DOCUMENT RESUME

ED 134 317 PS 009 042

AUTHOR Coelen, Craig; And Others
TITLE National Home Start Evaluation Interim Report V: Cost-Effectiveness Analysis.
INSTITUTION Abt Associates, Inc. Cambridge, Mass.; High/Scope Educational Research Foundation, Ypsilanti, Mich.
SPONS AGENCY Office of Child Development (DHEW), Washington, D.C.; Office of Human Development (DHEW), Washington, D.C.
PUB DATE 15 Oct 74
CONTRACT HEW-OS-72-127
NOTE 61p.; For other reports in this study, see ED 069 439-441, ED 077 583, ED 085 398, ED 091 074, ED 091 081, ED 092 225-229, ED 107 379-380 and PS 009 039-047

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS *Budgets; Comparative Analysis; *Cost Effectiveness; Data Analysis; Demonstration Programs; *Early Childhood Education; *Home Programs; *Homevisits; Intervention; Operating Expenses; Parent Education; Program Costs; *Program Evaluation
IDENTIFIERS *Project Home Start

ABSTRACT

This volume, part of the interim report on the National Home Start Evaluation, includes cost of the 16 Home Start projects and outcome data from the six summative sites. Findings and recommendations are presented on the intra-project cost-effectiveness of Home Start and the cost-effectiveness of Home Start as a Head Start option. Home Start, a federally-funded 3-year (1972-1975) home-based demonstration program for low-income families with 3- to 5-year-old children was designed to enhance a mother's skills in dealing with her own children and to provide comprehensive social-emotional, health and nutritional services. Cost findings are presented in detail in Chapter II. Both OCD dollars spent on Home Start as well as "in-kind" levered resources from other government agencies and private sources are presented so that a full comparison between projects can be made in terms of total monetized resources delivered to project families. Chapter III sets forth an analysis of intra-project efficiency in terms of technical efficiency (the home visit content and length) and cost efficiency. The chapter ends with a presentation of hypothetical model budgets for different project sizes located in different parts of the country designed to assist OCD in making future decisions about funding home based options. Chapter IV contrasts Home Start costs with Head Start costs at four sites. (Author/MS)

This Report was Prepared for:

The Department of Health, Education, and Welfare
Office of Child Development
Early Childhood Research and Evaluation Branch
Under HEW Contract No. HEW-OS-72-127

Dr. Esther Kresh, Project Officer

NATIONAL HOME START EVALUATION

Interim Report V:
Cost-Effectiveness Analysis

October 15, 1974

Craig Coelen, Coordinator,
Cost-Effectiveness Analysis Volume

Principal Author

Craig Coelen

Contributors

Richard Ruopp
Mona Stein

Editor

Richard Ruopp

Richard Ruopp, Director, Formative Evaluation
Nancy Goodrich, Deputy Director, Formative Analysis
Marrit Nauta, Deputy Director, Field Operations
Ilona Ferraro, Manager, Report Production

Abt Associates Inc.
55 Wheeler Street
Cambridge, Massachusetts
02138

Table of Contents

LIST OF TABLES

LIST OF TABLES (Continued)

I

INTRODUCTION

This Cost and Cost-Effectiveness volume combines cost data collected during the spring and summer of 1974 from 15 of the 16 Home Start projects[1] with outcome data from the 6 summative sites to produce findings and recommendations on the intra-project cost-effectiveness of Home Start and the cost-effectiveness of Home Start as a Head Start option reaching families Head Start is not currently serving.

Organization of the Volume

Cost findings are presented in detail in Chapter 2. Both OCD dollars spent on Home Start as well as "in-kind" levered resources from other government agencies and private sources are displayed so that a full comparison between projects can be made in turns of total monetized resources delivered to project families.

Chapter 3 sets forth an analysis of intra-project efficiency in terms of technical efficiency (the home visit content and length) and cost efficiency. The chapter ends with a presentation of hypothetical model budgets for different project sizes located in different parts of the country designed to assist OCD in making future decisions about funding home based options.

Chapter 4 contrasts Home Start costs with Head Start costs at four sites.

---

[1] Alaska did not provide cost data in time for the report.

II

PROGRAM COST

Introduction

The financial record of the Home Start program is important to policy makers and program administrators for several reasons. It is primarily important for purposes of program evaluation. It provides an estimate of the resource cost of the Home Start program agairst which can be weighed the benefits the program has achieved. It is important, secondly, as a guide for improving budgetary performances in the future. To the extent that the past record discloses differences across local budgets in the expenditures made for particular budget categories it may suggest budgetary areas where greater future control should be exercised. The past financial record is useful also because it shows how program cost is affected by policy and administrative decisions --- how cost would be affected, for example, by a decision to reduce or increase the caseload of the average home visitor. Finally, the past financial record provides important information to those who wish to know the costs of alternative plans for future expansion of the Home Start program.

The objective of this chapter is to present the Home Start Program cost and to explain how resources have been allocated across various budget categories. The chapter is retrospective and descriptive only. No attempt will be made to evaluate program efficiency or to compare Home Start spending with alternative uses of federal and private resources. These latter issues are addressed in later Chapters of this volume.

The cost expenditure information presented below pertains to the eight-month period from October 1, 1973, to May 31, 1974. This period was chosen for two reasons. First, it maintains consistency between this chapter and other volumes of this report, where the data (especially the psychometric results reported in Volume II) all pertain to the October-to-May period. Secondly, the eight-month period was chosen to facilitate cost/expenditure comparison across local projects by eliminating summer months, when some local projects reduce the scope of their operations or shut down completely (while others maintain normal schedules).

The chapter is divided into three major sections. The first section provides information on the total cost of the Home Start program and the division of that total cost into cost to the primary sponsor, the Office of Child Development, and cost to other public agencies and private donors. The second section compares costs, sources of funding and expenditure patterns across fifteen of the sixteen local Home Start projects.[1] The last section addresses the relationship between program cost and the number of families the program has served.

Cost and Expenditure Patterns: National Level

Most of the resources used by the Home Start Program are paid for out of funds provided to local project offices by the Office of Child Development, part of the U.S. Department of Health, Education and Welfare. The remainder of the resources used by the local projects -- approximately 22 per cent -- consists of goods and labor services contributed by other government agencies (e.g., medical examinations provided by county health departments) or by private organizations and individuals (e.g., donated office space and medical checkups by private physicians). The reader is referred to Tables II-1, II-2 and II-3 below for complete numerical detail of cost and expenditure patterns of the Home Start program at the national level.[1]

Between October 1, 1973 and May 31, 1974 total expenditure of OCD dollars for the Home Start program was $1.022 million. Were all local projects to spend OCD funds at the same rate for a full year as they did for the eight month period under consideration, the annual cost of the fifteen local projects would have been $1.534 million. Since most local projects reduce operations or close down completely during Summer months, actual OCD expenditures are estimated at $1.35 million (or $90 thousand /project).

An expenditure of $1.022 million between 10/1/73 and 5/31/74 can be put in perspective in several ways. During that same period it represented:

[1] Financial statements from the Alaska project were not available at the time of this writing, so cost/expenditure data for Alaska are not included in the tables or in the analysis of costs below.

- the total budget for 167 "average", low income, urban families of four;[1]
- $1 for every $317 spent on the Head Start program;[2]
- one thousandth of one per cent of the total outlays of HEW.[3]

The percentage distribution of expenditure of OCD funds across budget categories (given in Table II.1) indicates that the Home Start Program, like almost all social service programs, is highly labor intensive. Salaries, wages and fringe benefits for project staff account for approximately 72% of the average local project's expenditures of OCD dollars. Travel expenses and consumable supplies are the most important non-personnel costs. Less than 5¢ of every OCD dollar is spent on office space and durable equipment. The next section of this chapter will consider the extent to which the budgetary allocation patterns that emerge at the national level are consistently maintained from one local project to another.

An important feature of the contractual arrangements between the Office of Child Development and local Home Start project offices is that at least 10¢ of every dollar provided by OCD must be matched by resources contributed from the local community. For only one local project (Arizona) of the fifteen considered here is this matching obligation not required. In fact, all local projects (including Arizona) have been successful to varying degrees in augmenting resources paid for by OCD with resources obtained from the local community.

For the eight month period under consideration the estimated value of locally contributed goods and services was $287 thousand across the fifteen local projects (Alaska excluded). Scaled by a factor of 1.5 to project from an

---

[1]Data on low income budgets were obtained from U.S. Department of Labor, Monthly Labor Review, August, 1974.

[2]Estimate based on obligations for fiscal 1974 for Head Start plus DOA Head Start food programs. Source: Office of Child Development.

[3]October-to-May outlays of HEW are recorded in U.S. Department of Commerce, Survey of Current Business, August, 1974.

Table II-1

EXPENDITURES OF OCD FUNDS

BY BUDGET ITEM

(October 1, 1973 to May 31, 1974)

Item	Total 15 Programs	Percent of Total	"Average" Program Projected to 12 months (1)
Personnel	*799,370*	*78*	*79,937*
Salaries and Wages	664,653	65	66,465
Fringe Benefits	71,639	7	7,164
Consultants and Contract Services	63,078	6	6,308
Non-Personnel	*222,992*	*22*	*22,299*
Travel	84,102	8	8,410
Space Cost and Rental	24,856	2	2,486
Consumable Supplies	65,879	6	6,588
Equipment Cost and Rental	.20,495	2	2,050
Other Costs	27,660	3	2,766
Total	*1,022,362*	*100*	*102,236*

(1) The entries in this column were obtained by dividing the corresponding entrees by the number of local programs (15) and then multiplying the results by a factor of 1.5 to scale 8 month figures to a 12 month basis. As a result, the 12 month projections assume all local programs at full operation throughout the entire year. In fact, several local programs close down during the summer months.

eight to a twelve month period, this figure suggests that annual contributions from community sources would amount to $430 thousand. Of the $287 thousand worth of resources actually documented, approximately 43% was obtained from private organizations and individuals, while the balance came from a variety of state and federal government agencies (including, to a limited extent, from OCD indirectly in the form of contributions from local Head Start offices). Slightly more than half of local contributions was in the form of donated professional services (largely medical). The remaining one half was fairly evenly divided among non-professional services, donated office space and consumable materials.

An item-by-item examination of the resources Home Start offices obtain from community sources reveals a very broad spectrum of goods and services -- some of which are vital to the program's operations and some of which serve less critical needs. Table II.2 presents a breakdown of contributed resources into "core" and "supplemental" categories. In the "core" category are grouped such items as services donated by doctors, teachers, secretaries and bookkeepers; donated office space and office equipment; educational materials; tuition for adult education classes; legal aid; job counseling; and donations of cash. In the "supplemental" category have been grouped: refreshments for parties and picnics; volunteer time for party cleanup; chaperones, transportation expenses and admission tickets for field trips to parks, zoos, fire houses and police stations; airplane rides; toys, Indian costumes and other similar items.

In many cases the decision as to which category a particular item belongs is clear-cut. In other cases the choice is ambiguous, and "best estimate" judgments have been made on the basis of limited descriptions of the item involved. Because the dividing line between "core" and "supplemental" is not clear-cut and because, as Table II-2 indicates, resources represent less than 10% of all resources obtained from the local sources, future references and estimates of OCD resources refers to the total of both kinds of resources.

The total resource cost of the Home Start Program, the sum of OCD expenditures and the value of contributed goods and services, was $1.31 million for the eight month period of full operation. Projected cost for twelve months of full operation would be $1.96 million, or about $130 thousand for the average local project. Again, personnel costs consume the largest share of the total program budget, slightly more than 75%.

Table II-2

RESOURCES OBTAINED FROM NON-OCD SOURCES
BY SOURCE, BY TYPE OF RESOURCE AND BY PRIORITY TO PROGRAM
(October 1, 1973 to May 31, 1974)

CATEGORY	ESTIMATED VALUE OF RESOURCES OBTAINED		
	CORE	SUPPLEMENTAL	TOTAL
TOTAL FOR 15 SITES	258,673	28,250	286,923
BY SOURCE			
government agency	147,239	17,402	164,641
private donor	111,434	10,848	122,282
BY TYPE OF RESOURCE			
cash	1,670	0	1,670
professional services	145,381	3,475	148,856
non-professional time	28,122	11,876	39,998
space	37,128	0	37,128
consumable materials	37,454	12,472	49,926
durable materials	8,918	427	9,345

Several differences are apparent when one compares expenditure allocations within the OCD-funded budget with expenditure allocations within the total budget. While personnel costs represent approximately the same fraction of the two budgets, allocations within the personnel category are noticeably different when contributed professional services are added to staff costs paid for by OCD. Donated professional services alone account for 16% of the overall budget. Table II 3 indicates that roughly one quarter of all the labor services used by the Home Start program are obtained from non-OCD funds. The other difference one notices in comparing the OCD and overall budgets is that the cost of office space represents about twice the fraction of the overall budget that it represents of the OCD budget, but this item still consumes less than 5¢ of every program dollar. The conclusion still remains that Home Start is a labor intensive program.

Comparison of Cost and Expenditure Patterns Across Local Sites

The financial information made available by local Home Start offices indicates substantial variation across the fifteen local projects in expenditures of OCD funds, in the value of resources consumed and in the patterns by which resources are allocated across the various budget categories. Tables II-4 through II-10 beginning on page 12 present detailed numerical evidence of these inter-site differences.

During the eight month period under consideration the average local Home Start project spent $68.2 thousand of OCD funds, obtained $19.1 thousand worth of goods and services from community contributions and consumed, in all, $87.3 thousand worth of resources. Few local budgets adhered closely to these averages. OCD expenditures range from a low of $50.7 thousand in Massachusetts to a high of $86.1 thousand in West Virginia. Resources obtained from community contributions range from a low of $6.2 thousand in North Carolina to a high of $33.0 thousand in Nevada. The range for total resource cost is also large -- Massachusetts and West Virginia again on the lower and upper ends of the distribution respectively.

There are clear differences in the extent to which local projects rely on alternate sources of non-OCD resources. Kansas, Ohio and West Virginia obtain the major share of their contributions from the private sector. Contributions at the remaining sites are divided fairly evenly between public and private sources.

Table II-3

TOTAL COST OF HOME START BY BUDGET ITEM

(October 1, 1973 to May 31, 1974)

Item	From OCD Funds	From Other Sources(1)	All Sources	Percent of Tota
Personnel	*799,370*	*188,854*	*988,224*	*75*
Project Staff	736,292	0	736,292	56
Non-Project Professional Services	63,078	148,856	211,934	16
Non-Professional Service	0.	39,998	39,998	3
Non-Personnel	*222,922*	*98,069*	*321,061*	*25*
Travel	84,102	0(2)	84,102	6
Space	24,856	37,128	61,984	5
Consumable Supplies	65,879	49,926	115,805	9
Equipment	20,495	9,345	29,840	2
Other	27,660	1,670	29,330	2
TOTAL	*1,022,362*	*286,923*	*1,309,285*	*100*

(1) This column reflects all resources obtained from non-OCD sources -- not just those resources previously listed as "Higher Priority"

(2) Approximately $2,800 included elsewhere in the "From Other Sources" column are travel-related contributions: volunteers driving families on field trips, donations of gasoline etc.

There is substantial variation in the relative importance local projects place on certain types of budget items. Arizona allocates only 58% of its total resources to the personnel category and 42% to non-personnel.[1] In contrast, Utah devotes 91% of its resources to personnel and only 9% to non-personnel. In Alabama, home visitors' salaries and fringe benefits account for only 20% of the total resource budget; in Kansas the share is 42%. Arizona devotes almost four times as large a share of its total budget (31%) to administrative and office staff as Texas-TMC (8%). Staff specialists, paid consultants and donated professional time represent 42% of the total resources consumed in Alabama but only 8% in Kansas. These differentials are too large to be ignored.

There are several reasons for substantial variations in cost and expenditure patterns across local projects. Differences in the number of families served account for a substantial part of the variation in overall budgets. The availability of community resources in the public and private sectors is an important determinant of the amount of contributed resources local projects capture. In Arizona, for example, the Home Start project is located on an Indian reservation where the potential for contributions from community sources is limited.

The local project administrator determines the resource mix which will best serve the needs of the project's client families. These administrative judgments are a critical determinant of intra-budget allocation patterns. The fact that there are several distinct patterns of resource allocation suggests that alternative service models are being used in different projects. In North Carolina, Ohio and Tennessee, for example, the ratio of administrative staff to home visitor staff (measured in terms of dollars spent on each) is three or four times higher than in Kansas and Texas-TMC. A high ratio of administrative staff to home visitor staff should result in more intensive training and supervision of home visitors and greater success in obtaining community contributions than would occur where this ratio is low. Home

[1] Included in the non-personnel resources used by the Arizona project is a $10,500 contribution of Indian costumes. When this item is removed from the budget, the personnel vs. non-personnel breakdown of the Arizona budget is 65% and 35% respectively -- a somewhat less atypical distribution.

Start projects in Alabama, Nevada, Tennessee and Texas-Houston are operating with a much higher ratio of special service personnel[1] to home visitors than do projects in Arizona, Arkansas, California, Kansas and Massachusetts. Variations in the specialists/home visitor ratio should result in variations in the special services received by project families (medical, dental and psychological services, job counseling and legal aid) and in variations in the specialized training received by home visitors. How resources are allocated with a local project's budget clearly will be affected by the type of service model the project has chosen to use.

Another cause of the variations in intra-budget spending patterns is site-to-site variation in salary scales. As Table II-10 indicates, the average weekly salaries of home visitors and project administrators differ substantially from one site to another. A part of this difference is the result of regional variations in the cost of labor. The cost of living and therefore the cost of labor is much higher in Massachusetts, for example, than it is in a rural area in the South. But regional variation in labor costs is not the only determinant of site-to-site differences in salary scales. Some local projects pay higher scales because they hire more educated and therefore more costly staff.

Even when adjustment is made for differences in the cost of living and differences in the education of staff members, some local projects still pay higher salaries. These remaining differentials are probably the result of a conscious decision on the part of some administrator as to what salary scale is most appropriate. Site-to-site variation in the difference between weekly salaries of directors and weekly salaries of home visitors are clearly the result of such administrative decisions. A comparison of average weekly salaries of home visitors with average weekly budgets of low income families in the same locality (see Table II-10) produced one obvious conclusion: home visitors are receiving a marginal wage.

---

[1] Staff specialists, paid consultants and local professionals who contribute professional services.

Table II-4

COMPARISON OF LOCAL PROJECTS

VALUE OF RESOURCES OBTAINED FROM VARIOUS SPONSORS

(October 1, 1973 to May 31, 1974)

Local Project (2)	Government Agency			Private (1)	Total Resources
	OCD	Other (1)	Total		
Alabama	69,668	15,738	85,406	13,128	98,534
Arizona	77,332	14,100	91,432	1,586	93,018
Arkansas	65,556	12,618	78,174	6,025	84,199
California	61,227	9,412	70,639	9,216	79,855
Kansas	56,765	4,575	61,340	10,521	71,861
Massachusetts	50,652	5,367	56,019	3,266	59,285
Nevada	66,960	18,999	85,959	13,998	99,957
New York	58,563	15,719	74,282	10,803	85,085
North Carolina	60,359	3,798	64,157	2,412	66,569
Ohio	83,692	6,048	89,740	13,548	103,288
Tennessee	73,255	4,293	77,548	4,347	81,895
Texas (Houston)	76,716	9,434	86,150	7,598	93,748
Texas (TMC)	69,431	19,844	89,275	4,597	93,872
Utah	66,075	17,489	83,564	3,492	87,056
West Virginia	86,111	7,207	93,318	17,745	111,063
Average-All Sites	68,157	10,976	79,134	8,152	87,286

(1) The figures in these columns reflect all resources obtained from non-OCD, not just those previously labeled "Higher Priority"

(2) Alaska is not included because financial information from that site was not available at the time this report was written.

Table II-5

COMPARISON OF LOCAL PROJECTS:

PERCENTAGE OF RESOURCES OBTAINED FROM VARIOUS SPONSORS

(October 1, 1973 to May 31, 1974)

Local Project	Government Agency			Private	Non-OCD
	OCD	Other	Total		
Alabama	71	16	87	13	29
Arizona	83	15	98	2	17
Arkansas	78	15	93	7	22
California	77	12	88	12	23
Kansas	79	6	85	15	21
Massachusetts	85	9	94	6	15
Nevada	67	19	86	14	33
New York	69	18	87	13	31
North Carolina	91	6	96	4	9
Ohio	81	6	87	13	19
Tennessee	89	5	95	5	11
Texas (Houston)	82	10	92	8	18
Texas (TMC)	74	21	95	5	26
Utah	76	20	96	4	24
West Virginia	78	6	84	16	22
Average - All Sites	78	13	91	9	22

Table II-6

COMPARISON OF LOCAL PROJECTS' EXPENDITURE OF OCD FUNDS
(October 1, 1973 to May 31, 1974)

	Ala.	Ariz.	Ark.	Calif.	Kan.	Mass.	Nev.	N.Y.	N.C.	Ohio	Tenn.	Tex. Hous.	Tex. TMC	Utah	W.Va.	AVERAGE
Personnel	58,130	49,257	56,522	48,186	39,092	45,449	50,652	46,716	46,644	73,249	52,398	58,409	48,824	60,707	65,135	53,291
Home Visitors (1)	20,060	32,525	30,047	25,993	29,905	25,097	23,681	25,063	17,730	33,698	14,695	24,373	32,007	33,003	35,576	26,853
Admin. Staff (1)	13,975	15,482	16,993	13,576	8,722	18,575	15,753	19,943	16,921	28,606	15,625	9,793	7,530	14,621	17,688	15,600
Specialists (1) (2)	24,095	1,250	9,482	8,617	465	1,777	11,218	1,710	11,993	10,945	22,078	23,243	9,287	13,083	12,471	10,838
Non-Personnel	11,538	28,075	9,034	13,041	17,673	5,203	16,308	11,847	13,715	10,443	20,857	18,307	20,607	5,368	20,976	14,866
Travel	4,977	8,132	7,348	2,335	5,331	2,421	5,293	1,289	5,681	7,079	5,673	5,817	7,596	4,007	11,133	5,607
Space	2,828	1,399	528	1,809	3,888	1,601	3,344	4,815	659	0	1,718	0	1,944	323	0	1,657
Consumables	2,519	6,360	1,443	6,195	3,663	1,028	4,044	3,341	4,516	1,501	10,831	9,265	5,217	371	5,585	4,392
Equipment	126	9,517	(774)	1,222	4	40	2,172	272	1,842	132	1,096	3,184	1,185	4	473	1,366
Other	1,088	2,667	489	1,480	4,787	113	1,455	2,130	1,017	1,741	1,539	41	4,665	663	3,785	1,844
Total	69,668	77,332	65,556	61,227	56,765	50,652	66,960	58,563	60,359	83,692	73,255	76,716	69,431	66,075	86,111	68,157

(1) Fringe benefits have been allocated to these categories on the basis of the ratio of wages and salaries in each category to total wages and salaries.

(2) Includes paid consultants and staff specialists.

Table II-7
COMPARISON OF LOCAL PROJECTS
PERCENTAGE ALLOCATION OF OCD FUNDS
ACROSS BUDGET CATEGORIES
(October 1, 1973 to May 31, 1974)

	Ala.	Ariz.	Ark.	Calif.	Kan.	Mass.	Nev.	N.Y.	N.C.	Ohio	Tenn.	Tex. Hous.	Tex. TMC	Utah	W.Va.	AVERAGE
Personnel	83.4	63.7	86.2	78.7	68.9	89.7	75.7	79.8	77.3	87.5	71.5	76.1	70.3	91.9	75.6	78.2
Home Visitors	28.8	42.1	45.8	42.5	52.7	49.6	35.4	42.8	29.4	40.3	20.1	31.8	46.1	50.0	41.3	39.4
Admin. Staff	20.1	20.0	25.9	22.1	15.4	36.7	23.5	34.1	28.0	34.2	21.3	12.8	10.9	22.1	19.8	22.9
Specialists	31.6	1.6	14.5	14.1	0.8	3.5	16.8	2.9	19.9	13.1	30.1	31.5	13.4	19.8	14.5	15.9
Non-Personnel	16.6	36.3	13.8	21.3	31.1	10.3	24.4	20.2	22.7	12.5	28.5	23.9	29.7	8.1	24.4	21.8
Travel	7.1	10.5	11.2	3.8	9.4	4.8	7.9	2.2	9.4	8.5	7.7	7.6	10.9	6.1	12.9	0.2
Space	4.1	1.8	0.8	3.0	6.9	3.2	5.0	6.2	1.1	0	2.4	0	2.8	0.5	0	2.4
Consumables	3.6	8.2	2.2	10.1	6.5	2.0	6.0	5.7	7.5	1.8	14.8	12.1	7.5	0.6	6.5	6.4
Equipment	0.2	12.3	(1.2)	2.0	*	0.1	3.2	0.5	3.1	0.2	1.5	4.2	1.7	*	0.6	2.0
Other	1.6	3.5	0.8	2.4	8.4	0.2	2.2	3.6	1.7	2.1	2.1	0.1	6.7	1.0	4.4	2.7
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table II-8
COMPARISON OF LOCAL PROJECTS:
TOTAL RESOURCE COSTS
(October 1, 1973 to May 31, 1974)

	Ala.	Ariz.	Ark.	Calif.	Kan.	Mass.	Nev.	N.Y.	N.C.	Ohio	Tenn.	Tex. Hous.	Tex. TMC	Utah	W.Va.	AVERAGE
Personnel	84,280	53,453	65,785	52,047	44,167	50,036	76,352	65,689	52,267	85,861	58,678	69,753	72,316	78,953	78,587	65,858
Home Visitors	20,060	32,525	30,047	25,993	29,905	25,097	23,681	25,063	17,730	33,698	14,695	29,373	32,007	33,003	35,576	26,853
Administrative and Office Staff	13,975	15,482	16,993	13,576	8,722	18,575	15,753	19,943	16,921	28,606	625	9,793	7,530	14,621	17,088	15,600
Staff Specialists Consultants and Donated Professional Time	41,352	4,050	12,828	11,308	4,790	6,312	33,014	20,683	15,131	20,273	25,121	35,060	29,006	29,479	23,163	20,762
Donated Non-Professional Time	8,893	1,396	5,917	1,170	750	52	3,904	0	2,485	3,284	3,237	527	3,773	1,850	2,760	2,667
Non-Personnel	14,254	39,565	18,414	27,808	27,694	9,249	23,605	19,396	14,302	17,427	23,217	23,995	21,556	8,103	32,476	21,404
Travel	4,977	8,132	7,348	2,335	5,331	2,421	5,293	1,289	5,681	7,069	5,673	5,817	7,596	4,007	11,133	5,607
Space	3,728	1,399	8,402	8,274	11,291	4,366	3,344	4,815	659	5,654	2,778	638	2,289	1,947	2,400	4,132
Consumables	3,799	17,100	2,949	13,962	5,048	2,309	6,647	9,215	4,814	2,401	11,837	14,265	5,292	1,482	14,685	7,720
Equipment	662	10,267	(774)	1,657	1,237	40	5,391	1,947	2,086	562	1,390	3,234	1,664	4	473	1,989
Other	1,088	2,667	489	1,580	4,787	113	2,930	2,130	1,062	1,741	1,539	41	4,715	663	3,785	1,955
Total	98,534	93,018	84,199	79,855	71,861	59,285	99,957	85,085	66,569	103,288	81,895	93,748	93,872	87,056	111,063	87,285

Table II-9

COMPARISON OF LOCAL PROJECTS'
PERCENTAGE ALLOCATION OF TOTAL RESOURCE COST
ACROSS BUDGET CATEGORIES
(October 1, 1973 to May 31, 1974)

	Ala.	Ariz.	Ark.	Calif.	Kan.	Mass.	Nev.	N.Y.	N.C.	Ohio	Tenn.	Tex. Hous.	Tex. TMC	Utah	W. Va.	AVERAGE
Personnel	85.5	57.5	78.1	65.2	61.5	84.4	76.4	77.2	78.5	33.1	71.7	74.4	77.0	90.7	70.8	75.5
Home Visitors	20.4	35.0	35.7	32.6	41.6	42.3	23.7	29.5	26.6	32.6	17.9	26.0	34.1	37.9	32.0	30.8
Administrative and Office Staff	14.2	16.6	20.2	17.0	12.1	31.3	15.8	23.4	25.4	27.7	19.1	10.5	8.0	16.8	15.4	17.9
Staff Specialists Consultants and Donated Professional Time	42.0	4.4	15.2	14.2	6.7	10.7	33.0	24.3	22.7	19.6	30.7	37.4	30.9	33.9	20.9	23.8
Donated Non-Professional Time	9.0	1.5	7.0	1.5	1.0	0.1	3.9	0	3.7	3.2	4.0	0.6	4.0	2.1	2.5	3.1
Non-Personnel	14.5	42.5	21.9	34.8	38.5	15.6	23.6	22.8	21.5	16.9	28.4	25.6	23.0	9.3	29.2	24.5
Travel	5.1	8.7	8.7	2.9	7.4	4.1	5.3	1.5	8.5	6.8	6.9	6.2	8.1	4.6	10.0	6.4
Space	3.8	1.5	10.0	10.4	15.7	7.4	3.4	5.7	1.0	5.5	3.4	0.7	2.4	2.2	2.2	4.7
Consumables	3.9	18.4	3.5	17.5	7.0	3.9	6.7	10.8	7.2	2.3	14.5	15.2	5.6	1.7	13.2	8.8
Equipment	0.7	11.0	(0.9)	2.1	1.7	0.1	3.4	2.3	3.1	0.5	1.7	3.5	1.8	*	0.4	2.3
Other	1.1	2.9	0.6	2.0	6.7	0.2	2.9	2.5	1.6	1.7	1.9	*	5.0	0.8	3.4	2.2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table II-10

HOME START SALARIES AND SALARY DIFFERENTIALS ACROSS AND WITHIN PROJECTS

(site locations not identified to avoid disclosure of individuals' salaries)

Weekly Home Start Salaries[1]		Average Weekly Budget, Low Income Family[2]	Director's Salary as % of Low Income Budget	Home Visitors' Salary as % of Low Income Budget	Home Visitors' Salary as % of Director's Salary
Project Director	Home Visitor				
$142	$80	$153	93%	52%	56%
243	89	146	166	61	37
176	88	145	122	61	50
162	95	153	106	62	59
249	102	159	157	64	41
161	90	140	115	64	56
145	93	140	104	66	64
260	95	140	186	68	37
118	104	143	77	68	88
236	97	140	169	69	41
161	106	153	106	69	66
307	119	156	197	76	39
237	132	173	137	76	56
200	125	156	128	80	63
237	133	157	151	85	56

[1] Averages for period 10/1/73 to 5/31/74.

[2] Data represent total expenditures (including all tax payments) of an average low income family of four in the SMSA nearest the Home Start site; for those sites in states for which no SMSA data were available, average budgets for non-metropolitan locations in the region were used; data are based on price levels in the autumn of 1973. Source: U.S. Department of Labor, Monthly Labor Review, August, 1974.

Home Start Cost Per Family Served

Unit cost is usually defined as cost per unit of output produced. Estimates of such unit costs are useful measures of the relative efficiency of different processes for producing the same goods or services. The process which minimizes unit cost is the one which minimizes the quantity of input necessary to produce a given level of output (or maximizes the output that is obtained from a given level of input). Measures of cost per unit of output provided for local Home Start projects would permit a ranking of the cost/effectiveness of the local projects.

The most difficult problem that must be dealt with in estimating cost per unit of output produced for a social service program, like Home Start, is finding an operational definition of the unit of service provided. If only one kind of service were being produced, an ideal definition would take account of the number of persons being served, the quantity of service provided to each and the quality of the average unit. The unit of service provided by the Home Start program is particularly difficult to define because more than a single type of service is provided to the average Home Start family. The problem of constructing an output measure for a multiple service program is usually dealt with by calculating a market value for each type of service provided and then constructing a measure of the market value of all services produced by multiplying the market value for each type of service by the quantity produced of each and adding the results. A dollar of market value then becomes the measure of the unit of service, and unit cost is then defined as cost per dollar's worth of market value provided.

This approach cannot be used for the Home Start program because insufficient information is available with which to place a market value on the services provided by an early childhood intervention program. The market value of a one-point gain on the Pre-School Inventory Test simply is not known. As a result, no acceptable operational definition of the unit of service provided by a Home Start project is available. Since cost per unit of service provided cannot be estimated for Home Start projects, unit cost estimates with which to measure relative cost/effectiveness of local projects are not available.

The term "unit cost" is used below, but the definition being used for it is cost per unit (family) receiving Home Start services. While not usable as measures of the relative cost/effectiveness of local Home Start projects, measures of cost per family served are important in their own right. Any social service program, including Home Start, can be viewed as an income transfer program, in which the income being transferred is spent, and can only be spent, on the particular

services the program provides. Measures of the cost of Home Start per family served are important, then, because they estimate the quantity of in-kind income being transferred to the average Home Start family. Differences in cost per family across local projects reflect differences in resource transfers per family from one local project to another.

Given the available data, there are several alternative formulae one can use to estimate the number of families served by each Home Start project. Data are available on family enrollment by project at four relevant points in time: on September 30, 1973, on December 31, 1973, on March 31, 1974 and on June 30, 1974. Average enrollment for the October-to-May period must be calculated as a weighted average of enrollment at these four points in time. Which particular method of averaging is used has a substantial effect on estimates of average enrollment for certain local projects. Because enrollment at some projects is typically at seasonal lows in September and June, use of enrollments reported for these months would tend to bias downward estimates of average enrollment for October-to-May. The averaging method adopted here assumes that December enrollment is representative of the five month period from October to February, and that March 31st enrollment is representative of the three month period from March to May. A different averaging scheme would reduce enrollment estimates and thereby increase unit cost estimates for several projects.

Table II-11 presents estimates of OCD expenditures per family and total resource cost per family for the fifteen local projects and for a national average. For the October-to-May period, average OCD expenditure per family is $896 and average total resource cost per family is $1,149. When these figures are scaled by a factor of 1.5 to project unit costs for a twelve month period of full operation, OCD expenditure per family becomes $1,344 and total resource cost per family becomes $1,724.

Both OCD expenditures per family and total cost per family vary substantially from one local site to another. OCD costs per family range from a low of $681 in Texas-TMC to a high of $1,172 in Arizona. Total costs per family range from a low of $898 in Kansas to a high of $1,435 in Ohio. Costs per family at the highest unit cost site are slightly less than twice as high as costs per family at the lowest unit cost site. These site-to-site differences are large enough to suggest that families served by low cost-per-family projects are receiving substantially smaller in-kind income transfers via the Home Start program than families served by high cost-per-family projects.

It might be argued that, if all local projects provide the same kinds of service and in roughly the same quantities to their average families, then differences in cost per family

Table II-11

UNIT COSTS: OCD EXPENDITURES AND TOTAL RESOURCE COST PER FAMILY

(October 1, 1973 to May 31, 1974)

Site	Total Families	OCD Expenditures Per Family	Total Resource Cost Per Family
Alabama	84	829	1,173
Arizona	66	1,172	1,409
Arkansas	86	762	979
California	64	957	1,248
Kansas	80	710	898
Massachusetts	61	830	972
Nevada	78	858	1,282
New York	72	813	1,182
North Carolina	66	915	1,009
Ohio	72	1,162	1,435
Tennessee	77	951	1,064
Texas (Houston)	74	1,037	1,267
Texas (TMC)	102	681	920
Utah	76	869	1,145
West Virginia	80	1,076	1,388
Average-			
All Programs	76	896[1]	1,149[1]

[1] These figures are calculated as total cost of all Home Start projects divided by total family enrollment in all projects (1,138 families).

across projects would provide a rough measure of the relative cost/effectiveness of local projects. For two reasons, the cost-per-family estimates presented in Table II-11 should not be used as measures of relative cost effectiveness. First, a large part of the variation in cost per family across local projects is due to regional variation in the price of labor and other resources. Second, it is not reasonable to assume that the quantity of service provided per family is the same from one project to another. Some projects are less expensive because they employ fewer staff specialists than other projects. A project which employs a director, a secretary and home visitors only is not likely to provide the same quantity and quality of service as a project which employs, in addition to the basic staff people, an educational coordinator, a social service coordinator, a social service aide, a home visitor supervisor, a nutritionist and a psychologist.

Summary of Major Findings

The objective of this chapter has been to describe how much the Home Start program has cost during a representative period of operation and to provide some insight into the allocation of resources across budget categories. Site-to-site variation in total cost and resource allocation of local projects have also been addressed. A few of the major findings that have emerged in the chapter are listed below.

- Between October 1973 and May 1974 OCD expenditures on the Home Start program were $1,022 million, or an average of $68.2 thousand per local project.

- The total resource cost of the program (including community contributions) was $1.309 million for the same period, or an average of $87.3 thousand per local project.

- For a twelve month period of full operation, the average Home Start project would use approximately $100 thousand in OCD funds and would consume approximately $130 thousand in total resources from all sources.

- As is typical of social service programs, Home Start allocates slightly more than 75% of its total resources to personnel costs. Slightly less than 40% of total costs are salaries and fringe benefits for home visitors.

- Site-to-site variations in project cost and resource allocations are substantial. Total resource cost at the local level would range from $89 thousand to $167 thousand on a twelve month, full-operation basis. Home visitor salaries consumed a low of 20% and a high of 42% of total budgets. The percentage

of total resources consumed in the form of staff specialists, paid consultants and donated professional time ranged from 4% to 43%.

- Variation in salary scales across projects for a given type of worker (e.g., home visitors) are not consistent with regional differentials in the cost of living index. The structure of salary scales within sites for different types of labor (e.g., home visitor salaries relative to the salary of the project director) is not consistent with the structure of wage scales in the local labor market for similar types of labor.

- Compared to the average budgets of low income families in the same locality, the salaries paid to home visitors are quite low.

- OCD expenditures per Home Start family were $896 for an eight month period; full-year OCD expenditures per family are projected at $1,344.

The remaining chapters in this volume use these cost findings to address the issues of intra-program efficiency and the overall cost/effectiveness of the Home Start program.

III

INTRA-PROGRAM EFFICIENCY

Introduction

The Home Start program has been fully operational for less than a three year period. In any organization -- especially in an organization still in its infancy -- there exists potential for improvement in efficiency. The objective of this chapter is to define the areas in which the efficiency of the existing Home Start program can be increased and to present specific policy recommendations by which increased efficiency can be achieved.

The chapter is divided into four major sections. The first section discusses the content of the home visit and evaluates the potential for improving the effectiveness of the home visit process. The second section evaluates the ways in which staff time is utilized in the existing Home Start program and suggests ways in which this utilization can be improved. These first two sections both deal with the general issue of the technical efficiency of the existing process of service delivery in the Home Start program. The third section deals with issues of program cost, salary scales and staff mix. The last section of the chapter draws upon the findings of earlier sections to construct model budgets for Home Start projects of various sizes in various areas of the country.

Efficiency of the Home Visit

Since the home visit is the central feature of Home Start, any effort to determine the effectiveness of the existing Home Start program must consider the efficiency with which home visits are organized and carried out. The average home visitor spends 60 to 90 minutes each week with each of her focal families. During that period she typically devotes some time to each of five content areas:

- school readiness of the focal child
- social-emotional development of the focal child
- health and nutritional intake of the focal child
- teaching skills of the focal parent
- family awareness and utilization of community services

In attempting to assess the efficiency of the home visit process we have focused on two specific questions. First, has home visit time been allocated in an efficient manner across the various content areas? Second, are home visits of adequate duration?

During the Fall of 1973 and again during the Spring of 1974 a battery of tests and questionnaires were administered to a group of Home Start families in each of the six summative sites to measure the performance of focal children or focal parents in each of the five content areas listed above. Available for the same period and the same families is a set of data on certain characteristics of focal children (age and number of siblings), focal parents (age, education and SES), home visitors (age, education, SES, number of own children, etc.) and the home visit (average length, average time spent on each content area per visit, roles and interactions of parent, child and visitor, etc.).

Multiple regression analysis has been used to identify the extent to which child or parent performance on each of the Spring 1974 tests (post-test scores) can be explained in terms of the child or parent's performance on the Fall 1973 tests (pre-test scores), the characteristics of the child and/or parent, the characteristics of the home visitor and the characteristics of the home visit "treatment" afford that focal family. The regression analyses were performed in two stages. In the first stage post-test scores were regressed against various combinations of the non-program variables (pre-test scores, child characteristics and focal parent characteristics) in an attempt to identify a subset of non-program variables which explain a statistically significant portion of the variation in post-test scores across focal families. In the second stage of the analysis, program variables (characteristics of the home visitor and of the home visit) were added to the regressions to determine the extent to which variations in post-test scores can be explained by variations in the home visit "treatment" across focal families.[1]

---

[1] The use of the terms "first stage" and "second stage" does not imply that the technical method for calculating regression coefficients known as stagewise regression was employed in our analysis. All variables likely to affect post-test scores -- program and non-program variables -- were introduced into the regression equation simultaneously in the second stage of our analysis. The first stage regressions were run only to provide the analyst with a standard against which to compare the more comprehensive second stage regression results.

The objective of this statistical analysis was not to determine whether a family's participation in the Home Start program improved its performance on the post-test. That determination is the subject of the Summative Evaluation Report, a companion volume in this report. Rather, the objective of the analyses reported here was to determine whether one type of Home Start "treatment" is more effective in improving post-test performance than others.

The results of regressions relating post-test scores to non-program variables are presented in Table III-1 in summary form. The results indicate that once pre-test scores are included in the regression very few additional non-program variables are significantly related to variations in post-test scores across families. In the case of tests designed to measure child performance (PSI, DDST, S-E and NUTR), the more siblings in the focal child's family the lower his or her post-test score. The magnitude of this "sibling" effect, while statistically significant, is not large in magnitude. Children with no siblings scored on average one point higher on the PSI, for example, than children with three siblings and two points higher than children with six siblings (two points was the mean differential between Home Start and control children). While the child's age, the SES of the family or the family's location in a rural setting were not statistically significant explanatory variables once pre-test scores were included in the regressions, these variables were significantly related to pre-test performance. We cannot reject the hypothesis, therefore, that these variables have an effect, if only indirect, on post-test performance.

When program variables -- characteristics of the home visitor, length of the home visit, time devoted to various content areas within the home visit -- were included in the regression equations along with non-program variables, several important findings emerged.

• • Finding: For each of the five home visit content areas there is no indication of a meaningful statistical relationship between the amount of visit time devoted to that content area and child or parent outcomes in that area.

Two sources of data were available on the amount of time devoted to a particular content area in home visits with a particular family. The Home Visit Observation Instrument was administered once during the interval between the pre-test and post-test to most of the tested families. The data available from this source give a one-shot picture of the amount of time devoted to each particular content area with a given family. The Record of Home Visit Activities Instrument was filled out on three separate occasions by home visitors between the pre- and post-tests for most of the tested families.

Table III-1

REGRESSIONS RELATING TEST SCORES TO NON-PROGRAM VARIABLES

("+" or "-" indicates sign of significant regression coefficient "ns" indicates coefficient of variable was not statistically significant)

Non-Program Variable	PSI	DDST	S-E	NUTR	M-T
Corresponding Pre-test	+	+	+	+	+
Related Pre-test	+(1)	+(2)	+(1)	ns	ns
Age of Child	ns	ns	ns	ns	ns
# of Siblings	-	-	-	-	ns
SES of Family	ns	ns	ns	ns	ns
Parent's Age	ns	ns	ns	ns	+
Parent's Education	ns	ns	ns	ns	ns
Urban/Rural	ns	ns	ns	ns	ns
-- % Variation Explained	66	56	33	20	9

PSI: Pre-school Inventory Test
DDST: Language Scale of the Denver Developmental Screening Test
S-E: Task Orientation Schaefer Behavior Inventory (social-emotional measure)
NUTR: Index of total nutritional intake, Food Intake Questionnaire
M-T: Mother Teaches Score on High/Scope Home Environment Scale

(1) Pre-test score on DDST used.

(2) Pre-test score on PSI used.

These data, while self-reported, give a three-shot picture of time allocation within the home visit for a given family. While these two sets of data have obvious limitations as definitive measures of the amount of emphasis given a particular content area with a given family over an eight month period, we would expect high enough reliability that the families who received the most visit time in a particular content area would as a group achieve the highest test scores in that content area.[1]

All of the attempts to regress post-test scores on the amount of home visit time devoted to relevant content areas (e.g., time devoted to school-readiness and parental teaching skills for the PSI or the DDST) as well as non-program variables indicated no meaningful statistical relationship between treatment intensity in a content area and child or parent performance in that area. Table III-2 presents some representative results for the PSI test. Over 100 separate regressions were run -- most of them for the PSI and DDST scores (where Home Start-to-control differences were the largest) but a significant number of regressions were run for test scores measuring performance in all five content areas. The results unambiguously reject the hypothesis of a time-to-outcome relationship.

The two regressions in Table III-2 provide good illustrations of the kinds of results obtained. The first equation indicates that the more time spent on school-readiness with the child, the lower the child's school-readiness (PSI) score. The regression coefficient of TSR is not statistically significant, so we cannot reject the hypothesis that no relationship exists between visit time on school-readiness and PSI performance. The second equation indicates that the more time spent on parental teaching skills in the home visit the higher the focal child's PSI score. Again the regression coefficient of the relevant variable (TPTS) is not statistically significant, so

---

[1] Attempts to correlate time spent in a given area as measured on the Observation instrument with time spent in the same area as measured by Record instrument yielded rather discouraging results. The correlation coefficients are as follows:
School-readiness with the Child: 0.07
Social-Emotional Development with the Child: 0.06
Health and Nutrition with the Child: 0.21; with the Parent: 0.31
Teach Skills with the Parent: -0.02
Awareness and Utilization of Community Services: -0.04
Only the two correlations for the health/nutrition area are statistically significant at the 95% level.

Table III-2

REGRESSION RESULTS FOR THE PSI TEST

$$PSI_s = \underset{(3.31)}{-11.9} + \underset{(0.11)}{0.33}\ PSI_f + \underset{(0.14)}{0.94}\ DDST_f - \underset{(0.18)}{0.33}\ SIB - \underset{(0.45)}{0.17}\ TSR$$

$n = 105;\ R^2 = 0.69$

PSI_s: Spring 1974 score on the PSI test

PSI_f: Fall 1973 score on the PSI test

$DDST_f$: Fall 1973 score on the DDST

SIB: number of siblings in focal child's family

TSR: home visit time spent on school-readiness[1]

Standard errors are given in parentheses below regression coefficients.

n = sample size

$$PSI_s = \underset{(3.44)}{-13.5} + \underset{(0.11)}{0.32}\ PSI_f + \underset{(0.14)}{0.94}\ DDST_f - \underset{(0.18)}{0.31}\ SIB + \underset{(0.48)}{0.37}\ TPTS$$

$n = 105;\ R^2 = 0.70$

TPTS: home visit time on parental teaching ability[1]

Other symbols are defined above.

[1]Data used as measures of these variables in the regressions reported here are from the Record of Home Visit Activities instrument. Similar results to those reported here are obtained when data used to measure these variables come from the Home Visit Observation Instrument.

again we have an indication of no relationship between visit time and outcome.

Discussion of Results: Since we have some reservations about the accuracy of our measures of time allocation within the home visit, we must also have some reservations about the validity of statistical analyses based on these measures. We will shortly have additional data on the allocation of home visit time. This data will give us an opportunity to assess the accuracy of the time use data and to repeat the regression analyses reported above.

Results reported in the Summative Evaluation Results volume of this study indicate that the Home Start program has produced significant gains in school-readiness for Home Start children but has not produced similarly significant gains in most other areas. The findings presented in the Program Analysis volume of this study indicate that heavy emphasis is currently placed on school-readiness in the typical home visit. These two findings, taken by themselves, might suggest to the reader that only by devoting most of the available home visit time to a content area can performance in that content area be improved.

The results of the regression analyses reported here contradict that conclusion. If we were to group home visitors into three categories, those that devote well more than average time to a content area, those that devote well less than average time to that area and those in the middle, our regression results indicate no differences exist in the performances of the focal families served by the three groups. Approximately one-half of the home visitors in our sample devoted more than half of the available home visit time to school-readiness related activities. While our regression results do not indicate what minimum amount of time should be devoted to this area (we would not want to recommend that less than one-third of visit time be used on school-readiness), the results do suggest that the existing heavy emphasis on school readiness is not cost-effective.

A second important implication of our results is that even if some home visit time is saved by de-emphasis on school-readiness, without some further changes in the planning and implementation of home visits simply devoting extra time to some other content area is not likely to yield improved performances in those other areas. The regression results indicate that those home visitors who devoted above average time to health/nutrition, to social-emotional development or to parental teaching skills did not produce above average performances in those areas. The lack of a strong and consistent relationship between time-input and family performance across all content areas suggests there is potential for substantial improvement in the effectiveness of the home visit process. But such improvement will not be forthcoming from a simple reallocation of time within the home visit.

• • Recommendations: While statistical results suggest that the current focus of the typical home visit is not efficient, the results do not suggest what the optimal home visit should be. In fact, there is no optimal home visit; no particular approach would work for all home visitors and for all families. In-field supervision of home visitors and the use of specialists to accompany home visitors in the field occasionally are the two techniques which are flexible enough and potentially powerful enough to improve the effectiveness of the home visit process. Special assistance should be provided to home visitors in the area of nutrition education, and someone with special training in nutrition should occasionally accompany home visitors in the field.

Characteristics of Home Visitors

Several regression analyses were performed in an attempt to find a set of home visitor characteristics which were statistically related to the test performance of focal families.

• • Findings: There is no evidence to indicate that certain types (e.g., more highly educated) of home visitors are more effective than others in producing test gains among focal families.

Several kinds of data were available which could be used to classify home visitors into categories which might be correlated with the success of focal families. Project directors had been asked to classify home visitors as "most effective", "least effective" and "of average effectiveness" on the basis of subjective judgment. The outside observers who recorded information for the Home Visit Observation instrument were asked to rate home visitors on a number of personality characteristics (e.g., alert vs. tired, confident vs. nervous, active vs. passive, etc.). In addition, information was available on the home visitor's education, whether she had children of her own, whether she had formal training or work experience in areas related to early childhood education, etc.

When home visitor characteristics were included as additional (to non-program variables) explanatory variables in regression equations for post-test scores, no meaningful relationships were obtained. Effectiveness ratings provided by project directors often entered the regression equations with negative coefficients (the higher the effectiveness rating the lower the performance of the focal family on test batteries) and were never statistically significant. Educational attainment entered with a negative but statistically

insignificant regression coefficient. Previous training in early childhood education, previous work experience in related areas and the presence of own children were not related to the performance of the home visitor's focal families.

The inclusion of the observer's ratings of the home visitor on the Home Visit Observation instrument did enter the regression equations with statistically significant coefficients (% of variation explained rose from 66% to 72%), but the estimated coefficients had nonsensical implications. The results indicated that the ideal home visitor would be shy but outgoing, very involved and excited but quite passive, very formal but highly flexible, very confident but highly defensive -- in short, schizophrenic. Observer ratings of home visitors have not provided useful insights into the character of the "successful" home visitor.

The most important result that emerged from the attempts to relate home visitor characteristics to the performance of families on test batteries is the lack of any meaningful relationship between years of schooling and family outcomes. The available salary data indicates that some Home Start projects are paying higher salaries to home visitors with college degrees. While there is no evidence to indicate that persons with a college education should not be hired in the future, there is also no evidence to justify paying such persons a premium salary.

Use of Staff Time

Part of the data collected from local Home Start projects in preparation for this report consists of information on the use currently being made of the home visitor, director and specialist time. An analysis of these data suggests two areas in which the efficiency of the existing Home Start program can be improved.

● ● Finding: There is evidence that the outcome gains recorded by Home Start families decline significantly when contact time between the family and the home visitor falls below 90-120 minutes per family per week. There is no evidence to indicate that outcome gains are significantly higher when average contact time is above the 90-120 minute range.

Statistical Evidence: Time-use data for home visitors in the six summative sites were lined up with data on focal family test scores and family background; regression analysis was used to analyze the relationship between test scores and home visitor-to-family contact time. They indicate that Spring 1974 scores on the Pre-School Inventory test were two points lower (significant at the 99% level) for those children served by home

visitors whose average contact time with families was reported as normally below 90 minutes per family per week. Results obtained for the Denver Developmental Screening Test indicate that Spring 1974 scores on that test were one point lower (significant at the 97% level) for Home Start children whose home visitor reported her normal contact time per family per week at less than 120 minutes. To put the magnitudes of these differentials in perspective, a two point decline on the PSI or a one point decline on the DDST would essentially eliminate the difference between Home Start and control-group children recorded in the Summative Evaluation volume of this report.

Discussion of Results: Since the typical home visitor spends roughly 30 minutes of her total contact time per family per week outside the formal home visit, total contact time in the 90-120 minute range translates into an average home visit of 60-90 minutes. It is important to note that in five of the fifteen Home Start projects for which data is available average contact time is currently below the 90-120 minute range.

● ● Recommendations: Data on home visitor time use suggest that those families with caseloads in excess of 12-13 families had difficulty maintaining an average of 90-120 minutes of contact time per family per week. In contrast, contact time tended to rise well above the 90-120 minute range when caseloads fell below 9-10 families. It is recommended that home visitors not be assigned caseloads in excess of 13 families nor less than 9 families under normal circumstances.

● ● Finding: The degree of home visitor supervision across Home Start projects depends largely on the presence of a staff member whose primary responsibility it is to provide such supervision.

Evidence and Discussion: An analysis of time use data obtained from local Home Start projects indicates that both the amount of time spent on and the frequency of home visitor supervision are highly correlated with the presence of a staff member who is primarily responsible for field supervision of home visitors. A project director alone has too many administrative responsibilities -- financial management, coordination with the local sponsor agency and with the regional administrator, hiring and training of new staff members, general staff administration and community relations -- to provide adequate in-field supervision of home visitors. The availability of additional core administrative personnel not primarily responsible for supervision (assistant directors, educational coordinators and social service coordinators) does not, per se, guarantee adequate in-field supervision.

• • Recommendation: Each Home Start project should provide at least bi-weekly in-field supervision of each home visitor. A full-time staff person should be employed at each local project to provide such supervision as that staff person's primary responsibility. At small projects, with few home visitors, the supervisor could be given part-time responsibilities as home visitor to a small number of families or as social services coordinator. The supervisor should monitor the content of the home visits in an effort to produce a strong and consistent relationship between visit time spent on a particular content area and child/parent outcomes in that area.

Budget Control

This section discusses two areas of inequity or inefficiency in existing cost and expenditure patterns across and within local Home Start projects.

• • Finding: Average weekly salaries of home visitors are substantially below the average weekly budget of low income families[1] at every Home Start location. Site-to-site variation in ratio of home visitor salaries to low income budgets are too large to be explained in terms of site-to-site variation in the effectiveness of home visitor staff. Site-to-site variations in the ratio of home visitor salaries to the project director's salary are too large to be explained in terms of site-to-site variation in staff responsibilities and qualifications.

Evidence and Discussion: A brief examination of the data presented in Table II-10 in the previous chapter should be sufficient to convince the reader of the accuracy of these findings. The average home visitor is currently paid a salary sufficient to provide less than 70% of a low income standard of living. The low income budget used here is the U. S. Department of Labor's estimate of the spending of an average low income family of two adults and two children. The average home visitor has four children in her family; 48% of the 108 home visitors for which information is available indicated that no one else in her family was working at the time. While low salary scales for home visitors do not seem to currently adversely affect the operation of the Home Start program by encouraging high staff turnover rates and by reducing the home visitor's dedication to the program, they may have such an effect in the long run.[1]

Site-to-site variations in salaries of home visitors and in salaries of project directors are not consistent with regional differences in the cost of living (as measured by site-to-site variation in low income budgets). Home visitor salaries range from a high of 85% to a low of 52% of the local low income budget; the corresponding range for director's salaries is 93% to 197%.

[1]This is supposition, not based on actual statistical findings.

Such differentials in cost-of-living-adjusted salary scales imply some degree of inequity in staff remuneration across Home Start projects. Similar inequity is apparent in the ratio of home visitor to director salaries across sites. At some Home Start sites project directors are paid more than 2-1/2 times the average salary of home visitors; while in other sites the differential between director and average home visitor salaries is as low as 13%.

● ● Recommendation: Differentials in salary scales across projects should be tied more closely to regional differentials in the cost of living index. Salary differentials within sites (e.g., director salary relative to home visitor salary) should be tied more closely to wage differentials that exist in the labor market for different categories of labor.

● ● Finding: There is substantial variation across Home Start projects in the number of staff employed per family in various personnel categories. While local projects should be encouraged to experiment with alternative service delivery models, some projects appear to under-emphasize and others tend to over-emphasize particular personnel categories.

Evidence and Discussion: A wide variation exists across Home Start projects in the number of home visitors, the number of core administrative personnel and the number of various specialists employed per family enrolled in the program. Two local projects employ a project director, a secretary/bookkeeper and the remainder of the project staff consists entirely of home visitors -- essentially a skeleton staff. Another project, with approximately the same number of focal families, employs, in addition to home visitors, a director, a program coordinator, two secretaries, a social service coordinator, a social service aide, an educational coordinator, a part-time nutritionist and a part-time psychologist. The director, the secretary/bookkeeper and the home visitors are the only personnel employed at every local project; the number, training and responsibilities of other personnel vary widely across the existing Home Start projects.

An analysis of personnel budgets of local projects suggests that certain local projects employ staff specialists whose training and responsibilities are heavily concentrated in a single service area. One project's personnel budget lists four educational specialists but no nutritionist nor social service coordinator. Another program employs two social service coordinators and a nurse but no educational specialist. As was mentioned above, two local projects employ no staff specialists at all. The absence of staff specialists at some projects and the heavy concentration of such specialists in a single area at other projects indicates a great diversity in the emphasis local projects place on particular areas of service delivery.

While data are not available on enough Home Start projects to permit a statistical analysis of the relationship between variations in family outcomes, some analytic judgments can be made. First, it is fairly widely accepted that as additional resources are devoted to achievement of a particular objective, a point is reached at which further increases in the quantity of resources delivered yields smaller and smaller increases in results. This argument suggests that a heavy concentration of Home Start resources to one area of service delivery may not be cost/effective -- in the sense that some of those resources would yield a higher return were they devoted to a different area of service delivery. Second, as described in the original Home Start Program Guidelines, the Home Start program is designed to deliver some quantity of a wide variety of services to focal families. A heavy concentration of resources in one particular service area is not consistent with the original philosophy of the Home Start program.

● ● Recommendation: The absence of staff specialists at some local Home Start projects and the heavy concentration of specialists in one particular service area at other local projects suggest a need for a more careful scrutiny of the degree to which resource allocation across budget categories is consistent with the relative emphasis that should be placed on achieving various program objectives.

Model Budget

OCD's policy for the National Home Start Demonstration has been to provide the same level of funding to all local Home Start projects, regardless of enrollment levels and regardless of the local cost of living index. This policy produces site-to-site differentials in the ability of projects of different sizes and in different cost-of-living areas to provide services to focal families. When funding levels at all sites are uniformly set at the level appropriate for a project with an average number of families in an average cost-of-living area, then projects with more families and projects in higher cost areas have to curtail services per family. Projects with fewer than average families or projects in areas where the costs are low have the options of delivering more services per family, increasing salary scales or reducing efforts to supplement OCD funds with community contributions.[1]

• • Finding: A policy of tailoring the amount of federal funds provided to each Home Start project to enrollment levels and the local cost of living would not be difficult to implement. Such a policy provides several advantages that are not available under the existing policy of equal funding to all sites:

- Eliminates the disincentive to recruit a larger group of focal families that exists under the existing equal-funding policy.
- More nearly equalizes in-kind income transfers per family across local projects.
- Increases the number of families that can be served by the Home Start program for a given level of national appropriations.

Building a Model Budget: The construction of a model budget that ties OCD funding to project enrollment and the cost of living index is not a difficult process; it is largely a matter of following a set of mechanical rules. The model budets presented in Tables III-3 through III-5 at the end of the chapter serve to illustrate the process involved At a few points along the way a policy judgment must be made about a particular characteristic of a model Home Start project. The policy judgments that underlie the budgets in Tables III-3 to III-5 are presented in detail in the footnotes to those tables and are based upon the policy recommendations presented in this report.

Once a model budget has been developed for Home Start projects, with different enrollments for an average urban area in the U.S., the cost of living indices provided by the U.S. Department of Labor (see Table III-6) can be used to inflate or deflate the "average urban area" budget to reflect differences in the cost of living in different U.S. locations. Estimates of OCD expenditures and total project cost are presented in Table III-7 for 47

[1] The local project's ability to exercise this option is constrained to some extent by OCD's 10% matching fund requirement.

TABLE III-3

MODEL BUDGETS FOR HOME START
PROJECTS SERVING 80 FAMILIES
IN AVERAGE COST OF LIVING
URBAN AND RURAL LOCATIONS

	URBAN AREA[1*]	RURAL AREA[2]
PERSONNEL	102,071	87,004
Home Visitors[3]	49,088	45,856
Director[4]	11,453	10,651
Coordinator/Supervisor[5]	9,408	8,749
Nurse/Nutritionist[6]	9,408	8,749
Secretary/Bookkeeper[7]	7,526	6,999
Fringe Benefits[8]	8,688	8,100
Paid Consultants	6,500[9]	6,000[10]
NON-PERSONNEL[11]	22,000	22,000
OCD Total	124,071	109,004
Community Contribution[12]	12,407	10,900
GRAND TOTAL	136,478	119,904
UNIT COSTS:[13]		
OCD	1,551	1,363
Total	1,706	1,499

*Footnotes on following page.

Footnotes to TABLE III-3

Number	Content
1	Cost of living index = 100.
2	Cost of living index = 93; unless otherwise indicated items in "rural" column are 93% of items in urban column.
3	Eight home visitors with 10 family caseloads; salary scale set at 75% of U. S. Department of Labor's estimate of low income family's average budget in urban area (7 percentage points above existing Home Start average).
4	Salary set at 140% of low income budget (6 percentage points above existing Home Start average).
5	Salary set 115% of low income budget so that salary of nurse/nutritionist and coordinator/supervisor would be equal.
6	Salary set at 115% of low income budget (the average of the ratio of licensed practical nurses' salaries to low income budget for 21 large U. S. metropolitan areas plus two percentage points for training in nutrition; LPN salaries from U. S. Department of Labor, Monthly Labor Review, April 1974).
7	Salary set at 92% of low income budget (the average of the ratio of secretaries' salaries to low income budget in 21 large U. S. metropolitan areas plus 6 percentage points for training as bookkeeper; data on secretarial salaries from U. S. Department of Labor, Area Wage Surveys, September 1973).
8	Set at 10% of staff salaries (approximate average percentage currently prevailing for 15 Home Start projects).
9	Set at current projected 12 month spending for average of 15 Home Start projects (rounded to nearest $500).
10	Set at approximately 93% of orresponding urban figure.
11	Set at current projected 12 month spending for the average of 15 Home Start projects (rounded to nearest $1,000). Rural/urban amounts are same on the assumption that higher transportation costs will compensate for low cost of items in rural area.
12	Set at 10% of "OCD total" to reflect minimum matching fund required by OCD.
13	Corresponding cost total divided by number of families served.

TABLE III-4

MODEL BUDGETS FOR HOME START PROJECTS SERVING 50 FAMILIES IN AVERAGE COST OF LIVING URBAN AND RURAL LOCATIONS [1]

	URBAN AREA	RURAL AREA
PERSONNEL	71,486	66,959
Home Visitors [2]	24,544	22,928
Director	11,453	10,651
Coordinator/Supervisor [3]	9,408	8,749
Nurse/Nutritionist [4]	7,056	8,749
Secretary/Bookkeeper	7,526	5,249
Fringe Benefits	5,999	5,633
Paid Consultants [5]	5,500	5,000
NON-PERSONNEL [6]	19,000	19,000
OCD Total	90,486	85,959
Community Contribution	9,049	8,596
GRAND TOTAL	99,535	94,555
UNIT COSTS:		
OCD	1,810	1,719
Total	1,991	1,891

[1] See notes to Table III-2 for detail.

[2] Caseload of 12 families.

[3] Supervises four home visitors plus serves as home visitor to two families.

[4] Works a 30-hour week.

[5] Reduced by $1,000 from corresponding entry in Table III-2 to reflect lower spending for fewer families.

[6] Reduced by $3,000 from corresponding entry in Table III-2 to reflect reduced transportation costs for fewer families.

TABLE III-5

MODEL BUDGETS FOR HOME START
PROJECTS SERVING 110 FAMILIES
IN AVERAGE COST OF LIVING
URBAN AND RURAL LOCATIONS[1]

	URBAN AREA	RURAL AREA
PERSONNEL	125,611	116,846
Home Visitors[2]	55,467	51,588
Director	11,453	10,651
Coordinator/Supervisor[3]	18,816	17,498
Nurse/Nutritionist[4]	14,112	13,124
Secretary/Bookkeeper	7,526	6,999
Fringe Benefits	10,737	9,986
Paid Consultants[5]	7,500	7,000
NON-PERSONNEL[6]	25,000	25,000
OCD Total	150,611	141,846
Community Contribution	15,061	14,185
GRAND TOTAL:	165,672	156,031
UNIT COST:		
OCD	1,369	1,290
Total	1,506	1,418

[1] See Table III-2 for details.

[2] Caseloads of 12 families.

[3] One full time supervisor of six home visitors and one supervisor of three home visitors with a two-family caseload in addition.

[4] Two nurse/nutritionists working 30-hour weeks.

[5] Increased $1,000 from Table III-2 to reflect higher spending for more families.

[6] Increased by $3,000 from Table III-2 to reflect higher spending for more families.

metropolitan and non-metropolitan areas in the U.S. -- for projects with 50, 80 and 110 families enrolled. Corresponding unit cost estimates are presented in Table III-8.

Discussion of Results: In addition to providing proximate guidelines to OCD for estimating the cost of starting up new Home Start projects in various areas, the information in Tables III-7 and III-8 provides some valuable evidence of the effects of regional variation in the cost of living index and differences in enrollment levels on the cost of the Home Start program. In constructing the model budgets presented here, an effort has been made to devise Home Start models that are capable of delivering roughly the same quantity of Home Start services per family regardless of the level of project enrollment and the local cost of living. A comparison, then, of the data in Table III-7 suggests that OCD would have to spend roughly the same amount of money to deliver a "model" quantity of Home Start services to 50 families in Anchorage, Alaska as it would have to deliver the same quantity of services to 110 families in an average non-metropolitan area in the South. This suggests that if both projects operate with equal efficiency the existing Home Start project in Alaska can only deliver half the resources per focal family as the existing project in Texas (TMC) because OCD is funding both at $100 thousand per year. This discrepancy dramatizes one of the implications of the existing OCD policy of equal funding at all sites.

A second and equally important implication of the existing OCD funding policy is that it creates a disincentive to recruitment of a larger group of focal families. Consider the Boston, Massachusetts row in Table III-7. The costs estimates presented there are probably reasonably accurate estimates of the cost of a "model" program at the existing Home Start site in Gloucester, Massachusetts (20 to 30 miles from the edge of the Boston SMSA). On the basis of the information in the table, a "model" program is feasible at the existing Massachusetts site for $100 thousand of OCD funds only for 50 families. An expansion of enrollment beyond 50 families will reduce the quantity/quality of service provided to each focal family. It is interesting to note that the two projects operating in the highest cost of living locations are, in order, Alaska and Massachusetts. The two projects currently with the lowest enrollment of focal families are, in order, Alaska and Massachusetts. With $100 thousand in OCD funds regardless of enrollment levels the project administrators in these two sites are faced with a difficult trade-off between serving a larger segment of the community and reducing the quantity/quality of service provided.

To the extent that the equal funding policy discourages recruitment of a larger group of focal parents, it represents a serious obstacle along the most obvious route to improving the cost/effectiveness of the Home Start program. Table III-8 suggests that there are very significant economies of scale

TABLE III-6

United States Cost of Living Index (Fall 1973) (1)

(Metropolitan and Non-Metropolitan Areas)

Area	
Urban United States	100
Metropolitan areas	102
Nonmetropolitan areas	93
Northeast:	
Boston, Massachusetts	110
Buffalo, New York	100
Hartford, Connecticut	109
Lancaster, Pennsylvania	99
New York-Northeastern, New Jersey	106
Philadelphia, Pennsylvania-New Jersey	103
Pittsburgh, Pennsylvania	98
Portland, Maine	101
Nonmetropolitan areas	97
North Central:	
Cedar Rapids, Iowa	97
Champaign-Urbana, Illinois	105
Chicago, Illinois-Northwestern, Indiana	106
Cincinnati, Ohio-Kentucky-Indiana	95
Cleveland, Ohio	99
Dayton, Ohio	95
Detroit, Michigan	101
Green Bay, Wisconsin	97
Indianapolis, Indiana	100
Kansas City, Missouri-Kansas	99
Milwaukee, Wisconsin	100
Minneapolis-St. Paul, Minnesota	101
St. Louis, Missouri-Illinois	98
Wichita, Kansas	95
Nonmetropolitan areas	97
South:	
Atlanta, Georgia	94
Austin, Texas	88
Baltimore, Maryland	103
Baton Rouge, Louisiana	90
Dallas, Texas	92
Durham, North Carolina	97
Houston, Texas	92
Nashville, Tennessee	93
Orlando, Florida	96
Washington, D. C.-Maryland, Virginia	104
Nonmetropolitan areas	89
West:	
Bakerfield, California	96
Denver, Colorado	97
Los Angeles-Long Beach, California	104
San Diego, California	101
San Francisco-Oakland, California	109
Seattle-Everett, Washington	103
Honolulu, Hawaii	121
Nonmetropolitan areas	97
Anchorage, Alaska	147

(1) Source: U. S. Department of Labor, Monthly Labor Review, 8/74, p. 59.

TABLE III-7

OCD EXPENDITURES AND TOTAL BUDGETS FOR "MODEL" HOME START PROJECTS IN SELECTED URBAN AND RURAL AREAS[1]

AREA	50 FAMILIES		80 FAMILIES		110 FAMILIES	
	OCD Expenditures	Total Budget	OCD Expenditures	Total Budget	OCD Expenditures	Total Budget
Urban United States	90.5	99.5	124.0	136.5	150.6	165.7
Metropolitan Areas	92.3	101.5	126.6	139.2	153.6	169.0
Nonmetropolitan Areas	84.2	92.6	115.4	126.9	140.0	154.0
Northeast						
Boston, Mass.	99.5	109.5	136.5	150.1	165.7	182.2
Buffalo, N.Y.	90.4	99.5	124.0	136.5	151.0	165.7
Hartford, Conn.	98.6	108.5	135.2	148.8	164.2	180.6
Lancaster, Pa.	89.6	98.5	122.8	135.1	149.1	164.0
New York - Northeastern N.J.	95.9	105.5	131.5	144.7	159.7	175.6
Philadelphia, Pa. - N.J.	93.2	102.5	127.8	140.6	155.1	170.7
Pittsburgh, Pa.	88.7	97.5	121.6	133.8	147.6	162.4
Portland, Maine	91.4	100.5	125.3	137.8	152.1	167.3
Nonmetropolitan Areas	87.8	96.5	120.4	132.4	146.0	160.7
North Central						
Cedar Rapids, Iowa	87.8	96.5	120.4	132.4	146.0	160.7
Champaign - Urbana, Ill.	95.0	104.5	130.3	143.3	158.1	174.0
Chicago, Ill. - Northwestern Ind.	95.9	105.5	131.5	144.7	159.7	175.6
Cincinnati, Ohio - Ky. - Ind.	86.0	94.6	117.9	129.7	143.1	157.4
Cleveland, Ohio	89.6	98.5	122.8	135.1	149.1	164.0
Dayton, Ohio	86.0	94.6	117.9	129.7	143.1	157.4
Detroit, Mich.	91.4	100.5	125.3	137.8	152.1	167.3
Green Bay, Wis.	87.8	96.5	120.4	132.4	146.0	160.7
Indianapolis, Ind.	90.5	99.5	124.0	136.5	150.6	165.7
Kansas City, Mo. - Kans.	89.6	98.5	122.8	135.1	149.1	164.0
Milwaukee - St. Paul, Minn.	90.5	99.5	124.0	136.5	150.6	165.7
Minneapolis - St. Paul, Minn.	91.4	100.5	125.3	137.8	152.1	167.3
St. Louis, Mo. - Ill	88.7	97.5	121.6	133.8	147.6	162.4
Wichita, Kansas	86.0	94.6	117.9	129.7	143.1	157.4
Nonmetropolitan Areas	87.8	96.5	120.4	132.4	146.0	160.7
South						
Atlanta, Ga.	85.1	93.6	116.6	128.3	141.6	155.7
Austin, Tex.	79.6	87.6	109.2	120.1	132.5	145.8
Baltimore, Md.	93.2	102.5	127.8	140.6	155.1	170.6
Baton Rouge, La.	81.4	89.6	111.7	122.8	135.6	149.1
Dallas, Tex.	83.2	91.6	114.2	125.6	138.6	152.4
Durham, N.C.	87.8	96.5	120.4	132.4	146.1	160.7
Houston, Tex.	83.2	91.6	114.2	125.6	138.6	152.4
Nashville, Tenn.	84.2	92.6	115.4	126.9	140.1	154.1
Orlando, Fla.	86.9	95.6	119.1	131.0	144.6	159.1
Washington, D.C. - Md. - Va.	94.1	103.5	129.0	141.9	156.6	172.3
Nonmetropolitan Areas	80.5	88.6	110.4	121.5	134.0	147.5
West						
Bakersfield, Calif.	86.9	95.6	119.1	131.0	144.6	159.1
Denver, Colo.	87.8	96.5	120.4	132.4	146.1	160.7
San Diego, Calif.	91.4	100.5	125.3	137.8	152.1	167.3
Los Angeles - Long Beach, Calif.	94.1	103.5	129.0	141.9	156.6	172.3
San Francisco - Oakland, Calif.	98.6	108.5	135.2	148.8	164.2	180.6
Seattle - Everett, Wash.	93.2	102.5	127.8	140.6	155.1	170.6
Honolulu, Hawaii	109.5	120.4	150.1	165.1	182.2	200.5
Nonmetropolitan Areas	87.8	96.5	120.4	132.4	146.1	160.7
Anchorage, Alaska	133.0	146.3	182.4	200.6	221.4	243.5

[1] The figures in this table were obtained by scaling "urban area" totals in Tables III-3 through III-5 by the cost of living index (divided by 100) for each location appearing in Table III-6.

TABLE III-8

Unit Costs. OCD and Total Costs per Family for "Model" Home Start Projects In Selected Urban and Rural Areas

AREA	50 FAMILIES		80 FAMILIES		110 FAMILIES	
	OCD Expenditures	Total Budget	OCD Expenditures	Total Budget	OCD Expenditures	Total Budget
Urban United States	1810	1990	1550	1710	1370	1510
Metropolitan areas	1850					
Nonmetropolitan areas	1680	1850	1440	1590	1270	1400
Northeast						
Boston, Mass.	1990	2190	1710	1880	1510	1660
Buffalo, N.Y.	1810	1990	1550	1710	1370	1510
Hartford, Conn.	1970	2170	1690	1860	1490	1640
Lancaster, Pa.	1790	1970	1540	1690	1360	1490
New York - Northeastern N.J.	1920	2110	1640	1810	1450	1597
Philadelphia, Pa.	1860	2050	1600	1760	1410	1550
Pittsburgh, Pa.	1770	1950	1520	1670	1340	1480
Portland, Maine	1830	2010	1570	1720	1380	1520
Nonmetropolitan areas	1760	1930	1500	1650	1330	1460
North Central						
Cedar Rapids, Iowa	1760	1930	1500	1650	1330	1460
Champaign - Urbana, Ill.	1900	2090	1630	1790	1440	1580
Chicago, Ill. - Northwestern Ind.	1920	2110	1640	1810	1450	1600
Cincinnati, Ohio - Ky. - Ind.	1720	1890	1470	1620	1300	1430
Cleveland, Ohio	1790	1970	1540	1690	1360	1491
Dayton, Ohio	1720	1890	1470	1620	1300	1430
Detroit, Mich.	1830	2010	1570	1720	1380	1520
Green Bay, Wisc.	1760	1930	1500	1650	1330	1460
Indianapolis, Ind.	1810	1990	1550	1760	1370	1500
Kansas City, Mo. - Kansas	1790	1970	1540	1690	1360	1490
Milwaukee, Wis.	1810	1990	1550	1700	1370	1500
Minneapolis - St. Paul, Minn.	1830	2010	1570	1720	1380	1520
St. Louis, Mo. - Ill.	1770	1950	1520	1670	1340	1480
Wichita, Kansas	1720	1890	1480	1620	1300	1430
Nonmetropolitan areas	1760	1930	1500	1650	1330	1460
South						
Atlanta, Ga.	1700	1870	1460	1600	1290	1420
Austin, Tex.	1590	1750	1360	1500	1200	1330
Baltimore, Md.	1860	2050	1600	1760	1410	1550
Baton Rouge, La.	1630	1790	1400	1540	1230	1360
Dallas, Tex.	1660	1830	1430	1570	1260	1390
Durham, N.C.	1760	1930	1500	1650	1330	1460
Houston, Tex.	1660	1830	1430	1570	1260	1390
Nashville, Tenn.	1680	1850	1440	1590	1270	1400
Orlando, Fla.	1740	1910	1490	1640	1310	1450
Washington, D.C. - Md. - Va.	1880	2070	1610	1770	1420	1570
Nonmetropolitan areas	1610	1770	1380	1520	1220	1340
West						
Bakersfield, Calif.	1740	1910	1490	1640	1310	1450
Denver, Col.	1760	1930	1500	1650	1330	1460
Los Angeles - Long Beach, Calif.	1880	2070	1610	1770	1420	1570
San Diego, Calif.	1830	2010	1570	1720	1380	1520
San Francisco - Oakland, Calif.	1970	2170	1690	1860	1490	1640
Seattle - Everett, Wash.	1860	2050	1600	1760	1410	1550
Honolulu, Hawaii	2190	2410	1880	2060	1660	1820
Nonmetropolitan areas	1760	1930	1500	1650	1330	1460
	2660	2930	2280	2510	2014	2210

associated with increases in the number of families enrolled at a given Home Start project. OCD expenditures per family at a Home Start project in an average rural area are $1719, $1363 and $1290, respectively, for enrollment levels of 50, 80 and 110 families. In the design of the model budgets an effort has been made to devise hypothetical programs which provide the same quantity of Home Start services per family regardless of the level of enrollment. If this effort has been successful, the three unit cost estimates referred to above suggest that for each million dollars in federal appropriations for the Home Start program, 582 families can be served if all projects enroll 50 families, 734 families can be served if all projects enroll 80 families, and 775 families can be served if all projects enroll 110 families; the quantity of service provided per family is the same in all three cases. These figures suggest that by increasing enrollments per project from 50 to 80 Home Start can provide 26% more Home Start services for the same million dollars of OCD funds, and by expanding enrollments from 50 to 110 families per project 33% more benefits are produced again for the same million dollars. Clearly, any policy that discourages recruitment of additional focal families is reducing the cost/effectiveness of the program.

Recommendation: The existing OCD policy of providing the same level of funding to all Home Start projects should be altered: Instead, OCD should adopt a policy of tying funding levels to regional variations and to local enrollment levels. Local projects should be actively encouraged to expand recruitment efforts.

IV

COST/EFFECTIVENESS OF THE HOME START PROGRAM

There are several techniques available for evaluating the relative merits of alternative uses of scarce resources. The most widely used technique is cost/benefit analysis. Its application requires accurate measures of the monetary value of both the costs and benefits of a particular program or investment project. If the monetary value of benefits exceeds the monetary value of costs, the program or project should be undertaken. A second analytic technique is least-cost analysis. Its application requires a well defined set of absolute objectives, the availability of two or more alternative programs by which the objectives can be achieved and accurate estimates of the costs associated with each alternative program. The least-cost program is chosen. A third technique is constant-cost analysis. It consists, essentially, of a listing (often in qualitative terms) of the benefits that would be produced were a given level of resources invested in alternative programs.

Cost/benefit analysis and least-cost analysis are not useful techniques for evaluating the cost/effectiveness of the Home Start program. Cost/benefit analysis is not useful because no measures are available of the monetary value of the benefits produced by Home Start. The Home Start program provides a whole range of services to the families with which it works. Insufficient evidence is available with which to measure the value of these services in monetary terms. Least-cost analysis is not useful because at least some of the objectives of the Home Start program are not absolute. School-readiness, for example, is not a categorical (achieved/non-achieved) objective.

The technique that remains, constant cost analysis, has an important disadvantage relative to the other two techniques. Its output is not a decision (buy/don't buy) but a set of facts that a policy-maker can use to reach a wise decision. Were this chapter to provide a full-blown constant cost analysis of the Home Start program, at a minimum a substantial part of the Executive Summary volume would have to be repeated here.

The objective of this chapter, therefore, is to frame the question of the cost/effectiveness of Home Start in such a way that the reader can better utilize the findings reported elsewhere in the report to address the issue: Does the Home Start program represent a wise use of scarce resources? Two qualified judgments about the cost/effectiveness of Home Start will be presented here, and a small amount of new information will be introduced, but in the end the ultimate question is left unanswered.

Unit Costs: Head Start and Home Start

Table IV-1 presents measures of OCD expenditures per family enrolled in the Home Start program and OCD expenditures per child enrolled in the Head Start program. In the four states -- Alabama, Arkansas, Texas (Houston) and West Virginia -- for which Head Start data are available, the federal government spent less per Home Start family than it spent per Head Start child. For the eight month period, October 1973 to May 1974, in states listed above OCD spent $917 per family on Home Start and $1,175 per child on Head Start. No data are available on the value of community contributions to the Head Start projects so no comparison is possible of total resource cost per unit between the two programs.

Estimated annual expenditures, obtained by scaling 8-month figures by a factor of 1.5, are $1,376 for Home Start and $1,763 for Head Start. On the basis of these estimates of annual cost, OCD could provide either 727 families with twelve months' worth of the kinds of benefits a Home Start project provides or 567 children with twelve months' worth of the kinds of benefits a Head Start project provides.

A part of the analysis presented in the Summative Results volume of the study is a comparision of the relative outcome gains recorded by Home Start and Head Start children. Home Start children from Kansas and Ohio as well as from the four states listed above were included in the summative analysis. The results indicate that the Head Start and Home Start programs produced similar outcomes in several areas -- school-readiness, socio-emotional development and physical development. Only on the first of these three measures were gain scores for children in the control group lower by a statistically significant amount. Home Start performed slightly better than Head Start on achieving measured increases in the mother's teaching ability, but both programs showed significant gains over the control group. Head Start performed better than Home Start on measures of child health and nutritional intake. Head Start superiority in the health area was largely the result of a larger percentage of Head Start children receiving immunization shots. In the areas in which the services provided by the two programs overlap Head Start appears to have a slightly better record than Home Start -- principally because of the better nutritional scores recorded for Head Start.

Qualified Judgment: The Home Start program was initiated to deliver a specific set of services to the families it enrolls. Aside from the improvements that can be made in the efficiency of the program as it currently exists, the Home Start program appears to be a cost/effective mechanism for providing that set of services to its client families. The slightly better performance of the Head Start program in those areas in which the services of the two programs overlap is not great enough to establish beyond question that the services provided by Head Start to 567 children are of greater social value than the services Home Start could provide, for the same amount of funding, to 727 families. The reader should bear in mind that part of the

Table IV-1

COMPARISON OF UNIT COSTS FOR
THE HOME START AND HEAD START PROGRAMS
(10/1/73-5/31/74)

	Home Start		Head Start	
Site	# Families	OCD Expenditures Per Family	# Children	OCD Expenditures Per Child
Alabama	84	829	124	1648
Arkansas	86	762	182	728
Texas (Houston)	74	681	1500	1165
West Virginia	80	1076	179	1376
Average	81	917	496	1175

higher nutritional scores recorded by Head Start children is the result of the free food provided to them via the U. S. Department of Agriculture's Head Start Food Program.[1] In addition it should be noted that the relative cost/effectiveness of the two programs depends to a certain extent on where the projects are located. In low density rural areas a center-based Head Start project is just not a viable alternative to Home Start.

Overall Cost/Effectiveness:

The findings reported here should not be used to argue that Home Start, in general, is a more cost/effective program than Head Start. Although the two programs are substitutes for each other in some service delivery areas (notably in the area of school-readiness), there are other areas in which the principle objective of Home Start, the development of parental teaching skills, is largely outside the scope of the Head Start program. In contrast, one of the important if indirect services provided by Head Start, day care services for mothers who work, is a product Home Start cannot be expected to provide -- especially since the presence of the focal mother is an essential ingredient in the home visit process. Since the benefits provided by the two programs do not always overlap, the relative cost/effectiveness of the two programs cannot be judged by comparing unit costs alone.

The first responsibility of the research summarized in this report was to address the question of whether the Home Start program is a cost/effective mechanism for providing the specific services which the program was designed to provide. Based on the research results that have been obtained, the answer to that question appears to be "yes." A broader and more complex question remains to be addressed: whether Home Start is a cost/effective use of the resources it consumes. The answer to this second question depends upon one's judgment as to whether the benefits provided by a given quantity of resources invested in the Home Start program are of greater value to society than the benefits provided by the same quantity of resources invested in some other way. The second responsibility of the research summarized in this report was to provide adequate measures of the quantity of resources invested in the Home Start program and an adequate evaluation of the kinds and quantities of benefits the program has produced. The policy makers who read this report have the ultimate responsibility for using the information provided to assess the merits of the Home Start program relative to the merits of the immense range of alternative uses of public funds.

---

[1]The value of this food was not included in the cost of Head Start projects and therefore nutritional gains would be somewhat offset in the cost-effectiveness analysis by increased resource usage.