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AN EVALUATION OF THE LAMPANG HEALTH DEVELOPMENT PROJECT

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I. INTRODUCTION

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Scope of Work

The operational phase of the Lampang Health Development Project (LHDP) has ended. Basic data have been collected. Much of the information has been prepared, but few data have been analyzed comprehensively. Project staff have drafted a monograph that summarizes the project evaluation--how it was designed, how it evolved, what its purposes were. Even though it is in draft form, the monograph served as a useful point of departure for a discussion of the project's current status and the remaining analytical tasks.

The consultant's "Terms of Reference" proved to be most timely and were closely followed during the consultation. The four tasks specified in the "Terms of Reference" were:

1. Review the quality and usefulness of individual data sets from the project.

2. Consider the relative usefulness of and comparability among data sets.

3. Assist in preparing for further analysis, keeping in mind the conclusions drawn from points one and two above.

4. Review and comment on the material that has been written on the evaluation and offer recommendations on further efforts in this regard.

Work Plan

The consultancy began with a briefing by Mr. Merrill of AID/Bangkok. Dr. Maurier, from the Population Project, attended this briefing, which was an orientation on the Lampang Project in relation to the broader interests of the Ministry of Public Health.

Following the briefing, the consultant spent eight working days in Lampang with project staff. Participants from the National Institute of Development Administration (NIDA) joined the discussion for two of these days.

During the working sessions in Lampang, a draft report was prepared and discussed with project staff. The report was the basis for a day-long debriefing in Bangkok.

Evaluation

One of the matters considered was the overall framework for evaluating the project. The conclusions reached during the discussion are summarized in this section because they provide the contextual background for discussing the findings and more substantive conclusions.

It is apparent that three types of evaluation reports are needed. The first type should be a description of the evaluation process as it evolved at Lampang. The project rationale, objectives, indicators, data sources, and methods of analysis would be defined. The document would provide the background needed to understand the report on the results of the project. It would also be useful to individuals and agencies concerned with developing evaluation plans for related projects.

The second type of document would be a report of findings. Much of this report is devoted to a study of the analytical needs which underlie the preparation of the monograph. It should be pointed out, however, that the monograph should offer valuable insights into system performance as well as document quantitative results. Experience in, for example, recruiting and training volunteers, providing adequate supplies, and gaining the acceptance of wechakorn is important, even though it does not translate into a quantitative indicator of success or failure.

The third type of document would cite the lessons learned about the evaluation process itself. Whereas the first type of report would be descriptive, the third type would be interpretive. Given the size of the Lampang Health Development Project, the heavy emphasis on evaluation is unique. Previous experience in evaluating small, independent pilot projects has been of limited value. Recommendations on the improvement of the evaluation of similar large projects in the future would be most helpful. For example, at this time ministries in a number of countries, including Thailand, face demands for research and evaluation which exceed their own capabilities. Quite naturally, they are looking to academic institutions for guidance in designing studies, conducting surveys, and analyzing information. How can such institutions contribute most productively? The relationship between the Lampang Project and NIDA should be scrutinized, because an examination of their association may provide useful insights into institutional contributions.

II. FINDINGS AND CONCLUSIONS

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The following sources of information are available for an evaluation of the project: community survey, nutrition survey, task analysis, cost analysis, administrative analysis, routine service statistics abstracts, health post volunteer service statistics, and vital registration data. The baseline and follow-up community surveys are the most useful sources of information because they were carefully designed and conducted, are comprehensive in scope, and appear to have yielded data of reasonably high quality. Computer processing of the data set is nearing completion. Extensive sets of tabulations from C_1 and E_1 were available for review during the consultation. The preparation of similar tabulations for C_2 and E_2 is a routine matter.

Some of the community survey information is of limited value for other than descriptive purposes. For example, literacy rates of 70 percent to 80 percent have been observed consistently, but these have no apparent effect on the project's effectiveness. This bit of information is merely useful in understanding background. Of prime importance is the further analysis of selected items of information--preliminary tabulations--important to the evaluation. Because the tables provide, for the most part, rudimentary counts and percentages, they must be further manipulated to generate the most meaningful indices and associations. In general, the manipulations can be performed manually using existing tabulations. A set of calculations is presented below to illustrate what is needed, to guide further analysis, and to suggest the results that the analysis is likely to yield.

The task, cost, and administrative analyses are essential elements of the evaluation, even though they do not document satisfactorily baseline conditions. Follow-up surveys present the most complex analytical challenge in the entire evaluation. It is important that these surveys be conducted carefully and promptly.

A review of available material indicates that other data sources can be used to corroborate and complement the results of the studies discussed above.

Evaluation Format

Bearing in mind the types and sources of available data, the basic evaluation plan was reviewed to reaffirm and refine the specific operational and evaluation indicators. It makes sense to assess the increased availability and use of services, revised patterns of use and worker performance in accommodating these patterns, the impact of services on health status and fertility, and the feasibility of replication. Preliminary analysis suggests, however, that the most informative aspects of the evaluation are likely to relate to the volume and pattern of utilization of specific services by the target population, which consists of women and children. The rationale for this conclusion should become clear as this discussion continues.

Increased use of services presupposes availability, accessibility, and acceptability. Because preliminary analysis does indeed indicate increased use, the documentation of this fact and the differential effects on specific services and providers of interest should be central to the overall evaluation. Table 1 shows the conceptual format proposed for this appraisal.

The service categories listed in Table 1 are broad but do indicate that different types of curative and preventive care are offered. The categories have not been broken down further because the community survey classifications were not precisely the same as those used in the task and cost analyses. For comparative purposes,the listing in Table 1 is, therefore, the most practical; finer breakdowns can be shown in analyses of data from only the community survey. For example, maternity care can be separated into three categories: ante-natal, delivery, and postpartum services. When possible (see task analysis), nutrition services should be identified separately under children's services. Nutritional care is not indicated in most of the preliminary tabulations.

The source of care is identified in the columnar headings in Table 1. For some analyses, the specific provider should also be identified.

The information in the body of the table is a record of the volume of services in absolute terms and in relation to the target population's need. Under "Maternity Services," for example, one could list the data needed to determine the relative load of such care at various levels and the proportion of pregnant women receiving care. Time and cost measurements should also be recorded and compared with service load.

Availability, Accessibility, and Acceptability

Although the evaluation will focus principally on usage, the availability, accessibility, and acceptability of services will also be analyzed. The documentation of availability, a task which has virtually been completed, is straightforward. Increases in the number and distribution of facilities and manpower (by type) are reported. Efforts to provide appropriately staffed facilities which offer specified levels of services to defined populations are then documented.

Equally important is the qualitative appraisal of the resource development process. The solutions to such problems as recruitment, training, supervision, and supply are of considerable interest and may be useful in understanding the project's impact and in guiding future efforts in primary health care.

Accessibliity and acceptability are more difficult to assess, but certain data, including information on cost to the client, distance traveled, and reason(s) for not using services, as well as the results of patient interviews on satisfaction with care and regularity of service use, can be used as indicators. Again it should be emphasized that attitudinal data are generally suspect. The ultimate indicator of satisfaction is use of services.

Table 1

PROPOSED ANALYSIS FORMAT

Women's Services	Project					Non-Project
	Village	Tambol	District	Province	Mobile	
Medical Care						
Maternity						
Family Planning						
Other						

Children's Services	Project					Non-Project
	Village	Tambol	District	Province	Mobile	
Medical Care						
Immunization						
Child Health						
Other						

Other	Project					Non-Project
	Village	Tambol	District	Province	Mobile	
Medical Care						

Among the types of information cited above, cost data have the greatest potential value for evaluation. Even among the poor, private expenditures on health care generally exceed public outlays; it is interesting to observe the trends in the two types of cost data to evaluate total system costs and the changing balance of private and public components. Given the limited reliability of data and the substantial variance among relatively small samples, a cost and expenditure analysis must be undertaken with caution. It is important enough to merit maximum use of available information.

Quality of Community Survey Data

The community survey is the principal tool for assessing utilization. Before considering utilization, however, the quality of the data should be examined. Overall, the findings appear to be reasonable, and the results of E_1 and C_1 and the baseline and follow-up surveys are generally compatible. For the most part, the data appear to be of high quality. There are two exceptions, however.

The first exception concerns differences in the sampling procedure used in the two rounds of the survey. For the baseline survey, households were stratified according to a predetermined number of household members. A sampling was then taken for each category of household size. For the follow-up survey, a simple random sample was taken, and certain subsequent tabulations were run according to household size (identified in the sample). There were fewer than 60 percent as many small households (1-3 members) in the follow-up survey as in the baseline survey. Apparently, the initial estimate of the distribution of households by size was incorrect. Baseline sample results were not reported directly, compounding the problem. Instead, the results were exaggerated to reflect estimated conditions in the total population sampled. Obviously, members of small households had been given excessive weight in the overall findings, most of which were not broken down by household size.

The second exception concerns the apparently substantial under-reporting of morbidity, as shown in Table 2. Taking E_1 as an example, the overall illness rate was reported to be 8.2 percent, but among eligible women, it was 21.3 percent during the baseline survey. Reported morbidity is expected to be higher among women, but a more likely explanation for this discrepancy is that women accounted for the bulk of respondents. They could be expected to recall their own illnesses while overlooking those of other family members.

Under-reporting also is evident when data are broken down by household size. Morbidity rates for small households were generally more than twice as high as the morbidity rates for households with more than six members. Evidently, respondents who were reporting for many family members were less likely to be aware of their own illnesses than, for example, a wife accounting only for herself, her husband, and her one child.

The bias of household size is especially disconcerting in view of the excessive weight given to small households in the baseline survey. Other things being equal, households with high reported morbidity would necessarily produce a higher overall morbidity rate in the baseline survey than in the follow-up survey. It is estimated that a more accurate baseline population blow-up by

Table 2

ILLNESS RATES DURING PRECEDING TWO WEEKS

Population			Percent Baseline	Percent Follow-Up
All		E_1	8.2	6.4
		C_1	8.3	8.2
Eligible Women		E_1	21.3	16.4
		C_1	20.7	22.4
Households	1-3		12.7	11.6
	4-6	E_1	8.9	6.9
	7+		6.0	5.1
	1-3		9.2	13.3
	4-6	C_1	9.3	8.8
	7+		6.9	6.6

* Follow-up n: E_1: 4,166

C_1: 2,948

Sources: 3.1.1; 3.1.7; 3.1.8; and 3.19.

household size would have produced a baseline E_1 illness rate of 7.9 percent, 0.3 percent lower than the figure actually reported.

Accuracy in reporting morbidity is a problem that plagues any community survey, and the present study is obviously no exception Morever, reduction in morbidity is not expected to be a principal criterion of project performance. Of greater concern is the possibility that bias is introduced in other measures as a result of the unnecessary blow-up of sample data from the baseline survey. Of even greater concern is the lack of congruence between some of the control totals in different tables. Finally, some of the tabulations are not presented in relation to the appropriate target populations.

It is quite clear that a handful (perhaps 20) of the tabulations already prepared are essential to the final evaluation. It is advisable to return to the original sample data, reconstruct counts and distributions of verified accuracy, and relate these counts to appropriate target populations to obtain the necessary evaluation indicators. Obtaining the counts is a simple matter, but one which must be pursued carefully and conscientiously. Establishing the limited number of ratios and indicators can be a straightforward manual operation as long as the correct numbers are being inserted in the calculations.

The principal control totals needed to verify the various distributions and calculate ratios are listed in Table 3. Illustrative totals from the E_1 follow-up sample are included with comments on concerns about existing tabulations. The need for selected counts according to household size should be noted, since additional cross-tabulations on this basis should be run. It is quite possible that several additional tabulations by household size will show that most biases are unimportant and adjustment between surveys unnecessary.

Utilization Analysis from Community Survey

To illustrate the proposed utilization analysis from community survey data a series of tables has been prepared from existing tabulations for E_1 and C_1. It should be clear from the preceding commentary that the results are intended to be illustrative, not definitive. Nevertheless, they should serve four purposes.

1. They should represent a concrete portrayal of recommended action.

2. They should highlight existing tabulations that are of major importance and therefore in need of reconstruction and careful scrutiny.

3. They should depict ratios that require compatible numerators and denominators not always available from existing tabulations.

4. They should give preliminary indications of the project's effects, many of which are likely to be borne out in definitive analysis.

Table 3

CONTROL TOTAL GUIDELINES

Control Count	Illustrative Values From E. Follow-up	Comments
Household, Total	759	
Household, 1-3	110	
Household, 4-6	412	
Household, 7+	237	
Population, Total	4,166	
Population, 1-3 Households	288	
Population, 4-6 Households	2,022	
Population, 7+ Households	1,856	
Population, Children	342	
Population, Females 15-44	953	Higher in 1.5
Population, Females 15-44 Ever Married	514	513 in six tables, 814 in Table 3
Population, Females 15-44 Now Married	465	
Ill Persons, Total	264	
Illness Episodes, Total	272	
Illness Episodes, 1-3 Households		Not Known
Illness Episodes, 4-6 Households		Not Known
Illness Episodes, 7+ Households		Not Known
Illness Episodes, Children		Not Known
Illness Episodes, Females 15-44		Not Known
Delivered Past 2 Years	101	
Delivered Past Year	38	Age distribution discrepancy: 3.2.16,4.6
Currently Pregnant	32	
Contracepting	300	600 in Table 3.3.5
Receivers Maternity Care: Females, 15-44 Now Married		Not Known
Receivers Family Planning: Females, 15-44 Now Married		Not Known
Receivers Other Services: Females 15-44		Not Known
Receivers Immunization: Children		Not Known
Receivers Child Health: Children		Not Known
Receivers Other Services: Children		Not Known

Table 4 shows the proportion of women and children receiving any project services in a given year. The main difficulty in constructing the table is that the target population differs by service type. For illness care, all women aged 15-44 are of interest. Maternity and family planning services relate only to women married at this time. The reference tabulations were based upon women aged 15-44, and the numbers in Table 4 are not therefore exactly what is needed. Similar difficulties were encountered in constructing Tables 5-7. Children's services do not present this problem, and the percentages listed are strong evidence of a project's effect on utilization.

Table 5 sub-divides utilization into the categories outlined in Table 1. The problem here is the possibility of double counting within service categories. For example, a woman receiving both ante-natal and post-natal care is counted twice under "Maternity Service". As a result, the statistics quoted are "services per 1,000 eligible women." The reference tabulations do not permit analysis of "percent of eligible women receiving maternity care," "percent of currently married women receiving ...," or "percent of pregnancies receiving ...." This shortcoming should be corrected in further tabulations. It would also be useful to know how many individuals received what combinations of services (e.g., maternity and family planning or illness and immunization).

Whereas Table 5 breaks down utilization by category of service, Table 6 presents the information by source of care. Increased utilization, especially at nearby facilities, during the project period is apparent. The table suggests that by the time the follow-up survey was taken, approximately three-fourths of all women and children were using the tambol health center annually. Again, this figure is somewhat exaggerated because of the problem of double counting. Additional tabulations should relate people, as well as services, to the various facilities.

Table 7 complements Tables 5 and 6 in relating category of service to source of care, using total volume of services as the denominator. The changing distribution of services depicted at the provincial hospital is of limited value because of the small sample size. A more complete picture could be obtained from records of the hospital itself. Service statistics compiled to date are inadequate in this regard and should be expanded. Compilations similar to those in Table 7 could be developed for other service facilities with the same misgivings about sample size.

Table 8 presents a comprehensive summary of utilization of both project and non-project services. A definite trend away from drug purchases and towards use of government and other services for medical care is evident. Furthermore, there is a decided decline in the proportion of home deliveries.

Evidence of Impact from Community Survey

The Lampang Project faces the classic dilemma of watching well documented service outputs as indirect evidence of impact against much more fragmentary direct evidence of health and fertility outcome. Other projects lasting no more than five years have been notoriously unsuccessful in marshalling convincing evidence of health status or fertility change, and there is no reason to believe that Lampang will be unique in this regard. Nevertheless, there is an opportunity to pursue a limited number of different analytical methods.

Table 4

PROPORTION OF TARGET POPULATION RECEIVING PROJECT SERVICES

Service	Follow-up n	Percent Baseline	Percent Follow-up	Percent Change
Women				
E_1	953	33.6	37.7	+ 12
C_1	658	42.3	40.6	- 4
Children				
E_1	342	31.1	64.6	+108
C_1	239	42.8	39.2	- 8

Source: Table 4.4.

Table 5a

SPECIFIC WOMEN'S SERVICES
(By Type of Project Service)

Service	Services Per 1,000 Population		
	Baseline	Follow-up*	Percent Change
E_1			
Medical Care	211	301	+ 43
Maternity	149	173	+ 16
Family Planning	332	433	+ 30
Other	122	419	+243
C_1			
Medical Care	199	163	- 18
Maternity	144	122	- 15
Family Planning	374	311	- 17
Other	145	68	- 53

	Services Per User		
	Baseline	Follow-up*	Percent Change
E_1	1.51	1.90	+ 26
C_1	1.38	1.36	- 1

* Follow-up n: E_1: 515

C_1: 547

Source: Table 4.6.

Table 5b

SPECIFIC CHILDREN'S SERVICES
(By Type of Project Service)

Service	Services Per 1,000 Population		
	Baseline	Follow-up*	Percent Change
E_1			
Medical Care	204	237	+ 16
Immunization	181	462	+ 155
Child Health	19	126	+ 563
Other	13	415	+3092
C_1			
Medical Care	120	180	+ 38
Immunization	300	347	+ 16
Child Health	1	8	+ 800
Other	74	109	+ 47

	Services Per User		
	Baseline	Follow-up*	Percent Change
E_1	1.34	1.92	+ 43
C_1	1.18	1.64	+ 39

* Follow-up n: E_1: 342

C_1: 239

Source: Table 4.7.

Table 6

SPECIFIC SERVICES
(By Project Source of Service - E_1)

Source	Services Per 1,000 Population	
	Baseline	Follow-up*
Women		
Health Post Volunteer	3	234
Child Nutrition Center	2	4
Tambol Health Center	530	746
District Hospital	15	144
Provincial Hospital	263	184
Mobile Team	0	17
Children		
Health Post Volunteer	1	44
Child Nutrition Center	9	91
Tambol Health Center	287	754
District Hospital	5	135
Provincial Hospital	110	202
Mobile Team	5	15

* Follow-up n: Women: 515
Children: 342

Source: Tables 4.6 and 4.7.

Table 7

DISTRIBUTION OF PROVINCIAL HOSPITAL SERVICE USE - E_1

Service	Percent Baseline	Percent Follow-up	Percent Change
Women			
Medical Care	29.2	47.4	+ 62
Maternity	38.7	38.9	+ 1
Family Planning	22.6	7.4	- 67
Other	9.5	6.3	- 34
Total	100.0	100.0	
Children			
Medical Care	66.7	21.7	- 67
Immunization	23.2	69.6	+ 200
Child Health	5.8	7.2	+ 24
Other	4.2	1.4	- 67
Total	100.0	100.0	

* Follow-up n: Women's Services: 95

Children's Services: 69

Source: Tables 4.6 and 4.7.

Table 8

SOURCE OF SELECTED SERVICES - E_1

Service	Follow-up n	Percent Baseline	Percent Follow-up	Percent Change
Medical Care	272			
Government		25.1	32.7	+ 30
Own Medical		50.5	36.0	- 29
Other		24.4	31.2	+ 28
Ante-natal	101			
Recipients		58.7	70.3	+ 20
Government Services		95.0	93.0	- 2
Delivery	101			
Home		63.3	43.6	- 31
Physician	101	9.1	5.0	- 45
Nurse		19.9	18.8	- 6
Midwife		15.9	30.7	+ 93
TBA		38.6	33.7	- 13
Other		16.5	11.9	- 28
Family Planning	300			
Government		88.4	92.7	+ 5

Source: Tables 3.1.13; 3.2.4; 3.2.7; 3.2.10; and 3.3.3.

Sampling in the community survey was inadequate to produce meaningful measures of mortality or fertility. Vital registration data should be examined. Under-reporting is a serious problem and the attribution of a recorded change to the project will be difficult.

Morbidity data have already been presented with due caution in Table 2. In spite of the apparent biases, there is some evidence of morbidity reduction in E_1. After further investigation and adjustment for bias, morbidity rates should be re-calculated and compared.

Table 9 summarizes community survey results on environmental conditions, which are both indirect indicators of health improvement and more direct measures of quality of life. The results provide impressive across-the-board evidence of improvement in E_1 in comparison to C_1. Analysis following the format of Table 9 deserves elaboration in the final evaluation.

From several existing tabulations one can obtain information about marital status, contraception, and births by age. While the numbers of births (38 in the E_1 follow-up sample and 36 in the survey C_1) are too small to provide definitive evidence of fertility change, an appropriate composite of information can be informative.

The tabulations are unsatisfactory because "ever-married" women are inappropriately used as denominators to calculate rates, and there are obvious numerator errors. In the two tables that recorded 38 births during the past year, for example, one table attributed six births to women aged 15-24, the other assigned 21 births to this age group. Despite the numerical errors, the data have been used to construct Table 10 to illustrate the analytical format that could be used after corrections have been made. The illustrative results suggest a general trend toward later marriage, a substantially increased use of contraception among young married women in E_1, and a decline in the birth rate. Calculation of births per 1,000 non-contracepting married women is useful in that it shows little change over time. Thus, reduced fertility is largely concentrated in contracepting women. This is an indication of the effectiveness of contraception, and suggests that contraception use rates are satisfactory proxy measures of fertility impact in the absence of more definitive data on birth.

Task and Cost Analyses

Basic tabulations prepared for a task and cost analysis in E_1 and C_1 confirm the value of the information and point clearly to future directions for analysis. Observations of time allocations are available by worker category and location according to direct service functions, supporting service, field activities, and non-productive time. Preliminary baseline data were collected in E_1 in 1975, and two follow-up studies were made in early 1978 and mid-1979. One baseline survey and one follow-up study were done in C_1. Other tabulations related to numbers of service contacts by type, costs, and characteristics and attitudes of clients.

The validity and comparability of baseline task data have been questioned for some time. The two follow-up studies in E_1 were both done after project services had been in place for some time. A preliminary review suggests that the

Table 9

HOUSEHOLD ENVIRONMENTAL CONDITIONS

Condition		Percent Baseline	Percent Follow-up*	Percent Change
Drink Water From Well	E_1	97.8	97.9	+ 0
	C_1	79.6	70.9	- 11
Well Covered	E_1	10.7	17.3	+ 62
	C_1	21.9	23.7	+ 8
Water Improved	E_1	10.5	13.6	+ 30
	C_1	8.7	5.7	- 34
Waste Water Disposal	E_1	38.1	49.3	+ 29
	C_1	33.7	34.9	+ 4
Excreta Disposal	E_1	43.6	55.9	+ 28
	C_1	49.8	62.1	+ 25

* Follow-up n: E_1: 759

C_1: 530

Source: Tables 2.4, 2.6, 2.8, and 2.9.

Table 10

FERTILITY ASSESSMENT

Age	Number FU Women	Percent Currently Married			Percent Currently Married and Contracepting			Births Per 1,000 Population: Currently Married			Births Per 1,000 Population: Currently Married and Non-contracepti		
		B	FU	Percent Change	B	FU	Percent Change	B	FU	Percent Change	B	FU	Perce Chang
1													
15-24	537	29.4	23.3	- 21	40.4	57.6	+ 43	238	48	- 80	399	113	- 7
25-44	416	86.1	81.7	- 5	60.2	67.1	+ 11	112	94	- 16	281	286	+
Total	953	56.4	48.8	- 13	54.8	64.5	+ 18	146	82	- 44	324	230	- 2
1													
15-44	296	39.1	26.0	- 34	38.6	41.6	+ 8	208	169	- 19	338	289	- 1
25-44	362	85.5	83.4	- 2	55.7	67.9	+ 22	103	76	- 26	232	237	+
Total	658	63.0	57.6	- 9	50.5	62.5	+ 24	134	95	- 29	271	254	-

Source: Tables 1.1; 1.4; 3.2.15; and 3.3.2.

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findings reveal essentially similar activity patterns. The period of observation was brief: 10 days in the first follow-up and five days in the second. Given foregoing considerations, little reliance should be placed on baseline information and data from the two follow-up studies should be combined. The decision to combine E_1 and E_2 task data will depend on the preparation and analysis of E_2 findings. The task analyses will depict activity patterns and cost implications under project conditions. The findings can then be viewed against service use patterns derived from the follow-up community survey and compared to baseline conditions found in that survey. Table 11 illustrates the types of activity patterns that can be discerned from task analysis tabulations.

Costs for capital, maintenance, expendables, and salaries have been established at selected points. These costs have been allocated among service functions, and a variety of unit cost estimates have been calculated. The resulting tables are useful but further work along three lines is needed.

One, costs per unit of service have been determined on the basis of the service contacts made during the brief observation period. Since cost data have been derived on an annual basis, service patterns representative of annual activity should be used. Information from the community survey, service statistics abstracts, and health post volunteer reports may be useful.

Two, it must be recognized that changing unit costs over time are due to inflation and changes in staffing, as well as to changing patterns of utilization and activity. To separate out the latter effect, it is necessary to analyze changing workloads against a standardized cost structure. The procedure is analogous to the standardization for age in comparing mortality rates.

Three, the task and cost data could provide useful insights into important policy questions, as well as reveal information on current status. For example, what if further utilization of specified services were induced at the periphery? Would this stretch the capacity of facilities at that level? What are staffing and cost implications?

These three concerns illustrate the importance of giving prompt attention to the following actions in anticipation of further analysis. A detailed written description of the methodology and assumptions used in the current cost analysis should be prepared. It is crucial to the interpretation of findings. In addition, a worksheet showing the basic cost data used in the analysis should be developed. The data could then be used in other ways to address the concerns expressed above. Finally, the various sources of service statistics should be combined to obtain a meaningful composite pattern for cost analysis.

Administrative Analysis

Survey questionnaires have been designed and used to gather data from wechakorn, health post volunteers, and communicators to identify job attitudes, interpersonal relationships, and administrative practices. A preliminary analysis reveals an encouraging level of job satisfaction, especially among wechakorn, but a perceived need for improved competence through additional training. Relationships among and between wechakorn, health post volunteers, and health communicators appear to be good. Associations between these groups and the more traditional elements of the health care system are not as firm, however.

Percent of Time Devoted to all Activities by Facility Type

	Direct Services	Support Services	Field Work	Non-Productive	Minutes Obs
E_1					
District Hospital	15	25	3	57	109,200
HC	15	34	4	47	113,400
MWC	12	45	9	34	21,000
HC	24	27	7	42	12,600
MWC	32	42	2	24	4,200

ercent of Direct Service Time by Service Function

	Medical Care	MCH	Family Planning	Other	Minutes Obs
1					
District Hospital	75	13	8	4	16,536
HC	45	17	8	30	16,459
MWC	45	36	13	6	2,519
HC	58	11	24	7	2,951
MWC	77	11	11	1	1,354

verage Number of Minutes per Service

	Medical Care	MCH	Family Planning	Other
District Hospital	25	36	8	12
HC	13	18	6	19
MWC	8	8	4	78
HC	8	7	3	1
MWC	8	2	3	8

Best Available Copy

At this time, the overall analysis is undergoing additional review, interpretation, and refinement. The final report should be completed by early August.

Other Data Sources

Information from other project data sources tends to be less detailed and less subject to quality control. It should be used to corroborate and complement the data sources cited above, but it should not (and cannot) serve as a primary basis for evaluation.

Information on child nutrition status has already been compiled. There has been little change over time. For purposes of evaluation, therefore, further documentation of nutritional impact is unnecessary. What is needed is reflection on project experience to acquire insights into future prospects for more effective nutrition surveillance in projects intended to cover large populations.

Province-wide vital registration data should be reviewed for general trends and unique features. Because such a review is likely to be of little benefit, however, it should not be a high priority.

Gross summaries of service statistics are solid evidence of increased service coverage at locations close to the community. The use of the provincial hospital by E_1 residents appears to have remained fairly constant, while use by C_1 residents increased during the project years. These statistics can be helpful in confirming on a broad population base what community survey and task analysis data reveal in more detail on a limited sample. The service statistics are, unfortunately, gross. There is fragmentary evidence that certain forms of care have moved from the provincial hospital to more local sources in E_1. It would be useful to know more about changes in the form and severity of illnesses treated at various sites. More information on the other service categories listed in Table 1 would also be helpful. In short, a closer look at service statistics on a sample basis would be useful to the extent feasible.

Health post volunteers' monthly service reports provide a wealth of information which, unfortunately, has not been tested adequately for completeness and accuracy. Nevertheless, the reports are useful in reviewing service mix, variation among volunteers at a point in time, and trends over time. Since the reports are already monitored routinely by project staff, a more analytical appraisal of existing documents and recommendations for continued monitoring under ministry auspices are needed. Since the reports are in Thai, this reviewer is unable to offer more specific recommendations.

Timetable

A review of the current status of project evaluation and future analytical needs gave special attention to the community survey and task and cost analyses. Specific action on these studies that should be taken immediately and completed by September 1 are summarized below.

A. Community Survey

1. Resolve questions which existing tabulations raised.
   a. Correct or account for discrepancies in counts recorded in different tables.
   b. Calculate appropriate control totals for analysis.
   c. Check for possible errors in computer programming.
2. Specify the additional tabulations needed.
3. Run all necessary tabulations for E_1, C_1, E_2, and C_2.
4. From the complete set of verified tabulations, compute and compare rates as appropriate.

B. Task and Cost Analyses

1. Further review existing tables on E_1 and C_1 for accuracy.
2. Run corresponding tables on E_2.
3. Conduct statistical analyses to interpret changes and to establish the legitimacy of combining results.
4. Describe the methodology and assumptions used in the analysis, especially with regard to cost calculations.
5. Prepare a worksheet of basic cost data for further analysis.
6. Review the various sources of service statistics to derive composite representative measures for use with cost data.

III. RECOMMENDATIONS

RECOMMENDATIONS

1. The analysis should proceed with three types of documents in mind. These are:

    a. Background description of the evolution of the evaluation process at Lampang.

    b. Report of evaluation results, conclusions, and recommendations.

    c. Appraisal of evaluation procedures for application elsewhere.

2. Having identified the tabulations of special evaluative interest, questions of data accuracy should be resolved, and a revised run and any additional necessary tabulations should be made. The implications of different household size distributions should be examined and necessary adjustments made.

3. The tabulations for task analysis should be completed and reviewed for similarities and differences in activity patterns to establish the appropriate number of unique patterns to be used in further analyses.

4. The available sources of service statistics should be compared so that they can be expanded in greater detail as necessary and synthesized appropriately to obtain representative data for use in cost analyses.

5. Cost worksheets should be prepared for use with the activity and service data derived from Steps 3 and 4 above.

6. Descriptions of the methodology and assumptions employed should be prepared.

7. Duplicate sets of basic data (on tape if possible) should be prepared for reasons of security and to facilitate multiple analyses.

8. Additional consultation on evaluation should be planned for 1980, when the concrete results from the foregoing steps should be available for review and interpretation.

Appendix

ITINERARY AND CONTACTS

ITINERARY AND CONTACTS

June 16 - Bangkok

Briefing

Henry Merrill, AID/Thailand
Michael Maurier, World Bank Population Project

June 17 - Travel to Lampang

Working Sessions

Pien Chiowanich, Lampang Project
John Rogosch, Lampang Project
Ronald Wilson, Lampang Project

June 18-20, 23 - Lampang

Working Sessions

Pien Chiowanich
John Rogosch
Ronald Wilson

June 24-24 - Lampang

Working Sessions

Pien Chiowanich
John Rogosch
Ronald Wilson
Titaya Suvanajata, NIDA
Prachoom Suwattee, NIDA
Anumongkol Sirivedhin, NIDA
Nikorn Wattanpanom, NIDA

June 26 - Travel to Chieng Mai-Bangkok

Discussion

Pien Chiowanich
John Rogosch
Ronald Wilson
Somboon Vacharotai

June 27 - Bangkok

Discussion

Natth Bhamarapravati, Mahidol University

Debriefing

Pien Chiowanich
John Rogosch
Ronald Wilson
Michael Maurier
Henry Merrill
David Oot, AID/Thailand
Debhanom Muangman, Mahidol University