrition program which would provide the basis for long term improvement in the nutritional status of the country.

As mentioned previously, the SBS has been the subject of two formal evaluations over the project life and annual large sample surveys since 1976. The survey conducted at the end of 1980 and reviewed in the latest evaluation, Sept 1981, revealed some major progress in the effort to reduce mortality in infants and to lower fertility rates in communities where SBS activities are carried out (communities between 400 and 2,000 population).

HEALTH STATUS

1.- Mortality

a) Infant Mortality Rate (IMR)

Numerical data contained in the "Diagnos Survey" of 1975 is generally used as the base from which progress in improving health status of the Dominican people is measured. The report placed the pre-project National Infant Mortality Rate at 104 infant deaths per 1,000 live births (127.9 infant deaths per 1,000 live births in rural areas). Against this background, specific health interventions designed to lower IMR in the project area were implemented under the auspices of the Health Loan.

Infant mortality information collected at the end of 1978, showed that the IMR had dropped to 79.5 in the areas under the Health Program coverage at that time. According to the Program's logical frame-work, the expected rate for that year had been approximately 88 infants death per 1,000 live births or an expected decline of 15.4%. However, at that time, the Program was fully operationally in only about half of the intended communities. In 1980 when the Program was completely operational in all proposed communities, the IMR stood at 82.4. This figure represents a 20.7% drop from the pre-project (1973-1974) national figure of 104, or, if consideration is given to the rural IMR (127.9), a 35.5% rate reduction was realized in 1980. Accordingly, it may be more appropriate to use the rural IMR as the initial base since the health interventions took place in rural communities. Nevertheless, the trend is downwards.

b) Age Specific (1-4 years) Mortality Rate

Mortality rate for children of ages one (1) through four (4) declined from the national rate of 17 per 1,000 in the 1973-1974 period to 10.9 (35.8%) decline in 1978. The expected rate was 15.3. The major decline appear to have taken place in the first year of the project (10.1 or a 40.6% decline). The mortality rate fluctuated from a low of 10.1 to a high of 10.9. As stated in the SBS evaluation (Sept 1981) the slow decline in the death rate (since 1978) among this age group may reflect, among other things, the decreasing but continuing influence of the malnutrition problem, and, undoubtedly, indicate a need for more vigorously nutrition effort. Although a surveillance (promoters) and treatment (recuperation centers) mechanism is in place in target areas, unfortunately many children continue to be brought to the centers (and hospitals) only after they reach a seriously malnourished state.

2.- Fertility

a) Birth Rate

According to the Project Paper (PP), the birth rate were not expected to decline substantially during the three-year life of the program, although a 15% reduction was hoped for after five years. Consequently, the birth rate was not used as an indicator at the goal level. However, since the birth rate is an important component of population change, it is considered in this report, and certainly contributed to progress made at the goal level.

Since 1978, when the birth rate stood at 33 births per 1,000 population, the rate has been declining at a relatively steady pace. In 1980, the rate was 25.7 births per 1,000 population in the project area,

22% below the rate realized in 1978 and clearly ahead of the 15% reduction that was not expected to be obtainable until 1981 (five years into the project).

b) General Fertility Rate (GFR)

The General Fertility Rate is a more refined measure of population change than crude birth rate because it refers specifically to the age-sex group at risk of giving birth (i.e., women, 15-49 years of age). Based on survey data collected over a period of five years, the GFRs for the sample population were as follows:

<u>Year</u>	<u>Women in age 15-49 (Sample Pop)</u>	<u>Number of births</u>	<u>General Fertility Rate</u>
1976	1,454	202	138.9
1977	6,369	1,282	201.3
1978	11,041	1,787	161.9
1979	16,623	2,291	137.8
1980	30,649	3,834	125.1

The decline in the GFR since 1977 is believed to be indicative of changes in fertility behaviour of the target population.

3.- Contraception

In the design of the Low-Cost Health Care Delivery system, high priority was given to the provision of family planning services, especially information and education on family planning methods and the distribution of the free contraceptives. An August 1977 study involving three control communities and conducted in Health Region IV, which has the longest experience with the Program activities, showed that the contraception rate (mostly pill and condoms) was strikingly higher,

(14%) in communities where SBS health and family planning interventions had been introduced, as compared to non SBS communities where only a 5.8% user rate was estimated. In 1980, the percentage of females (15-49) practicing contraception, in the areas serviced by the SBS, stood at 18.1% with pills, sterilization, and condoms as the preferred methods of contraception.

4.- Rate of Natural Increase

The population growth rate before the introduction of the SBS activities (1976) hovered around the 3 percent level. The rate in the SBS population survey in 1977 was 3.2; in 1978 the rate was 2.7 and in 1979 the rate had fallen to 2.4. The last survey under Health Loan I, placed the rate at 1.9 in the project communities.

A.- NUTRITION

Health Sector Loan I developed certain nutrition interventions (nutrition recuperation centers, nutrition training for health promoters, seminars on breast-feeding, nutrition surveillance) designed to combat the malnutrition problem. Nevertheless, it has been observed that there still remain a serious lack of adequate nutrition coordination among all agencies and institutions which deal with or should be dealing with the chronic nutrition problem in the Dominican Republic. Moreover, there is no convincing evidence to prove that the National Nutrition Plan is being updated and reevaluated with the purpose of improving it. There is an urgent need to establish the necessary planning and coordinating mechanism to provide a comprehensive approach to the malnutrition problem. Although

an Office of Nutrition Coordination was established through the Health Loan, the Office does not have the kind of high level administrative or decision making authority to focus multisectoral nutrition interventions in a concentrated target specific manner.

The comparative success of the nutrition effort can be attributed to the promotional and surveillance activities (preventive measures) of the 5,400 promoters under the SBS program, and to the national program of nutrition education through the use of mass media, mostly radio, as a mechanism to reach target groups.

Direct nutrition services provided by health promoters and recuperation centers have had a measurable impact on the nutrition status of malnourished children, and on the provision of nutrition information and education to the mothers of such children. Evidence of the effectiveness of these services have been demonstrated by the reduction of infant and child mortality rates.

The effectiveness of radio as a medium for communicating health messages (family planning, environmental health, nutrition) has been adequately demonstrated in the Dominican Republic. As stated earlier, in the Dominican Republic there is a 83% heads of family radio listening audience. Interviews with persons coming to family planning clinics revealed that 52 percent are current listeners to family planning radio programs.

In a preschool nutrition evaluation carried out in the Dominican Republic by CARE International (dated August 1977), it was found that 53 percent of mothers listen to radio nutrition education messages occasionally. A recent food habit study (July 1981) conducted by the

Research Center of National University of Pedro Henriquez Urefia for the Office of Nutrition Coordination, revealed an occasional nutrition information listening audience of 71.1 percent, and 51 a percent daily listening audience.

Some gains were also made in creating an awareness of the nature of the nutrition problem among Government business and professional leaders through the use of national seminars. The consensus (AID/DR and GODR/SESPAS staff) is that "counsciousness raising" has been one of the main stay of these seminars.

Thus, the judical use of promoters, recuperation centers, radio messages, and seminars (as nutrition interventions), have been relatively effective in improving the nutritional state of the target population, specifically infants and children.

B.- ADMINISTRATIVE REFORM

In order to reduce the rate of population growth and improve the health and well-being of disfranchised members of the Dominican society, a health program was formulated and implemented. An administrative reform component was incorporated into the Loan Program whose purpose was to improve SESPAS' management of the public health system.

Two assumptions were made in connection with the Administrative Reform package (1) that improve management performance was necessary on the part of SESPAS before significant progress could be made under the SBS component, and (2) more specifically, that increased management capability would enhance the extension of the public health system into the rural areas. Justification for the inclusion of the Administrative Component

in the Loan Program was primarily based on a pre-program analysis of SESPAS administrative operations as described in the Health Assessment Report of 1975. The report cited constraints to the efficient execution of SESPAS' health role as poor financial management practices, inefficient personnel system, unreliable information system, and an inadequate organization and management structure.

The Health Assessment Report also suggested that administrative improvement within the Secretariat of Health be accomplished by providing the Secretariat with resources to contract technical assistance, particularly from universities and management firms. Subsequently, when the Loan was designed an administrative element was included. This element specifically focused on the development of institutional capacity (trained staff, budget, supply and equipment, financial management, personnel, planning, and information) and institutional performance (delivery of services).

As stated previously, the US management firm contracted to provide the above inputs, developed a workplan and a budget for each activity unit or area selected: the Office of the Secretary, Planning and Evaluation, Human Resources, Personnel, Financial Administration, Physical Resources (including Maintenance), Supply and Transportation, and Statistics and Information Systems. SESPAS' Technical Office of Administrative Reform (created by the Loan) reviewed the detailed workplans with relevant SESPAS' division heads and technical offices, and the AID Mission. Subsequently, the plans were forwarded to the Secretary

for approval. Of the eight areas recommended for revision, five were eventually approved for implementation: reorganization of SESPAS, financial administration, human resources, personnel* and information system. Achievements in these program areas can be directly attributed to the interest and support (sanctions) from the Secretary of Health and the various division directors. The remaining areas were either postponed, proposed for other donor financing and development (i.e., PAHO), or eliminated.

During the life of the Loan many of the shortcomings of SESPAS' management system were dealt with. Mission believes SESPAS has proven to have the institutional capacity to deliver health services to the population. SESPAS has been instrumental in the development of the activities under the Low Cost Health Delivery System and has incorporated the program into their own budget even before Health Loan I was fully disbursed. Further, the SBS is now a part of the Rural Health Services Division, which was created by SESPAS in the reorganization process.

Health Loan II is now active. And with the implementation of the potable water/sewage/health education elements of the program, SESPAS has been able to handle the bidding process for the procurement of handpumps, materials for gravity flow systems and wells, preparation of materials for latrines, etc. SESPAS has also given evidence of being able to establish adequate controls of inventory and equipment and, through the Loan Coordinator's Office controls the implementation of all Health Sector Loan II activities.

* Personnel is now part of the Human Resource Division.

20. BENEFICIARIES

The primary beneficiaries of the Loan Program are the rural poor, and in particular, mothers, infants and children, and women of child-bearing age (target groups) who live in rural communities with population between 400 and 2,000.

The more immediate goal of the Loan Program was to improve the health and well-being of the poorest people in the rural areas through the establishment of a cost effective rural health care system which would reach some 1.8 million people not served by the existing public health system. Now that the Program activities are fully operational in all health regions, the number of persons under coverage of the rural health care system is estimated to be 2.1 million, 300,000 more than originally anticipated.

These beneficiaries now receive simple preventive and basic health care services, including family planning (contraceptives and information) services, all as a result of the Loan. These services are benefiting the entire Dominican society by reducing the mortality rate in general and the infant mortality rate in particular, as well as contributing to the lowering of the population growth rate. In addition to improve health and reduction in fertility rates, increased social and economic benefits are also believed to be accruing to the target population, primarily as the result of averted births.

Other beneficiaries of the Loan Program are the personnel of SESPAS that have been provided technical assistance and trained in various aspects of health management. These include 5,400 promoters

providing basic health care to rural communities in which they reside, nursing and medical personnel providing more advanced services in rural health clinics, and supervisory and management personnel at the local, regional, and national levels.

21. UNPLANNED EFFECTS

1. The Health Loan initially included an element generally referred to as the Urban Basic Health Services Program (USBS) which consisted of activities directed toward the health needs of urban poor without adequate access to health care services. The USBS was introduced in the Herrera Barrio of Santo Domingo on a pilot basis. Several months after the program was initiated, it was learned that the area had begun to receive attention from a health outreach program of a local medical school, social services were being provided by a private voluntary organization, and family planning services were being offered from a recently constructed government health clinic. There was also an unexpected surge in the number of private physician practicing in the area. During the same period, it was found that the USBS was plagued by a high rate of attrition of health promoters. Nearly 30% the USBS promoters had move to other parts of the city apparently in search of better economic opportunities.

These unanticipated events, coming after the introduction of the USBS, caused GODR/AID to discontinue the USBS program after determining that a duplication of health services was evident. Interesting enough, many of these health entities were not present before USBS was introduced into the Herrera area.

2. The Loan was designed to provide health services to an estimated 1.8 million target population. Because of the success of the SBS component, GODR provided additional human and financial resources which made it possible for a 2.1 million population to receive health coverage.

22. LESSON LEARNED

1. Administrative Reform of a major department, ministry, or secretariat of a national government, require a strong and mutually respected working relationship, as well as collaborative actions on the part of host country officials and technical personnel of the donor agency. Accordingly, the lesson learned from this Loan Program is the importance of delicately handling programmatic inputs which proposes to improve the management of a major government institution. Implementation of the desired changes in the operation of an institution require the personal support of the staff of all affected units. Therefore, such officials should be employed in the planning process to the fullest extent possible. It is particularly important, also, that administrative reform programs be designed so that those who will be directly responsible for instituting the changes, participate in the decision making process at all stages of design and implementation.

2. A series of nutrition interventions were developed under the Loan program to improve the nutrition status. Included was an intervention to create an organizational unit with a nutrition coordination focus. It is believed that the desired coordination never materialized because the unit was not established at the highest possible government level and, as such, did not have the public authority to bridge the nutrition activities of the several agencies and institutions dealing with the chronic nutrition problem.

HEALTH SECTOR LOAN I (517-U-028)
EVALUATION OF THE
LOW COST RURAL HEALTH DELIVERY SYSTEM (SBS)
COMPONENT

I.- INTRODUCTION

In mid-1974 a group of 45 Dominicans from a variety of disciplines undertook an in-depth look at the state of health of the Dominica people.

These investigators noted that a Dominican child born alive in 1974 was six times as likely to die before his first birthday as a child born alive in the United States. More tragically still was the finding that a Dominican child who reached his first birthday was seventeen times as likely to die before his fifth birthday as comparable child in Barbados.

One of the most important factors contributing to this excessive mortality is malnutrition. The best available evidence suggested that three out of every four preschool Dominican children suffered from malnutrition to some degree and that one in four suffered from second or third degree malnutrition. The latter children are severely malnourished. For these youngsters an attack of diarrhea, which is little more than a nuisance for a healthy child, may prove rapidly fatal.

The problem of malnutrition in the Dominican Republic is compounded by excessive fertility. The Dominican researchers noted that Dominican women of the 20-24 year age group bore three times as many children in a given year as their American counterparts. With low family income more mouths to feed means less food per mouth.

The Dominican Government had not been indifferent to the health needs of its people. A fairly extensive network of hospitals and rural clinics, some of which were constructed with AID assistance and more recently with World Bank assistance, had been elaborated. Only those Dominicans who live in the most isolated areas are more than a few hours by car from a health facility.

Nevertheless, this health infrastructure had not proven effective in providing services to most Dominicans, particularly those who live in rural areas, for reasons of cost and time.

Faced with this rather dismal perspective, the Dominican investigators opted for the only logical solution to the problem --- health care must be brought to the people, particularly those in greatest need. It is greatly to their credit that these young Dominicans insisted that health care should not just be available in rural villages but should be offered in the homes of the inhabitants of these areas.

Additionally, high priority was given to a nationwide program of nutrition-education by radio and to technical assistance for improving administrative and management practices in the main provider of health care, the Secretariat of Public Health and Social Assistance (SESPAS).

The Government of the Dominican Republic requested assistance from USAID/Dominican Republic in implementing a program to address specifically each of the problems cited above, and on October 1, 1975, an agreement was signed between the Government of the Dominican Republic and the U.S. Agency for International Development which provided \$4,800,000 from AID Loan and RD\$6,919,000 from the GODR to finance a health sector program for

three years (extended to five years). The total amount disbursed from AID funds, for each program element are as follows:

Low Cost Health Delivery System	2,402,417
Nutriton	663,760
Institutional Development, SESPAS	<u>1,733,823</u>
TOTAL	4,800,000

II.- PROGRAM DESIGN

Basic Health Services System (SBS)

The Low Cost Health Delivery System, now known as the Basic Health Services System, is designed to bring minimal health care to the inhabitants of all Dominican villages with populations between 400-2000. The aim of the program is to reach 60% of the rural population. The goals of the program are to reduce infant and preschool child mortality by 25% respectively within a period of three years, and to reduce fertility by 15% within five years.

In each village to be served, a committee for health promotion is formed, and this committee selects a man or woman to be trained as a health promoter. The health promoter is given three weeks of training and upon return to his or her village, the promoter conducts a population census enumerating the inhabitants by age and sex. Each promoter is assigned about 70 households and is expected to visit each household every 15 days.

The functions of the promoter are as follows:

- 1) to report all births and to report all deaths by age and sex;

- 2) to encourage breast feeding of infants throughout the first year of life and to promote the introduction of solid foods in infant's diets at the age of six months;
- 3)* to immunize children against measles, whooping cough, diphtheria, tetanus and to immunize women of reproductive age against tetanus;
- 4) to provide oral ferrous sulphate to all pregnant women;
- 5) to treat diarrheal disorders in early childhood by oral rehydration and train mothers on how to prepare the oral rehydration solution;
- 6) to provide symptomatic treatment of uncomplicated upper respiratory infections; and
- 7) to offer contraceptive pills and condoms to those couples who request them.

III.- IMPLEMENTATION

The Low Cost Health Delivery System (SBS) was initiated in Health Region IV (Southwest) in the year 1976 and through August 1978 had approximately 1200 health promoters distributed among Regions IV, I and part of Region II. In January 1979, the stronger financial support offered by the Government made it possible to rapidly expand the program and by August 1981 there was a total of 5400 promoters working in rural communities throughout the nation with services available to approximately 2.1 million rural inhabitants.

The Secretariat of Health of the Dominican Republic has created a Rural Health Directorate, now responsible for the development of

* As the program was developed, polio immunization was added. Tetanus immunization is now available to any member of the household.

activities of the SBS. The transfer of responsibilities was achieved gradually during the life of the project, with a very close coordination between the Loan Coordinator and the Director of this unit.

IV.- 1980 EVALUATION OF THE LOW COST HEALTH DELIVERY SYSTEM (SBS)

A.- Methodology used for the evaluation

1.- Validation of the family records

(a) Three regions were selected for this validation. The three regions were randomized to determine the order in which the promoters were to be numbered for sampling purposes. The order obtained was: V, I, and IV.

(b) Five promoters were randomly selected from each region and for each one, twenty (20) family records were selected at random and the households visited and inquiries made as to: (See Annex I).

(1) whether or not the promoter was visiting them on a regular basis.

(2) whether or not the number of persons listed in the family record were actually living in the household.

(3) whether or not members identified as practicing family planning were actually doing so.

(4) whether or not the members identified in the record as having received a given immunization actually received them.

(5) verification of births and deaths, including the dates the events happened.

(b) Comments

(1) There was difficulty, on the part of the head of the household or his wife, in remembering exact dates of certain events, as

well as which specific immunizations were received by members of the household. However, they were accurate in remembering the event and, in relation to immunizations, the great majority had kept the record cards issued by the promoters.

(2) There was a positive response as to the fact that the promoters were visiting them on a regular basis. Some of them mentioned that, in between visits of the promoters, if they needed any service they visited the promoter's house.

(3) Discrepancies as to the number of persons living in the household, compared to the number registered in the family record, stemmed from the fact (in very few cases) that some members were provisionally working in other agricultural areas and had to stay away during most part of the week. When this was the case, it was considered that the information in the record was correct.

2.- Random Sample of Promoters from Health Regions

(a) The order in which the promoters were to be progressively numbered to get a sample of 10% of them was determined by randomizing the regions. The order in which they came on the sample was IV, I, II, III, and V. The decision was made to consider, for a particular year, only regions in which the services were fully developed throughout the region. For the purpose of the survey, region 0 was not considered. The sample was drawn and the family records of each promoter were collected and the information contained in the same was tabulated. (Annex II).

(b) A daily sample of the processed records was examined to determine the accuracy of the information drawn. At the end, another sample was taken from all the records with the same purpose.

B.- Findings and Brief Analysis

1.- Sample Population Distribution

It is interesting to note (Table I) the reduction in the less than one year age group (37.5%) between 1976 and 1980 in the sample population. Similarly there is also a reduction in the below 15 years age group: in 1976 this group accounted for 51.3% of the total sample population compared to 47% in 1980. This last distribution together with a low level of educational attainment and a very low per capita income, support the prediction of a high morbidity due to infectious diseases (gastroenteritis mainly), communicable diseases of childhood (diphtheria, pertussis, measles, etc.), respiratory infections and perinatal disorders. To these, one can add the malnutrition problem which undoubtedly contributes to increase mortality rates from different infectious diseases.

2.- Births

In 1977, the evaluation of the SBS showed a birth rate of 40.3 live births per 1000 population (Table II) with a fertility rate of 201 live births per 1000 women aged 15-49. In 1980, the birth rate in the sample population was found to be 25.7 live births per 1000 population representing a 36.2% reduction from 1977 (the Program had expected a 15% reduction in five years, from 1975-1980) fertility rate 125 live births per 1000 women 15-49 years old representing a 37.8% reduction. From Table I we can see that the percentage of women in reproductive age (15-49 years) from 1976 to 1980 has remained almost the same (between 20 to 20.6). The 37.8% decrease in fertility and the 36.2% reduction in the birth rates cannot be explained on the basis of a reduction of women in

reproductive age. One of the possible factors to explain this decrease could be that in December 1980 18% of women in reproductive age (see Table III) were using some type of contraceptive as opposed to 5.8% found in the evaluation of the SBS done in August 1977.

The Child Woman Ratio (CWR) for the sample population from 1976 to 1980 is shown in Table VII. The reduction in the CWR from 1976 to 1980 is 18.2%.

3.- Natural Increase

During 1977, the growth of the population in the Dominican Republic, due to natural increase (the excess of births over deaths) showed a rate of 32.4 persons per 1000 population, compared to 19 in 1980 for the areas covered by the sample. This decrease was due primarily to the decrease in the birth rates (see Table II).

One of the aims of the project was to reduce the population growth rate from "the current level" of 3% to 2.7% in 1978 (10% reduction). In the 1980 evaluation the population growth rate in the sample population was found to be 1.9% representing a 36.6% reduction from the 3%.

4.- Deaths Rates

In the 1977 the national crude death rate was 7.8, and 6.7 for the sample area in 1980 (Table IV) representing a 14% reduction. Age-adjusted death rates control for changes and variations in the age composition of the population and, therefore, they are better indicators that the crude death rates in showing changes in the risk of dying, over a period of time.

When we compare the age-adjusted death rates for the SBS, in 1977 (14.45%) to that of the SBS in 1980 (12.55), we find that there was a 13% reduction.

5.- Death Rates by Age

The Diagnos Survey of the Health Sector Assessment (1974) estimated Infant Mortality at 103.8 per 1000 live births nationwide (127.9 rural and 73.9 urban). Table IV shows that, considering these figures, the sample rural population's infant mortality rates of 89.1 in 1980 represent a 30.3% decline from the 127.9 found for the nation's rural population in 1974. If we consider the initial evaluation of the SBS (1977), then the decline is 8.1% (See Graph I).

The program was aiming at reducing Infant Mortality by 8% after the first year and each year thereafter for the first three years of operation. The Infant Mortality Rates for the different years are as follows:

<u>Year</u>	<u>Infant Mortality Rate</u>
1974	* 127.9
1977	89.7 (29.8% reduction)
1978	79.5 (11.4% reduction)
1979	**
1980	82.4 (3.6% increase)

* Diagnos Survey.

** Not considered for being extremely low (41).

The expected reduction in ther Infant Mortality Rates was 15.4% (from 104, which was the national and not the rural rate for 1973-74 to 88 in 1978). The 1980 Infant Mortality Rate of 82.4 in the sample population represents a 20.7% reduction from the 104 National Infant Mortality rate for 1973-1974.

Infant mortality rates are influenced by medical factors during the neonatal period and by environmental factors thereafter. No attempt has been made in this evaluation to differentiate among neonatal and post-neonatal infant mortality. It is worth mentioning that the information gathered through the SBS seems to be reliable (as corroborated in this study), among other things, probably because the promoters reside where the events happen (where the parents of newborn live or where the dead lived).

The age-specific 1-4 mortality rate was 16.8 for the Dominican Republic in 1974 (Diagnos), with 15 deaths per 1000 aged 1-4 for urban areas and 19.6 for the rural. If we consider the findings of the 1980 evaluation (10.4 deaths in the sample population per thousand aged 1-4 years) a 47% reduction has occurred compared to 1974. However, when we compare the age specific (1-4 years) death rates in the sample population from 1976 to 1980, there is no encouraging change in these rates (see Table IV). Deaths rates among this age group may reflect, among other things, the influence of the malnutrition problem.

Some public health authorities are convinced that it is very difficult, if not impossible, to reduce fertility where infant and preschool mortality rates are high. The reduction accomplished in infant mortality by the SBS may also account, according to this hypothesis, for the reduction in fertility shown in Section II.

TABLE I

RURAL POPULATION DISTRIBUTION BY AGE

Sample Survey in Rural Areas Served by the SBS

1976 - 1980

	<u>1976</u>	<u>%</u>	<u>1977</u>	<u>%</u>	<u>1978</u>	<u>%</u>	<u>1979</u>	<u>%</u>	<u>1980*</u>	<u>%</u>
Total Sample Population	7063		31801		54125		80754		148896	
Less than 1 year	343	(4.8)	1559	(4.9)	1938	(3.6)	2750	(3.4)	4594	(3.0)
1-4 years	1086	(15.4)	4989	(15.7)	8007	(14.8)	11212	(13.9)	20027	(13.4)
5-9 years	1144	(16.2)	5469	(17.2)	9221	(17.0)	13381	(16.6)	23694	(15.9)
10-14 years	1052	(14.9)	4490	(14.1)	7857	(14.5)	11685	(14.5)	21704	(14.6)
15-49 years (females)	1454	(20.6)	6369	(20.0)	11040	(20.4)	16623	(20.6)	30649	(20.6)
15-49 years (males)	1396	(19.8)	6268	(19.7)	11019	(20.3)	17133	(21.2)	32097	(21.5)
50 or more	588	(8.3)	2657	(8.3)	5043	(9.3)	7970	(9.9)	16131	(10.8)

* Adjusted.

TABLE II

HEALTH SECTOR LOAN I (517-U-028)
SBS EVALUATION 1980
(SUMMARY)

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Total Population	7063	31801	54125	80754	148896
Less than 1 year	343	1559	1938	2750	4594
1 - 4	1086	4989	8007	11212	20027
5 - 9	1144	5469	9221	13381	213694
10 - 14	1052	4490	7857	11685	21704
15 - 49 (females)	1454	6369	11040	16623	30649
15 - 49 (males)	1396	6268	11019	17133	32097
50 or more	588	2657	5043	7970	16131
Live Births	202	1282	1787	2291	3834
Birth Rates	28.6	40.3	33	28.4	25.7
Infant Deaths	20	115	142	94	316
Infant Mortality Rates	99	89.7	79.5	41	82.4
Deaths 1 - 4 years	11	50	87	70	208
Age Specific Death Rates (1 - 4 years)	10.1	10	10.9	6.2	10.4
Total Deaths	38	249	336	318	1002
General Mortality Rates	5.4	7.8	6.2	3.9	6.7

Notes:

1976 - Only Region IV fully operational.

1977 - Regions I and IV fully operational.

1978 - Regions I, II and IV fully operational.

1979 - Regions I, II, IV and V fully operational.

1980 - Regions I, II, III, IV and V fully operational.

* Adjusted.

TABLE III

PERCENTAGE FEMALES (15-49 YEARS) PRACTICING CONTRACEPTION BY METHOD

Sample Survey in Rural Areas Served by the SBS
December 1980

<u>REGION</u>	<u>FEMALES</u>			<u>CONTRACEPTIVE METHOD UTILIZED</u>									
	<u>15-49 YEARS OF AGE</u>			<u>Condoms</u>		<u>Sterilized</u>		<u>Pills</u>		<u>IUD</u>		<u>Other</u>	
	<u>TOTAL</u>	<u>ACTIVE</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
I	7,584	1,160	15.3	205 (2.7)	390 (5.1)	413 (5.4)	66 (0.9)	86 (1.1)					
II	7,563	2,308	30.5	540 (7.1)	832 (11)	777 (10.3)	99 (1.2)	69 (0.9)					
III	10,414	1,283	12.3	192 (1.8)	557 (5.3)	414 (3.9)	53 (0.5)	67 (0.6)					
IV	2,603	461	17.7	65 (2.5)	112 (4.3)	258 (10)	6 (0.2)	20 (0.8)					
V	<u>2,544</u>	<u>345</u>	<u>13.6</u>	<u>76 (3)</u>	<u>24 (0.9)</u>	<u>204 (8)</u>	<u>15 (0.6)</u>	<u>26 (1)</u>					
TOTAL	30,708	5,557	18	1,078 (3.5)	1,915 (6.2)	2,066 (6.7)	230 (0.7)	268 (0.9)					

TABLE IV

	<u>INFANT MORTALITY</u>				
	Sample Survey in Rural Areas*				
	Served by the SBS				
	1976 - 1980				
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Live Births	202	1282	1787	2291	3834
Infant Deaths	20	115	142	94	316
** Infant Death Rate	99.0	89.7	79.5	41.0	82.4

* Sample for regions where the SBS was fully operational during the years concerned.

** Infant Deaths/1000 Live Births.

TABLE V

AGE-SPECIFIC (1-4 YRS.) DEATH RATES

	Sample Survey in Rural Areas* Served by the SBS 1976 - 1980				
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Total Population					
1 - 4 yrs.	1086	4989	8007	11212	20027
Deaths					
1 - 4 yrs.	11	50	87	70	208
** Age Specific Death					
Rates	10.1	10.0	10.9	6.2	10.4

* Sample for regions where the SBS was fully operational during the years concerned.

** Deaths/1000 population in the 1-4 age group.

TABLE VI

	<u>GENERAL MORTALITY RATES</u>				
	Sample Survey in Rural Areas*				
	Served by the SBS				
	1976 - 1980				
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Population Surveyed	7063	31801	54125	80754	148896
Deaths	38	249	336	318	1002
**Death Rates	5.4	7.8	6.2	3.9	6.7

* Sample from regions where the SBS was fully operational during the years concerned.

** Deaths/1000 population.

TABLE VII

CHILD WOMEN RATIOS

Sample Survey in Rural Areas
Served by the SBS
1976 - 1980

<u>Year</u>	<u>Children under 5 yrs. of age per 1000 females 15-49 in the sample population (CWR)</u>	<u>Percent Change</u>
1976	982	-
1977	1028	+ 4.7
1978	901	-12.3
1979	840	- 6.8
1980	803	- 4.4

ANNEX "A"

Summary of Draft Evaluation Report and the Utility
of Evaluations Based on Existing Samples,
and Data Derived from SBS Records

By

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Health Promoters

Between January of 1976 and August of 1981, a total of 5400 health promoters began working in rural communities of 400-2000 inhabitants. These promoters are responsible for an average of 70 families a piece. Their selection is carried out by local health committees who require that they be able to read and write and are willing to undergo a total of four weeks of training for the duties involved. To date, the promoters have been overwhelmingly women (about 95%), and, until August of 1978, their integration into the program was gradual, with approximately 1200 health promoters distributed among health regions IV, I and II. A rapid expansion of the program followed after that.

Records

Each of the promoters maintains a family record containing information on family members and their characteristics (age, sex, date of birth, name), a record of all immunizations, and of births, deaths and

arrivals and departures (including the dates at which they took place) occurring to the household. During the seven years that their system has operated, three versions of the family record have been used. It is not clear how the change in the design of the family record might have affected the quality of the information recorded, though no drastic changes were made in the manner in which vital events were inscribed.

Quality Checks of Information Recording

For purposes of evaluation of the SBS System, two samples of records have been drawn. The first, consisting of about 300 family records from three health regions, served as a basis for evaluating the validity of records and promoter performance of duties. Quantitative information is not available concerning the exact degree to which records were verified or discrepancies were found. Although the comparisons that were made were interpreted as producing satisfactory evidence of the recorded information reflected events that actually took place, they do not constitute a methodologically independent check on the accuracy of the information. Thus, although there is little reason to believe that immunizations are under-reported, it is possible that other events (particularly births and deaths) occurred to families covered by the program but were not recorded or were misrecorded by promoters. No assessment can be made concerning the extent to which this may have occurred, although it would seem that a major advantage of the SBS System is the fact that events such as the birth of children could hardly go unnoticed by the promoters, who are themselves members of the community. This, of course, would be less true of deaths to children occurring soon after birth.

The Study Sample

To obtain estimates of levels and trends of health indicators, a second, larger sample was drawn that consisted of 10% of health promoters that had been active for at least one year as of June, 1980 in Regions I-V. Records for as far back as the promoter's initiation into the program were obtained from them and selected information was abstracted, transferred to computer punch cards and the data tabulated. This tabulation produced, for each region, distributions of the population by age, selected age groups (including under 1, 1-4, and 15-49), sex, as well as crude and general rates of fertility and mortality for as many years as the individual promoters had belonged to the program in their province and health region. Only data for regions I and IV have been presented in this document and for these regions, data for certain years were not presented. The presentation has been limited to only two regions because for regions II, III and V, data could be tabulated for only one to three years, and insufficient period to demonstrate trends. Furthermore, it was determined that in abstracting information from promoters records, not all of the births that occurred to some families during a given year were recorded, although the entire household was included as part of the total population "at risk" during that year. This seems to have resulted for a decision to count only those births that occurred to the family after becoming part of the program. Thus, the total number of births in Region I appears to have been underestimated during 1976 and 1979, both years during which large number of promoters entered the program after the beginning of the year. It is not surprising, therefore, that measures of fertility calculated from those births show an unanticipated rise from 1976 to 1977 and a dip

during 1979. The same is true of infant and general mortality. In the case of child mortality, however, there is greater instability of the rates (because of the small number of cases) and it is difficult to draw conclusions regarding mortality at these ages.

In general, the estimates of fertility derived from these data appear to underestimate fertility. Judging from informal estimates of the National Statistical Office however a national crude birth rate of about 42 for 1975 and about 28 for 1982, the degree of underestimation is not great. Moreover, the more critical question bearing upon the validity of conclusions drawn in this document is whether or not there was differential underestimation during the years for which comparisons are made. In the case of fertility there appeared to be a decline between 1977 and 1980 for Region I and IV. While there are a variety of factors that could have affected the degree of underestimation of fertility during these years, it appears that the one under discussion (the deflating effect could not have of the addition of the partial records of new promoters) operated to produce greater underestimation in 1980 than in 1977. Since one criterion for eligibility for inclusion in the sample was that the promoter had to have worked at least one full year in the SBS program, no births or deaths that appeared in their records would have been uncounted. In the case of the promoters that appear in the sample for 1977, however, some (approximately 10%) had joined after the beginning of the calendar year. Insofar as the effect of this factors is concerned, then, the comparison between 1977 and 1980 underestimates the size of the difference in levels of mortality and fertility.

Another factor that might affect the conclusions drawn from these data is the addition to the areas served at the beginning of the program of other areas (hence population and promoters). This took place principally during 1979 and means that the areas referred to in 1980 are different from those that provided the data prior to 1979. Unfortunately, very little information is available at this time with which to estimate the differences between the communities represented in the sample during 1980 as compared with 1976 or 1977. Although it may be suggested that rural communities of 400-2000 inhabitants tend to be rather homogeneous, demographically, and hence the addition of these communities might not seriously affect conclusions drawn in this document, this question is worthy of further investigation.

In general, then, it appears that there was surely some significant fall in fertility in the regions of greatest exposure to the SBS program. There may also have been a moderate decline in infant and general mortality as well, but this is more difficult to document. It is not possible, using the data available through the SBS to establish the link between the changes discussed here with the services and assistance made available to families in health regions I and IV in family planning, nutrition, and immunization. In part, this is due to the limitations in the types of information collected by promoters, and in part because of the manner in which data were processed and tabulated. It would have been of great use, for example, age-specific rates of fertility could have been calculated, for this would have provided valuable information as to family formation strategies. This, of course, does not mean that the program has not had a positive impact on fertility and mortality, only that information contained in promoters records and their statistical treatment to date have been insufficient to demonstrate that impact.