

TRIP REPORT

LAMPANG PROJECT

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While in Thailand for another purpose, the writer met with Lampang Project personnel to review future evaluation efforts, focussing in detail on the resolution of specific current and anticipated problems areas. The timing of the consultation proved to be most advantageous, and the discussions were exceptionally substantive and productive.

A meeting was held in Lampang on June 19 to consider the need for a post-operational evaluation period for final data collection, analysis, report preparation and dissemination. The meeting was attended by Messrs. Scott and Merrill of USAID Thailand, in addition to Project evaluation staff and the writer. This was followed by more detailed scheduling of evaluation activities and review of the Community and Nutrition Surveys. Representatives from NIDA joined the discussions in Lampang and Chiangmai on June 21-22 for a careful appraisal of the Task and Cost Analysis, as well as data processing requirements and capabilities.

Scheduling

There is no doubt in the writer's mind of the need for two years of close-out support for Project evaluation during fiscal years 1980-81. Even this time frame requires tight scheduling of activities and leaves little room for slippage. Further data collection and compilation must be completed as early in the period as possible to permit adequate time to capitalize on the informative potential afforded by the data.

In particular, it was agreed that final data collection for Task and Cost Analysis should be completed in fiscal year 1979 in order to assess worker performance while the Project remains operational. Since Project impact is to be judged largely from the Community Survey, that should be the latest major data collection effort, undertaken during the first 4-6 months of fiscal 1980.

Coding and computer editing need not await the completion of a particular survey. Rather, these activities must proceed study area by area. If, for example, data collection is to proceed from E₁ to C₁, coding and editing of E₁ data should occur simultaneously with data collection in C₁.

Assuming adherence to such a schedule, it remains necessary to allow 3-6 months after survey completion for data processing and tabulations similar to those produced from

earlier surveys. Thus the basic tabulations from the follow-up Community Survey cannot be expected before the end of fiscal 1980. This leaves one year for more complex comparative analyses, interpretation, and report preparation.

If meaningful analysis is to be accomplished within this time frame, detailed preparation for analysis must begin immediately and be fully completed during fiscal 1980. This requires first a well-defined plan of analysis and set of specifications. These will lead to two types of computer programming effort. The first involves a restructuring of data sets, e.g. compilation of new files from selected items of information on baseline and follow-up surveys or from existing Community and Task Analysis data sets. The compilation may require the formation of summary variables as averages, totals, rates, etc. The second programming effort involves the writing of any analytical routines not available in library programs.

Further elaboration of the analysis plan will clarify budget and personnel requirements. It is apparent, however, that needed expertise during the evaluation phase-out will not conform precisely to present staff configuration. Operational management and routine data collection and compilation activities will terminate, while the need for analytical skills

and data processing capabilities will become paramount. Processing of follow-up data must coincide with computer programming and processing in preparation for overall analysis. It is quite possible that NIDA programming and computer facilities will have to be supplemented.

Community-Nutrition Survey

Baseline Community Survey data collection required a total of 6-7 months and produced information on 5,600 families. It is felt that a 25% reduction in sample size in the follow-up surveys would not jeopardize the value of the findings. Moreover, item-by-item review of the survey instrument ^{during the present consultation} resulted in elimination of about one-third of the original items as relatively uninformative. Overall, then, follow-up surveys in the four study areas should be accomplished in 60-65 percent of the time required for baseline data collection.

More specifically, the following items are retained in the follow-up survey.

Population Characteristics

- Age
- Sex
- Marital Status
- Education
- Occupation
- Socioeconomic Classification
- Ownership of Selected Possessions/

Hazards to Health

Smallpox Immunization

BCG Immunization

DPT Immunization

Use of Privy

Source of Drinking Water

Morbidity in Preceding Two Weeks

Symptoms

Duration

Time lost from normal activity

Mortality in Preceding Year

Cause

Place of Death

Services Utilization

In Relation to Two-Week Morbidity

incident { Source of Care

{ Cost

Government Services during Preceding Year

incident { Service Function Category

{ Source of Care

{ Reason for Going Outside Local Area

Pregnancy Experience

Pre-natal Problems and Care

Place of Delivery

Post-partum Problems and Care

Cost

Family Planning

Pregnancy History and Outcome

Time and Result of Last Pregnancy

Present Practice of Family Planning by Method and Source of
Care

A presently organized the Nutrition Survey is a component of the Community Survey and has three parts: anthropometric measurements on young children; mother and child feeding and weaning practices; and family eating habits.

Following discussion it was agreed that anthropometric measurements are critical and should be obtained on all study children under the age of six in the four study areas. Although nutrition surveillance is conducted by HPVs in E₁ it was agreed that E₂ should be included in the anthropometric survey in the interest of comparability. Feeding and weaning information is also important and should be obtained from all sample households with pre-school children, although the current form might be simplified. The family eating habits survey is considered to be of low priority and might be

eliminated if the schedule of data collection so indicates. If conducted at all this survey should be limited to 100-200 families included in the Community Survey.

Task-Cost Analysis

The Task and Cost Analyses are largely to satisfy Project Objective 2. Considerable attention was devoted, therefore, to the reformulation of the objective and associated indicators into more operational terms. As re-stated, objective 2 is:

To assess the performance of health personnel and the cost of the health delivery system within the context of existing operations and management practices.

Explicit indicators emerging from this objective logically fall under the headings of "Performance" and "Cost". It is not reasonable to subject the contextual factors to the same degree of quantitative analysis in this Project. For example, it is neither feasible nor very productive to determine that records and reports are x% accurate, especially if the information reported is not used optimally for management decisions. Rather, Project evaluation should introduce contextual factors into the analysis descriptively as a means of interpreting performance and cost findings. The contextual factors include such things as worker attitudes, evidence of coordination and cooperation, frequency and nature of

supervision, patterns of referral, functioning of the reporting system, and logistical support. Information on these factors is available from a variety of data sources as well as personal experience.

Re-defined indicators are as follows:

Performance

1. Differences between worker categories and between workers of the same type in different facilities in the average time to perform particular tasks.
2. The proportion of time spent on each service function and other activities by worker and facility type.
3. Projection of service capabilities of the present system.

Cost

1. Cost per service function contact by facility type.
2. Overall cost per facility for MCH, nutrition, family planning, and medical care.
3. Cost of government health expenditures per capita.
4. Consumer cost per episode of illness according to form of action taken.
5. Estimated cost per family per year for health care.

The follow-up Task and Cost Analysis was reviewed within this revised analytical framework. First of all, the need for clear, meaningful definitions of service function is apparent. Coding for task analysis should insure comparability with the list of service categories used in Community Survey Form 2D, which establishes services utilization patterns from clients' perspective.

Group deliberations also produced the recommendation that patient interviews at the time of data collection for task analysis determine whether the patient's presence is as a result of referral and, if so, by whom.

The task analysis will undoubtedly reveal the continuing availability of substantial slack time in the system. It will be of interest, therefore, to determine the amount of additional service activity which could be accommodated without personnel expansion. Thus Indicator 3 under Performance above is recommended.

Costs should be viewed from both client and government perspectives. From the former point of view, interest lies both in the cost associated with a particular health problem and the overall burden of health care on family finances. From the government perspective, interest is attached to unit costs of service, the cost of operating a particular type of facility, and the contribution of various service functions

to total costs. The aforementioned cost indicators have been developed with these considerations in mind.

Considerable attention was given in discussion to sampling procedures and the impact of operational difficulties in following established procedures. While many of the operational details must be worked out under field conditions, certain guiding principles emerged from the discussion.

First, the task analysis only examines in detail activities conducted at health facilities. Time on official duties outside of these facilities should be accounted for but recorded separately in view of their more global and less reliable assessment.

Second, a clear distinction must be made between the amount of a worker's time sampled and the total amount of effort in the system devoted to a particular activity. Principal interest in analysis centers on a unit of official time. Who does what where in a typical working day, month, or year? The time sampled need not be represented in this way, however, as long as translation is possible in analysis. If, for example, ten midwives are at work on a typical day but only two are sampled, the estimated activity of the ten can be projected from data gathered from the two. From a statistical standpoint it may be desirable to employ principles other than pure

randomness. For example, it may be advantageous to sample morning periods more heavily than afternoons. One must take into account the impact of non-randomness, of course. If a midwife was not sampled because of her absence from the facility, what effect did this have on activities of the sanitarian? The point is that "typical" work patterns must be defined carefully, along with deviations of interest, and methods of extrapolation from sample to population must conform to these definitions.

The role of the HPV is such that activity time is of little relevance but record of service contacts is important. Standard methods of task analysis are accordingly inappropriate. Neither the volunteers' logs of activities nor periodic reports submitted are considered complete and adequate for analysis. It is recommended, therefore, that shortly before operational phase-out a sample survey of volunteers be undertaken to determine activities performed during the preceding month. The sample should randomly include one-third of the volunteers in E_1 ($n_1=25$) and one-fifth of those in E_2 ($n_2=120$). This would provide adequate information to estimate service averages and variances, both of which are important for analysis.

The hospital task analysis is of limited value in spite of its complexity. It was agreed that in-patient analysis

would not be sufficiently useful to merit the substantial effort needed to carry it out. Analysis of out-patient facilities, on the other hand, is relevant, and affords the opportunity to investigate the important issue of appropriateness of care in an important setting.

This suggests the desirability of conducting an out-patient flow analysis in place of a hospital task analysis. The focus would be on the patient as he interacts with providers rather than upon the provider as he interacts with patients. Patient characteristics and diagnosis would be determined, along with a record of service functions provided, time, and cost. Patients could then be classified along a scale from highly specialized care to routine care available at peripheral facilities. This would permit a distribution of utilization according to appropriateness and distance travelled. Moreover, time and cost for routine care could be compared more meaningfully with corresponding results from task analysis at other facilities.

While the patient-flow analysis has many attractive features, it has inherent difficulties. It would require the design of an essentially new survey, yet one in which classification of service functions must be compatible with

other sources of data. It could provide information on worker service activities as adequately as task analysis but would lack assessment of other uses of worker time.

In view of the major considerations on both sides of the issue, no final decisions were made during consultation. The hospital patient flow analysis deserves serious consideration, however.

Framework for Analysis

Moving from detailed consideration of individual surveys to the overall plan for analysis, a conceptual framework was proposed as shown in the attached diagram. Pre and post-utilization patterns would be compared, primarily in relation to coverage Objective 1. The Community Surveys would be the main sources of data for these analyses, along with the Services Records Abstracts. Estimates of "Need" could be established from demographic and other data in place of service targets. Under the MCH function, for example, the need for pregnancy-related services would be based upon the number of pregnant women in the target population. Quantitative levels of need would form the denominators for indicators of coverage. The number of deliveries by trained health personnel, for example, would be related to the total number of pregnancies.

Service functions need to be specified within each of the major headings: MCH, nutrition, family planning, and medical care. To illustrate, MCH functions should be classified minimally according to those associated with pregnancy and well-child care. Each of the matrices in the diagram should have compatible classifications of service function in the interests of comparability.

Impact measurements in relation to Objective 3 would be aligned in relation to services utilization, or coverage, to facilitate interpretation. The Project will be unable, of course, to attribute impact unequivocally to services coverage. Assessment of impact will come mainly from the Community Surveys and the Vital Events reporting system.

Measurements of worker performance and cost relate principally to Objective 2 and will come from the Task and Cost Analysis. Comparison of pre-and post-coverage patterns can be interpreted in light of activity and cost patterns emerging from the Project. Again, however, definitive causal relationships will not be possible.

Replicability, Objective 4, will require a largely descriptive, interpretive appraisal of overall achievements and costs in human and financial resources.

Assuming data comparability, the matrices in the diagram would be linked as indicated by the heavy connecting lines. The linkage suggests that it is more important for the follow-up Task and Cost Analysis to be compatible with Community Survey data than with earlier Task and Cost Analyses.

To make the conceptual framework operational it will be necessary first to examine individual items in survey instruments in detail for purpose of integrating them into the final matrix formats. Then specifications for data manipulation must be established to insure conformance with the required data array. In the course of linking data bases with analytical format a number of sub-analyses will undoubtedly emerge for more detailed investigation of certain elements of the overall matrices.

Concluding Remarks

The Lampung Project has progressed to the point where it was possible during this consultation, with the aid of solid dedication of Project staff, to come to grips as never before with substantive issues in evaluation. Input from NIDA personnel also merits special attention. Although Task and Cost Analysis has proved to be a difficult area of investigation in the past, present NIDA staff are impressively competent and motivated. Given the available guidance from Project

personnel, they should have little difficulty in meeting evaluation requirements relative to worker performance and costs. Capabilities with respect to computer programming, data processing, and administrative analysis remain problematical and deserve attention.

