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# HEALTH SECTOR FINANCING PROJECT

Ministry of Health  
Republic of Indonesia

## CONSULTANT REPORT SERIES

### **REPORT 25:**

CONSULTANCY TO PROJECT  
IMPLEMENTATION  
OFFICE OF PHARMACEUTICALS  
DEPARTMENT OF HEALTH  
REPUBLIC OF INDONESIA



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A USAID-Sponsored Project in Collaboration with  
The International Science and Technology Institute, Inc.

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REPUBLIC OF INDONESIA

## REPORT 25:

CONSULTANCY TO PROJECT  
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REPUBLIC OF INDONESIA

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## ACRONYMS

<b>Balai POM</b>	Pengawasan Obat dan Makanan (Food and Drug Administration)
<b>BINKESMAS</b>	Bina Kesehatan Masyarakat (Director General for Community Health Development)
<b>DINKES</b>	Kinas Kesehatan (Provincial Health Office of Department of Home Affairs)
<b>MJM</b>	MJM Consultants
<b>PIO</b>	Project Implementation Office
<b>PusKesMas</b>	Pusat Kesehatan Masyarakat (sub district public health center)
<b>PWS</b>	Price Waterhouse Siddik
<b>Rumah Sakit Umum</b>	General Hospital

## I. INTRODUCTION

The Project Implementation Office for Pharmaceuticals at the Department of Health, Republic of Indonesia, is in the process of undertaking a multi-component study of drug management and use in Indonesia. The results of this study are to form the basis improving the efficiency of drug management and the effectiveness of drug use. This study is being conducted under the Health Sector Financing Project, supported by USAID/Jakarta and implemented by ISTI/Jakarta.

The need had been identified for a quantitative data management advisor to assist with the study. Specifically, the advisor was to assist the Director of the Project Implementation Office for Pharmaceuticals to monitor data entry, management and analysis for two study components: the drug management study and the manpower study. Other components of the study have been temporarily postponed.

Over the contract period (March 15 to June 30, 1989), services were performed on a part-time, as needed basis, but primarily immediately before and during the first data collection. The consultant worked most closely with Dr. Sihombing, formerly the Director of the Project Implementation Office for Pharmaceuticals, Dr. Tri Djoko, the designated counterpart Data Management Advisor, Mr. James A. Bates, the Study Logistics Advisor, Dr. Tom D'Agnes, Project Technical Coordinator and ISTI Chief of Party, and researchers from two contracted Indonesian consulting firms, MJM Consultants (MJM) and Price Waterhouse Siddik (PWS).

This report contains a description of activities conducted under this consultancy, including the report of field observations during data collection in West Sumatra. Because similar contracting arrangements may be made in the future, the report also discusses some major lessons learned from this experience.

## II. SCOPE OF WORK

The specific tasks to be carried out were as follows:

- Review all extant documentation and standardize formats for data collection instruments, coding procedures, computer data file structures and presenting analyzed data;
- Observe pilot test, evaluate the process of data collection, make recommendations for overcoming any deficiencies observed and assist the Director of the Project Implementation Office for Pharmaceuticals with final revisions of instruments;
- Oversee enumerator training and confirm that enumerators are prepared to collect data correctly at both the pilot test and regular data collection stages; and
- Observe data input and cleaning operations and assure that this work is being performed correctly.

Immediately prior to the start of this consultancy, plans for a pilot test were abandoned. The two implementors for the drug use and manpower studies, MJM Consultants and Price Waterhouse Siddik, argued that their instruments already had been field tested, and that a pilot test was unnecessary. As a compromise, both the field implementors and the Project Implementation Office for Pharmaceuticals agreed that observers would accompany field teams during data collection in the first province(s). Therefore, the work plan for this consultancy was modified to reflect this change.

### **III. PREPARATIONS FOR DATA COLLECTION**

By mid-March, plans were well underway for the drug management and manpower studies. Proposals had been accepted and contracts awarded to MJM Consultants (drug management study) and Price Waterhouse Siddik (manpower study). The study implementors and the Project Implementation Office already had spent a few months developing data collection protocols and instruments. One month earlier, a team of international consultants had completed a thorough review of preparations for all components of the study, and developed recommendations to improve the conduct and management of the study.

#### **A. Quality Control Plan**

At a meeting at the Project Implementation Office at the Department of Health in mid-March, general agreement was obtained concerning the following quality control plan.

1. Review pretest data in proposed final presentation formats.
2. Review revised instruments.
3. Review coding procedures and data presentation formats.
4. Approve points 1-3.
5. Review enumerator training and supervision.
6. Approve enumerator training and supervision plans.
7. Observe data collection in first province in sample.
8. Review problems observed with team leaders.
9. Make go/no go decision.
10. Observe in process data collection.
11. Review data input and cleaning plans.
12. Approve data input and cleaning plans.
13. Monitor input and coding.
14. Assist in finalizing formats for final presentation of data.

Points 4, 6, 9, 12, and 14 (above) were identified as key decision points in the quality control plan. Dr. Sihombing suggested that obtaining an official recommendation to begin data collection be inserted in the quality control plan between points 6 and 7. This decision should be made no later than March 23, since March 24 was a national holiday. All other points would be accomplished early during the week of March 20, but the process of review could begin immediately.

The quality control plan was discussed, first with the head of the study implementation team from MJM for the drug management study, and subsequently with the study implementors for the manpower study from PWS. The contractors felt confident as a result of the field testing already completed. The head of the study implementors from PWS was unsure about the purpose of field observers during the data collection but could accept them as long as the cost would not come out of their contract.

It would be necessary to review field activities after data collection in the first province, before making the critical go/no go decision for the remaining five provinces (point number 9 on the quality control plan). This point also would be the time to make necessary revisions in procedures or related matters. If the first data collection activity was to be used as a learning experience, the schedule should permit an opportunity to learn from it. Dr. Sihombing suggested that the two field teams and observers meet after data collection in the first province. There would be four field observers: Dr. Chalid and Dr. Bates would observe the MJM team, and Dr. Tri Djoko and Dr. Mary White would observe the PWS team.

A checklist was prepared for use by the field observers. This was not a large-scale survey; in many instances, a questionnaire was designed for only one respondent per province. Therefore, some types of data checks were considered inoperable. Basically, the observers were to examine whether the desired information could be collected accurately, and whether problems in data collection methods affected the quality of the data obtained.

Although both consulting firms had proposed beginning data collection in two provinces simultaneously, this idea was viewed as incompatible with the quality control plan and the purpose of observing the data collection in the first provinces. Dr. Sihombing decided that each consulting firm would collect data initially in only one province. Both firms were hoping to begin data collection during the week of March 27. Considerable concern was expressed about extending data collection during the fasting month, which began on April 7. Eventually, it was determined that both the drug management study and the manpower study would begin in the same province, West Sumatra.

## **B. Data Collection Instruments**

The study implementors for the manpower study (PWS) had completed field testing in Bekasi. All the questionnaires had been revised as a result of the field test, and some questionnaires were added. There were now 16 questionnaires divided into six sets. The revised questionnaires were more job-specific, and examined communications within

and between sections, incentives and work environment. Each questionnaire began with ten core questions concerning personal information. The study implementors considered the revised questionnaires as ready to be used, although there were still revisions to be made in the structure of the data files.

For the drug management study (MJM), the field instruments were being completely revised as a result of the recent field test. Their revised questionnaires were not available until March 22. Separate forms were prepared for each organizational level, such as drug warehouse, health center, hospital, etc. For some of the most important variables, no special forms had been prepared. Instead, a list had been prepared of the information to be obtained at each level, which included drug request records, the 10 most important illnesses, and so on.

### **C. Data Analysis Plans**

A meeting was held with Dr. Batara B. Siagian, and Dr. Sigid P.K. and Dr. Tri Djoko, at the offices of Price Waterhouse Siddik to discuss their plans for data processing and analysis for the manpower study. Discussion focused on their extensive use of open-ended questions. For some open-ended questions, the study implementors already had an idea of the type of responses they might obtain and the specific issue they were trying to assess. Since they had allocated only 20 to 30 days for data processing and analysis, it would be to their advantage to try to simplify their data processing. When time is limited, information which is not precoded runs the risk of never being analyzed. The study implementors agreed to review the questionnaires again to see if codes could be developed in advance for some items.

Until that time, the analysis and presentation of data had been given less attention. Dr. Sigid expressed concern that the consideration of possible analyses of the data could bias the collection of the data. However, since most of their data analyses were likely to be descriptive in nature, the risk of interviewer or enumerator bias was small. It was obvious that they would be collecting far more information than they could reasonably process in a short time period. Even though their analyses would be largely qualitative in nature, they were encouraged to give more attention to possible data analyses and presentation formats. Simple descriptive statistics may be useful for some types of data. Because of the sampling strategy and sample size, inferences were likely to be based on interpretation and judgement, and not on more complex statistical tests and p-values.

Computer processing of the collected information was to be completed by Dr. Batara Siagian and one of the enumerators. Previously prepared data structures appeared to correspond well with the earlier questionnaires and were well documented. New data structures still needed to be developed to correspond to their revised instruments.

The information to be collected for the drug management study was much more quantitative in nature. After some initial reluctance, the study implementors (MJM) prepared "dummy tables" which illustrated some of the analyses they were planning to

present. The Project Implementation Office and the Study Logistics Advisor were quite satisfied that these early tables represented the types of analyses they had hoped to see.

#### **D. Data Coding**

With regard to coding decisions, coordination between the two teams was still needed, primarily with regard to the identifying variables. The two consultant teams had not yet agreed on what exactly the identifying variables and codes should be.

After preliminary discussions with both study implementors, a meeting was held at the Project Implementation Office for Pharmaceuticals to discuss coding issues. Those present at the meeting included Dr. Batara from PWS, Dr. Yos, Dr. Budi, Dr. Sugianto and Dr. Sumadji from MJM, and Dr. Tri Djoko and Dr. Victor Gan from the Department of Health. Discussion focused on the uniform coding of the variables which would be measured by both study teams. These variables could be classified as identifying variables or subject variables.

The subject variables which were common to both studies included illness, drug, and year. With regard to year, MJM was using fiscal year while PWS was using calendar year to express time periods. Dr. Yos thought that it would be very desirable for PWS to also use fiscal year. Dr. Batara said that he would consider this suggestion, but appeared unconvinced of the value of using fiscal year.

With regard to illness, Dr. Yos was surprised to learn that PWS would be asking about the most common illnesses, since MJM would collect information on the top ten diseases and top ten drugs in each sampled area. It was explained that PWS was asking questions about the most common illnesses as a way of measuring the health worker's knowledge. Everyone agreed that illnesses or health problems should be coded in a way to enable comparisons between the health worker's response (obtained by PWS) and the health records (obtained by MJM). Ultimately, it was decided that illnesses would be coded according to the BINKESMAS list for morbidity. The illness name would be recorded as stated by the respondent, but the respondent also would be asked to choose the corresponding name from the BINKESMAS list. Dr. Yos had objected to the specification of illness names and codes before the data collection, arguing that each area used their own names and that diagnoses were often ambiguous.

With the regard to drugs, Dr. Yos stated that PWS should record form and dose as well as name, and the others present at the meeting agreed. Dr. Batara agreed to consider this suggestion, but expressed skepticism over the usefulness of recording drug information in such detail. For the manpower study, he believed that drug name was enough.

Dr. Yos rejected the suggestion that drugs be coded according to existing codes, because such codes were based on pharmacological principles and therefore did not serve his purposes. He planned to develop his own coding scheme for drugs. After considerable discussion, it was agreed that drugs would be coded according to the classification

system developed at the Department of Health's pharmaceutical bureau. Additional digits could be added to the code by MJM to incorporate source or other variables, as desired.

With regard to identifying variables, Dr. Batara from PWS and Dr. Budi from MJM had met the day before and agreed to a general coding scheme. After some group discussion, the final plan was to use an eight-digit code for each questionnaire which incorporated the following information:

<u>Digit</u>	<u>Variable</u>
1	Implementor (PWS or MJM)
2	Province
3	Organizational level
4	Institution
5-6	Position of respondent
7-8	Name of PusKesMas or hospital

With regard to the position of the respondent, the code number would be increased by 50 if a substitute respondent had to be interviewed. For substitute respondents, information on the organizational characteristics would be collected, but not personal characteristics. In discussing possible merging of PWS and MJM data files, the MJM team stated that they did not intend to make any use of the personal information being collected by PWS. It was suggested that the two implementing teams develop a list of codes before beginning the data collection. Dr. Batara and Dr. Budi agreed to meet again before the data collection to discuss these codes and other data processing issues.

#### **E. Enumerators**

Plans for enumerators were reviewed with each study implementor. Both MJM and PWS planned to use small teams, composed of in-house staff.

MJM (drug management study) would use two teams, each with two people. Three people were in-house, and the fourth person had not yet been identified. One enumerator would be Dr. Yos, the team leader and a pharmacist. The other two enumerators were: Dr. Ign. Sugianto, educated at a teacher's training college and previous experience with Save the Children projects; and Dr. Irwan Sumadji, trained in mathematics and economics and experience as a trainer and consultant. These latter two enumerators had participated in the field testing in Bekasi and were designing the questionnaires. Notes would be prepared for completing the questionnaire and attached to the forms.

PWS (manpower study) planned to use four staff members as enumerators, divided into two teams. Dr. Sigid, the team leader, has a Master's degree in International Relations

from the University of Washington, as well as a Masters in Social Science. Dr. Batara has a degree in Industrial Engineering from the Technical Institute in Bandung. The other enumerators would be: Ms. Sri Gunawan, who has a degree in psychology from the University of Indonesia and a master of education from Boston University; and Dr. Irawan Husein, who has an MBA from the University of California (specializing in management information systems) and previous experience with two other USAID projects.

PWS has its own in-house training for consultants, which includes training in how to interview clients. For this project, the enumerators would participate in special sessions to become familiar with the questionnaires; these sessions would last one and one-half hours a day over three days (March 20 to 22).

It was concluded that the enumerators would be well prepared to collect the necessary information for both the drug management and manpower studies.

## **IV. OBSERVATIONS OF DATA COLLECTION IN WEST SUMATRA**

### **A. Schedule of Activities**

March 26	Depart Jakarta for Bukit Tinggi via Padang.
March 27 - 29	Observe data collection activities of PWS team in Lubuk Sikaping (Rumah Sakit Umum, Puskesmas, Dinkes II), return to Padang.
March 30 - 31	Observe data collection activities of PWS team in Padang.
April 1	Meetings to discuss observations with implementing teams and the Director of the Project Implementation Office for Pharmaceuticals.
April 2	Depart Padang for Jakarta.

### **B. Summary of Observations**

#### **1. General Comments**

Both enumerators from PWS were very thorough; they obviously understood the questions being asked and were prepared to make modifications as necessary to respond to the situation. None of the problems observed appeared serious enough to justify interrupting or postponing the data collection.

#### **2. Methodology Used by the Implementors**

The enumerators conducted interviews with the respondents. Questions posed to the respondents corresponded to the questions printed on the questionnaire, but usually were rephrased in some way. The order in which the questions were asked was generally the same as that on the questionnaire, with some slight changes. For example, the questions concerning personal characteristics were asked at the end instead of at the beginning of the interview. Responses were recorded on notebook paper and sometimes also on the questionnaire. Later, the enumerators edited the responses and transferred information from the notebooks onto the questionnaire. The editing process could take longer than the interview.

### **3. Specific problems encountered**

- Respondents often had difficulty in answering certain questions, particularly questions concerning work problems. The enumerators had to use prompts quite frequently. These prompts were not always neutral in nature. In addition, it was not uncommon for the enumerators to transform an open-ended question into a yes/no question by asking the respondent whether he agreed or disagreed with a response provided by the enumerator.
- Respondents generally were unable to provide figures for the amount of time they spent in a given activity, or the relative ranking of certain problems. The enumerator sometimes translated a qualitative response into a figure.
- The supervisor often was present while his/her subordinates were interviewed. This made it difficult to assess what the subordinate actually knew, because the supervisor sometimes would answer the question. In addition, the enumerators were not able to ask about personnel matters in the supervisor's presence.
- The BINKESMAS list of disease names was not used to translate responses concerning common health problems into standard terminology, and questions about the drugs used for treating illnesses did not specify form and dosage.

### **C. Discussions of Field Experiences**

In Padang, the two implementing teams (Dr. Yos, (MJM), and Dr. Sigid and Dr. Batara, (PWS), the observers (Dr. Chalid, Dr. Djoko, Dr. Bates, Dr. White) and Dr. Joy Pollock from USAID/Jakarta met twice to discuss the data collection. Dr. Sihombing, the Project Implementation Office Director, joined the second meeting later in the evening.

The PWS team had been able to complete all but one of their intended interviews (missing was the interview with the head of Balai POM at the province). They were able to collect the necessary secondary data, but discovered that it was spread out over a wide area. To facilitate data collection in the remaining provinces, they requested better notification of field personnel, including a list of secondary data to be obtained.

The PWS team agreed that the presence of supervisors during the interviews limited their ability to obtain frank responses about certain personnel problems. The possible bias introduced by the use of prompts by the interviewers was also discussed. Dr. Sigid believed that it would be possible to cross-check responses among respondents to detect common problems. The PWS team found that most respondents were unable to provide information about the value of drugs in rupiah.

The MJM team reported no significant problems in collecting data for the drug management study. There were some gaps in the data, but Dr. Yos believed that the necessary data could be obtained at higher levels.

There was considerable discussion over the value of identifying alternative sites for data collection, in case unexpected transportation or other problems were encountered. Ultimately, the two teams agreed to not use alternative sites.

At the meeting with Dr. Sihombing, the teams described their experiences and the observers discussed their observations. Certain modifications would be made in the order of activities in the field, and the PIO would provide letters of credentials to the implementing teams and improve the notification process. It was agreed that the implementing teams should proceed with the data collection process.

## V. DATA INPUT AND ANALYSIS

Data collection activities in the provinces were completed by both study implementors by end of April. Activities slowed down slightly during the fasting month of Ramadan and the following holiday of Idul Fitri.

The manpower study implementors (PWS) reported that they had no important gaps in their data. Out of 120 scheduled interviews, substitutions of respondents had been necessary in only five instances. The actual number of respondents was fewer than originally anticipated, because people frequently performed multiple functions.

The drug management study implementors (MJM) had encountered some difficulties in the field which reduced the amount of information that could be collected in some instances. For example, two selected hospitals in South Sulawesi proved to be inappropriate choices; one was still in the planning stage and another only received outpatients. Floods in Kalimantan destroyed records at two health centers. In mid-May, MJM was still receiving supplemental information from some areas.

### A. Data Input

Visits were made with Dr. Tri Djoko to the offices of both study implementors to review data input activities. At MJM, special data input forms, had been developed for much of the quantitative data that had been collected. These input forms were to be completed prior to data entry. Recent high school graduates would be hired to abstract information, primarily dates and totals, from the records that had been photocopied in the field. Study implementors would supervise this process. Another person outside MJM would be hired to enter the data into the computer. A computer program would be developed to check for errors in the data. Methods for manual checking of data coding also were discussed.

At PWS, Dr. Batara was still in the process of finalizing data entry screens. Dr. Batara would be completing the data entry himself. The manpower study implementors had assigned higher priority to completing qualitative descriptions of each of the six provinces. Only the personal variables would be entered into the computer. There appeared to be at least three reasons for limiting data entry: the responses to open-ended questions had been recorded in an inconsistent fashion which made subsequent coding difficult; it was unclear how some information might be analyzed or presented; and Dr. Batara's time was limited.

### B. Data Analysis

As is usually the case, both study implementors had collected more information than could be processed, but PWS seemed to be having more difficulty sorting through their

data. At a meeting held at the Department of Health in late May with senior-level officials, it was decided that consensus groups would be formed, composed of key personnel from the Department of Health and the project implementors. The purpose of the groups would be to work with the study implementors, so that the data analyses best met the needs of those who would design and implement an intervention. The first meeting of the consensus group was originally scheduled for June 10, but later rescheduled for June 22. (A previous commitment outside Jakarta prohibited me from attending this meeting).

Prior to the first consensus meeting, meetings were held with Dr. Djoko and Dr. Batara at PWS to discuss the analysis of the manpower study. Suggestions were offered concerning some simple analyses and presentations of the information contained in their questionnaires. Dr. Batara was encouraged to abstract certain key variables from the questionnaires and include them in the data entry, along with the personal variables. It appeared as though little thought had been given to the reason behind certain questions. (Subsequently, the Study Logistics Advisor requested that more experienced staff at PWS be assigned to analyze this data).

## VI. DISCUSSION

It is quite desirable for studies such as the drug management and manpower studies to be completed, whenever possible, by national consultants rather than international consultants. National firms may not have the same breadth of experience as international firms, but national experts are better versed in the local environment, and contracting can be an effective method of strengthening national expertise.

Because some national firms may have less experience in performing certain types of studies, certain allowances should be made. For example, the request for proposals may need to be more directed and specific. Contracts are different from research grants, and it therefore may be appropriate to specify the protocols and methodologies in advance, and in some detail. In addition, it is not appropriate to hold less experienced firms to the same standards as more experienced firms, if the purpose is to develop local capabilities.

National firms may have expertise in certain types of studies, and it is preferable to exploit this expertise rather than ask the firms to venture into unexplored territory. The MJM group was very familiar with drug management issues, and this expertise proved to be a real asset. The PWS group was very familiar with personnel management issues, but less familiar with survey methodology. Their study turned out to be a hybrid survey/in-depth social science study, with which they were not completely comfortable. Any group would have difficulty making sense of over 100 open-ended, wide-ranging interviews with persons who fell into at least 16 different job categories, especially since the sampling strategy did not permit statistical inference. For some types of questions, other forms of research methodology more familiar to social scientists, such as focused assessment groups, may be more appropriate.

Outside experts, either national or international, may be of most value at the beginning of the study, during the planning stage. After study design protocols have been finalized and instruments tested, the potential contribution of outside experts is quite limited. Technical experts may be able to assist in preparing the request of proposals or assist national firms in preparing proposals and developing instruments. Contracts may provide additional funds to permit firms to hire international experts, if appropriate. As a member of the national contractor's team, an outside expert may be in a better position to contribute constructively to the study and to transfer certain expertise.