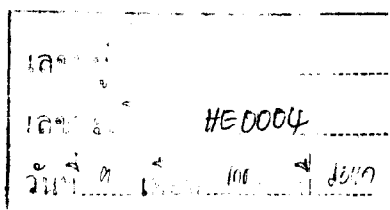




Thailand's Mid-decade Goals for Children: Monitoring and Evaluation Program

Phase 2:

Development of Provincial System for Monitoring of Children's Health and Basic Services



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Thailand's Mid-decade Goals for Children: Monitoring and Evaluation Program

Phase 2: Development of Provincial System for Monitoring of Children's Health and Basic Services

I. INTRODUCTION

The finding of UNICEF-supported Mid-Decade Goals Monitoring and Evaluation Project Phase 1: *National Monitoring and Evaluation System and Current Mid-Decade Goals Status*¹ indicated that current monitoring and evaluation activities being implemented by MOPH's Department included multiple systems and relied upon data collection at different time intervals. Even though the target groups or subjects of investigations were similar, the evaluation surveys were done with inadequate coordination. No focal point for collaborating data collection existed to make this effort concerted and systematic hence duplication was potentially unavoidable. Finally, the current systems demanded voluminous work of the rural health personnel.

Phase 1 study recommended that the monitoring and evaluation should enable the provinces to address program implementation. The monitoring information should be relevant and community-based. "Rapid survey" was identified as a potential method accommodating efficiency and integrated data set. This continuing project - *Phase 2*² - aimed at developing a provincial-based public health information system that allows the monitoring and evaluation of health programs not only at the national level but also provides local statistics for each of the 75 provinces. The main approach was to identify the information needs at the respective levels and to develop an integrated survey system. This multi-indicator survey would, to the greatest extent possible, replace the various means (primarily existing surveys) of current data collection.

This project responded to and eventually represented an pedantic part of a landmark development of the MOPH public health information system. In April 1995, the MOPH decided that it would adopt a large-scale community-based survey as primary monitoring tool and abandoned, to the greatest extent possible, the current activity reports. This Provincial Health Survey (PHS -- frequently referred as "rapid health survey") required two weeks of data collection and included approximately 1,200 interviewed households per province. Since the MOPH - the primary client - indicated its interest comprising comprehensive service provision, the scope of this survey was extended to cover a broad array of monitoring indicators added to that related to maternal and child health. Besides the survey incorporated indicators addressing some health behavior, child mortality rates, health security and selected self-reported morbidity.

¹ Kachondham, Y. *Thailand's Mid-decade Goals for Children: Monitoring and evaluation programme (Phase I)*, Health System Research Institute, Thailand, 1993

² Previously, we proposed two separate phases of the continuing study. Phase 2 would develop an acceptable model and Phase 3 examine its wide implementation. This project collapsed the two into one single phase.

By the time of this writing, the preliminary report of the survey findings was almost completed. Some findings agreed well with recent reported figures from other sources. However, the statistics on EPI coverage and child mortality rates showed debatable discrepancies. Data quality was conceived as a major problem. Meanwhile, the MOPH determined to implement the second-year survey in mid-1996 and started working out some improvement on the first survey.

II. STEPS TO PROVINCIAL HEALTH SURVEY DEVELOPMENT

The process of the Provincial Health Survey (PHS) appeared as follows :

1. Preliminary research making up the preparation of the survey including:
 - 1.1 Through focus-group discussion, identifying information needs at the central and provincial levels, uses of information (planning, monitoring, evaluation), timing of information need and order of priorities of the data;
 - 1.2 Content analysis of the existing surveys, namely those implemented by the MOPH technical divisions and National Statistics Office, and the UNICEF multi-indicator survey;
 - 1.3 Survey on the choice of population denominators adopted by the provinces for the purpose of program target setting and on the existing means of program monitoring;
2. Developing the PHS design, methods, questionnaire, guidelines for interviewers, management guidelines; plan of data analysis and report presentation;
3. Implementation: pre-testing, evaluating and revising the questionnaires, fieldwork, data entry and data cleaning;
4. Data analysis and reporting;
5. Formative assessment and preparation for the second-year survey.

Preparation

During the past years, the MOPH made several attempts to identify a common set of health indicators approved by all of its concerned divisions. Attention had generally been paid to indicators included in periodic reports. The role of the technical divisions demanded supplementary data for the use of program improvements. Inevitably, those needs occurred from time to time in response to specific problems. So once a common data set was implemented, the province still received special requests from the technical divisions for added items. Those items then became annexed to the basic reports and eventually integrated into regular reporting.

Shortly before the PHS, the MOPH was making another endeavor of indicator identification to modify the latest forms of provincial reporting. The HSRI intervened as a collaborative action and initiated a forum emphasizing indicators related to the Child Summit Goals. This later became a basis for developing the PHS questionnaire.

In April 1995, the MOPH declared a significant policy which would abolish all "unnecessary" reporting, and adopt a provincial survey as primary monitoring means. The HSRI was called to provide technical support to this project. The MOPH announced an ambitious mandate that this survey would be nationwide and get completed in six months.

We then collected existing survey questionnaires from the technical divisions, the Health Examination Survey,³ and the National Health and Welfare Survey.⁴ The UNICEF guideline on multi-indicator survey was also studied and eventually adopted as primary framework. Indicators were selected from the existing questionnaires and only those pertaining to monitoring purpose were included. The PHS adopted the basic design of the UNICEF survey. The significant modification was to use the two age groups of the latest years (0-11 and 12-23 month old) instead of the five-year (0-59 month old) group.

Finally, the frequent debate on which population denominator source should be used was considered. Generally, the province required the numbers of specified population groups for target setting and monitoring. Although the *de jure* figures supplied by the Ministry of Interior were readily available, many provinces claimed they were inaccurate and implemented periodic census to obtain their local *de facto*. Some provinces also used the population projections estimated from the latest census (every ten years) as adjunct source.⁵

We conducted a small survey to investigate the current practices among provinces. This study was also aimed at addressing the survey experience of the provinces. About 73 percent of the provinces returned the questionnaire.

The findings indicated that the population data used for target setting at the provincial level were mostly divided from the population census coupled with additional surveys made by the provinces (30.9%), following by the use of data merely from the local surveys (29.1%). As for the data used in monitoring, most of the provinces (54.5%) used the data from the population surveys conducted in the provinces whereas 23.6% of the provinces utilized data both from the population census and the provincial surveys. Only 16.4% of the provinces used the MOI figures exclusively. These findings confirmed the inconsistent usage of the denominator sources between and within the provinces.

During 1992-1994 most of the provinces had conducted approximately 3 population surveys which required roughly 3-8 weeks per each survey. Most surveys were conducted through interviewing every household (census-like) except for three provinces whereby households were randomly sampled. Most of the provinces

³ The first Health Examination Survey was conducted nationally in 1993 and investigated primarily morbidity, physical fitness and health behavior.

⁴ The National Statistical Office conducted this survey every five years most recently in 1993. The survey covered mainly health behavior.

⁵ The National Economic and Social Development Board produced the projections based on specified scenarios. The most recent base-year was 1990.

(69.0%) had completed the survey in 1994 which some of the remaining (18.18%) began to conduct their survey in 1995.

Forty - five per cent of the field investigations were done by health personnel and health volunteers. Fifty-five per cent of the provinces had conducted the population survey within their municipal (urban) areas and the latest data were the findings of the 1994 survey.

Regarding the experience in using random sampling methodologies, during the three previous years 56.4% of the provinces had used 1-3 time(s) of this survey technique whereas 25.5% had no experience in random sampling.

Program monitoring was usually based on community-based records. At the health center level, 50.9% of the provinces designated the use of population record form divided by each target group. The rest utilized registration by family (10.9%), personally developed record forms (7.3%), and 12.7% used the province-wide population record form coupled with family registration. It was evident that there had been no uniformity in population data collection at the health center level.

III. PROVINCIAL HEALTH SURVEY (PHS)

Background

The MOPH often mentioned the equitable delivery of essential health services as a primary means to a "healthy nation". As the goal of the Eighth Five-Year National Economic and Social Development Plan (1997-2001), both the quality and coverage would be ensured. Currently, the health information system which relied on the existing records and reports was found irrelevant for program monitoring for it failed to indicate the coverage of essential health services, and hardly revealed health behavior of the population. Besides the criticism on data accuracy and formidable workload by local workers, the current system operated "vertically" and "compartmentally", hence provided piece-meal information inadequate for addressing the dynamism of client populations.⁶

To obtain comprehensive information on program monitoring, the first provincial health survey (PHS) was conducted in August 1995. PHS required about two weeks of data collection conducted by a fraction of provincial health workers. It included a long-term goal to enhance the potential of provincial health authorities in collecting and analyzing data. The survey was hoped to become an instrument the local authority could use to address the population's health profile within its constituency.

⁶ Kachondham, Y. *Thailand's Mid-decade Goals for Children: Monitoring and evaluation programme (Phase I)*, Health System Research Institute, Thailand, 1993, pp. 7-11.

Objectives :

1. to acquire qualified data which could be used in monitoring government health care services in the issues of :
 - coverage of health services
 - health status (IMR and selected morbidity)
 - selected health behavior
2. to develop a monitoring system and tool that allows the province to address local problems.

Assumptions - Expectation :

1. the survey aimed at monitoring of health conditions in broad perspective and locating the target groups with health problems;
2. the survey will be conducted once a year in every province at similar time interval;
3. the findings from this survey will be added to those derived from other nationwide surveys i.e. health and welfare survey, health examination survey, health status of the elderly survey, etc.;
4. this survey will address specific health issues most likely to be leading health problems, group or section of population more seriously affected by those problems;
5. the potential of each province in data collection and analysis will be upgraded in the long term through exchange of experiences among the provinces and technical support from the central administration.

Content of the survey :

1. *Coverage of basic health services* namely family planning, pre-natal care, immunization, growth monitoring for children, sanitation, provision of clean drinking water, welfare services ;
2. *Health status* namely infant mortality rate, mortality rate of children under 5 years of age, birth weight, child mortality rate (from diarrhea, diseases of the respiratory tract, malnutrition), accident ;
3. *Health behavior* namely access to health information, drinking water, knowledge on how to choose food products, choices of drugs, healthy living, choices of health services institutions, breast feeding, dental health, cigarette smoking during pregnancy ;
4. *Population composition* for estimating the *de facto* population from the *de jure* report (and census).

Principles of investigation planning :

1. Select a limited number of indicators for each specific health issue by picking out only those appropriate for monitoring ;
2. Select characteristic variables describing households and target groups for the purpose of classified analysis i.e. rural / urban, distance from town, household head (economic status, education, profession), welfare status ;
3. Apply probability sampling to avoid sampling biases which made a major drawback of the 30-cluster design;

4. Apply efficient omission of households to pick out minimal number of samples that compromised different sample size requirements of the six target populations;
5. Develop a common computer program for data input;
6. Analyze both the national and provincial data centrally while encourage local analysis to compare with the centrally processed findings;
7. Generate a national report that includes monitoring statistics by province and the provincial report returned exclusively to each of the 75 provinces.

Reliability of data:

1. For data analysis at the provincial level, the degree of precision of each index will be moderate with deviation at 3-5% with the confidence level at $p = 0.10$;
2. For sub-regional, regional and national analysis, the results will be derived from compiling all the provincial data through weighing. The level of accuracy and confidence of each index will be very high ;
3. Infant mortality rate will be classified by region (one region = 14-20 provinces) allowing the imprecision by 4 per 1,000 ($p = 0.05$) while the corresponding figures of the national rate should be 2 per 1,000 ($p = 0.05$).

Survey Methods

This project was designed as a community-based interview survey considering the province as a monitoring unit. More aggregate estimates were produced secondarily from provincial estimates through weighting. This project adopted the "multiple-indicator survey" design recommended by UNICEF as basic framework.⁷ Distinct modifications included: (1) extension of study contents to cover many non-MCH parameters; and, (2) taking the most recent one-year-cohort as the sample population in estimating service coverage instead of children under five year old. The first modification was justified as a fundamental request of the user (Ministry of Public Health): The latter, although demanded larger sample size, would generate far more reliable data owing to the greater probability of finding personal health records among children 0-23 month old than older children. Finally, the modification called for a sampling plan that cut redundant case collection as described below.

The survey populations of the first provincial health survey (excluding the Bangkok Metropolitan) constituted the following :

1. households
2. individuals
 - general population
 - children 0-11 month old
 - children 12-23 month old
 - children 0-59 month old
 - women of reproductive age (15-49 yr.)

⁷ UNICEF, Monitoring progress toward the goals of the World Summit for Children: A practical handbook for multiple-indicator surveys, United Nations Children's Fund, New York, January 1995.

Sampling Plan

A stratified cluster sampling with probability proportional to size (PPS) was employed. The sample size was calculated to provide acceptable estimates of the key variables used in evaluation of the mid-decade goals and included 4,500 households per province.

Sample size

For each of the selected parameters, the sample size that yields the precision of 0.03, 0.04 and 0.05 was calculated (at $p=0.05$ and $p=0.10$). At the precision of ± 5 percent ($p=0.05$) measles vaccination required a sample size of 492 children (12-23 month old). Based on the current population structure, to find one child (12-23 month old) among the general population, the probability was about one-sixtieth. Given the average household size of 5 persons, one needs to investigate 5,700 households to obtain 492 children. At the confidence level of 90 percent ($p=0.10$), the sample size shrank to 370 children or 4,291 households.

Table 1: Priority indicators used for determining the sample size with the respective precision when the sample size of 4,500 households per province is adopted.

Indicator	Precision ^a (%)	Confidence level (%)
<i>BCG</i>	±3 - ±4	95
<i>DTP3, OPV3</i>	±4 - ±5	95
<i>Measles</i>	±4 - ±5	90
<i>TT2 in pregnancy</i>	±3 - ±4	95
<i>Vit A</i>	±4 - ±5	95
<i>Iodized salt</i>	±2 - ±3	95
<i>Ante-natal care</i>	±4 - ±5	95
<i>ORT use (in 15 days)</i>	±9 - ±10	95
<i>ORT use (in 30 days)</i>	±6 - ±7	95
<i>Low birth weight</i>	±2 - ±3	95
<i>1:5 selection</i>	±4 - ±5	95
<i>Safe water</i>	±2 - ±3	95
<i>1:5 selection</i>	±3 - ±4	95
<i>Sanitation</i>	±2 - ±3	95
<i>1:5 selection</i>	±3 - ±4	95

Similar calculations were generated for each of the 13 selected indicators. Eventually, we decided to adopt the sample size of 4,500 households. This sample size would produce moderately precise estimates for most coverage indicators at the provincial level (Table 1).

If 4,500 household per province was investigated, all but three indicators in the table above would offer the precision of ±5 percent or better at 95-percent confidence level ($p=0.05$). The three exceptions included the coverage of measles vaccination and ORT use rate (two-week and one-month recalls). At 90-percent confidence level, this sample size would yield the precision of ±5 percent for measles which we considered an acceptable trade-off. Finally, the sample size required for comparable estimates on

^a Assumptions of the calculation included:

(1) percentage of one-year cohort = 1.72; (2) household size = 5 persons; (3) design effects = 2 (individual services) and 10 (water and sanitation); and, (4) rate of diarrhea among children = 0,10 during the past two weeks.

ORT use would be too large to practically implement. So we decided to produce only regional estimates for ORT use (two-week recall among sick children).

Three indicators (lowbirth weight, safe water and sanitation) estimated from all qualified cases in 4,500 households would become highly precise. To obtain comparable estimates with the others, only one-fifth of this sample size was needed. So we decided to implement a systematic sampling (1:5 inclusion) from the 4,500 households. As a result, only 900 households would be examined with respect to those two and other household-related indicators. As for the percentage of low birth weight, we decided to include only infants in their first 12 months (0-11 month old) because the greater availability of personal health records. Finally, the coverage of Vitamin A supplements was omitted because of the limited implementation in five southern provinces with prevalent morbidity.

These 4,500 households were divided into 60 clusters each comprising 75 households. The cluster size was justified mainly from administrative practicality. During the pretesting, we found that a team of six could finish the fieldwork of one 75-household cluster in two days. This allowed enough time for returning to the closed households and questionnaire editing.

Not all but approximately 20-25 households in a cluster would be actually interviewed. The 75 households were first screened for the interviewing which applied only to those meeting pre-defined criteria. The screening was carried out systematically and based on the respective probability of finding the target groups as reported in the Health and Welfare Survey (1993). Only one-fifth of the households were interviewed on household-related questions. Besides, all households in which children 0-23 month old resided were interviewed on MCH-related questions. As a result, the number of households actually interviewed amounted to about 1,200 per province. The process of sampling appeared as follows:

Step 1 : Selection of the clusters:

1.1 Designate number of clusters in each province which was 60 and then divided into those within and outside of the municipal areas by proportion of population in each area;

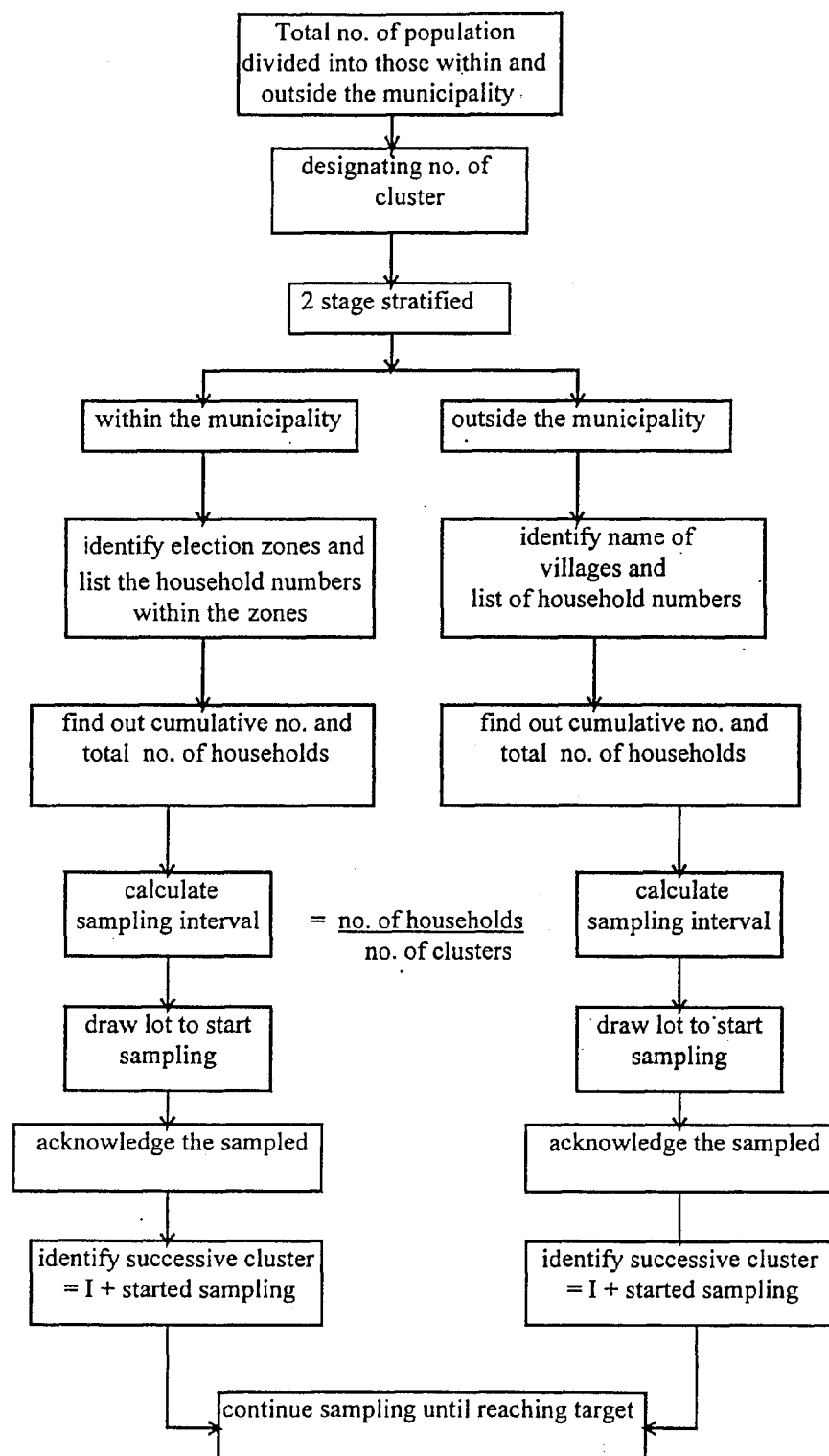
1.2 Make a listing of household numbers within each village, subdistrict and district. As for households within the municipality the listing was based on the geopolitical unit (village equivalent) surveyed for the then approaching general election (September 1995);

1.3 Calculate sampling interval (I) for households both within and outside the municipal areas;

$$I = \frac{\text{Total no. of households (within or outside municipality)}}{\text{No. of required cluster (within or outside municipality)}}$$

1.4 Select the first villages randomly from the sampling interval, then find additional clusters through a systematic sampling.

Figure 1: SAMPLING SCHEME



Step 2 : Selection of screened households:

- 2.1 Designate the no. of sampling households within 1 cluster (75 households);
- 2.2 Prepare a listing of addresses of all households within each sampled clusters ;
- 2.3 Draw lot randomly to identify the household which is the starting point (sampled household No. 1);
- 2.4 Select household No.2 by choosing the nearest neighbor of No.1.⁹ In case there are 2 household nearby at similar distance, selection will be through random drawing among the nearest neighbors;
- 2.5 Continue in the same manner until completing 75 households all of which must be in the same village (or election zone);
- 2.6 Generally a typical village (or election zone) includes enough households to complete a cluster. Selected households (except for household No. 1) could be those found and unfound in the official list.

Step 3 : Selection of interviewed households:

- 3.1 Households No. 1, 6, 11, 16 ...71 will be interviewed for household data;
- 3.2 Any households in which any one belonging to the two children groups (0-11 mo. or 12-23 mo.) lives will be interviewed primarily on specified child-related questions;
- 3.3 In case those in 3.1 above has any child of the two age groups residing, additional interviewing will be done for the child-related items.

Survey Forms

The questionnaire was comprised of five forms. One was a screening form (Form S). Another (Form A) included identifying questions. The other three (Forms B, C, and D) basically contained questions specific to the different survey populations as follows:

1. Household Screening (Form S)

Form S is used for screening the households to be interviewed under the following guiding principles :

- 1.1 All households of which the running number ends with 1 and 6 must be interviewed by using Form A and Form B (basic

⁹ This protocol, though subject to a tendency of including denser areas, was to allow inclusion of unregistered households. Also it was simple enough for wide implementation.

forms). In case any household has as its member any 0-11 month old children, C will be added; whereas for households with 12-23 month old children Form D will be applied.

- 1.2 For households whose running number ends with any other than 1 and 6, in addition to Form A the extended interviewing will be made only with those children of 0-11 or 12-23 month old by using Form C or Form D whatever the case will be.
- 1.3 In all cases that the interviewing occurs, Form A must be used.

2. Form A

Form A is used for collecting basic data of the characteristics of households and household members, i.e. welfare scheme, illness, living status, use of health care services and access to health information.

3. Form B

Form B includes questions related to household profiles regarding service attainment namely clean water and sanitation. Besides it addresses certain behavior including those related to food and drugs, accident, contraceptive uses. Women of reproductive age (15-49 years old) are asked about their previous pregnancies. Finally, this form investigates health condition (diarrhea and acute respiratory infection) of small children (0-59 month).

4. Form C

Form C is used for examining service attainments and rearing behavior related to children 0-11 month old i.e. peri-natal services, tetanus vaccine, breast feeding etc. Additionally, ARI and diarrhea are also addressed to enlarge the sample of affected children. History of one child makes a case. The form allows the interview for up to three cases. When the number of children exceeds three, another form will be added.

5. Form D

Form D contains questions about 12-23 month old children in reference to maternal and child health services as above mentioned and is formatted similar to Form C. Questions related to ARI and diarrhea are added.

Data collection and compilation

All provincial public health offices were responsible for the data collection and record them onto diskettes by means of ready-made computer program. Then the province turned in the diskettes for overall compilation by the Ministry.

Quality control

As this provincial health survey was the first of its kind, it was rather difficult to achieve fully good data quality. The haste of implementation also prevented significant quality control measures to put in place. During the data analysis, an assessment was attempted to address the quality of the data. It was feasible only to distinguish the quality of the data on diskettes as submitted to the central processing. Efforts were made in re-cleaning the data and checking the internal consistency. The relevant range of the provincial denominators was checked with respect each target group. Besides the assessment examined data on selected nominators (percent of "don't know"). Based on the variation of these denominators and nominators, the province was assigned grade A, B, C or D. Finally, nine provinces belonging to grade D (poorest quality) were removed from the estimation of the national statistics. (Table 2.)

Table 2: Four classes of provinces by quality of data

Grade	Number	Remark
A (best)	40	Three were densely populated neighboring to Bangkok. Nationally, one-fifth of the population lived in urban areas.
B	18	
C	8	
D (poorest)	9	
Total	75	

Data processing and analysis

After removal of the nine provinces (Nonthaburi, Ptumtani, Sakon Nakorn, Amnajaroen, Nakorn Sawan, Tak, Pechaboon, Ratchaburi, and Yala), data collected from 66 provinces were processed using SPSS for Windows (version 6.1) which was a distinguished statistical package. The data analysis primarily provided univariate and bivariate statistics of key variables. For regional and national estimates, the provincial data were weighted by the population size as follows :

$$\text{Weight} \propto \frac{\text{No. of population in province } i}{\text{No. of population for the whole country}}$$

Analysis plan

The findings of the survey were presented in tables indicating percentages and rates of :

- background data
- coverage basic health services
- health status
- health behavior

The statistics were categorized as follows:

1. general information
2. service outlets sought by the household
3. health information received by the household
4. health insurance
5. clean water and sanitation
6. family planning practice
7. food and drugs
8. accident
9. handicapped, mentally retarded, alcoholic persons
10. incidence of diarrhea in 0-59 month old children :

- rate of continued feeding when sick

$$= \frac{\text{No. of sick children receiving continued feeding}}{\text{Total no. of sick children}} \times 100$$

- rate of children receiving increased ORT when sick

$$= \frac{\text{No. of sick children receiving increased ORT}}{\text{Total no. of sick children}} \times 100$$

- rate of children receiving continued feeding and increased ORT when sick

$$= \frac{\text{No. of sick children receiving continued feeding + increased ORT}}{\text{Total no. of sick children}} \times 100$$

- rate of children receiving ORS when sick

$$= \frac{\text{No. of sick children receiving ORS}}{\text{Total no. of sick children}} \times 100$$

11. Infectious diseases of respiratory tract

12. Pregnancy history

- rate of livebirth (per 1,000 population)
$$= \frac{(\text{No. of births} \times 1,000)}{\text{Total no. of population}} / 5^*$$

* the figure need to be divided by 5 as it was the record of 5-year history of pregnancies
- rate of stillbirth (per 1,000 livebirths)
$$= \frac{\text{No. of stillbirths}}{\text{Total no. of births}} \times 1,000$$
- mortality rate of 0-11 month children (per 1,000 livebirths)
$$= \frac{\text{No. of deaths of 0-11 month children}}{\text{Total number of births}} \times 1,000$$
- mortality rate of 0-59 month children (per 1,000 livebirths)
$$= \frac{\text{No. of deaths of 0-59 month children}}{\text{Total number of births}} \times 1,000$$
- rate of MWRA practicing birth control
$$= \frac{\text{No. of MWRA living with husband and practicing birth control}}{\text{Total no. of MWRA living with husband}} \times 100$$

13. Pre-natal care

- vaccination against tetanus :
meeting the criteria means :
 - during pregnancy receiving at least 2 injections
 - before pregnancy but not more than 3 years back receiving at least 2 injections
 - more than 3 years before delivery but not more than 5 years back receiving at least 3 injections
 - more than 5 years before delivery but not more than 10 years back receiving at least 4 injections

14. Breastfeeding

15. Immunizations

having full course of immunizations mean :

- BCG	1	injection
- DPT	3	injections
- OPV	3	times
- Measles	2	injections
- Hepatitis B	3	injections

standard schedule of immunization

- BCG one injection within 7 days
- DPT
1st injection within 2-3 months after delivery
2nd injection within 4-5 months after delivery
3rd injection within 6-7 months after delivery
- OPV
1st time given within 2-3 months after delivery
2nd time given within 4-5 months after delivery
3rd time given within 6-7 months after delivery
- Measles two injections given within 9-12 months after delivery
- Hepatitis B
1st injection within 7 days after delivery
2nd injection within 4-5 months after delivery
3rd injection within 6-7 months after delivery

Survey findings

Although PHS included a broad array of health indicators, this report will highlight only those related to maternal and child health. The table below summarizes the national statistics of the Child Summit indicators generated from the PHS. Corresponding figures reported from the departmental sources (mostly through specific surveys) are also presented.

The statistics on most indicators agreed with that reported by the departments. Indicators showing dubious contrariety included three vaccination coverage and the infant mortality rate (IMR). The sizable difference of the ante-natal care coverage is somewhat explainable for the reported figure showed only the rate among rural residents. The situation could reasonably become better when taking into account urban families. A similar explanation could apply to the figures on diarrhea and ARI control.

Particularly, the IMR was analyzed more extensively than other indicators. Guest found some inconsistency between responses to related questions.¹⁰ He pointed out that the flaws could occur during the interview, coding, and data editing. Also he noted the possible weakness of the questionnaire on IMR. Given the rarity of infant death, small mistakes could seriously affect the statistics.

Table 3: PHS findings on selected indicators as compared with equivalent figures from existing sources

Indicator	Recent report	PHS	Remark
<i>Peri-natal care</i>			
Ante-natal care attainment (%)	67	81	
Delivery with qualified health personnel (%)	88	84	
Post-natal care attainment (%)	60	56	
Low birth weight (%)	8	7	
<i>Breast feeding</i>			
Immediate breastfeeding after birth (%)	n.a.	66	
Continued breastfeeding at one year (%)	55.1	41	
<i>Extended Program on Immunization (EPI)</i>			
Tetanus toxoid (%)	93	91	
BCG (%)	98	79	
DPT3 (%)	94	79	
OPV3 (%)	94	79	
Measles (%)	90	92	
<i>Treatments of childhood diarrhea</i>			
ORT use (%)	23	25	
Continued feeding (%)	81	95	
ORT+ continued feeding (%)	19	24	
ORS use (%)	54	73	
<i>Treatments of acute respiratory infection in childhood</i>			
Appropriate treatment (%)	n.a.	91	different definition
<i>Water and sanitation</i>			
Access to clean drinking water (%)	88	89	

¹⁰ Dr. Philip Guest of the Institute for Population and Social Research, Mahidol University, made an assessment on data quality of the IMR part.

Indicator	Recent report	PHS	Remark
Access to sanitation latrine (%)	92	95	
Infant mortality (per 1,000 livebirths)	30	15	indirect v. direct

Evaluation

The MOPH conducted a few focus group meetings to identify potential points of improvements on the PHS. More comments touched upon the project administration than the survey design and method.

Administering problems were identified as follows:

1. *Negative attitudes.* The survey launching came exclusively from the MOPH top. The provinces were forced to accept the project without adequate involvement. Many provinces perceived marginal benefits from the survey;
2. *Urgent delivery.* The province was allowed only two months for completing the survey including interviewer training, data collection and putting the data on diskettes;
3. *Questionnaire complexity.* The survey design which minimized the workload of data collection required five forms of questionnaire and unfamiliar protocol. Since the training was very urgent, interviewers failed to understand the questionnaire completely;
4. *Deficient quality control.* The MOPH installed virtually no mechanism to ensure good data quality at the province;
5. *Imprecise data inputting.* The computer program contained some bugs leading to data entry mistakes;
6. *Unstrengthened local analysis.* Data analysis by the province was limited supported especially regarding the technical transfer;
7. *Inadequate resources.* The MOPH instructed the provinces to conduct the survey with their own resources.

During the group discussions and through individual interviewing, comments on the survey method were given as follows:

1. *Voluminous sample sizes.* The objective in obtaining statistics at the provincial level demanded huge sample sizes (i.e. > 100,000 households). This scale generated managerial troubles and the difficulty in ensuring acceptable data quality;
2. *Imprecise provincial statistics.* Despite the large sample sizes at the national level, yet this design yielded relatively imprecise statistics ($\pm 3-5$ percent) at the provincial level. Further, the

province needed even more detailed categorization (i.e. breakdowns by district) which the survey did not provide.

3. *Unmatched definitions.* Although exhaustive effort was made to capture currently used indicators, yet some indicators in this survey failed to match that obtained by the technical divisions.

By the time of this writing, some researchers obtained the data diskettes from the MOPH and might be examining them. The data was given to any request. Meanwhile, the MOPH was calling for any report pointing out the strengths and weaknesses of the first survey.

IV. CONCLUSION

PHS represents a significant step of obtaining monitoring data specific to the province. It provides a common reference as to any monitoring indicator would be measured through common nominator and denominator. Its community-based design allows the monitoring to cover services and events encountered by the whole population -- not restricted to those reported at public facilities. The survey approach is less burdensome than population-wide facility-based recording or census and flexible for capturing events occurring to mobile populations. Finally, the multiple-indicator design allows cross analysis between variables.

The Thailand Ministry of Public Health (MOPH) launched the 1995 PHS through administrative justification and placed academic concerns secondary. Given the survey's "face validity", the Ministry aimed primarily to establish the PHS system and abandon the existing reporting which handled basically MOPH activities. The first-year implementation was mandated in each of the 75 provinces (except for Bangkok) and required exclusively provincial resources for the implementation. Thus primary trade-off included the loss in data quality, adequate appreciation, and bothering management.

National estimates showed comparable findings with that reported recently through existing sources (mostly specific-purpose surveys) with regards to the majority of parameters. Significant exception included child mortalities and parameters on immunization coverage. The discrepancy was partly arisen from the problematic instrument. No adequate assessment was made to identify weakness of provincial implementation. However, the data analysis pointed to significant variation of data processing across the provinces. Eight provinces fell in grade C where data quality was barely acceptable; whereas nine belonged to grade D of which the data was totally removed from the generating of statistics.

Albeit assertion on the poor data quality, the PHS development yet shows large room for improvements. Starting in 1996, the MOPH will allocate sizable budget for PHS development. Greater efforts could be made to enhance understanding and appreciation. Refinements of the design and instrumentation could be developed. Finally, the MOPH has stated a policy to transfer technical knowhows to the provinces and that local customization will be allowed in subsequent surveys.

APPENDIX 1
Samples in Typical Province

Category	Expected	Observed			
		Median	Mean	S.D.	Range
Screened households	4,500	-	-	-	-
X1 and X6	900	892	812	192.64	167-906
All interviewed	1,300	1230	1141	328.69	130-163
Children					
0-11 month	400	312	301	102.73	52-596
12-23 month	400	269	260	85.27	44-492
0-59 month (X1 and X6 only)	400	315	312	137.60	56-1151
Women 15-49 years old	1,200	963	1,004	258.45	140-1,356
General residents (X1 and X6 only)	4,500	3,948	3,730	1012.77	36-5,081

Sample Size Calculations

APPENDIX 2

Basic Assumption

	Low	High		
Design effect	2	10		
		p=0.05	C-alpha =	1.96
Person per household	5		Squared =	3.84
Population	58	millions		
Prevalence of diarrhoea 15 days	0.10			

INDICATOR	TARGET	PREVALENCE		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED	
		POPULATION	PREVALENCE	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF
				SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS
			estimated reported	.01	.01	.03	.03	0.04	0.04	.05	.05	0.06	0.06	.07	.07	0.1	0.1
DPT3 coverage	12-23 mos	0.90	0.92	6,915	80,213	768	8,913	432	5,013	277	3,209	192	2,228	141	1,637	69	802
Measles coverage	12-23 mos	0.80	0.85	12,293	142,600	1,366	15,844	768	8,913	492	5,704	341	3,961	251	2,910	123	1,426
OPV3 coverage	12-23 mos	0.90	0.92	6,915	80,213	768	8,913	432	5,013	277	3,209	192	2,228	141	1,637	69	802
BCG coverage	12-23 mos	0.95	0.97	3,650	42,334	406	4,704	228	2,646	146	1,693	101	1,176	74	864	36	423
TT2 coverage (pregnancy)	0-11 mos	0.80	0.90	6,147	71,300	683	7,922	384	4,456	246	2,852	171	1,981	125	1,455	61	713
Vit A coverage	0-23 mos	0.70	0.80	16,135	93,581	1,793	10,398	1,008	5,849	645	3,743	448	2,599	329	1,910	161	936
Iodized salt consumption	HH	0.50	.03-.05	19,208	19,208	2,134	2,134	1,201	1,201	768	768	534	534	392	392	192	192
Use of ORT in diarrhoea (15 d)	Dia. < 5 yrs	0.70	0.80	16,800	389,760	1,867	43,307	1,050	24,360	645	14,973	448	10,398	343	7,954	168	3,898
Use of ORT in diarrhoea (30 d)	Dia. < 5 yrs	0.70	0.80	16,135	187,163	1,793	20,796	1,008	11,698	645	7,487	448	5,199	329	3,820	161	1,872
Percent low weight/age	All < 5 yrs	0.10	0.08	6,915	16,043	768	1,783	432	1,003	277	642	192	446	141	327	69	160
Safe water	Population	0.80	0.86	61,466	12,293	6,830	1,366	3,842	768	2,459	492	1,707	341	1,254	251	615	123
Sanitation	Population	0.85	0.92	48,980	9,796	5,442	1,088	3,061	612	1,959	392	1,361	272	1,000	200	490	98
ANC	Mother of 0-23 mos	0.6	0.65	18,440	106,950	2,049	11,883	1,152	6,684	738	4,278	512	2,971	376	2,183	184	1,070

Sample Size Calculations

Basic Assumption

	Low	High		
Design effect	2	10		
		p=0.10	C-alpha =	1.70
Person per household	5		Squared =	2.89
Population	58	illions		
Prevalence of diarrhoea 15 days	0.10			

INDICATOR	TARGET	PREVALENCE		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED		REQUIRED	
				TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF	TARGET	NO. OF
		POPULATION	PREVALENCE														
				SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS	SAMPLE	HOUSEHOLDS
		estimated	reported	0.01	0.01	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.1	0.1
DPT3 coverage	12-23 mos	0.90	0.92	5,202	60,343	578	6,705	325	3,771	208	2,414	145	1,676	106	1,231	52	603
Measles coverage	12-23 mos	0.80	0.85	9,248	107,277	1,028	11,920	578	6,705	370	4,291	257	2,980	189	2,189	92	1,073
OPV3 coverage	12-23 mos	0.90	0.92	5,202	60,343	578	6,705	325	3,771	208	2,414	145	1,676	106	1,231	52	603
BCG coverage	12-23 mos	0.95	0.97	2,746	31,848	305	3,539	172	1,990	110	1,274	76	885	56	650	27	318
TT2 coverage (pregnancy)	0-11 mos	0.80	0.90	4,624	53,638	514	5,960	289	3,352	185	2,146	128	1,490	94	1,095	46	536
Vit A coverage	0-23 mos	0.70	0.80	12,138	70,400	1,349	7,822	759	4,400	486	2,816	337	1,956	248	1,437	121	704
Iodized salt consumption	HH	0.50	0.03-0.05	14,450	14,450	1,606	1,606	903	903	578	578	401	401	295	295	145	145
Use of ORT in diarrhoea (15 d)	Dia. < 5 yrs	0.70	0.80	16,800	389,760	1,867	43,307	1,050	24,360	486	11,264	337	7,822	343	7,954	168	3,898
Use of ORT in diarrhoea (30 d)	Dia. < 5 yrs	0.70	0.80	12,138	140,801	1,349	15,645	759	8,800	486	5,632	337	3,911	248	2,873	121	1,408
Percent low weight/age	All < 5 yrs	0.10	0.08	5,202	12,069	578	1,341	325	754	208	483	145	335	106	246	52	121
Safe water	Population	0.80	0.86	46,240	9,248	5,138	1,028	2,890	578	1,850	370	1,284	257	944	189	462	92
Sanitation	Population	0.85	0.92	36,848	7,370	4,094	819	2,303	461	1,474	295	1,024	205	752	150	368	74
ANC	Mother of 0-23 mos	0.6	0.65	13,872	80,458	1,541	8,940	867	5,029	555	3,218	385	2,235	283	1,642	139	805

APPENDIX 3

QUESTIONNAIRE
HEALTH SURVEY
FIRST ROUND

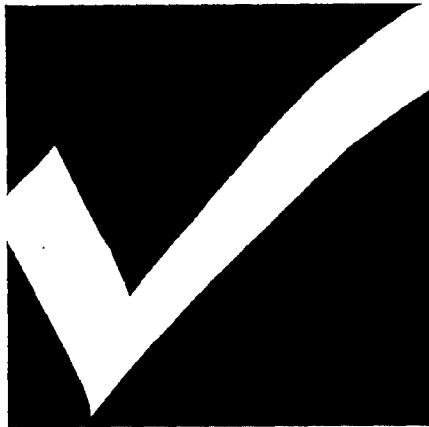
JULY – AUGUST 1995

HEALTH STATUS

HEALTH SERVICES

HEALTH BEHAVIOR

***(WITH HANDBOOK FOR USAGE
OF QUESTIONNAIRES)***



MINISTRY OF PUBLIC HEALTH

CONDUCTED BY

ALL PROVINCIAL PUBLIC HEALTH OFFICES

UNDER TECHNICAL SUPPORT OF

**DEPARTMENTS OF HEALTH, COMMUNICABLE DISEASE CONTROL,
MEDICAL SERVICES, MEDICAL SCIENCES, FOOD AND DRUG ADMINISTRATION**

HEALTH SYSTEMS RESEARCH INSTITUTE

JOINT FUNDING FROM UNICEF

ADVISE ON USAGE OF QUESTIONNAIRES

This set of questionnaires is divided into 2 essential parts namely :

1. questions for conducting survey,
2. explanation on usage (handbook)

These 2 parts will appear simultaneously.

Before using the questionnaire, the interviewer should have full understanding of the 3 stages involved in administering

1. selection of households within each cluster whereby the survey will be undertaken,
2. selection of the right questionnaire to be interviewed out of the 5 different set of questionnaires,
3. screening the households by using the screening form.

(CLUSTER)

1. One cluster means a group of 75 households.
2. If possible the interviewer should be outside officials with a village health volunteer guiding the team while working in the field with area mapping.
3. Prepare a list of households by address no./sampling no. based on fact as a sample household need not be officially registered nor having the official household address.
4. Select 1 initial household by drawing lot from the household list in no.3.
5. Begin the survey (interview) the initial household, following by a 2nd household which is in its closest vicinity and further to a 3rd household which is closest to the 2nd household.
6. Continue to interview the successive households under the former approach which is choosing the nearest household of the one already interviewed.

7. In case there is more than 1 household close by with similar distance from the one already interviewed, selection is to be made through drawing lot.
8. After interviewing the initial household, continue the survey along the foresaid manner until completing all 75 households in the cluster.
9. A household being deserted or without any inhabitant, whether with address no. or not (e.g. in the case of building a wooden house for the sole purpose of selling) should be left out on the contrary a household without address no. but within which there are permanent inhabitants should be included in the survey.
10. In case there are more than 75 households in any cluster, the survey should cover only 75 households along the procedure specified in no.4-8. If the number of households in any cluster is less than 75, the nearest households in the surrounding village should be interviewed along the foresaid manner until achieving the required number.

SELECTING THE RIGHT QUESTIONNAIRE AMONG 5 SETS

1. There are 5 different type of questionnaires namely :
 - 1.1 Screening form S for household screening and selection of corresponding questionnaire.
 - 1.2 Form A data on household members, health related welfare, living conditions.
 - 1.3 Form B household data (e.g. clean water, sanitation) food, drugs, household accident, incidences of diarrhea, respiratory diseases, children 0-59 months.
 - 1.4 Form C data relating to infants aged 0-11 months e.g. pre-natal care, breast feeding, etc.
 - 1.5 Form D data relating to children aged 12-23 months e.g. pre-natal care, breast feeding, immunizations, etc.
2. Eventhough the sample households amounted to 75 major interviews will cover only a few households (15-30 households per cluster) through screening Form S.

- 3 For all of the 75 sample household, screening Form S is to be administered enquiring whether there is any children under 5 years of age (0-59 months) and record in the table contained in Form S which will show that :
 - 3.1 which household is selected
 - 3.2 what kind of questionnaires to be used for each selected household

Each participating province could add more questions as may deem useful within the questionnaires

1. *Form A general data, ask all households interviewed by using Form B, C or D*
2. *Form B household data*
3. *Form C data relating to infants aged 0-11 months and the mother e.g. infantile diseases, child care, services received, etc.*
4. *Form D similar to that of Form C but data relating to children aged 12-23 months*

- 4 Selection of questionnaires to be interviewed (please refer to Form S)
 - 4.1 Household No.1,6,11...71 (every fifth household) use Forms A and B
 - 4.2 Household with infant aged 0-11 months (regardless of number) use Forms A and C
 - 4.3 Household with children aged 12-23 months (regardless of number) use Forms A and D
 - 4.4 Household with multiple characters (4.1, 4.2 and/or 4.3 use all corresponding forms

Example : in case within household no.41, there are one 0-11 month infant and two 12-23 month children living, Forms A,B,C and D should be used

- 5 Characteristics of households that are to be interviewed.
 - 5.1 Every household whose running number ends with 1 and 6 must be interviewed using Forms A and B. If any of these households has infant aged 0-11 months and/or children aged 12-23 months Forms C and/or D must also be applied.
 - 5.2 All other households whose running numbers end with other numbers will be selectively interviewed - only those with 0-11 month infant and/or 12-23 month children are to be interviewed using Forms A, C and/or D whatever the case may be.
 - 6 After completion of the foresaid survey, all data related to the cluster are to be compiled.
-

In case of household found without any inhabitant

This survey should be conducted only in the case where there are permanent inhabitants in the household, if not the case Form S should not be used.

Household No. X1 and X6

Taken this household as No.1 within the total no. of 75 using Form S but for the succeeding households (X2 or X7) Forms A and B should be applied (if there are children in these households Form C or D should also be used).

If the interviewer could not find any inhabitant at first visit, at least 1 revisit must be made.

Households under other numbers

Ask the neighbor whether or not there are children aged 0-59 months in the household.

If the answer is no., the household should be taken as one of the 75 households in Form S, fill in the form and continue the succeeding survey.

If the answer is yes, come back at least once for revisiting. If there is still nobody in the house it should be deleted from form S and survey the nearest house of household No.75 (household No.76) for replacement,

Screening Form S

One screening Form S is used per 1 cluster.

Form S is used to screen the households as follows :

1. which household must be interviewed and which one needs not be interviewed.
2. screening is based upon 2 criteria :
 - ☐ whether or not the running number of the household ends with 1 or 6,
 - ☐ whether or not the household has 0-11 month old infant and/or 12-23 month old children and/or 0-59 month old
3. for each household to be interviewed, what type or types of questionnaires are to be used and mark the corresponding letter in the column "questionnaires" (see details under the heading "selection of questionnaires")

Form S will compile data of 3 target groups (infants 0-11 month, children 12-23 month and children 0-59 months) and common characteristics of households within each cluster.

SUMMARY OF SCREENING METHOD

1. All households whose running number ends with 1 and 6 must be interviewed using at least Form A and B and in the case that they have 0-11 month infant and/or 12-23 month children as household members, Forms C and/or D should also be used.
2. Households whose running numbers are other than 1 and 6, only those which have 0-11 month infant and/or 12-23 month children should be interviewed, using Forms A, C and/or D whatever the case may be.

Question Is there any under 5-year old children (0-59 months) in this household ? If the answer is yes, how many ? (and fill in the number of children in each household in this form). As for the column, "type of questionnaires" please circle the one or ones to be used for each household.

No. of household	No. of address	No. of 0-11 month infant	No. of 21-23 month children	No. of 0-59 month children	Type of questionnaires	Remarks
If yes, select	⇒	A + C	A + D		⇒ ↓ ↓	
1					A B C D	
2					A C D	
3					A C D	
4					A C D	
5					A C D	
6					A B C D	
7					A C D	
8					A C D	
9					A C D	
10					A C D	
11					A B C D	
12					A C D	
13					A C D	
14					A C D	
15					A C D	
16					A B C D	

No. of house- hold	No. of address	No. of 0-11 month infant	No. of 21-23 month child- ren	No. of 0-59 month child- ren	Type of question- naires	Remarks
If yes, select ⇒		A + C	A + D		⇒ ↓ ↓	
17					A C D	
18					A C D	
19					A C D	
20					A C D	
21					A B C D	
22					A C D	
23					A C D	
24					A C D	
25					A C D	
26					A B C D	
27					A C D	
28					A C D	
29					A C D	
30					A C D	
31					A B C D	
32					A C D	
33					A C D	
34					A C D	
35					A C D	

No. of household	No. of address	No. of 0-11 month infant	No. of 21-23 month children	No. of 0-59 month children	Type of questionnaires	Remarks
If yes, select	⇒	A + C	A + D		⇒ ↓ ↓	
36					A B C D	
37					A C D	
38					A C D	
39					A C D	
40					A C D	
41					A B C D	
42					A C D	
43					A C D	
44					A C D	
45					A C D	
46					A B C D	
47					A C D	
48					A C D	
49					A C D	
50					A C D	
51					A B C D	
52					A C D	
53					A C D	
54					A C D	
55					A C D	

No. of house- hold	No. of address	No. of 0-11 month infant	No. of 21-23 month child- ren	No. of 0-59 month child- ren	Type of question- naires	Remarks
If yes, select	⇒	A + C	A + D		⇒ ↓ ↓	
56					A B C D	
57					A C D	
58					A C D	
59					A C D	
60					A C D	
61					A B C D	
62					A C D	
63					A C D	
64					A C D	
65					A C D	
66					A B C D	
67					A C D	
68					A C D	
69					A C D	
70					A C D	
71					A B C D	
72					A C D	
73					A C D	
74					A C D	
75					A C D	

SUMMARY OF CLUSTER'S DATA (CLUSTER)

Households interviewed by using Forms A, B, C or D	No of 0-11 month infants	No of 12-23 month children	No of 0-59 month children	No. of questionnaires used
TOTAL <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> Households </div>	<div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> </div>	<div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> </div>	<div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> </div>	A = <div style="display: flex; align-items: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> copies B = <div style="display: flex; align-items: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> copies C = <div style="display: flex; align-items: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> copies D = <div style="display: flex; align-items: center; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> copies
No. of households left out _____ households				

CHARACTERISTICS OF CLUSTER (CLUSTER)		
CLUSTER No. <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> </div>	Date of survey From _____ To _____	1. Municipality 2. Sanitary district 3. Rural area
No. of villages <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 5px;"></div> </div> </div>	Distance from : provincial headquarter _____ km	Supervisor _____

Form A

Use 1 copy of Form A per 1 household
Ask a representative of the household
who knows about health conditions

basic information, welfare, illnesses, living condition,
usage of service, information received, health volunteer

HOUSEHOLD DATA

No. of provinces <input type="checkbox"/> <input type="checkbox"/> No. of cluster <input type="checkbox"/> <input type="checkbox"/>	No. of household <input type="checkbox"/> <input type="checkbox"/> <hr/> Address _____ 0=without address	Date of survey ____ / ____ / 1995
Name of interviewer _____ No. of interviews made _____	Name of household's head _____	No. of household members in official registration form No. _____ not registered
Type of house 1. single house 2. slum congested area 3. town house 4. condominium 5. factory's lodge 6. government housing 7. others	Type of questionnaires used (circle the one/ones used by the interviewer) A B C D	(To be used by supervisor) Interview results 1. complete 2. not complete 3. not undertaken

TIPS FOR INTERVIEWING

We are from the provincial public health office. Today we would like to interview members of this household in order to obtain useful data for upgrading the health services for the people.

Questions will be asked about the health conditions of this household with particular emphasis on maternal and child health. The time requires for overall interview is 30 minutes.

First of all we would like to interview a representative of this household who knows about health conditions in general and later we would like to interview all women who have under 5-year old children in this house.

*Select the household member who knows
about health conditions in general
Circle the correct answer or fill in the blank*

Interviewee

Age _____ years

Sex 1. Male 2. Female

Educational Background 1. primary education or lower

2. secondary education

3. diploma/certificate

4. bachelor degree or higher

LIST OF HOUSEHOLD MEMBERS

Interview a representative of each household
on welfare, birth control, status of living, illnesses

Interviewer : record the name and information concerning
each household member who are permanent
resident in the tables,
circle only one corresponding number
(1,2,3....) or fill in the blank space the data
for each person.

Advise for interviewer

1. Name : record only the names for references during the successive stages of interviewing.
2. At first divide the household members by sex and then make the list by age, starting from the highest to the lowest age.
3. The age of each household member who is more than 5 years should be counted by subtracting the current calendar year with the year of birth and fill in the form.
4. As for the 0-59 month old children, note the age by month and one corresponding code (1,2 and 3). When using the age code 1 and 2 it means that Form C and/or Form D will be used for this household.
5. For the entitled welfare schemes, select the one most frequently used whereas for the corresponding code number.
6. As for sicknesses, count only severe ones which need at least 1 day sickness leave for adults and 1-day rest for children and jobless persons, and only those which occurred within the past 1 month. In case a household members fell sick in a number of times, only the most serious one will be counted. (interview only the household no. ending with 1 or 6)

LIST OF HOUSEHOLD MEMBERS WHO ARE PERMANENT RESIDENTS

No.	Name	Sex	Age		Welfare scheme when sick	Status of living		sicknesses occurred within the past 1 month (only x1 and x6)
CODES →		1=female 2=Male	1 = 0-11 m. 2 = 12-23 m. 3 = 24-59 m.	specify (yrs.)	1. civil servant, pensioner, state enterprise, dependents 2. social insurance 3. workmen compensation fund 4. private insurance 5. private employer contracted service 6. health card 7. low income card, social welfare, veteran welfare and other state welfare 8. health insurance for school children 9. child and old age welfare 10. none	1. name appears in house registration 2. name does not appear in house registration	1. lived in the house for less than 6 months 2. lived in the house more than 6 months	0. not sick 1. accident, injury 2. heart disease, coronary diseases, paralyze, partially paralyzed 3. cancer, tumor 4. asthma, allergies, allergic to food and drugs, rashes 5. respiratory tract infections 6. diarrhea, food poisoning 7. poisoning, use toxic substances, self injured, assaulted 8. others 9. don't know
1		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
2		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
3		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9

No.	Name	Sex	Age		Welfare scheme when sick	Status of living	sicknesses occurred within the past 1 month (only x1 and x6)
4		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
5		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
6		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
7		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
8		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
9		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
10		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
11		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
12		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
13		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9
14		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2 1 2	0 1 2 3 4 5 6 7 8 9

No.	Name	Sex	Age		Welfare scheme when sick	Status of living		sicknesses occurred within the past 1 month (only x1 and x6)
15		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
16		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
17		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
18		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
19		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
20		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
21		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
22		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
23		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9
24		1 2	1 2 3		1 2 3 4 5 6 7 8 9 0	1 2	1 2	0 1 2 3 4 5 6 7 8 9

**Basic information, usage of services, information received,
health volunteer**

1. What is the major occupation of the household head ?
 1. agriculture
 2. government service, state enterprise
 3. driver, transport good, communication
 4. factory worker
 5. trade
 6. others
 0. jobless
 9. don't know
2. What is the educational background of the household head?
 1. primary education
 2. secondary education, pre-university
 3. certificate/diploma
 4. bachelor degree or higher
 0. not educated
 9. don't know
3. What is the average monthly income of the household head?
 1. Baht 2,000 or less
 2. Baht 2,001-8,000
 3. Baht 8,001-15,000
 4. Baht 15,001 - 20,000
 5. Baht 20,001 and over
 9. do not know
4. Leaving this household for the nearest health service center (whichever type, public as well as private) should ordinary vehicle is used for transportation, how much time is required to reach the destination.

_____ hrs. _____ minutes

5. In case of minor illnesses like common cold, diarrhea, what kind of curative services this household sought for?
 1. buy drug at drugstores
 2. consult health volunteer of community PHC center
 3. health center, municipal health center
 4. community hospital
 5. general hospital or other government hospitals
 6. private hospital
 7. private clinic
 8. monk, indigenous doctor, traditional healer, Tamboon doctor
 9. not seeking any service/self care
 0. don't know

6. During the past 1 month did you receive any information or did anyone tell you about AIDS ?
 1. yes
 0. no

7. From which source did you receive the AIDS Information most frequently?

1. TV	2. radio
3. newspaper	4. periodical/magazine
5. poster, photo, leaflet	6. village landspeaker
7. others	
0. have not received any information	
9. don't know	

8. Who told you most about AIDS?

1. doctor/nurse at hospital	
2. doctor/nurse at other places	
3. health center staff	4. health volunteer
5. household member	6. neighbor
7. peer	8. others
0. nobody	9. don't know

9. Through the following which one could cause transmission of AIDS?

	no	yes	don't know
blood transfusion	1	2	9
sexual intercourse	1	2	9
mosquito bite	1	2	9
syringe	1	2	9
pass from mother to child during pregnancy	1	2	9
kiss	1	2	9

10. In this village or cluster is there any health volunteer?

1. yes (continue to No.11)
2. yes but don't know her/him in person (end of interview)
0. no (end of interview)
9. don't know what is a health volunteer (end of interview)

11. When was the last time the health volunteer give advise or inquire about health of household members?

1. within the past 1 month
2. before the past 1 month
3. never give advice, do not remember
9. don't know

12. When was the last time you yourself or other family members consulted or requested for assistance (e.g. checking a child's weight) from the health volunteer

1. within the past 1 month
2. before the past 1 month
3. never give advice, do not remember
9. don't know

End of Form A

No. of province ☐☐ No. of cluster ☐☐ No. of household ☐☐
Interviewer: please make sure the no.'s of province, cluster and
household correspond to those appearing in Form A
(page A1)



Interview only households whose running no.'s end with 1 or 6

Interview a representative of each household on

clean water, sanitation, food, drug, accident

women 15-49 years of age, health of 0-59 month children,

child mortality

Record only 1 answer which corresponds to real action or
observations (except for the items which allow multiple
answers.)

Select the household member who assumes role in health
care for interviewing.

Circle the answer or fill in the blank

CLEAN WATER-SANITATION

1. What is the major source of drinking water for this household?
 1. rain water
 2. municipality, sanitary district water work
 3. piped water
 4. underground water
 5. sanitary well
 6. unsanitary well
 7. pond, river, brook
 8. water from the truck or brought for sale
 9. treated or bottled water
 10. others

2. Has the drinking water (as specified in no.1) been boiled before drinking?
 1. yes
 2. no

3. Is the drinking water from the above source adequate all year round?
 1. quite adequate but not all year round (continue to no.4)
 0. yes (skip to no.7)
 9. don't know (skip to no.7)

4. Which of the following months whereby drinking water is found inadequate?
(circle the corresponding months, could be more than 1)
 Jan.....Dec.
 1 2 3 4 5 6 7 8 9 10 11 12

5. In case of shortage of drinking water, from which source does the household seek for additional supply?
 1. rainwater
 2. municipality, sanitary district water work
 3. piped water
 4. underground water
 5. sanitary well
 6. unsanitary well
 7. pond, river, brook
 8. water from the truck or brought for sale
 9. treated or bottled water
 10. others

6. Has the additional drinking water obtained from the source (as specified in no.5) been boiled before drinking
 1. yes
 2. no

7. In general do you (the respondent) wash your hands with soap before having a meal?
 1. mostly
 2. mostly but do not use soap
 3. sometimes
 4. rarely
 9. no answer

8. What kind of latrine being used in this household?
(could give more than 1 answer.)
- | | |
|---|--------------------------|
| 1. flush toilet | 2. water flushed latrine |
| 3. close pit | 4. open pit |
| 5. latrine constructed upon the bank of river/canal | |
| 6. other type of latrines | 0. no latrine |
9. Is there any member in this household who did not use the latrine?
- | | | |
|--------|-------|---------------|
| 1. yes | 2. no | 9. don't know |
|--------|-------|---------------|
10. On the whole how does this household dispose the garbage from cooking?
- | |
|---|
| 1. compile and dispose through municipality or sanitary district garbage disposal service |
| 2. burnt |
| 3. buried |
| 4. dispose in the river or canal |
| 5. dispose at garbage mound close to the house |
| 6. others |
| 9. don't know, no answer |

FOOD AND DRUG

Interviewer please have the logo "ဝဏ္ဏ" of FDA for reference during interview

1. Do you know the "ဝဏ္ဏ" logo?
 1. yes
 2. no
2. Do you know the meaning of having the logo "ဝဏ္ဏ" of FDA affixed on food or food products?
 1. the food is nutritious
 2. the food is safe
 3. the food meets the set standard
 4. other
 9. don't know
3. During the past 1 month how many times did you purchase drugs for the family?
 1. _____ times
 0. did not purchase
4. Apart from prescribed drugs where did the family purchase drugs?
 1. pawn shop
 2. mobile vendor
 3. drug cooperative, health volunteer, community PHC center
 4. drugstore
 5. hospital/clinic
 6. health center/ municipal health center
 7. others
 9. don't know
5. When purchasing drug, did you got the kind of drugs you select or those recommended by the seller?
 1. self selected drugs
 2. drugs recommended by sellers
 3. both self selected drugs and those recommended by sellers
 9. don't know

ACCIDENTS

1. During the past 1 month what is the total no. of accidents occurred to all household members (each member might have had more than 1 accident episode)

total no. of accidents _____

0 = no accident occurred
99. don't know
2. During the past year what was the most recent and most severe accident occurred to household members which resulted in more than 1 day hospitalized?

1. road accident	2. accident occurred in the house
3. accident in the office	4. others
0. no accident (skip to no.4)	9. don't know
3. What is the age of the person where she/he had the accident subject to no.2? (in case there were more than 1 victim the most severe one is to be considered)

1. less than 5 years	2. 5-14 years
3. 15-24 years	4. 25-59 years
5. over 60 years	9. don't know
4. How many disabled (persons with physical deformity, malfunctioned, unable to function like normal person), mentally retarded (could not attend compulsory education) and heavy drinkers are there in this household?

No. of disabled persons _____
 No. of mentally retarded persons _____
 No. of heavy drinkers _____

Accident means unexpected, unintended and sudden injuries e.g. falling from a tree, finger cut by machine, fall, burnt, electric shock, cut by knife, hit by car, etc. Accidents in no.1 refer to casual ones whereas those referred to in no.'s 2 and 3 mean severe accidents which resulted in more than 1 day hospitalized.

15-49 YEARS OLD WOMEN

Interviewer interview all 15-49 years old women living in the household about child bearing, taking the name from the list of household members (Form A) and record in the table in the next page

1. Ask the questions below and record the answers in the table
2. Use the corresponding code numbers for recording
3. In interviewing about pregnancy history for the past 5 years, further probing might be essential to ensure accurate information about infant/child mortalities.
4. The concerned province should assign health professionals to verify the real cause of infant mortality
5. In the column "spouse" having a spouse means a couple living openly together (not necessarily with marriage registration).

Questions (record the answers in the table)

1. For each 15-49 years old woman ask how many living children they have (her children may be over 5 years old, living or not living with her)
2. During the past 5 years, which one had delivered babies and how many times?
3. Who had delivered babies during the past 5 years but the babies were dead.
(record no. of deaths and stillbirths for babies borned within the past 5 years)
4. When the baby died how old was she/he? (select the corresponding code no.)
In case any women lost more than 1 child record the age at death of the next child in the next line and note that she/he was born to the same mother.
5. Of all women which one had a spouse and whether they are living together
6. Does each woman practise birth control and by which method (ask only the one living with a spouse)

Characteristics of pregnancy termination

Livebirth means baby who cries, breathes or move her/his body after birth even for a short period

Stillbirth means baby who does not cry, breathe nor move after birth which occurred after 28th week of pregnancy

			No.of	record of deliveries during the past 5 years					
Code →			(คน)	(คน)	(คน)	1. within 7 days after birth 2. 8 days-1 month 3. 1-11 months 4. 12-59 months 9. don't know	(คน)	1. living together 2. not living together 3. no spouse	1. oral pills 2. injectable contraceptive 3. IUD 4. female sterilization 5. vasectomy 6. implantation 7. condom 8. natural method or others 9. don't know 0. never use
	1					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0
	2					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0
	3					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0
	4					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0
	5					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0
	6					1 2 3 4 9		1 2 3	1 2 3 4 5 6 7 8 9 0

HEALTH CONDITION OF 0-59 month children

No. of 0-59 month children in this household _____
(please refer to Form A)

if there is no 0-59 month children, end of Form B

if there is 1 child or more, continue the interview
the following questions are about health conditions
of 0-59 month children

1. During the past 2 weeks how many episodes of diarrhea affected the children in this household (count the total figures for all children and note that each one might be affected more than once)

Total no. _____

0. no child with diarrhea

Diarrhea means liquid bowels passing 3 times or more within 24 hours or in case of watery bowel with blood mucous even once within 24 hours

2. During the past 6 months did any child in this household suffer from diarrhea?

1. yes (continue to no.3)

0. no (skip to no.6)

9. don't know (skip to no.6)

3. When the child is affected with diarrhea, how much is food given to her/him?

1. more than usual

2. same as normally given

3. less than usual

4. no feeding at all

9. don't know

4. When the child is affected with diarrhea how much is soft diet like soup, clear rice soup, ORS, water breast milk, bottle milk, given to her/him?

1. more than usual

2. same as normally given

3. less than usual

9. don't know

5. For the last time that the child was affected with diarrhea, was she/he given ORS properly diluted in water?

1. yes

2. no

9. don't know

6. For the past 1 month, how many times did the child fall sick with fever and cough which might be accompanied with running nose, sore throat, loose bowel or rashes (might have more than 1 accompanying symptom)
No. of times the child had fever and cough with such accompanying symptom _____
7. During the past 6 months was any child fall sick with fever and cough subject to no.6 for more than 5 days?
1. yes (continue to no.8)
2. no (end of Form B)
9. don't know could not remember (end of Form B)
8. When the child fell sick with fever and cough for more than 5 days where did you usually take her/him for treatment.
1. buy drugs at drugstores
2. health center, municipal health center
3. general hospital/other government hospital
4. private clinic
5. monk/indigenous doctor/traditional healer
0. no treatment
9. don't know
9. When the child fell sick with fever and cough subject to no.6 for more than 5 days was she/he given antibiotics or anti-infections in the last episode of illness?
1. yes 0. no 9. don't know
(interviewer may want to see the drug or ask for additional information like whether it is taken before meal or it is to be diluted with water)

End of Form B

No. of province ☐☐ No. of cluster ☐☐ No. of household ☐☐

Interviewer: please make sure the no.'s of province, cluster and household correspond with those appearing in Form A (page A1)



Interview only the households with 0-11 month child

Interview the mother of the 0-11 month child or her representative on pre-natal care, maternal health, tetanus toxoid, breast feeding

Interviewer :

- 1) Ask for every 0-11 month child in the household by checking the names of household members in Form A. Then interview the mother or her representative.
- 2) Write down the names of mother and child as of Form A. There might be more than 1 mother with 0-11 month child living in the same household. 1 mother and 1 child constitutes one pair of mother-child.
In case of a twin or more than one 0-11 month child born to the same mother, interview is to be made by each pair.
Example: Mrs. Somying have 5 children, a boy Kwaen (12 yrs.) a girl Kaew (4 yrs.) a girl Kluoi (16 m.) and a twin Kheng (boy) and King (girl) 9 month old. Mrs. Somying with her twin Kheng and King will be recorded in Form B as two pairs of mother-child.
- 3) Ask whether the mother had a note book recording her child immunization?
- 4) Ask question while also checking the notebook.
- 5) Record the sequence of immunization and compare with the pregnancy history.
- 6) In case the child lives in the household but the mother lives elsewhere, ask another person in place of the mother. But, if the mother lives in the household while the child lives elsewhere there is no need to interview such a pair.

*Interview and circle the answer or fill in the blank space in column
"mother-child, 1st pair" and column "mother-child, 2nd pair"*

	↓	↓
	mother-child, 1st pair	mother-child, 2nd pair
	Name of mother _____ Name of child _____ Child's birthday _____ / ____ / 199 ____ respondent 1. mother 2. others child health handbook 1. yes 2. no	Name of mother _____ Name of child _____ Child's birthday _____ / ____ / 199 ____ respondent 1. mother 2. others child health handbook 1. yes 2. no
1. When you were expecting this child, did you have pre-natal examination? 1. yes (continue to no. 2) 0. no (skip to no. 5) 9. don't know (skip to no. 5)	1 0 9	1 0 9
2. Who gave you the advise to go for a pre-natal examination? 1. health volunteer 2. government health officer 3. private health service provider 4. family member 5. friend, others 6. nobody given advise 9. don't know	1 2 3 4 5 6 9	1 2 3 4 5 6 9
3. At which term of pregnancy did you go for the first pre-natal examination? 1 = 1st-6th month 2 = after the 6th 0 = did not go 9 = don't know	1 2 0 9	1 2 0 9
4. During the 7th-9th months of pregnancy did you go for a check-up every month? 1 = yes 0 = yes, but not every month 9 = don't know	1 0 9	1 0 9

	mother-child, 1st pair	mother-child, 2nd pair
5. During pregnancy did you receive any dental or gum check-up? 1 = yes 0 = no 9 = don't know	1 0 9	1 0 9
6. During pregnancy did your husband smoke cigarettes? 1 = yes 0 = no 9 = don't know	1 0 9	1 0 9
7. When you were expecting this child how many tetanus toxoid given to you at different time intervals as follows: 0 = not received 99 = don't know <u>during pregnancy</u> <u>before pregnancy but not more than 3 years prior to the date of delivery</u> <u>between 3-5 years prior to the date of delivery</u> <u>between 5-10 years prior to the date of delivery</u>	(No. of tetanus toxoid given) _____ _____ _____ _____ (fill in the no. for all the 4 periods)	(No. of tetanus toxoid given) _____ _____ _____ _____ (fill in the no. for all the 4 periods)
8. Where was your child born? 1. community hospital 2. general hospital/ regional hospital 3. other government hospital 4. health center 5. private hospital 6. midwifery clinic, private clinic 7. at home, others 9. don't know	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 9
9. Who was the one who helped delivering the child? 1. health personnel 2. trained traditional birth attendant (TBA's) 3. TBA's 4. others 9. don't know	1 2 3 4 9	1 2 3 4 9

	↓	↓
	mother-child, 1st pair	mother-child, 2nd pair
10. What was the child's birth weight? 1 = less than 2,500 gram 2 = 2,500 - 2,999 3 = 3,000 - 3,999 4 = 4,000 and over 9 = don't know	1 2 3 4 9	1 2 3 4 9
11. After delivery did you receive at least 2 post-natal examinations within 5 weeks? 0 = no 1 = yes 9 = don't know	0 1 9	0 1 9
12. Did you receive a post-natal examination within 5 weeks? 0 = no 1 = yes 9 = don't know	0 1 9	0 1 9
13. Was your child given any breast-feeding? 1. yes 0. no (skip to no.15) 9. don't know (skip to no.15))	1 0 9	1 0 9
14. When was your child first given breast-feeding? 1. immediately after birth 2. within 12 hours after birth 3. 12-35 hours after birth 4. after 36 hours or more 9. don't know	1 2 3 4 9	1 2 3 4 9
15. During the past 2 weeks was your child sick with diarrhea? 0 = no 1 = yes, 1 time 2 = yes, more than once 9 = don't know	0 1 2 9	0 1 2 9
16. When your child was sick with diarrhea last time, was she/he given ORS solution? 0 = no 1 = yes 2 = did not have diarrhea 9 = don't know (end of interview)	0 1 2 9	0 1 2 9

end of Form C

No. of province No. of cluster No. of household

Interviewer: please make sure the no.'s of province, cluster and household correspond with those appearing in Form A (page A1).



Interview only the households with 12-23 month child

Interview the mother of the 12-23 month child or her representative on pre-natal care, tetanus toxoid, breast feeding, child immunizations

Interviewer :

- 1) Ask for all 12-23 month children living in the household by checking the names of household members in Form A. Then interview the mother or her representative.
- 2) Write down the names of mother and child as of Form A. There might be more than 1 mother with 12-23 month child living in the same household.
1 mother and 1 child constitute a pair of mother-child.
In case of a twin or more than one 12-23 month child born to the same mother, interview is to be made by each pair.
Example: Mrs.Somying have 5 children, a boy Kasem(12 yrs.) a girl Kaew(4 yrs.) a girl Kluoi(16 m.) and a twin Kheng(boy) and King(girl, 9 month old. Mrs.Smorn, also living in the same household, has a daughter named Urai. In this case the interviewer must record both the 2 pairs.
Mr.Somying and her daughter Kluoi and Mrs.Smorn and her daughter Urai in Form D.
- 3) Ask whether the mother has a note book recording her child's immunization?
- 4) Ask question while also checking the notebook.
- 5) In case the child lives in the household but the mother lives elsewhere, ask another person in place of the mother. But, if the mother lives in the household while the child lives elsewhere there is no need to interview such a pair.

CHILD IMMUNIZATIONS

mother-child, 1st pair		mother-child, 2nd pair
Fill in history <div style="text-align: center;">⇒ ⇒ ⇒</div>	Name of mother _____ Name of child _____ Child's birthday ____/____/253____ Respondent 1.mother 2.others _____ Child health handbook 1.yes 2.no _____	Name of mother _____ Name of child _____ Child's birthday ____/____/253____ Respondent 1.mother 2.others _____ Child health handbook 1.yes 2.no _____
Interviewer: check record of immunizations from child health handbook and/or additional interview then circle the no. corresponding to the month receiving each type of vaccine.	Code for each month <div style="display: flex; justify-content: space-between;"> <div> 1 = January 3 = March 5 = May 7 = July 9 = September 11 = November </div> <div> 2 = February 4 = April 6 = June 8 = August 10 = October 12 = December </div> </div>	Example : <i>The child received DPT's in October 1979, December 1979 and March 1980, circle the corresponding no.'s 10,12 and 3 as follows:</i> 2536 → 1 2 3 4 5 6 7 8 9 <u>10</u> 11 <u>12</u> 2537 → 1 2 <u>3</u> 4 5 6 7 8 9 10 11 12 (The numbers in heavy print correspond to the period during the first year of the child's age.)
BCG	Date ____ Month ____ Year 199____ 0.not received 99.don't know	Date ____ Month ____ Year 199____ 0.not received 99.don't know
(BCG SCAR) 0 = no 1 = yes 9 = don't know did not meet the child	0 1 9	0 1 9

	mother-child, 1st pair	mother-child, 2nd pair
DPT 1,2,3	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know
OPV 1,2,3	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know
MEASLES	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know
Hepatitis B - 1	Date ____ Month ____ Year 199 ____ 0.not received 99.don't know	Date ____ Month ____ Year 199 ____ 0.not received 99.don't know
Hepatitis B - 2,3	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 - not received 99 = don't know	1979 → 1 2 3 4 5 6 7 8 9 10 11 12 1980 → 1 2 3 4 5 6 7 8 9 10 11 12 13 = after December 1980 0 = not received 99 = don't know

	Mother-child, 1st pair	Mother-child, 2nd pair
	circle the answer or fill in the blank space	
1. Where did the child usually have the immunizations? 1. health center/municipal health center 2. community hospital 3. general hospital/other government hospital 4. private hospital 5. private clinic 6. mobile unit 7. other 0. not received 9. don't know	1 2 3 4 5 6 7 0 9	1 2 3 4 5 6 7 0 9
2. When you were expecting this child, did you have any pre-natal examinations? 1. yes 0. no (skip to no.6) 9. don't know (skip to no.6)	1 0 9	1 0 9
3. Who gave you the advise to go for pre-natal examinations? 1. health volunteer 2. government health personnel 3. private health service provider 4. family member 5. friend, others 6. nobody given advise 9. don't know	1 2 3 4 5 6 9	1 2 3 4 5 6 9
4. At which term of pregnancy did you go for the first pre-natal examination? 1 = 1st to 6th month 2 = after the 6th month 0 = did not go 9 = don't know	1 2 0 9	1 2 0 9
5. During the 7th-9th months of pregnancy did you go for a check-up every month? 1 = yes 0 = yes but not every month 9 = don't know	1 0 9	1 0 9
6. During pregnancy, did you receive any dental or gum check-up? 1 = yes 0 = no 9 = don't know	1 0 9	1 0 9

	Mother-child, 1st pair	Mother-child, 2nd pair
7. When you were expecting this child how many tetanus toxoid given to you at different time intervals as follows: 0 = not received 99 = don't know <u>during pregnancy</u> <u>before pregnancy but not more than 3 years prior to the date of delivery</u> <u>between 3-5 years prior to the date of delivery</u> <u>between 5-10 years prior to the date of delivery</u>	(No. of tetanus toxoid given) _____ _____ _____ _____ (fill in the no. for all the 4 periods)	(No. of tetanus toxoid given) _____ _____ _____ _____ (fill in the no. for all the 4 periods)
8. What was the child's birth weight? 1 = less than 2,500 gram 2 = 2,500 - 2,999 3 = 3,000 - 3,999 4 = 4,000 gram and over 9 = don't know	1 2 3 4 9	1 2 3 4 9
9. After delivery did you receive at least 2 post-natal examinations within 5 weeks? 1 = yes 0 = no 9 = don't know	1 0 9	1 0 9
10. Did you receive a post-natal examination within the 6th week after delivery? 1 = yes 0 = no 9 = don't know	1 0 9	1 0 9
11. Was your child given any breast feeding? 1. yes 0. no (skip to no.16) 9. don't know (skip to no.16)	1 0 9	1 0 9
12. When was your child first given breast feeding? 1. immediately after birth 2. within 12 hours after birth 3. 12-35 hours after birth 4. after 36 hours or more 5. don't know	1 2 3 4 5	1 2 3 4 5

	Mother-child, 1st pair	Mother-child, 2nd pair
13. What was the length of breast-feeding during which no other feedings were given? 0. less than 7 days 1. 1 week - 1 month 2. 2 months 3. 3 months 4. 4 months 5. longer than 4 months 9. don't know	0 1 2 3 4 5 9	0 1 2 3 4 5 9
14. Is the child still being breast fed? 0 = no, already weaned (continue to no.15) 1 = yes (skip to no.16) 9 = don't know	0 1 9	0 1 9
15. What was the age of the child at weaning? (no. of months) 0 = when he was a newborn baby 99 = don't know	(no. of months) _____	(no. of months) _____
16. During the past 2 weeks was your child sick with diarrhea? 0 = no 1 = yes, 1 time 2 = yes, more than once 9 = don't know	0 1 2 9	0 1 2 9
17. When your child was sick with diarrhea last time was she/he given ORS solution? 0 = no 1 = yes 2 = did not have diarrhea 9 = don't know (end of interview D)	0 1 2 9	0 1 2 9

end of Form D

APPENDIX 4 Percentage of Target Population

Area	children aged 0-11 month	children aged 0-59 months	women aged 15-44 years	population aged over 60 years
Whole country	2.77	7.76	25.63	9.48
Urban	2.76	7.74	27.81	9.75
Rural	2.77	7.76	24.37	9.42
Central	2.82	7.97	27.55	10.74
Region 1	3.04	7.77	29.80	10.57
Region 2	2.23	7.11	23.74	11.36
Region 3	3.21	8.05	29.06	10.35
Region 4	2.82	9.07	31.51	10.66
North East	2.71	7.58	23.36	7.97
Region 5	2.99	7.85	24.11	9.13
Region 6	2.21	6.66	21.83	5.80
Region 7	2.76	8.01	25.33	8.33
North East	2.87	7.56	26.88	12.47
Region 8	4.64	11.94	38.89	17.64
Region 9	2.33	6.78	24.95	11.30
Region 10	2.80	7.04	26.78	12.03
South	2.76	8.21	24.05	8.74
Region 11	2.67	7.64	26.12	9.32
Region 12	2.85	8.71	23.32	8.22

(n=264,368)

APPENDIX 5 Percentage of Ante-natal Care Attainment, Post-natal Care Attainment, and Low Birth Weight (<2,500gm.)

Areas	Ante-natal care Attainment	Post-natal care Attainment	Low Birth Weight (<2,500 gm.)
Whole country	81.63	56.17	7.25
Central	83.11	57.34	6.73
Region 1	85.51	63.72	6.31
Region 2	79.30	52.20	8.67
Region 3	82.26	52.48	6.37
Region 4	86.47	64.88	5.46
North East	86.01	50.50	7.38
Region 5	84.00	44.01	8.18
Region 6	86.34	49.92	6.60
Region 7	88.58	60.54	6.96
North East	87.16	61.51	8.85
Region 8	83.57	53.96	7.74
Region 9	86.15	61.58	8.86
Region 10	89.05	63.98	9.25
South	82.18	55.82	6.17
Region 11	86.81	60.17	6.45
Region 12	78.79	52.70	5.97

Provinces	Ante-natal care Attainment	Post-natal care Attainment	Low Birth Weight (<2,500 gm.)
Samutprakarn	90.40	67.16	5.97
Pranakornsriayudthay	81.11	62.96	5.96
Angthong	82.00	54.67	8.13
Lopburi	78.06	41.52	12.46
Singhburi	87.09	68.02	7.68
Chainart	81.63	51.09	7.42

Provinces	Ante-natal care Attainment	Post-natal care Attainment	Low Birth Weight (<2,500 gm.)
Saraburi	78.62	57.12	7.28
Cholburi	82.64	53.02	7.30
Rayong	85.25	53.68	5.79
Chantaburi	86.14	49.09	7.45
Trad	90.45	74.33	4.89
Chahceingsao	84.20	58.35	4.38
Prajinburi	78.78	57.64	6.42
Nakornnayok	83.29	60.56	5.10
Srakeaw	72.93	35.16	6.80
Nakornrajsrima	85.64	50.63	6.83
Burirum	82.90	47.49	10.50
Surin	84.77	53.63	8.52
Srisaket	80.72	31.04	6.87
Ubolrajthani	88.15	62.98	6.92
Yasothon	85.91	43.93	6.66
Chaiyapum	85.78	29.77	9.17
Nongbualumpoo	87.76	38.58	6.10
Khonkhen	85.67	49.30	6.69
Udonthani	88.56	64.31	6.14
Leoi	80.94	24.14	8.50
Nongkai	87.00	51.24	5.97
Mahasarakarm	88.50	69.73	6.99
Roi-et	90.47	59.64	5.27
Kalasin	89.24	58.33	6.89
Nakornpanom	90.52	72.15	9.88
Mugdaharn	83.20	52.61	7.59
Cheingmai	89.65	62.66	11.13
Lumpang	88.96	63.14	9.98
Utaradit	83.40	55.26	8.66
Nan	93.08	70.43	7.71

Provinces	Ante-natal care Attainment	Post-natal care Attainment	Low Birth Weight (<2,500 gm.)
Payoa	88.14	62.19	9.79
Cheingrai	90.21	76.29	6.03
Uthaitani	86.51	65.09	8.21
Kumpangpeth	80.00	47.97	7.25
Pitsanulok	85.69	64.61	9.94
Pichit	78.49	55.46	8.02
Kanchanaburi	81.77	56.78	5.84
Supanburi	77.86	53.57	7.65
Samutsakorn	92.70	73.55	4.74
Samutsonkram	85.59	57.56	9.03
Pechburi	82.58	67.37	5.89
Prachubkirikhan	84.87	57.28	5.56
Nakornsritumaraj	85.85	54.08	7.27
Krabi	83.82	70.30	5.66
Phang-Nga	88.35	62.22	5.10
Phuket	95.11	76.44	4.49
Ranong	85.01	53.88	5.99
Chumporn	89.58	71.40	7.36
Songkhla	82.51	56.52	5.69
Satoo	87.31	67.82	5.59
Patalung	89.55	59.68	8.24
Pattanee	69.11	48.93	4.37
Narathivas	69.83	36.21	6.43

(n=40197)

Note : There are 16 provinces having no qualified data for analysis

APPENDIX 6 Percentage of Households using safe
drinking water

Areas	% of Households
Whole Country	89.32
Urban	94.20
Rural	88.10
Central	94.80
Region 1	97.00
Region 2	97.00
Region 3	90.50
Region 4	96.60
North East	94.00
Region 5	92.70
Region 6	96.20
Region 7	93.50
North	83.80
Region 8	81.80
Region 9	87.50
Region 10	82.40
South	76.40
Region 11	81.40
Region 12	71.60

Provinces	% of Households
Pranakornsriayudthaya	94.90
Angtong	98.10
Lopburi	99.30
Singhburi	98.30
Chainart	94.50
Saraburi	96.10

Provinces	% of Households
Chonburi	96.00
Rayong	79.10
Chonburi	84.40
Trad	89.10
Chacheingsoa	97.80
Prachinburi	87.40
Nakornnayok	92.90
Nakornrajsrima	99.00
Burirum	97.10
Surin	88.20
Srisaget	71.10
Ubonrajchtani	91.70
Yasothon	94.50
Chaiyapum	99.90
Nongbualumpoo	98.90
Khonkhaen	97.80
Udonthani	93.90
Loi	97.70
Nongkai	94.10
Maharakam	99.70
Roi-et	99.60
Kalasin	94.60
Nakornpanom	84.20
Mukdahharn	77.00
Cheingmai	84.50
Lumpoon	85.60
Lumpang	85.00
Utradit	93.50
Prae	86.00
Nan	67.20
Payoa	76.20

Provinces	% of Households
Cheingrai	86.20
Maehongsorn	42.70
Uthaithani	92.20
Kumpaengpeth	76.80
Sukhothai	82.80
Pitsanulok	90.50
Pijit	96.50
Karnjanaburi	93.90
Supanburi	97.40
Nakornpathom	98.70
Samutsakorn	97.30
Samutsongkram	99.90
Petchburi	98.50
Prajaubkirikhun	93.80
Nakornsritummaraj	86.00
Krabi	50.40
Phang-nga	73.60
Phuket	79.30
Ranong	79.80
Chumporn	85.80
Songkhla	86.90
Satoo	75.80
Patalung	71.20
Pattanee	58.90
Narathivas	62.30

(n=57784)

Note : Data from 13 provinces were excluded from analysis

APPENDIX 7 Percentage of households using sanitary latrines

Areas	% of Households
Whole Country	95.70
Urban	98.40
Rural	95.10
Central	97.20
Region 1	97.90
Region 2	97.10
Region 3	97.40
Region 4	96.70
North East	95.60
Region 5	92.30
Region 6	97.60
Region 7	98.10
North	96.60
Region 8	95.70
Region 9	97.80
Region 10	96.30
South	92.20
Region 11	94.60
Region 12	89.70

Provinces	% of Households
Pranakornsriayudthaya	98.78
Angtong	99.05
Lopburi	97.88
Singhburi	99.55
Chainart	98.88
Saraburi	97.53

Provinces	% of Households
Chonburi	99.22
Rayong	97.73
Chonburi	98.43
Trad	96.10
Chacheingsoa	96.44
Prachinburi	97.10
Nakornnayok	94.32
Nakornrajsrima	94.52
Burirum	90.42
Surin	89.66
Srisaget	89.48
Ubonrajchtani	96.34
Yasothon	98.00
Chaiyapum	96.99
Nongbualumpoo	98.54
Khonkhaen	96.66
Udonthani	98.33
Loi	96.97
Nongkai	97.99
Maharakam	98.74
Roi-et	98.98
Kalasin	99.10
Nakornpanom	98.99
Mukdaharn	96.65
Cheingmai	95.39
Lumpoon	96.78
Lumpang	97.54
Utradit	98.86
Prae	99.31
Nan	99.44
Payoa	98.95

Provinces	% of Households
Cheingrai	98.22
Machongsorn	79.93
Uthaithani	99.67
Kumpaengpeth	92.96
Sukhothai	96.78
Pitsanulok	96.74
Pijit	95.70
Karnjanaburi	93.52
Supanburi	95.41
Nakornpathom	99.89
Samutsakorn	99.51
Samutsongkram	99.11
Petchburi	98.55
Prajaubkirikhun	92.51
Nakornsritummaraj	96.09
Krabi	83.29
Phang-nga	95.36
Phuket	98.10
Ranong	93.68
Chumporn	94.24
Songkhla	93.24
Satooon	91.22
Patalung	98.78
Pattanee	76.50
Narathivas	87.04

(n=57784)

Note : Data from 13 provinces were excluded from analysis

APPENDIX 8 Percentage of diarrhea episodes in under-fives give
increased fluids and continued feeding

Areas	Continued feeding	Increased fluids
Whole Country	95.91	25.18
Urban	95.00	23.40
Rural	96.10	25.50
Central	95.20	18.60
Region 1	94.60	21.00
Region 2	95.40	14.50
Region 3	95.00	18.40
Region 4	95.90	21.90
North East	96.10	29.10
Region 5	96.90	25.00
Region 6	95.80	25.60
Region 7	95.00	36.70
North East	96.00	22.40
Region 8	96.90	17.80
Region 9	95.50	23.00
Region 10	95.80	24.30
South	96.30	26.40
Region 11	96.20	27.00
Region 12	96.40	26.10

APPENDIX 9 Number of deaths of infants under-one year
of age per 1,000 live births

Area	Infant mortality rate
Whole Country	15.35
North	20.82
North East	15.54
Central	10.55
South	16.11