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ABSTRACT

The final report of the Health Start evaluation of the second year program is presented in three separate documents. This paper presents an overview of the Urban Institute's evaluation of the Health Start program and covers two broad areas: health service coordination and health service delivery. The two major questions for the 1972-73 evaluation were the following: (1) How can health services for low-income children best be coordinated?, and (2) What are some innovative ways to provide health detection, treatment, entry into an on-going program and education that could be adopted by summer and full-year Head Start programs? Recommendations made as a result of the evaluation study were to strengthen federal program management and to design the Health Start program to yield more useful information. Limitations of the evaluation study are noted. The appendix presents an overview of the health service component of the Health Start program. (CS)

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HEALTH START: SUMMARY OF THE EVALUATION OF THE SECOND YEAR PROGRAM

by

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ABSTRACT

The final report of the Health Start evaluation of the second year program is presented in three separate documents. This paper presents an overview of The Urban Institute's evaluation of the Health Start program and addresses the research questions posed by the Office of Child Development for the evaluators. The questions provided the evaluation framework and covered two broad areas: health service coordination and health service delivery. This paper ends with major conclusions about the Health Start program and recommendations for possible adoption in Head Start and other programs.

Health Start: Final Report of the Evaluation of the Second Year Program (U.I. Paper 964-6) is available on request from The Urban Institute. It includes a more detailed description and analysis of the Health Start program and extensive data on the approximately 10,000 children enrolled. The Urban Institute Analysis Plan for the Second Program Year (U.I. Working Paper 964-2) is also available on request from The Institute.

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I. OVERVIEW OF THE REPORT

A. The Evaluation

This report represents the results of the two year evaluation of the Health Start program.[1] At the beginning of each program year, the Office of Child Development (OCD) posed a set of research questions to be addressed by the evaluators. In the first program year (1971-72), The Urban Institute developed a reporting system and monitored the Health Start projects in order to collect data for responding to the OCD questions about project performance.

Because project approaches and characteristics varied greatly, the evaluators could not say definitively what first year factors had related to project success. They did identify several promising approaches to test in a more structured program. The two major evaluation recommendations for the second year (1972-73) Health Start program were: to strengthen federal program management and to design the program to yield more useful information. Even though a national Health Start director was appointed to manage the program, the second year program lacked a program design which would allow systemmatic testing of various approaches to providing health services to economically disadvantaged preschool children.

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1. The Urban Institute papers and reports prepared as a part of the Health Start evaluation are: Joe N. Nay, et al., Health Start: Interim Analysis and Report, January 3, 1972; Nancy Perlman, Health Start: Profiles of Selected Projects, April 1972; Leona M. Vogt and Joseph S. Wholey, Health Start: Final Report of the Evaluation of the First Year Program, September 1972; Garth N. Buchanan and Leona M. Vogt, Health Start Analysis Plan for the Second Program Year, August 1972; Leona M. Vogt, et al., Health Start: Year Two Interim Status Report, December 1972; and Jean Lawlor and Katryna J. Regan, Health Start Profiles - Year Two, May 1973.

The 1972-73 evaluation effort included the same basic elements but involved more extensive data collection and analysis. The evaluators refined the original project reporting system so that it could capture more precise data on the prevalence of the health problems among the children enrolled, the factors relating to project success ensuring that children received needed health services, and the feasibility of interagency coordination of health services. Health Start failed as a "demonstration" because of the nature of the program--no design, no expectations stated, no problems defined. Yet the program did produce data which aided in determining the health care needs of economically disadvantaged children from birth to six years of age, the availability of health care resources, the feasibility of interagency health service coordination and cost estimates of a health care approach like Health Start. As an operational program, Health Start did meet its goal of providing health services to 20,000 children over a two year period.

B. The Program

1. What Was Planned?

Health Start was launched by the Office of Child Development in March 1971 to develop a variety of approaches to generate health services (where they existed) for economically disadvantaged preschool children and to purchase them (where and when they were not available as "free" services). Health Start projects were to provide preventive as well as curative health care and health education to the children enrolled in the program. Health Start was based on the health component in Head Start and, even though the battery of tests and health services were essentially the same as those required for Head Start projects, the age group to be served included

children from birth to six rather than children of preschool age (three to six) as in Head Start. The program was funded at approximately $1 million each year and operated at 29 projects in the first year and 30 projects in the second year. The national enrollment goal for each year was 10,000 children.

Each local project was to have a full-time or part-time "health coordinator," preferably a nurse or someone with a health related background. Health Start projects were to carry out the following national objectives: coordination (utilization) of HEW and other existing health resources, provision of health care to children enrolled, and development of new techniques to deliver that health care. Each Health Start child was to receive a minimum regimen of health services: immunizations (if needed), tuberculin and blood tests, urinalysis, hearing, vision, physical and dental screening, treatment of all health problems detected, and health education. (Projects could include--for some or all of the children--additional tests for such conditions as sickle cell anemia, lead poisoning, strep throat.) Beside ensuring that each child received all needed health care during the program year, Health Start projects were expected to make arrangements for continuing health care for as many children as possible.

As a part of the demonstration effort, HEW national and regional office staffs were expected, especially in the second year, to participate in interagency efforts to use health services available through federally-sponsored health care programs to Health Start children. The two largest health care resources available for economically disadvantaged preschool children--Title XIX Medicaid and Title V Maternal and Child Health--were expected to be used in the Health Start program along with other federally sponsored programs.

2. What Happened?

Table 1 presents summary data on the characteristics of the 1972-73 Health Start program, and where possible, comparison data on the 1971-72 program.

a. Funding Levels of Projects

In 1971, OCD funded 28 Health Start projects with grants ranging from $20,000 to $75,000. In addition, one existing summer Head Start was allowed to convert to Health Start (funded at $251,000). In 1972, OCD funded 30 projects[1]--20 of which were 1971 projects--with about the same range of grant size: $15,000 to $252,000. The median project grant in 1971 was $32,500; in 1972, $38,897. The per child funding levels across projects varied widely and were fairly uniformly distributed from $22 to $300 a child in 1971 and from $22 to $322 a child in 1972. The median per child funding level was $133 in 1971 and $146 in 1972.

b. Cost of the Program

If every enrolled child received all required tests and screening and all treatment found to be needed, the minimum average per child cost would have been approximately $120,[2] $40 of which would have been paid through the Health Start grant. Because not all children were tested or given needed treatment, the actual per child cost of the health component was $38, of which OCD paid $24. However, total costs and OCD expenditures for health services varied greatly--not only across projects but within projects also. Costs depended on the age of the children, the number and types of health problems that the projects detected, and the health resources available in the community.

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1. Beside the converted Head Start, two additional projects were funded with regional Head Start monies.

2. The actual per child project grant expenditures range from $38 to $286.

TABLE 1

SUMMARY DATA FOR HEALTH START PROGRAM

I. PROJECT CHARACTERISTICS	1971-72	1972-73
A. Grant Size		
1. Total Program	$1,205,200	$1,376,183
2. Median	$32,500	$38,897
3. Range	$20,000-251,000	$15,000-252,000

B. Per Child Project Expenditures	1971-72 Planned	1971-72 Actual	1972-73 Planned	1972-73 Actual
1. Median Project	$133	$120	$154	$97
2. Range	$22-320	$22-243	$38-286	$38-286

C. Community Served		
1. Urban	10	7
2. Rural	16	17
3. Urban and Rural	3	6
	29 projects	30 projects

D. Grantee Type		
1. Community Action Agency	24	24
2. School System	3	3
3. Health Agencies	2	2
4. Other (4-C)	-	1
	29 projects	30 projects

E. Project and Coordinator Experience --1972 only		
1. Projects Funded 1971 and 1972 (Same coordinator both years)	-	15
2. Projects funded 1971 and 1972 (New coordinator 1972)	-	5
3. Projects Funded 1972 Only	-	10

II. CHILDREN'S CHARACTERISTICS	%	%
A. Ethnic Groups Served		
1. Black	27	34
2. White	48	39
3. Mexican-American	18	21
4. Puerto Rican	2	3
5. American Indian	2	2
6. Other	2	1

TABLE 1 (Continued)

	1971-72 %	1972-73 %
B. Migrants	8	19
C. Health Care in 12 Months Prior to Health Start		
1. Medical Care		
a. Crisis care only	-	21
b. Some preventive care	-	16
c. No care	-	39
d. Unknown	-	24
2. Dental Care in 12 Months Prior to Health Start		
a. Some dental care	-	4
b. No dental care	-	50
c. Too young	-	28
d. Unknown	-	18
3. Immunization Status		
a. Up-to-date on entering program	-	19
b. Completed during Health Start	-	35
c. Incomplete or unknown	-	46
4. Medicaid Eligibility		
a. Enrolled before Health Start	29	32
b. Enrolled during Health Start		1
c. Eligible, not enrolled	-	10
d. Not eligible	-	42
e. Unknown	71	15
5. Percent of Enrolled Tested		
a. Blood	72	55
b. Tuberculin	64	56
c. Urinalysis	71	63
d. Vision	60	64
e. Hearing	58	59
f. Dental	62*	48**
g. Medical	77	74

* Twenty-two percent of the children enrolled in 1971-72 were considered too young for a dental examination and, therefore, were not tested.

** Twenty-one percent in 1972-73 were "too young" for dental exam.

TABLE 1 (Continued)

	1971-72 %	1972-73 %
6. Percent of Those Tested Who Had Abnormal Test Results		
a. Blood	7	~12
b. Tuberculin	1	.3
c. Urinalysis	-	3
d. Vision	6	6
e. Hearing	6	4
f. Dental	44	52
g. Medical	24	27
7. Major Medical Problems Detected		(% of tested)
a. Nutritional deficiency	-	5
b. Acute upper respiratory disease	-	4
c. Disease or infections of the ear	-	3
d. Skin disorders	-	3
e. Various types of hernias	-	2

Table 2 presents cost estimates and projections for case finding, detection and treatment program for preschool children. These figures are based primarily on Health Start data. The data include an average unit cost of Health Start services, the percent of the total services paid for by some other agency or individual ("coordinated"), and the detection rates for each screening test. These data are presented for three groups of children: from birth to three years of age, from three to six years of age, and from birth to six. The data are displayed in this manner to show Health Start results as well as cost projections which could be used for programs serving particular age groups, for example, Head Start. The evaluators feel strongly that health delivery cost estimates (for an approach as used in Health Start) should include personnel and other costs because more than direct payment for health care is involved in the program.

TABLE 2

PROJECTED COSTS OF HEALTH CARE DELIVERY, SCREENING, DETECTION, AND TREATMENT PROGRAM

Item	Average Unit Cost Of Service*	Percent Available Through Coordination	Fraction of Children Needing Service			Projected Per Child Cost*					
						No Coordination			With Coordination		
			Under 3 Years Old	Over 3 Years Old	0-6 Years Old	Under 3 Years Old	Over 3 Years Old	0-6 Years Old	Under 3 Years Old	Over 3 Years Old	0-6 Years Old
Immunization	$ 6.60	62%	85%	78%	81%	$ 5.50	$ 5.10	$ 5.30	$ 2.10	$ 1.95	$ 2.00
Blood Test	2.50	25%	All	All	All	2.50	2.50	2.50	1.90	1.90	1.90
Urinalysis	2.70	15%	All	All	All	2.70	2.70	2.70	2.30	2.30	2.30
Vision Screening	1.50	56%	All	All	All	1.50	1.50	1.50	0.70	0.70	0.70
Hearing Screening	3.60	59%	All	All	All	3.60	3.60	3.60	1.50	1.50	1.50
Speech Screening	2.70	25%	None	All	60%	0	2.70	1.40	0	1.35	.70
Tuberculin Test	3.10	54%	All	All	All	3.10	3.10	3.10	1.40	1.40	1.40
Dental Screening	11.50	27%	None	All	50%	0	11.50	5.80	0	5.75	2.90
Medical Screening	8.50	14%	All	All	All	8.50	8.50	8.50	7.30	7.30	7.30
Total Screening And Immunizations	$42.70	-	-	-	-	$27.40	$41.20	$34.40	$17.20	$24.15	$19.70
Treatment from Blood Test	$ 6.00	Assume 0%	19%	12%	16%	$ 1.15	$ 0.70	.90	$ 1.15	$ .70	.90
Treatment from Urinalysis	10.00	Assume 0%	3%	3%	3%	0.30	0.30	.30	0.30	0.30	.30
Vision Treatment	24.00	57%	6%	7%	7%	0.70	1.70	1.20	.30	.70	.50
Hearing Treatment	53.00	75%	3%	4%	4%	1.60	2.10	1.85	.40	.50	.50
Speech Treatment	44.75	37%	N.A.	8%	4%	0	3.60	1.80	0	2.25	1.15
Tuberculin Treatment	Unknown	Assume 100%	0.3%	0.3%	0.3%	← Unknown →			0	0	0
Dental Treatment	43.10	8%	N.A.	57%	29%	0	24.55	12.30	0	20.60	10.30
Medical Treatment Assume	250.00	Assume 90%	28%	26%	27%	70.00	65.00	67.50	7.00	6.50	6.75
Total Treatment	-	-	-	-	-	$ 73.75	$ 97.95	$ 85.85	$ 9.15	$ 31.55	$ 19.90
Total Health Services	-	-	-	-	-	$101.15	$139.15	$120.25	$ 26.35	$ 55.60	$ 39.60
Personnel, Transportation etc.	80.00	8%	All	All	All	80.00	80.00	80.00	74.00	74.00	74.00
GRAND TOTAL	-	-	-	-	-	$181.15	$219.15	$200.25	$100.35	$129.60	$113.60

* Based on 1972-73 data. These figures would have to be adjusted to account for inflation.

While Table 2 may be useful to budget planners (for example, in making budget requests to Congress or in planning the health component of local projects), it is important to emphasize the variability of total costs and costs to OCD across Health Start projects. Table 2 and Figure 1 demonstrate the range of costs across and within projects.

Using Health Start cost and incidence data the evaluators estimate that if all required tests and screens are given to a group of 100-200 children (from birth to six years of age) and all needed treatment is completed, it would cost an estimated $2?0 a child.[1] If the same overall amount of donated services were received as in Health Start; the cost of serving the same age group would be $113 a child. (If only children over three years old were served, the total cost of providing them with Health Start-like services would be $219 a child and $129 a child with "coordination.")

c. Project and Community Characteristics

As in the first year program, over half (17) of the 1972-73 Health Start projects were located in rural areas, some covering many counties or sections of a state. Seven projects were located in urban areas, and seven covered both cities and their surrounding rural areas. Predictably, projects in urban areas most often had more extensive health resources existing in their communities. Relative to other Health Start communities nine projects were determined to have many community health resources, and nine were determined to have few available health resources.

1. This figure includes all health care delivery costs, personnel, transportation, etc. Few Health Start children have medical problems requiring treatment, and medical treatment for serious (and costly) care can usually be provided through other agency resources such as the Crippled Children's program.

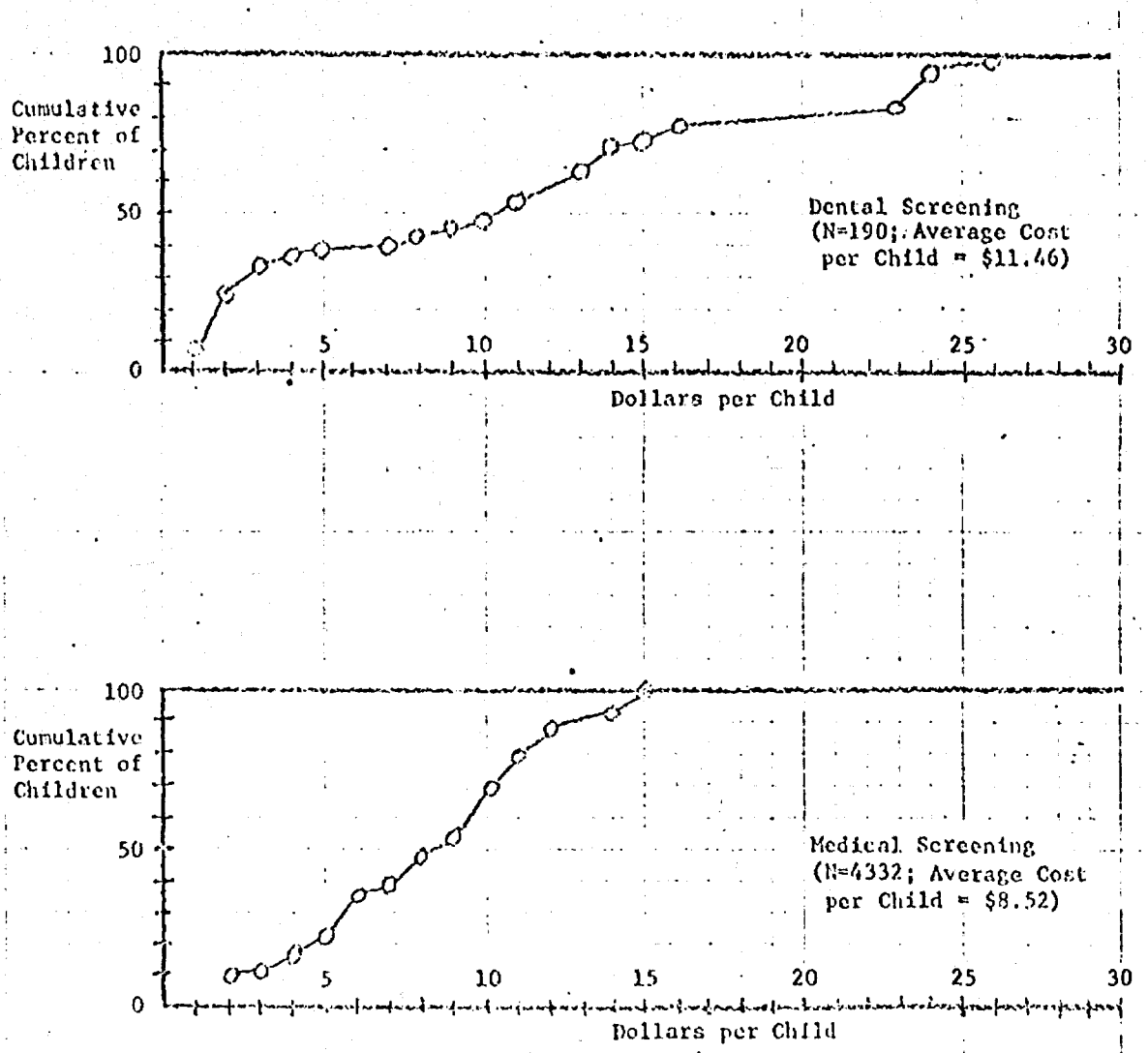

Figure 1 - (Continued) - Distribution of Unit Costs for Screening and Immunization

In both program years, community action agencies administered and operated most of the programs. Twenty of the 1971-72 projects continued to operate in the second year. Nurses served a majority of the projects as coordinators: 21 in the first year and 23 in the second. Of the 31 health coordinators in the 1972-73 program, 15 were veterans of the first year program. Eleven health coordinators in 1972-73 worked less than a full year or part-time on Health Start.

d. Characteristics of the Health Start Children

The Health Start guidelines permitted enrollment of children from birth to six years of age. Seventy-eight percent of the children in the 1971-72 program were over three years old, and 63 percent were over three in 1972-73. More white children enrolled than any other group; however, they were a smaller proportion of the total in the second year program: (48 percent in 1971-72, 39 percent in 1972-73). Blacks comprised the next largest group--27 percent in 1971-72, 34 percent in 1972-73. In the two program years Mexican-American children constituted 18 and 21 percent respectively, Puerto Ricans constituted 2 and 3 percent, and American-Indians were a consistent 2 percent. In the second year, 19 percent of the children were migrant, more than double the number (8 percent) in the first year.

Less than half of the Health Start children in the 1972-73 program are known to have received health care in the 12 months previous to enrollment in Health Start. Of the children old enough to need dental care, 4 percent were known to have received dental care in the previous year. Thirty-five percent of the children had medical care in the previous year, and 16 percent had some preventive care. Thirty-seven percent had no medical care in the previous year. The medical care history for the rest

of the children was reported as unknown or was not reported.

Data on this age and this economic group (poverty level) indicate that having previous care does not alleviate the need for future care: Data on dental problems for this age group (primarily those children over three years old), indicate that, even if care were given, Health Starters would still need additional restorative work within the year. Health Start data showed that 52 percent of those examined needed some type of dental treatment for dental health problems detected.[1] In the medical area, children with previous care still required some type of treatment. In fact, children having crisis care (but no preventive care) in the previous year were found to need medical treatment twice as often than children known to have had no care; those having preventive care also needed care more often than children who had not received medical care in the previous year.

In 1971-72, 29 percent of the children were enrolled in the Medicaid program, while in 1972-73 32 percent were enrolled in Medicaid.[2] Projects gave three reasons for Health Start children's not being eligible for Title XIX benefits: the children did not meet the state Medicaid requirements, the families refused to participate in the program, or local enrollment procedures discouraged families from attempting to enroll.

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1. Data on dental treatment do not include fluoride application and prophylaxis, but do include such things as restoration, repair and extractions of teeth.

2. Forty-two percent of the 1972-73 Health Start children were not eligible for Medicaid benefits primarily because of family income or employment status.

e. Project Performance Data[1]

Health Start projects in 1971-72 enrolled 10,010 children, slightly over the target number. In 1972-73, the total program enrollment reached 9,835. Eighty-one percent of the children entered the 1972-73 Health Start program needing immunizations; 35 percent of those were brought up to date by Health Start, leaving slightly under half (46 percent) with unknown or incomplete immunization status.

The first and second year programs differed little on three performance measures: percent of children receiving medical, vision, and hearing screening. Each year approximately three-fourths of the Health Start children received a medical screening or examination while 60 percent received dental exams in the first year and 48 percent in the second year. Of those children examined, 24 percent were found to need medical treatment in 1971-72 and 27 percent in 1972-73. Need for dental care rose too--from 44 percent in the first year to 52 percent in the second. In general, the reported incidence data for the two years were similar.

Forty-five percent of the children in the first year Health Start received health education. In the second year (possibly due to increased guideline emphasis on health education), 55 percent of the children and 63 percent of their parents had some health education encounters. However, projects varied greatly in the degree and manner in which health education was delivered. With the exception of eight projects, health education was given on a casual, sporadic basis.

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1. See the Appendix for more detailed description of results of the screening and treatment component.

First year projects did not systematically report data on assurance of future health care for Health Start children. Future care data for one-fourth of the 1972-73 children is not known. Surprisingly, only 1 percent were known to have no possible future care at all, i.e., no assurance that medical and dental providers will take them and no way to pay for any type of care. Fourteen percent of the children were assured of payment for future medical and dental treatment, because they were enrolled in Medicaid and resided in states that provided (at that time)[1] reimbursement for both medical and dental care. Of the 46 percent of the children who were assured of future medical and dental services, a slightly higher percentage of the parents indicated to the project staffs that they would use Health Start dentists and physicians rather than the providers they used for their children before Health Start.[2]

1. Some states have either recently implemented or are in the process of implementing, the Medicaid Early Periodic Screening, Detection and Treatment (EPSDT) regulation. An increased number of Medicaid children now could be covered for dental care.

2. Twenty-eight percent of the parents indicated they would use the same medical services as used in Health Start and 26 percent said they would use medical services available to them before Health Start. A higher proportion of parents indicated they would use Health Start dentists (31 percent) than would use dentists used by the family before Health Start (21 percent).

II. RESULTS OF THE EVALUATION

A. OCD Research Questions

At the beginning of each Health Start year, OCD posed research questions about Health Start for the evaluators to answer. In each program year, the Institute developed evaluation instruments to collect data in order to answer the questions. The two major groups of questions for the 1972-73 evaluation were the following:

(1) How can health services for low-income children best be coordinated? How feasible is coordination of federal, state and local resources to meet the children's needs for detection, treatment, entry into an on-going health care system, and health education?

(2) What are some innovative ways to provide health detection, treatment, entry into an on-going program and education that could be adopted by summer and full-year Head Start programs? What new ways to provide these services are relatively inexpensive, work well and offer promise of reproducibility? What examples of experimental approaches developed by Health Start can be recommended for wider adoption in child programs?

These questions were followed by a series of sub-questions, some of which dealt with project performance in meeting the program goals.

(1) Is a service coordination approach feasible in delivering services for children? This effort will evaluate the use of Title XIX and other resources, including (but not limited to) such questions as the following:

(a) In what ways were services coordinated in areas with many and few resources (as defined by OCD)?

(b) How was this coordination brought about?

(c) What was the anticipated and actual support obtained through coordination? How much was required in direct payments to provide what service to how many children? Under what circumstances was service coordination most effective? What approaches worked best in areas with many and few resources?

(d) What resources existed in areas to be served? What new agreements were reached?

(e) Were there any "trade-offs" in providing service through Health Start that meant reduction in number of children reached or level of care ordinar provided by cooperating agencies?

(2) Could the existing agencies absorb the extra load (Health Start) or were Health Start children served in lieu other possible recipients?

(3) How effectively did the projects meet the Health Start goals, including:

(a) Number of children registered for specific activities initiated by the program.

(b) Number of children served, type of health problem identified and treatment provided.

(c) The success of the health education component.

- How was health education provided to children, parents and staff?
- What was the content of the health education program?
- What did staff, parents and children learn about health?
- How was the health education knowledge put to use?

(d) The success of the entry-into-an-ongoing delivery system component: how many children entered into an ongoing prevention/treatment health delivery system as a result of Health Start?

(4) How are Health Start project results related to community characteristics? to characteristics of pre-existing medical services? to project characteristics?

(5) What innovative approaches to health de very have been developed that could be used by summer or full-year Head Starts?

Because of the program design, the extent to which the evaluation could yield information to answer the impact questions was limited. Health Start was not designed to test systematically various approaches to delivery of health care through use of project models. Therefore, because of the many community, project and health service variables at work, only tentative conclusions could be reached about the factors affecting project success in reaching the program goals. If in the second year of Health Start or in a renewed third year OCD had tested particular hypotheses and imposed some structured design on the Health Start projects, there might have been greater informational benefits from the program.

B. Evaluation Approach

The Urban Institute developed an analysis plan[1] based on the questions posed by OCD and on the Health Start guidelines. A set of data collection instruments were developed by The Urban Institute to measure the degree to which the program goals were accomplished. The health coordinators were trained in the use of these reporting forms, and constant checks were made throughout the year to ensure that the forms were being completed properly. Also, because most of the forms were designed to assist the coordinators in managing their projects as well as to report health services given, most of the data collected were of use to the project--a fact which increased the reliability of the data. Table 3 presents a description of the major data sources used by the evaluators.

1. See Garth N. Buchanan and Leona M. Vogt, Health Start Analysis Plan For Second Program Year, Working Paper 964-2, The Urban Institute, Washington, D.C., August 16, 1972.

TABLE 3

SUMMARY OF MAJOR DATA SOURCES

Major Data Source Used	Content	Reporting Mode	Comments
1971-72 Health Start Data and Urban Institute papers and reports on Health Start evaluation	Data, research findings, results on two years of Health Start	Six reports between January 1972 and May 1973	See page 1 for listing of titles
HEW and OCD Documents	Health Start and EPSDT guidelines and national and regional office correspondence	-	-
Health Start Planning Format	Project report on availability, accessibility and use of various HEW and other health resources	Data collected during site visits and in June 1973	Quality of data varied greatly from project to project
Compendium of HEW Resources	Prepared by U.I. staff to determine the HEW health resources available for children 0-6 years of age	-	This document was based on the HEW Secretary's Child Health Task Force, the U.S. Budget, & HEW interviews
Health Start Project Profiles	List of HEW resources potentially available at each project location	-	Prepared as follow-up to Compendium of HEW Resources
Health Start Expenditure Form	Detailed breakdown of project expenditures and amount of health resources coordinated	Submitted by projects to the Urban Institute in October 1972 and June 1973	Quality of data varied considerably. Few projects reports included the dollar value of coordinated resources
Health Start Quarterly Health Report	Per child data on background, health services, Medicaid eligibility and future care arrangements	Submitted quarterly by projects to the Urban Institute	Quality of data good. Primary data source for health services delivered by program
Health Start Field Collection Format	Detailed data on planning and operation of Health Start projects. Also included interviews with cooperating and non cooperating HEW agencies	Collected during two day site visits by U.I. staff, conducted early in program year	Extensive process data used to classify projects & communities and identify problems and promising approaches
HEW National and Regional Interviews	Extent of activities to assist projects in coordination of resources and constraints to coordinators	Personal interviews with nine national and 51 regional staff members	Number of regional interviews varied. The number depended on the extent of Health Start activity in the region
Telephone Survey on Medicaid	Reasons for Health Start children not being enrolled in Medicaid and project activities in relation to EPSDT	Conducted December 1972	
Telephone Survey on Health Education	Questions related to project content and approach	Conducted in Spring 1973	Planned U.I. parent survey dropped*
Questionnaire for Health Coordinators on Coordination Activities	Information on contacts and results of coordination efforts	Completed by coordinators at follow-up coordinators' conferences	Not all projects submitted the questionnaire
"Pie Charts"	Allocation of project staff time by activity	Completed by coordinators at follow-up coordinators' conferences	Not all projects submitted the questionnaire

*See Appendix B of U.I. Paper 964-6 for discussion of methodological problems related to the parent survey.

C. Answers to OCD Research Questions

1. Coordination of Resources

The major OCD questions about coordination of resources dealt with best approaches to, and feasibility of, service coordination. HEW agencies and Health Start projects expended various amounts of effort negotiating for health care services and funding. But the only true measures of the feasibility of coordinating health resources are the number of projects reporting use of HEW and other resources, for example, the number of services paid by other agencies and the value of the services used.

Therefore, the OCD questions and their sub-questions have been translated into measurable terms in order to answer them more precisely. Each question will be stated, then followed by as definitive an answer as possible, given the quality of the relevant Health Start data.

Question: How many projects reported using other resources for detection of health problems? for treatment of children? for health education?

Projects varied greatly in the amount of screening services that they secured at no cost to Health Start. Of the 26 projects reporting coordination data (out of a total of 30 Health Start projects), 20 projects received some coordinated services for detection of health problems. Three of the projects reporting no use of outside resources contracted for a year's health care for the children enrolled and paid for all care except immunizations.

Projects reported but often did not submit precise estimates of value for two types of donated services--treatment of health problems and health

education. Twenty projects reported using other resources for treatment of Health Start children--primarily for medical care. Few projects reported using other resources for health education or staff instruction.

Question: What percent of each type of screening and treatment service was paid by an agency other than Health Start?

Figure 2 shows that a high percentage of the tests given were provided through some other public agency or private resource. Because the services were not of equal value,[1] the total reported value of the coordinated services that can be estimated was not high.[2] Three of the more expensive services--medical screening, dental screening and dental treatment--were usually paid by Health Start funds. Although precise cost data were not available, most of the costly medical treatments, like heart surgery, were financed by other agencies.

1. See Chapter VII of U.I. Paper 964-6 for a detailed description of estimated costs of health services. The estimated average cost, for example, of a blood test ($2.50) is low relative to the estimated value of a dental exam ($11.50).

2. For every OCD grant dollar, Health Start projects generated 20 cents.

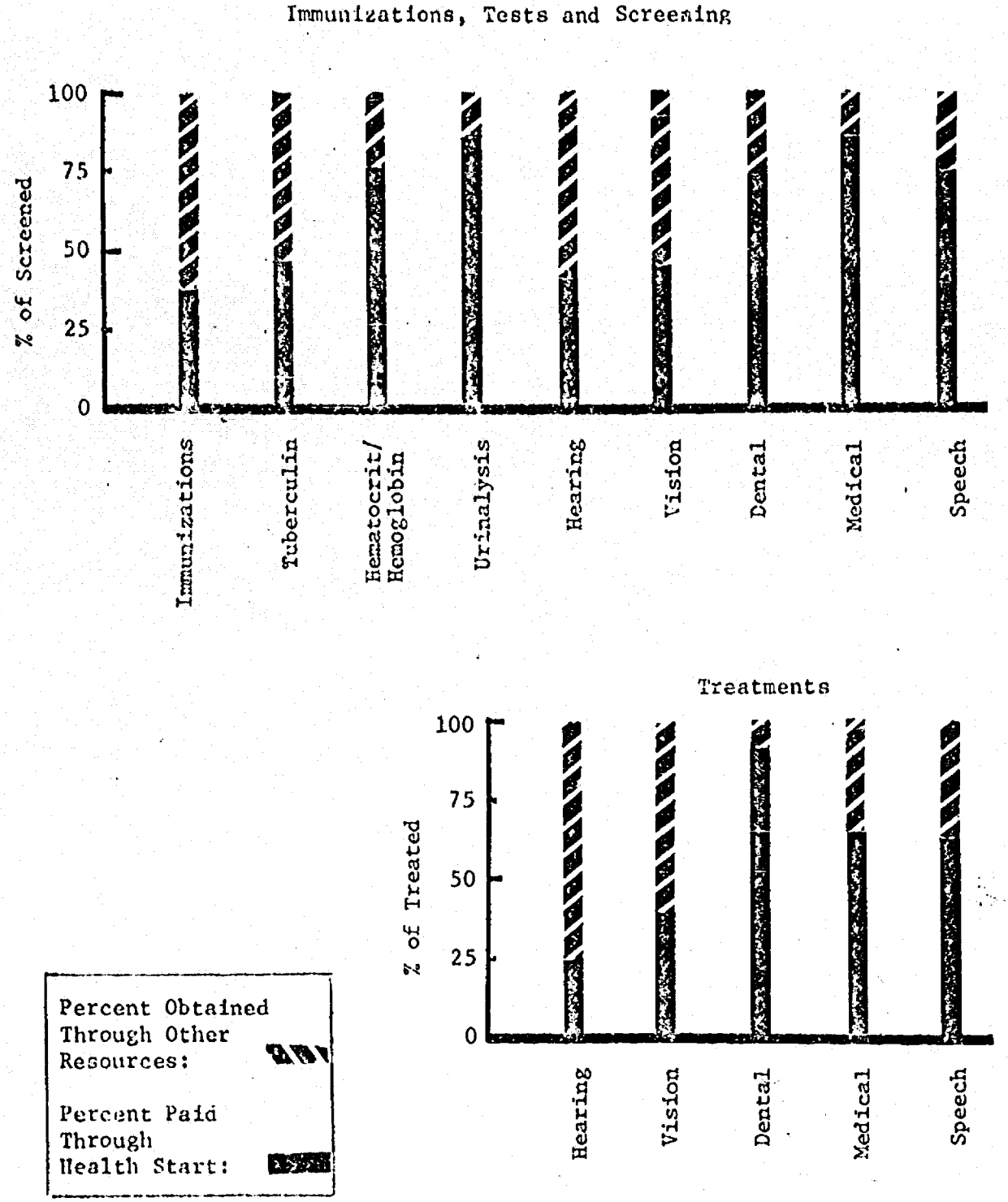


Figure 2 - Percent Health Services Paid Through Health Start Grant and Percent Obtained Through Other Resources

Question: Were particular programs--like Title XIX - Medicaid and Title V - Maternal and Child Health--used by Health Start projects?

Only two projects had children who were ineligible for or not enrolled in the Medicaid program. The rest of the projects theoretically could have used Medicaid to pay for some of the health services; however, only 10 of the 30 projects reported that Medicaid paid for any of the Health Start health services. One reason for this limited use was that most states had not implemented the Medicaid Early Periodic Screening, Diagnosis, and Treatment (EPSDT) regulations early enough in the Health Start year. Therefore, most services for which providers could be reimbursed involved follow-up treatment.

Eighteen projects made early efforts to reach an agreement with the state Medicaid agency over use of EPSDT; yet no Health Start projects negotiated early agreements. Over the course of the year, all except nine projects discussed EPSDT with state Medicaid agencies. Two projects reported using EPSDT for a limited number of health services, and one Health Start project staff secured an EPSDT provider number from a state Medicaid agency.

The Maternal and Child Health program (MCH) used most extensively was the State Formula Grant program,[1] which provided immunizations, hearing, vision and some dental screening, training workshops and nutrition counseling. Of the 19 projects using the Maternal and Child Health program, one had to negotiate for use of MCH State Formula Grant services, while the others already had access to the MCH services because of previous arrangements with the local Head Start project or because the services were readily available.

1. Title V maternal and child health services, a program of matching grants to states.

Not as many projects used the Crippled Children's program as used the MCH state formula grant resources (13); yet more projects reported having access to Crippled Children's services (whether they used them or not) than services provided through MCH. The other major federally funded MCH programs --project grants for Children and Youth, Special Dental Projects for Children, and Maternity and Infant Care--rarely were used by Health Start projects primarily because they were not located in the same geographic areas.

Question: Were HEW and other agencies used by Health Start able to absorb the additional patient load without excluding other individuals?

Data from the local HEW agency interviews did not reveal that the added case load resulting from Health Start had detrimental effects--in terms of reducing the number of patients served or the range of the services offered. Several local public health departments reported being understaffed and, therefore, could not offer more than immunization clinics. Projects reported that state Crippled Children's agencies were short of funds which limited their services. Because most public health agencies take patients on a "first-come" basis, few agency personnel could predict what the impact of Health Start would be on their agency service.

Of the seven projects that used Community Mental Health Centers, three paid fees for services given to the Health Start children. Because of their own funding problems; these agencies seldom offered free services to Health Start children. In other words, Health Start grant resources were "coordinated" (used by these agencies).

2. Project Performance in Meeting the Health Start Goals

Question: Did the projects enroll the number of children they planned to enroll?

Health Start projects identified in their proposals the number of children they intended to enroll. Most of the projects (20) reached 90 percent (or greater) of their enrollment target. Four projects enrolled less than 50 percent of the number of children they planned to serve, and three enrolled substantially more than planned. The size of projects ranged from 88 to 864 children, with the median project having 280 children.

Question: What percent of the children had their immunizations brought up to date by Health Start?

Nineteen percent of the children entered Health Start with their immunizations up to date. An additional 35 percent were on schedule at the end of the program year. Forty-six percent needed additional immunizations or had unknown status. Two projects "completed" less than 10 percent of the children, and one project provided all the needed immunizations for over 90 percent of the children enrolled.

Question: What percent of the children were tested and what types of health problems were identified?

The average enrolled child received 4.4 of the seven required tests and 0.8 optional tests. Nine percent of the Health Start children received no required tests, and 20 percent received all seven. Forty percent received no optional tests and 20 percent received at least two optional tests. Seventy-four percent of the children across all projects got a medical exam and 61 percent of the children considered old enough for dental screening received a dental exam.

Table 4 reveals that the percent of those tested who needed treatment was to an extent dependent on the age of the child. Data are presented for

TABLE 4

SUMMARY OF HEALTH SERVICES
(FOR ALL CHILDREN AND FOR CHILDREN UNDER AND OVER THREE YEARS OF AGE)

	Type of Test	9835 Health Start Children				3580 Children Ages 0-36 Months		6055 Children Ages 37 Months and Above	
		Number Tested	Percent of Enrolled Who Were Tested	Percent Of Tested Who Needed Treatment	Percent of Those needing Treatment Who Completed Treatment (and Number Treated)	Percent of Enrolled Who Were Tested	Percent of Those Tested Who Needed Treatment	Percent of Enrolled Who Were Tested	Percent of Those Tested Who Needed Treatment
	Hemoglobin *	3084	31%	10.4%	36% (115)	37%	12.5%	26%	8.6%
	Hematocrit *	3089	31%	14.6%	43% (194)	32	19.4	32	11.8
	Tuberculin	5473	56%	0.3%	37% (6)	47	0.2	62	0.3
	Urinalysis	6186	63%	2.6%	64% (103)	48	2.5	72	2.6
	Vision	6337	64%	5.8%	43% (158)	48	2.6	75	7.1
	Hearing	5783	59%	3.6%	39% (81)	42	2.7	70	3.9
Optional	Speech	3083	31%	6.3%	6% (12)	25	3.3	35	7.6
Optional	Intestinal Parasites	921	9%	17.2%	57% (90)	1	28.9	14	16.3
Optional	Lead Poisoning	703	7%	10.5%	54% (40)	5	9.4	8	11.1
Optional	Psychological	868	9%	10.3%	18% (16)	11	5.5	8	13.9
Optional	Sickle Cell	1601	48%**	4.7%	19% (14)	15	2.1	17	6.0
Optional	Strep	213	2%	27.2%	97% (56)	2	17.0	2	34.7
Optional	Development	1311	13%	4.7%	13% (8)	15	2.9	12	6.3
	Dental Screening	4693	48%***	51.7%	74% (1795)	20	24.4	65	56.9
	Medical Screening	7501	74%	26.5%	53% (1025)	71	27.6	77	25.9

* Approximately 8 percent of the children received two blood tests.

** Based on percent of black children enrolled.

*** Does not exclude children under three years of age who might not have needed a dental examination.

the total Health Start population and for children over and under three years of age.

The most common health problem among Health Start children was dental disease: half of the children receiving dental exams needed some type of restorative work. Almost all of these children were over three years of age. Twenty-seven percent of the children receiving a medical exam were found to need medical treatment.

The five most common medical problems detected in Health Start children were: (1) nutritional deficiencies (5 percent of tested), (2) acute upper respiratory diseases (4 percent), (3) ear diseases or infections (3 percent), (4) skin disorders (3 percent) and (5) various types of hernias (2 percent). Recent data on a sample of Head Start children[1] indicate that Head Start children share similar types of medical problems (if one considers the results of all screening tests). Of the five most frequently occurring problems reported for Head Start children (skin, vision, speech, tonsils and adenoids, and malnutrition) all but one (tonsils and adenoids) were the same as the most frequent problems in Health Start.

A wide variation existed across projects on the percent of children found to need some type of health care. For example, four projects found less than 5 percent of the children receiving a medical exam needing treatment, while five projects found more than 50 percent of the children tested needing medical treatment. A wider variation existed in the dental area. Of the children receiving dental exams, two projects found dental disease (needing care) in less than 10 percent of the children and five projects found dental problems in more than 95 percent of the children.

1. Data are for Head Start children in one OCD region and represent children in four states (Arkansas, New Mexico, Oklahoma and Texas). Source: Summary Data for Phase II of the Head Start Health Planning Assessment Report, (prepared by the Region VI Health Liaison Specialist for reporting to the American Academy of Pediatrics).

Question: What percent of the children tested and found to need treatment actually completed treatment?

As with other project characteristics, Health Start projects varied greatly in completing treatment for the health problems detected. Data show that two projects completed no treatment, while another completed treatment for all the problems found. Approximately 80 percent of the children needing dental treatment completed it before leaving Health Start. Fifty-three percent of the children who were tested and needed medical treatment completed their medical work and an additional 21 percent with medical problems requiring continuing care had arrangements made for on-going care or surveillance.[1]

Question: How was health education provided to children, parents and staff? What was the content of the health education program? What did staff, parents and children learn about health? How was the health education knowledge put to use?

Some health education was given in the homes, some in day care centers, some at evening sessions, and a great deal of what was called "health education" was given to the children and parents on the way to a physician's office, or while in the waiting room. One project set up no formal health education encounters, while another project reported having encounters for 98 percent of its parents and children. Over all, 55 percent of the children and 64 percent of the parents received some form of health education instruction. The average number of encounters across all projects was 1.3 for children and 1.6 for parents. One project held an average of over five health education sessions for both parents and children. Eight coordinators developed promising health education programs, however, the other 22 projects

1. The Appendix describes for each test the final treatment status of the children tested needing treatment.

invested little time in developing their components and consequently little health education took place.

Few projects reported planning extensive training sessions for staff. One regional office conducted, as in the first year Health Start program, a dental workshop for the Health Start staffs in the region. Other projects reported staffs were trained by state agency personnel in such areas as nutrition. Several Health Start staffs benefited from local Head Start training programs.

Almost all projects covered such basic topics as toothbrushing, some tailored specific instruction to local health needs, and about half included consumer health education for parents. No conclusions could be reached about what staff, parents and children learned from the health education component. Because of the small amount of structured health education given Health Start children and their parents, the Institute's plan to conduct a survey of the Health Start parents near the end of the 1972-73 program to determine the impact of health education on children was dropped.

Question: How many children entered an on-going prevention/ treatment health delivery system as the result of Health Start? How will their future care be funded?

For future care, Health Start linked 28 percent of the children to the same medical services used during the program year and 31 percent to the same dental services. For remaining children it was either not known or it is expected that they will continue to use the sources used prior to Health Start.

Medicaid would provide funds for the medical care of 20 percent of the Health Start children and for the dental care of 16 percent. Some other Health starters planned to utilize migrant funds, health insurance, or other sources. Funds for future medical care were either unreported,

not known, or non-existent for 70 percent of the Health Start children, and funds for future dental care were either unreported, not known, or non-existent for 77 percent of the children.

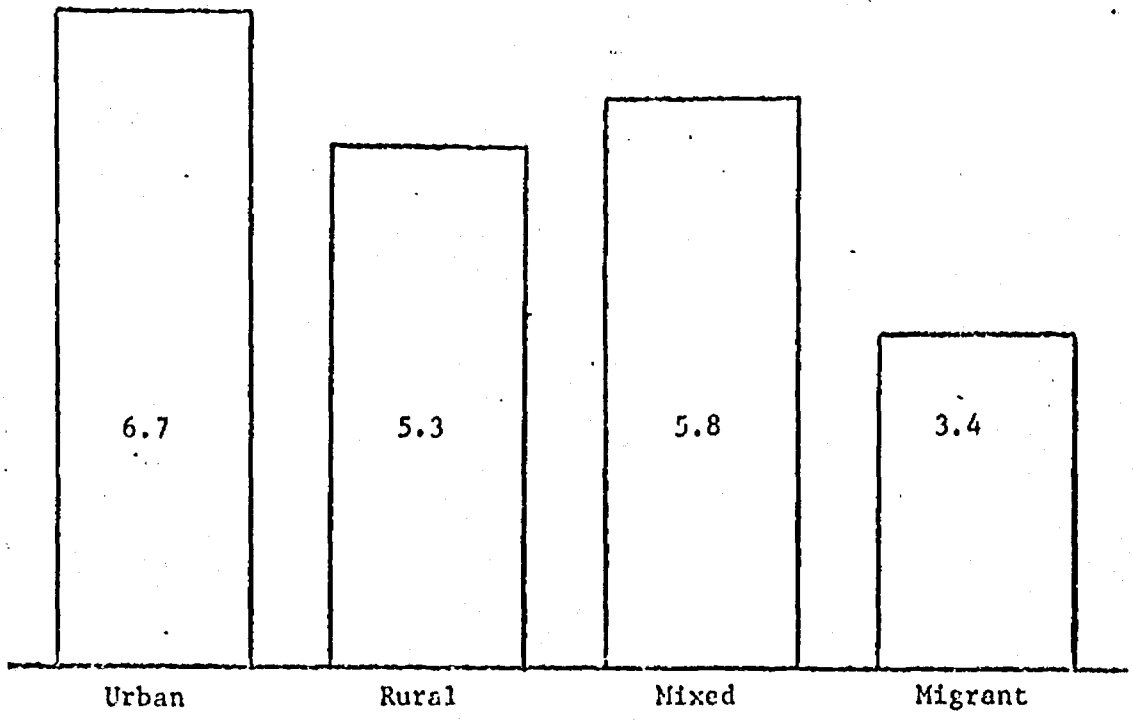
3. Relationship of Project Results to Community Characteristics

Question: How are Health Start project results related to community characteristics?

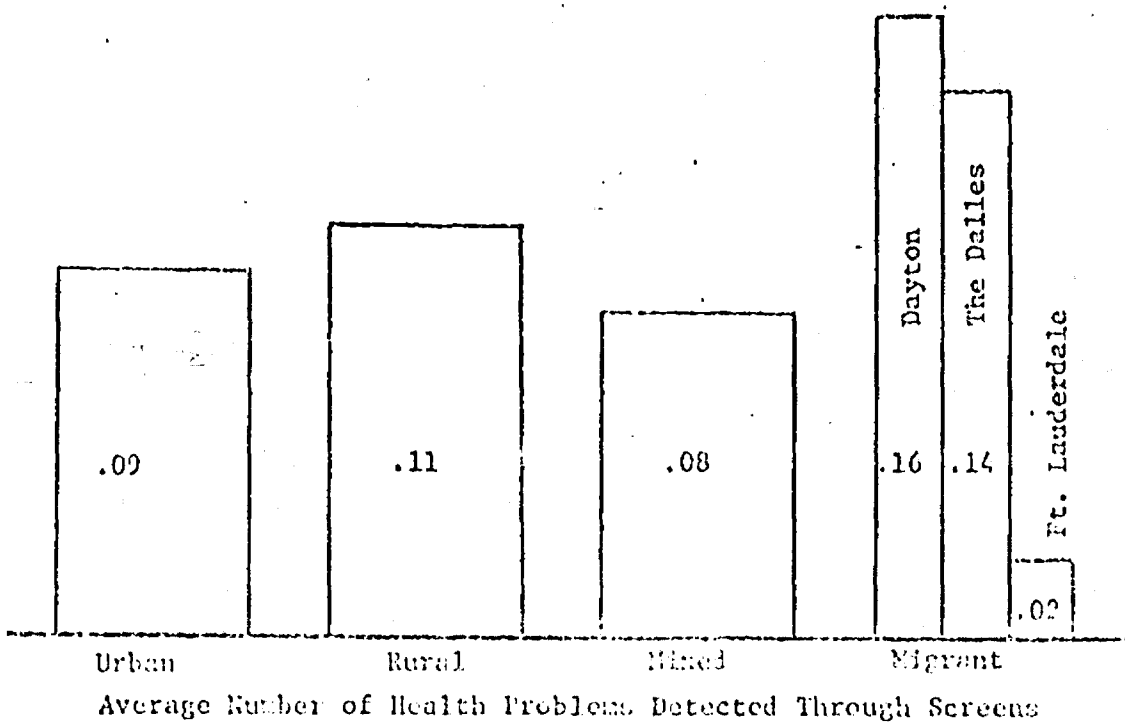
For the purpose of this analysis, Health Start projects were divided into four groups: urban, rural, mixed (urban and rural) and migrant.

As Figure 3 indicated urban and mixed projects did better on most measures with two exceptions: (1) urban projects gave more tests per child, and (2) migrant projects found the highest proportion of health problems in the children tested. Urban and migrant projects completed treatments for a smaller percent of those children needing treatment than did the other projects. Three of the six urban projects completed less than 50 percent of treatment needed while less than one-fourth of all other projects completed less than 50 percent of needed treatment.

In general, migrant children received fewer services than did other Health Start children. Migrant projects had generally below average performance and tended to have low per-child expenditures. Migrants were much less likely to be eligible for Medicaid and less likely to have had previous medical or dental care. They received fewer tests, even though in two of the three migrant projects the average number of abnormal conditions per test was very high. The reported future health care status of migrants was considerably worse than for other children.



Average Number of Screenings per Enrolled Child



Average Number of Health Problems Detected Through Screens

Figure 3. - Relationship of Community Characteristics to Project Performance: Screening and Detecting Health Problems

4. Relationship of Project Results to Pre-Existing Medical Services

Question: How are Health Start project results related to pre-existing medical services?

The amount of health care resources available (as measured by the number of physicians per thousand people in the community)[1] did not have a detectable influence on project performance. The distributions of performance among projects with high, medium, and low amounts of health resources in the community were not markedly different. However, it is of interest to note one anomalous situation: the three projects with the fewest completed treatments, both per enrolled child and per treatment needed, all were in communities with a high number of health resources, while on the other extreme, the project with the highest number of treatments completed per enrolled child had only one active physician in the community. Thus, one can conclude that the presence of an abundance of health resources does not guarantee good project performance, nor does a paucity of resources inevitably lead to poor performance.

5. Relationship of Health Start Project Results to Project Characteristics

Question: How are the Health Start project results related to project characteristics?

Some project characteristics seemed to be related slightly to project success:[2] having no delays in project start-up, having experienced health coordinators, being experienced Health Start projects, conducting multiphasic screening and doing relatively high number of staff-administered screenings.

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1. Distribution of Physicians in U.S. 1971, American Medical Association, Center for Research and Development, Chicago, 1972.

2. Project performance is measured by the amount of health services given (including health education) and the extent to which future health care arrangements were made.

High project performance was strongly related to nurse-coordinators, higher per child grant expenditures, high rates of staff time per child enrolled, and relatively small numbers of children enrolled.[1]

6. What innovative (effective) approaches to health services delivery have been developed that could be used by summer or full-year Head Starts?

Definitive guidelines for assuring effective approaches to health service delivery could not be derived (with high confidence) because of the program design. However, the evaluation produced data on cost estimates for various components, prevalence of health problems, and availability of services, as well as the effects of some project characteristics on project performance. Thus, while tested models of innovative approaches cannot be advanced, a sufficient data base has been developed and presented[2] to support OCD in planning health components for summer and full year Head Starts.

D. Major Conclusions and Recommendations

1. Coordination of Resources

Health Start reinforced the hypotheses that it is difficult, if not impossible, to change existing institutions (even temporarily) without mandating or legislating change.

Health Start experience with "coordination" revealed that: (1) there was no clear definition of the functional meaning of coordination or apparent understanding of how it was to be accomplished, (2) there were

1. See Health Start: Final Report of the Evaluation of the Second Year Program by Leona M. Vogt, et at., (Urban Institute Report 964-6). Chapter VI presents detailed analysis of relationship of project approaches and project performance.
2. Ibid.

no incentives for HEW agencies to work together, and (3) there was no clear understadning of the locus of responsibility for the effort. Therefore, in only on instance, when HEW national and regional staffs worked together and with a Health Start project coordinator, did any tangible results occur (in terms of functional changes of agencies and programs). That one case involved the negotiation of a Medicaid Early Periodic Screening, Diagnosis and Treatment (EPSDT) contract between the state Medicaid agency and a Health Start agency. The rest of the activity termed "coordination" involved (1) some discussions and meetings of various HEW staffs and (2) some negotiations of Health Start projects with numerous agencies (some federal, but primarily state and local) for specific health services.

The results amounted to Health Start agreements with individual agencies for particular types of service for all or some of the children, or less frequently, a regimen of services for all the Health Start children. Only in a few cases did agencies change the delivery or the amount of care that they provided to other pre-school economically disadvantaged children. Consequently, it seems that Health Start projects were advocates for the Health Start children entrusted to them but not for the great numbers of poor children in that same age group who need health care. Health Start's coordination efforts proved fallacious the theory that there are vast potential health resources for children waiting to be tapped.[1]

Because the ability to coordinate is somewhat dependent on what exists in the community, it is difficult to predict the feasibility of a local Head Start successfully "coordinating" (using) health resources. However,

1. The one exception could be Medicaid's EPSDT program. However, it could only benefit one-third of the Health Start population--those eligible for Medicaid benefits.

Medicaid funds should be generally available to children eligible for Title XIX benefits. Therefore, Head Start projects should use Medicaid to the extent possible.

There are more implications than recommendations that emerge from this part of the analysis of the Health Start program. They are: (1) It is difficult to change federal and health institutions. Changing federal agency operations may require legislative action to reduce the fragmented care now provided by HEW. Health agencies, like federal agencies, need greater incentives and resources to provide more comprehensive care to a population. (2) Health agencies have a need for Health Start-like services. Representatives of local health agencies indicated that Health Start offered the possibility of providing them with needed services: outreach, health education and transportation. (3) It is possible for an agency like Health Start to have access to various existing health resources; however, negotiating for such services takes staff time and project funds. The pay-off for such efforts on the short-run probably does not justify the cost of securing the agreements. With an on-going program like Head Start, the initial negotiations could produce years of care; therefore, such efforts could be cost-beneficial.

For a program like Head Start, we make the following operational recommendations:

- Regional Offices of Child Development (possibly the AAP Health Liaison Specialists) should work with state agency staffs to secure EPSDT agreements for several Head Starts. Securing an EPSDT provider number for several projects could be easier than for a single (small) Head Start project. If Head Starts cannot successfully negotiate agreements to secure EPSDT provider numbers, then Head Starts should refer whenever possible

Medicaid children to local EPSDT providers in order to take advantage of the Medicaid program and reduce the cost of their health components.

- Project staffs should be urged strongly to refer Medicaid eligible children for enrollment to secure maximum Title XIX benefits.

- Projects should negotiate early in the program year agreements for health care to be contributed by other agencies in order to take advantage of as many free services as possible.

2. Detecting Children Needing Health Care

Health Start data show that the following tests should be given first to find the children most likely to need health care especially if funds are limited.

a. Priorities in Screening

- Because blood tests are relatively inexpensive and seem to predict serious health problems they should be given first (along with immunizations). Since hematocrits are more precise tests,[1] they should be given instead of hemoglobin tests (if only one blood test is given).

- Because over 50 percent of the Health Start children over three years of age need dental treatment, dental screening could be eliminated. Instead, all children could be sent to the dentist for fluoride and curative treatment. (Because of the dramatic effects of fluoride on the dental health status, the least expensive types of preventive treatment is fluoride.)

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1. The disadvantage of using hemoglobin level as an approach to nutritional anemia is the difficulty in identifying the abnormal state when the normal cannot be clearly defined. See C.A. Finch, M.D., "Criteria for Evaluation of the Status of Iron Nutrition," Extent and Meaning of Iron Deficiency in the U.S., National Academy of Sciences, Washington, D.C. 1971.

b. Priorities of Children to be Screened

- Children who have had recent medical care (especially crisis care). They tend to need medical treatment.
- Young children (under three) who are small for their age. They have twice the number of ailments as young children of normal size.
- Children who have abnormal blood readings. They tend to have serious medical conditions.
- Children who are not exposed to fluoridated water. They had a substantially higher number of dental caries repaired and extractions (a measure of the incidents of dental problems).

3. Measurement Problems in Screening Program

In six of the eight required tests, the variability among projects in referral rates was more than one would expect to find due to the true variability of health status among children.

Even though the Health Start evaluation was not to include an assessment of the quality of the care given in the program, the variability across projects in costs and in detection and treatment rates points to a need for further study to design a low cost/high yield health screening program for children.

4. Health Education

Health education, as in the first year Health Start program, was relatively unsophisticated and unorganized. With the exception of eight projects, most Health Start projects delivered health education on an informal, casual and sporadic basis. Projects varied on the emphasis given to the topics required by the guidelines. Ten projects, either by design or lack of resources, limited their health education efforts primarily to children with known health problems or to particular health problems prevalent in the children in the area.

Because of the manner in which health education was delivered and the methodological problems in determining the relationship of health education and the health status of the children, no recommendations can be made about "best approaches."

5. Cost of Program

Data on Health Start cost and prevalence of health problems reveal that if all required tests and screenings were given to a group of 100-200 children (from birth to six years of age) and all needed treatment were completed, it would cost an estimated $200 a child. If the same overall amount of donated services were received as in Health Start, the cost of serving the same age group would be $113 a child. If only children over three years old were served, the total cost of providing them with Health Start-like services would be $219 a child ($129 a child with "coordination").

Cost data similar to those presented in this report could be used in the Head Start program not only for Congressional budget requests but also in reviewing project proposals and budgets. If OCD required Head Start grantees to prepare budget justifications for estimated health services costs (including those expected to be incurred by some other agency), Head Start projects probably would be more successful in planning and budgeting for their health service components than were Health Start projects.

Health Start failed as a "demonstration" because of the nature of the program--no design, no expectations stated, no problems defined. Yet much was learned about the health care needs of poor children from birth to six years of age. The evaluation did yield enough data on project approaches so that program models can be developed which may be adopted in the Head Start program. As an operational program, Health Start did provide health services to 20,000 children.

APPENDIX

OVERVIEW OF HEALTH SERVICES GIVEN TO HEALTH START CHILDREN

This appendix presents an overview of the health service component of the Health Start program. Each of the following figures shows the amount of care the Health Start children received for each test. There were several types of possible health service status:

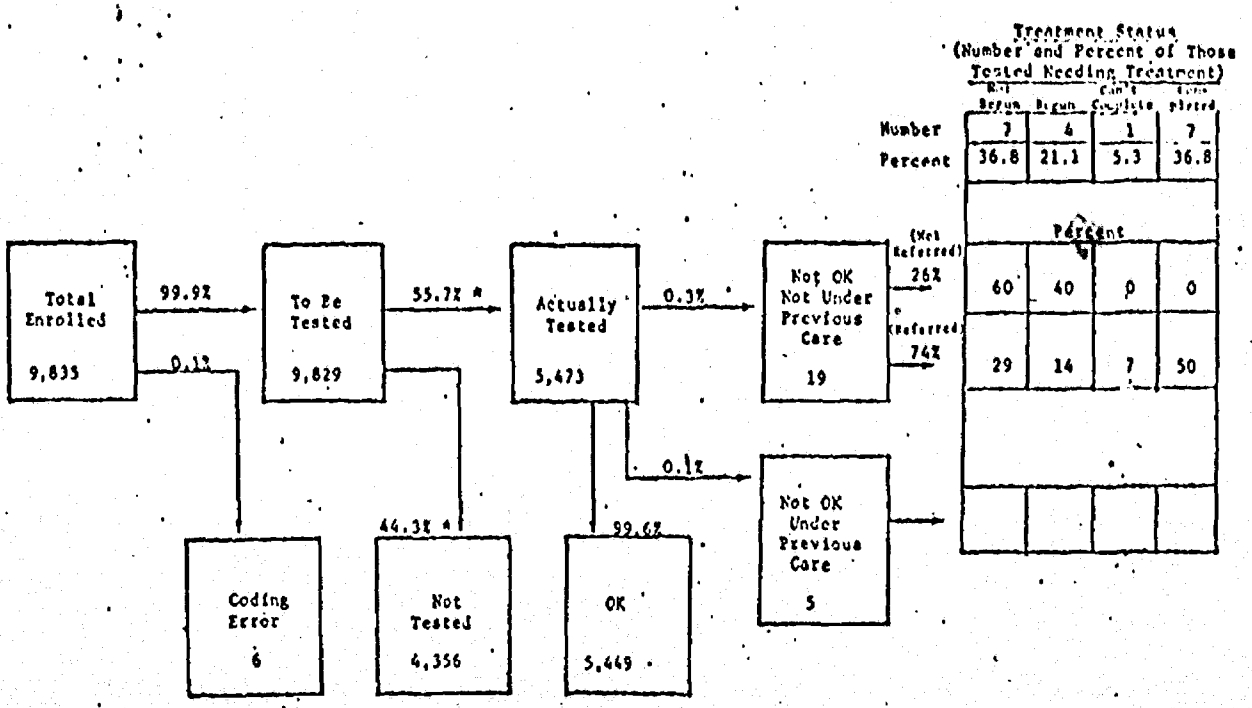
1. Test status: tested, not tested or too young to be tested.

2. Diagnosis: tested needing treatment; tested not needing treatment; or already under care for condition.

3. Treatment status: Tested, treatment needed, not started; tested, treatment needed, begun; tested, treatment needed, under care and can't complete within year; or tested, treatment needed, and care completed.

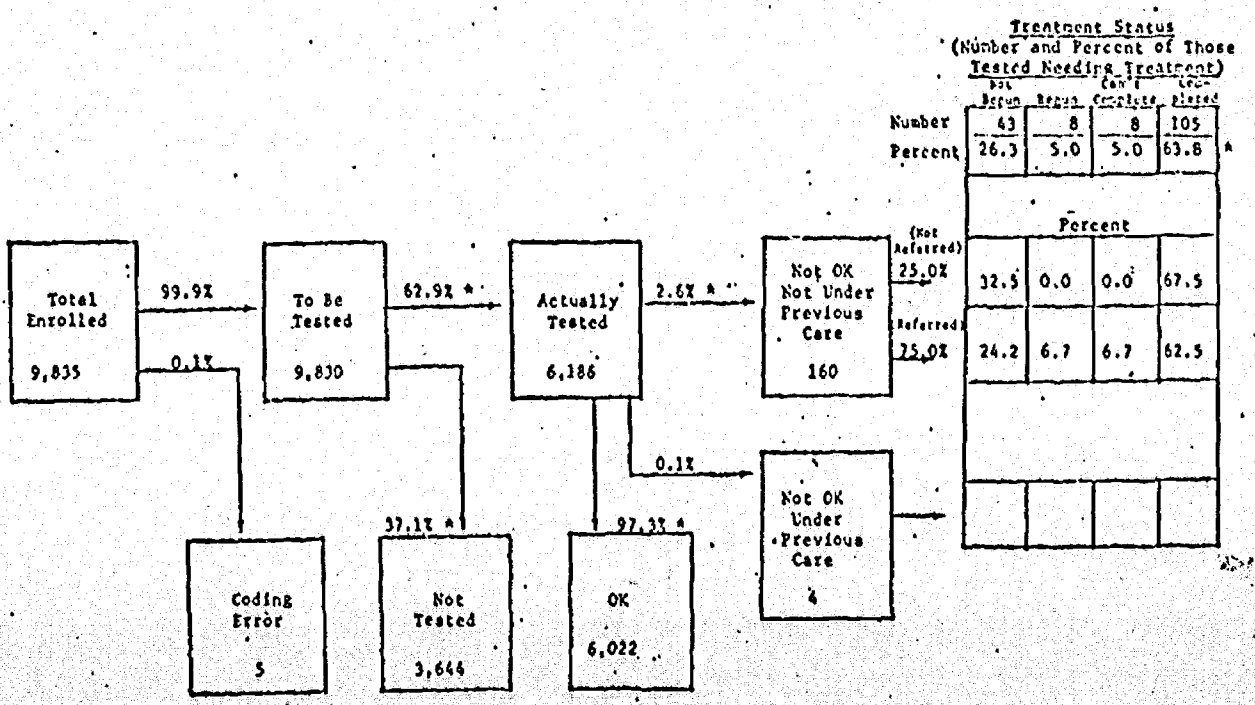
Treatment can be provided either by the same agency/individual who did the screening ("not referred") or by a different agency/individual than did the screening ("referred").

The data source for this appendix is the Health Start Quarterly Health Report, June 1973.



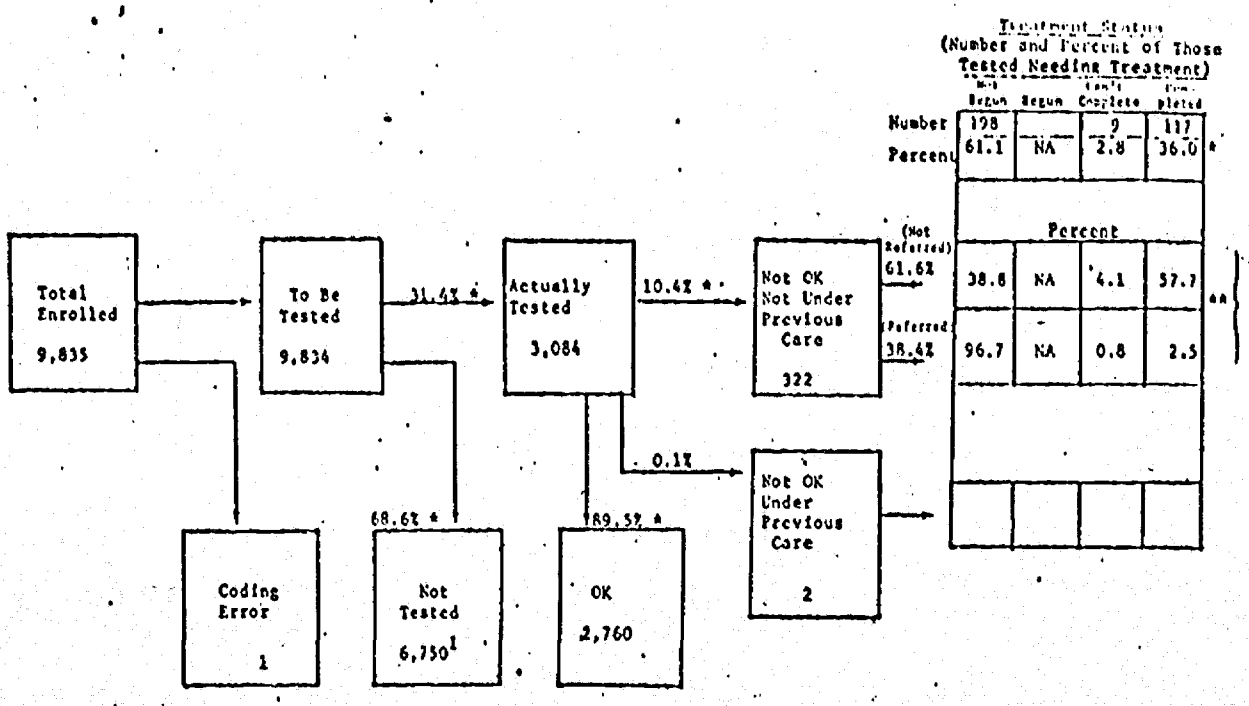
* Significant variation across projects ($p < .0001$).

FIGURE A-1: TUBERCULIN SCREENING AND TREATMENT



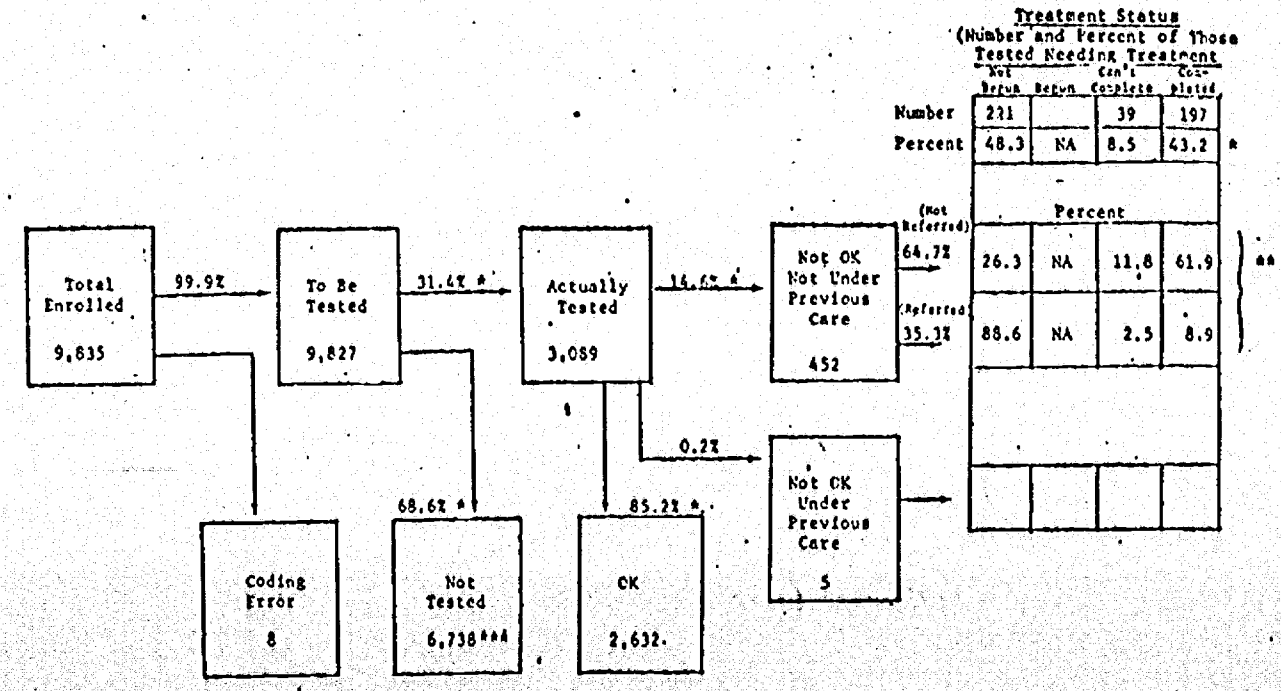
* Significant variation across projects ($p < .0001$).

FIGURE A-2: URINALYSIS SCREENING AND TREATMENT



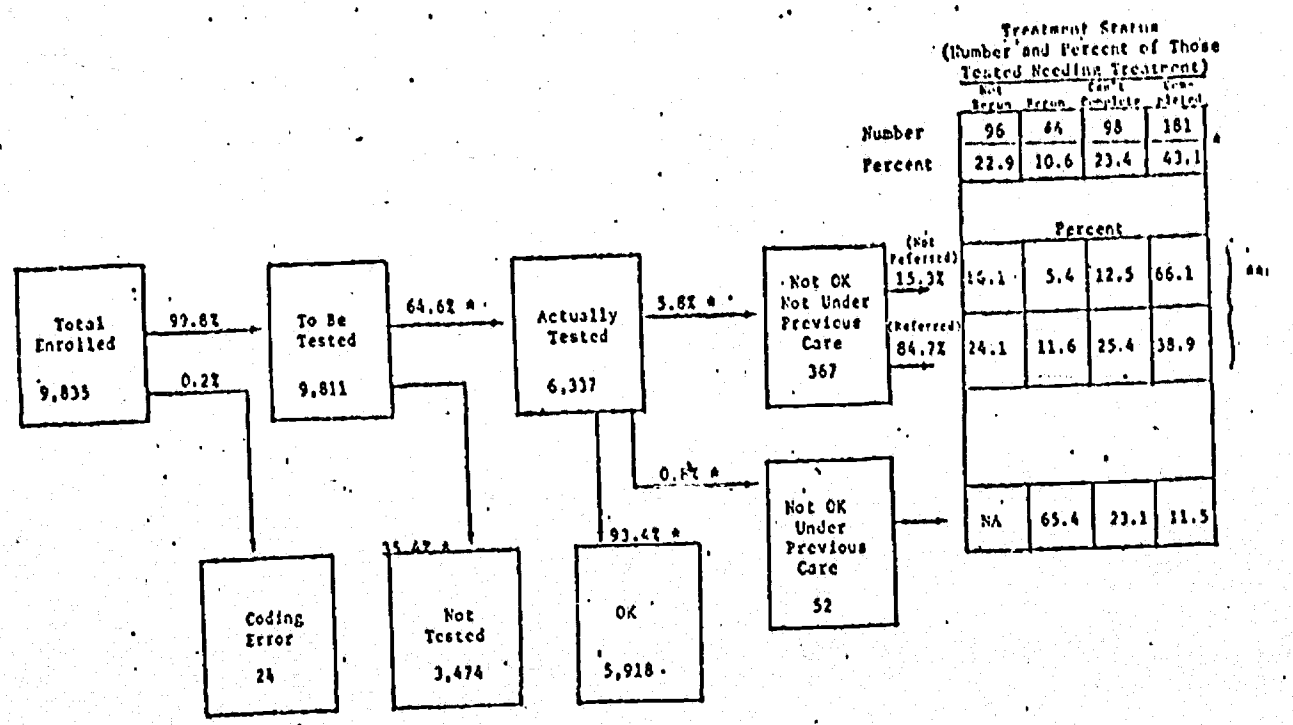
* Significant variation across projects ($p < .0001$).
** Percentages significantly different ($\alpha < .0001$).
1 Includes 1,071 children with hemoglobin readings reported but lacking any indication of being OK or needing treatment.

FIGURE A-3: HEMOGLOBIN SCREENING AND TREATMENT



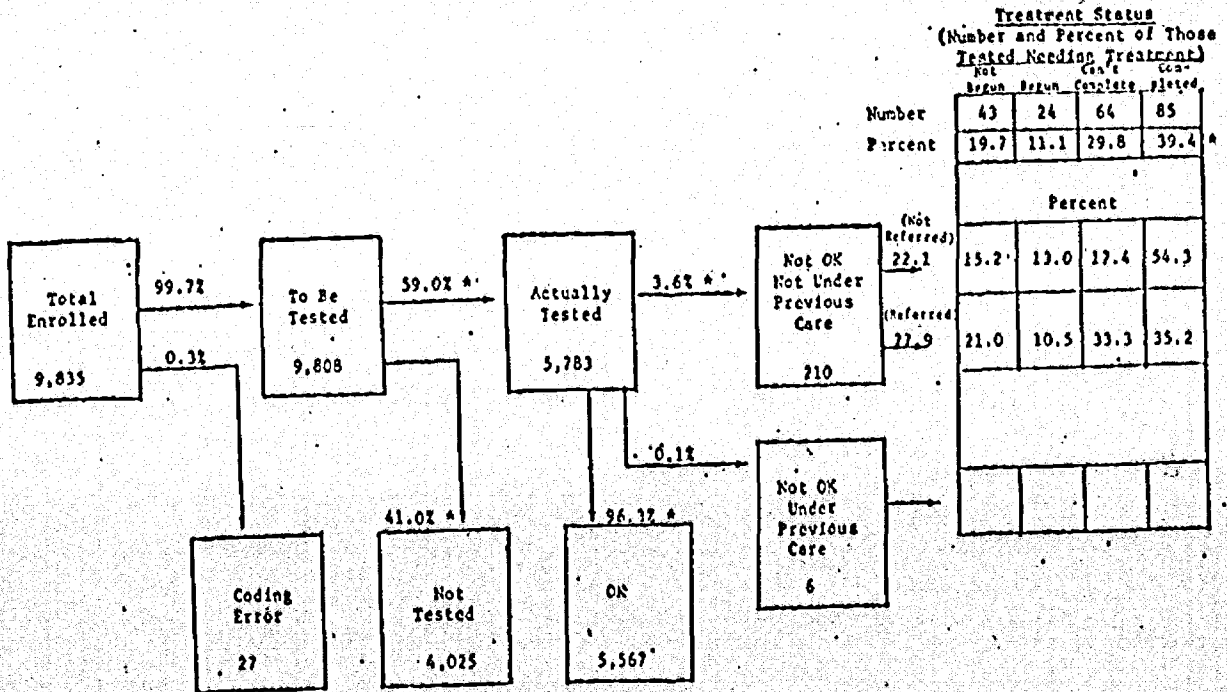
* Significant variation across projects ($p < .0001$).
** Percentages significantly different ($\alpha < .0001$).
*** Includes 1,178 children with hematocrit readings reported but lacking any indication of being OK or needing treatment.

FIGURE A-4: HEMATOCRIT SCREENING AND TREATMENT



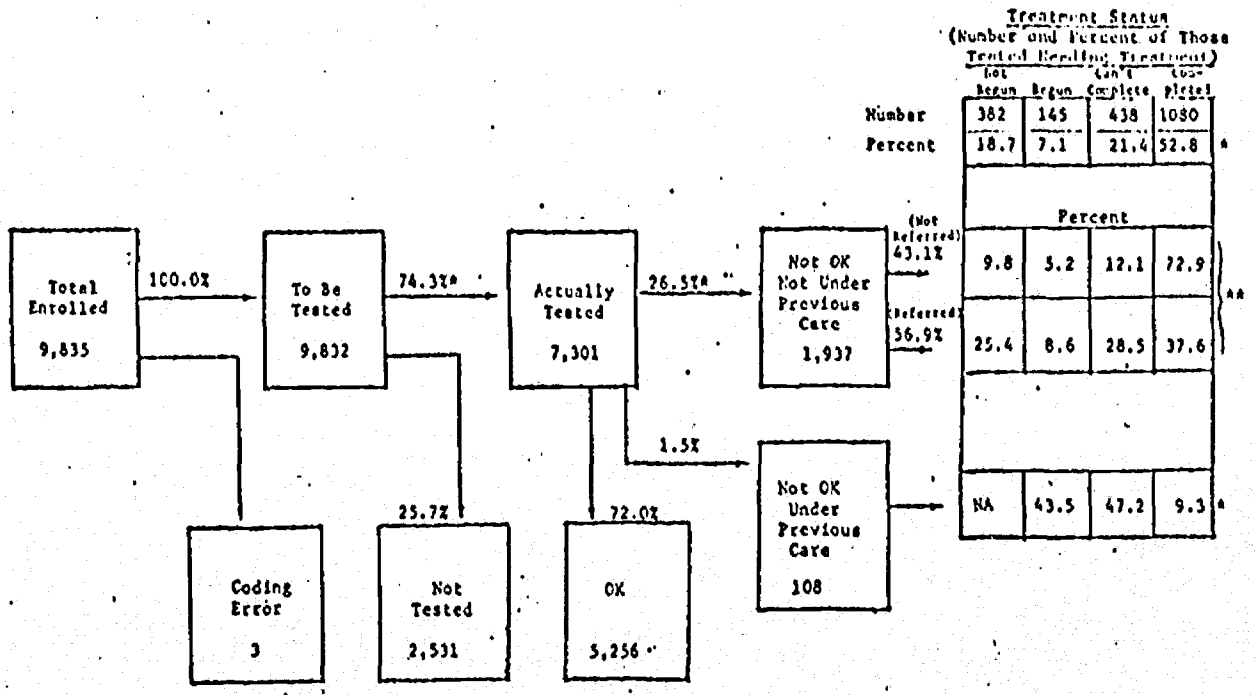
* Significant variation across projects ($\alpha < .0001$).
** Significant variation across projects ($\alpha = .0028$).
*** Percentages significantly different ($\alpha = .0022$).

FIGURE A-5: VISION SCREENING AND TREATMENT



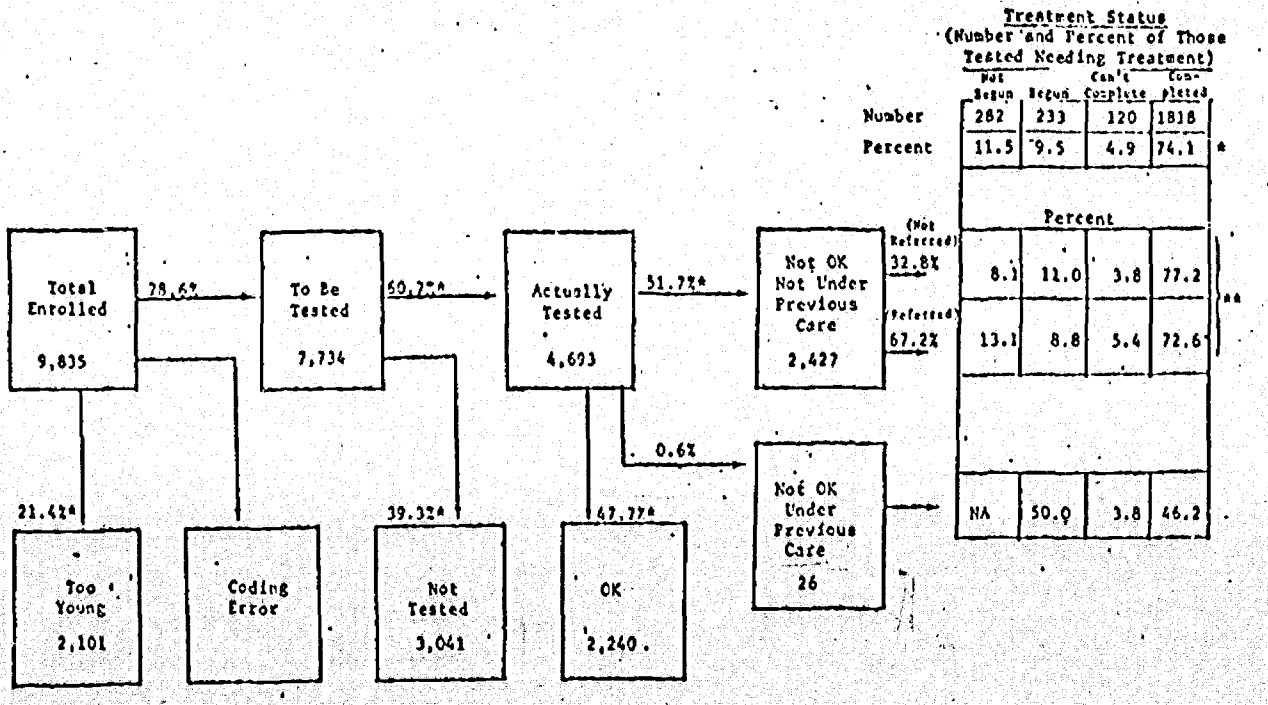
* Significant variation across projects ($\alpha < .0001$).

FIGURE A-6: HEARING SCREENING AND TREATMENT



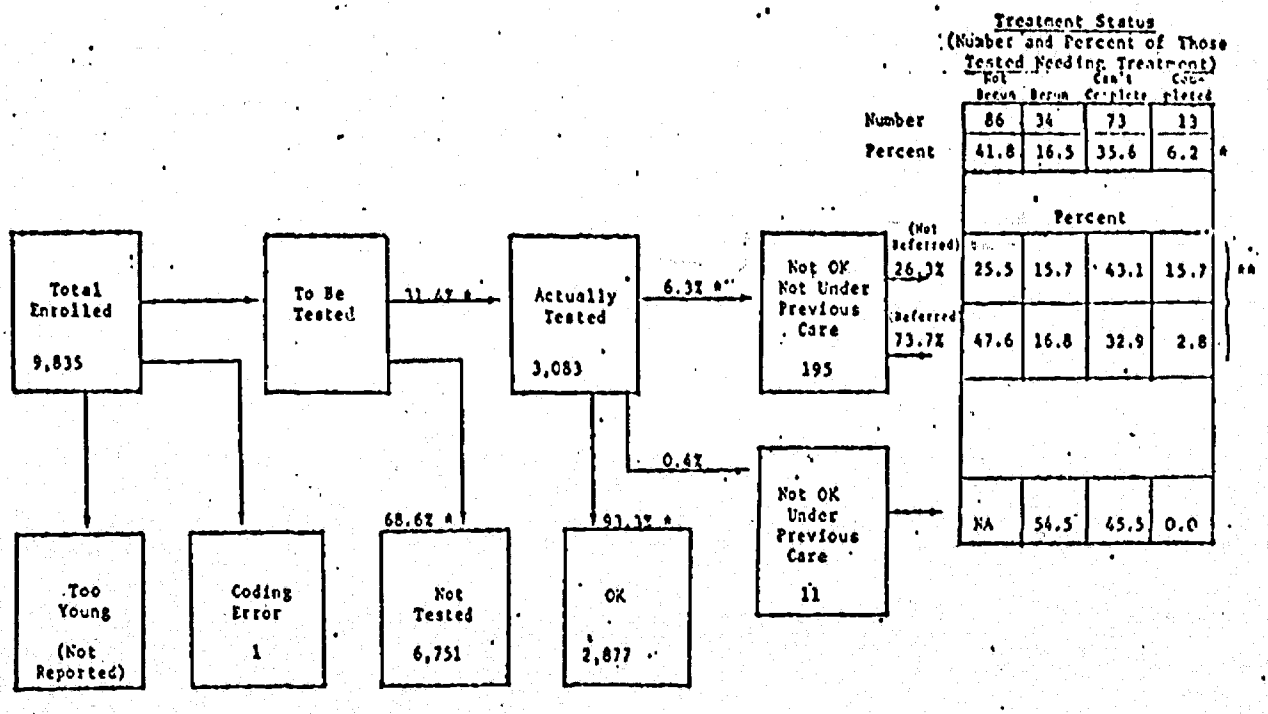
* Significant variation across projects ($p < .0001$).
** Percentages significantly different ($p < .0001$).

FIGURE A-7: MEDICAL SCREENING AND TREATMENT



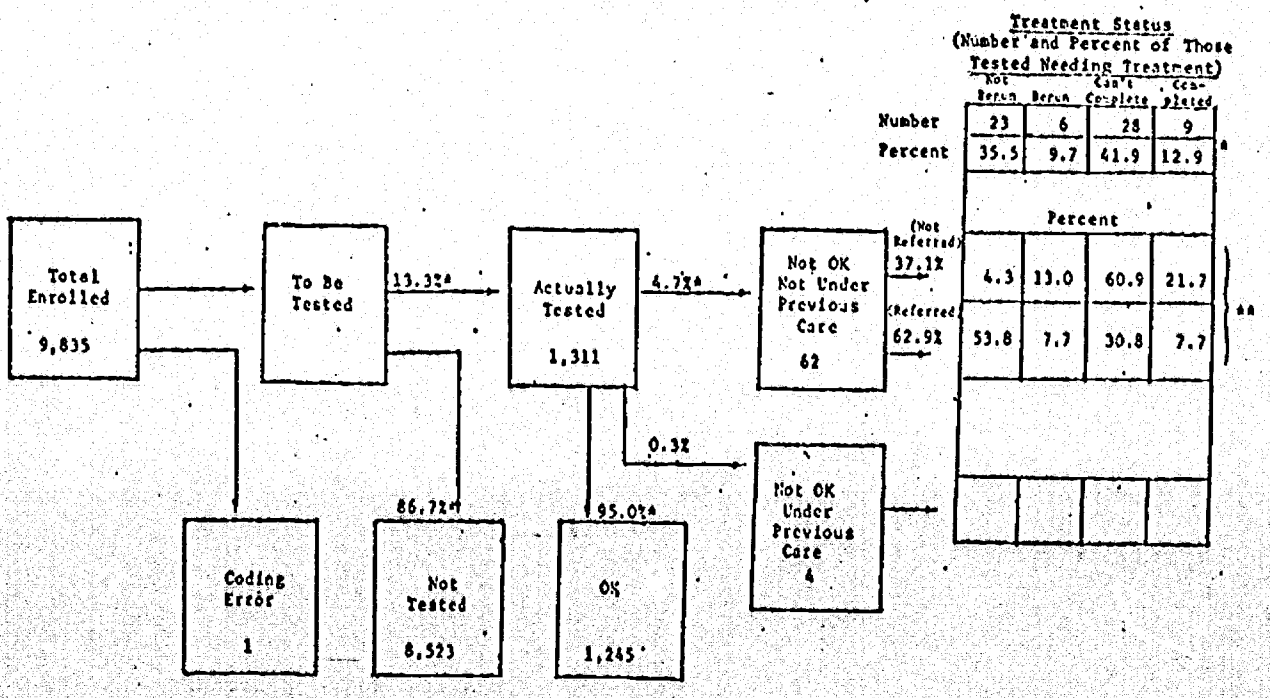
* Significant variation across projects ($p < .0001$).
** Percentages significantly different ($p < .0001$).

FIGURE A-8: DENTAL SCREENING AND TREATMENT



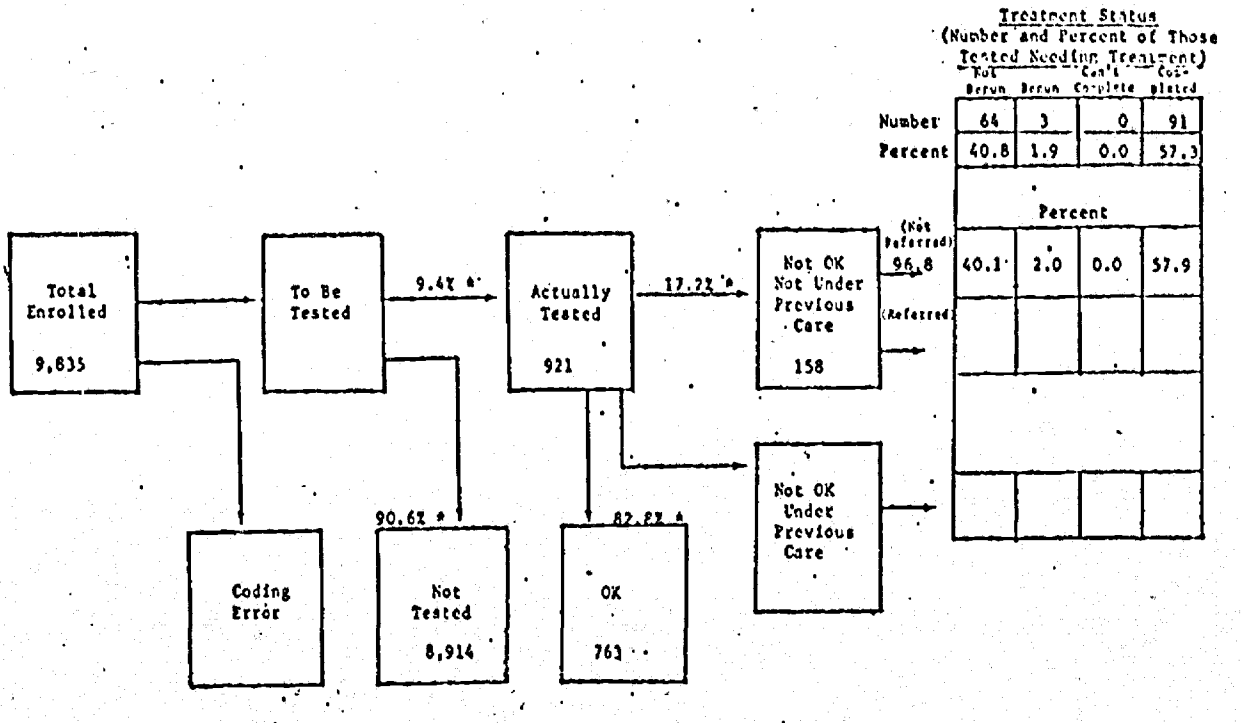
* Significant variation across projects ($\chi^2 < .0001$).
** Percentages significantly different ($\alpha = .0014$).

FIGURE A-9: SPEECH SCREENING AND TREATMENT (Optional)



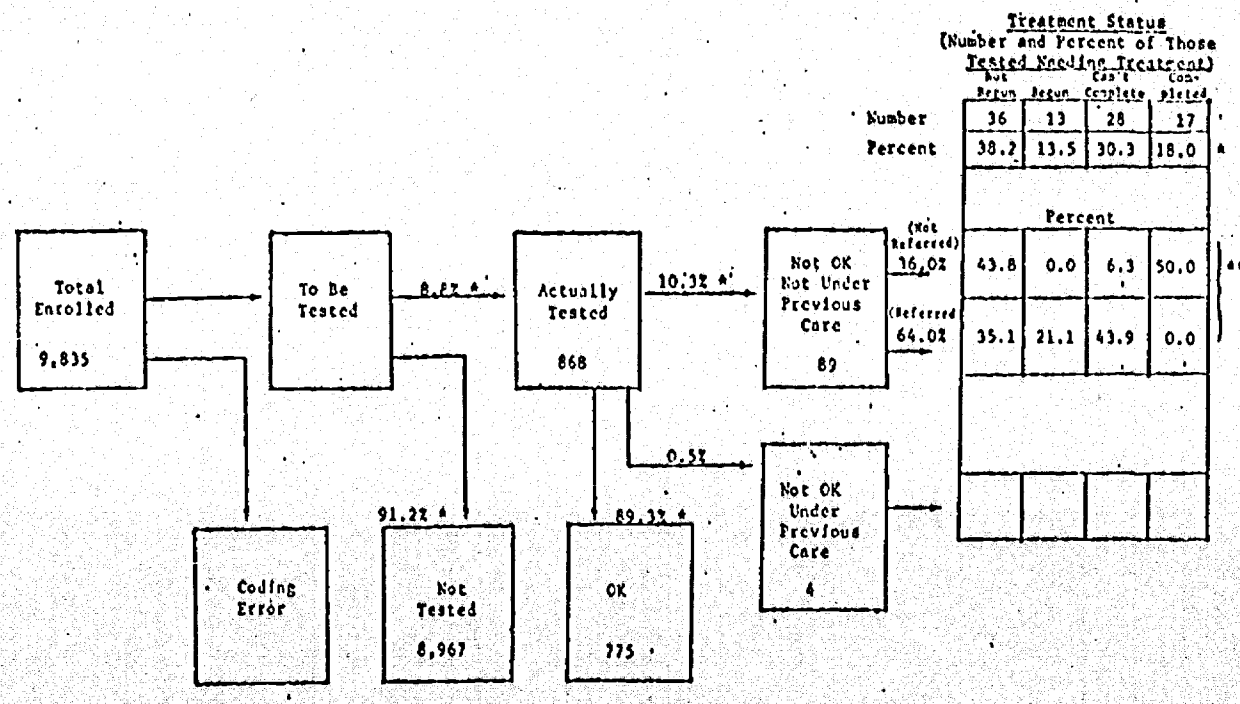
* Significant variation across projects ($\chi^2 < .0001$)
** Percentages significantly different ($\alpha = .0013$).

FIGURE A-10: DENVER DEVELOPMENT SCREENING AND TREATMENT (Optional)



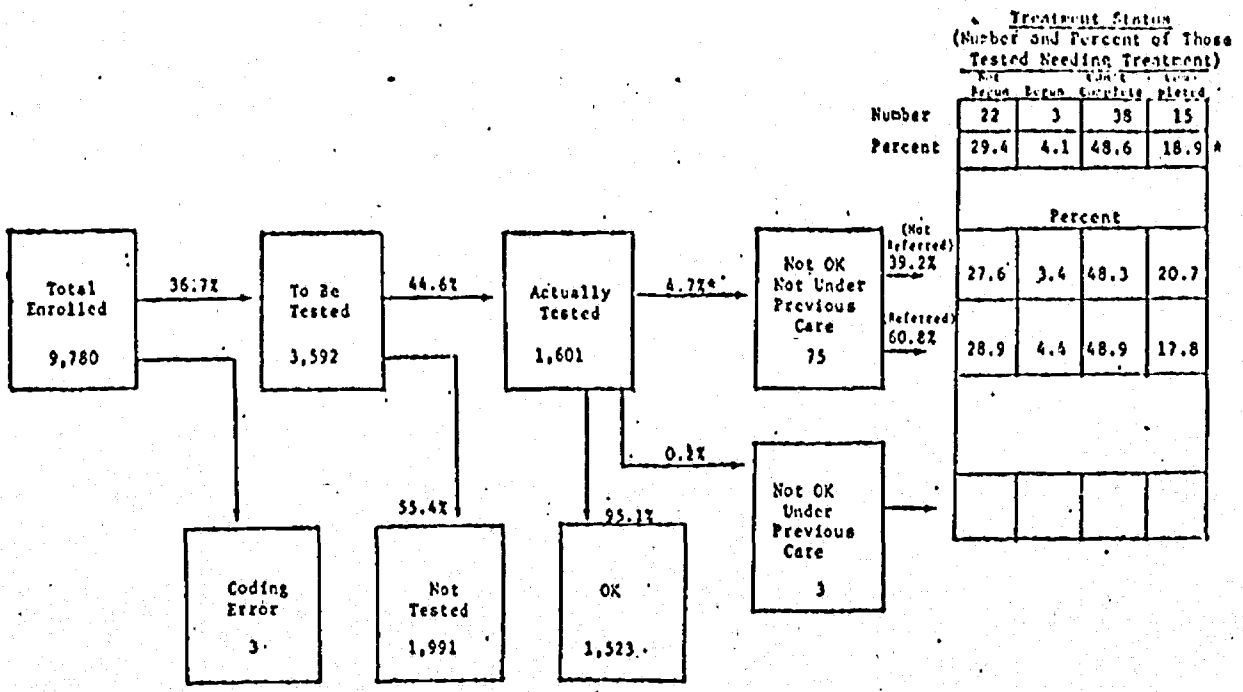
* Significant variation across projects ($p < .0001$).

FIGURE A-11: INTESTINAL PARASITES SCREENING AND TREATMENT (Optional)



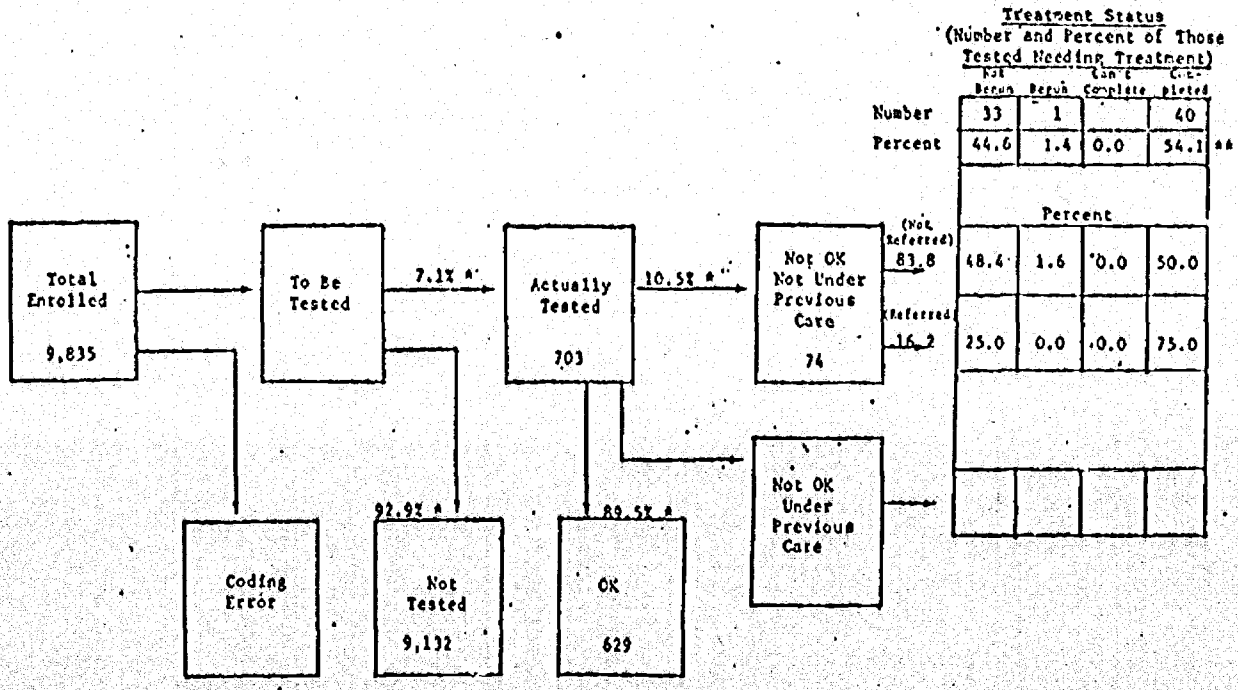
* Significant variation across projects ($p < .0001$).
** Percentages significantly different ($p < .0001$).

FIGURE A-12: PSYCHOLOGICAL SCREENING AND TREATMENT (Optional)



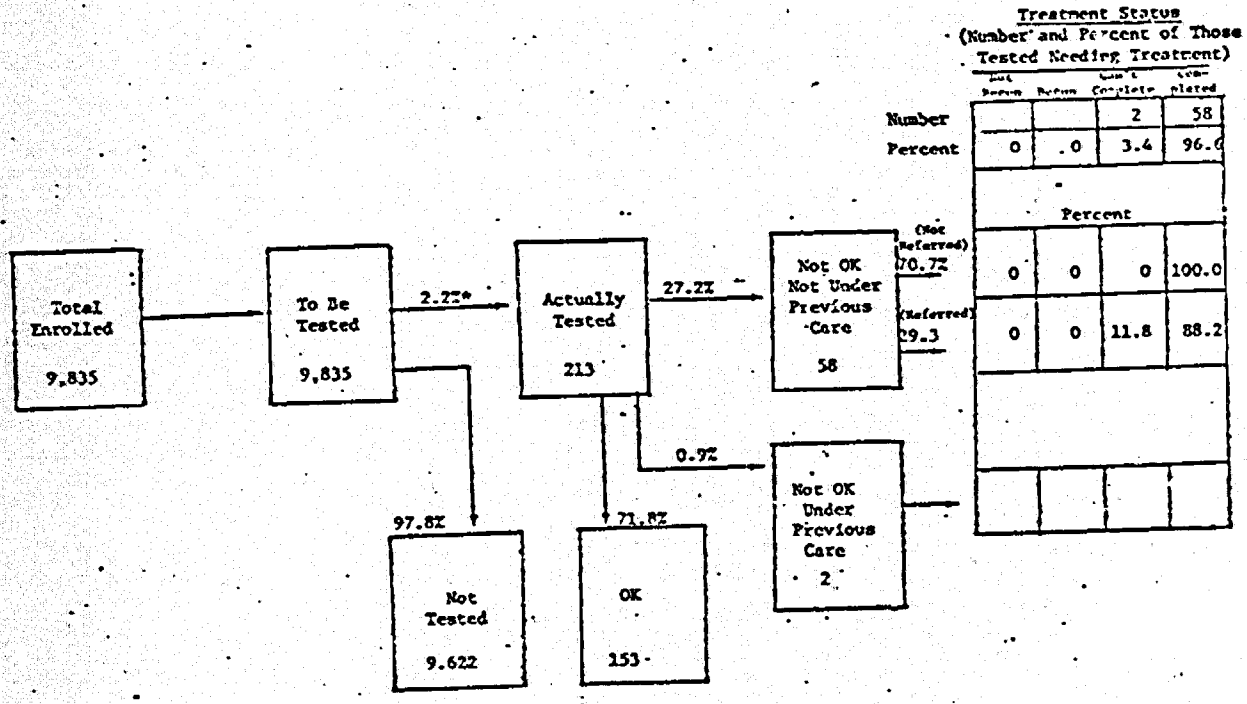
* Significant variation across projects ($\alpha < .0001$).

FIGURE A-13: SICKLE CELL SCREENING AND TREATMENT (Optional)



* Significant variation across projects ($\alpha < .0001$).
**Significant variation across projects ($\alpha = .0007$).

FIGURE A-14: LEAD POISONING SCREENING AND TREATMENT (Optional)



* Significant variation across projects ($p < .0001$).

FIGURE A-15: STREP CULTURE SCREENING AND TREATMENT (Optional)