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REPORT OF APHA CONSULTANTS  
RELATIVE TO TULANE/PRIMOPS  
DOCUMENTATION (PHASE 1 & 2)

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## 1. Introduction and Conclusion

### 1.1 Introduction

APHA has asked us to review the response from Tulane University's Technical Assistant Project to "PRIMOPS" on the modifications made on Phase I and Phase II documents since our site visit in August 1975. Although we reported our findings orally to PRIMOPS/Cali and PRIMOPS/Tulane at the time of our visit, we had assumed that our Report would be submitted to them in writing when available. Our Report was delivered to AID, October 1, 1975, but received by PRIMOPS/Tulane on December 12, 1975, after their progress report was due. It is, therefore, not surprising that a number of the points in our Report are not dealt with adequately in the documents submitted by Tulane University in December 1975. This Report was drafted in January, 1976 and sent to Tulane University (Dr. Delgado) for review and comments prior to submission to AID/W. Our draft Report was given careful and thorough consideration by both PRIMOPS/Tulane and Cali, as evidenced in a five volume reply and updating of the Phase I documents (dated March, 1976) sent to us on April 5, 1976. In order to provide the reader full access to this dialogue, we have preserved our January Report and then acknowledged or commented on the March, 1976 response with a paragraph titled "Comments June 1976". These paragraphs are inserted in the Report whenever appropriate.

Before entering on the substance of this report, we would like to thank PRIMOPS/Tulane for providing us with a succinct, clearly organized outline in their Memos No. 75176 and 75177 to Dr. Shutt, and for a detailed Table of Contents in the March 1976 report. These made our task much easier. The Tulane Reports of March 1976 evidence a serious and careful consideration of our earlier draft.

## 1.2. Conclusions

Phase I is essentially complete and satisfactory. Our reservations concern the Cost Analysis Study where further specification of the study design is needed. Although it is now being addressed satisfactorily, we are also concerned at the lack of adequate computer-programmer capabilities; we recommend that AID monitor progress on this topic through trimesteral reports. The comments below deal with a few of the issues still remaining.

## 2. Objectives of PRIMOPS/Tulane

It is the success of the PRIMOPS/Cali activities in meeting their objectives which interest all of us. The PRIMOPS/Tulane (P/T) objectives as we understand it, are to assure that all obstacles to such success are identified and brought to the attention of PRIMOPS/Cali, that consultation be provided to PRIMOPS/Cali as requested and that three counterparts in PRIMOPS/Cali (P/C) be supported and trained so as to leave with

P/C the technical capabilities necessary to expand the evaluation of PRIMOPS to larger segments of the population pari passim with the extension of PRIMOPS/type services to larger areas of Columbia.

By the time of our site visit in August 1975, PRIMOPS/Tulane had fulfilled its obligation in hiring three competent counterparts and in providing them the appropriate opportunities for technical training. We are concerned about the stability of these counterparts with P/C, but do not have any suggestions as to how to ensure this any better than P/C and P/T are doing it presently. By last August, P/T had done a satisfactory job in providing consultation to P/C. Their concept of good consultation includes the identification with P/C of problems and their solutions. This should result in imparting to the three counterparts and other staff of P/C the technical skills to deal with similar problems in the future. The implementation of this concept was, in general, satisfactory. The technical quality of consultation was also usually good-to-excellent when the general problem was identified by PRIMOPS.

### 3. Model Design for Delivery of Health Care

We realized upon rereading the August 1975 documents, our Report of October 1st and the new documents submitted to us, that we confused various "Model Designs". We now perceive that the Model Design for Delivery of Health Care included:

1. Objectives of PRIMOPS in improving health.
2. The basic new concepts which PRIMOPS wishes to

implement to attain the health objectives. These concepts can be summarized as:

- a. Rational patient-flow to different providers of health services.
  - b. Delegation of tasks to the most efficient levels of service.
  - c. Extension of health care and preventive services into the home by health extension workers (some-what similar to agricultural extension workers).
3. The administrative structure to implement these concepts within the Columbian health system.

In this section we discuss only the "Model Design" and not the Evaluation Studies. As our October Report indicated, we felt that parts 1 and 2 above were adequate. Part 3 had problems at two levels"

3.1 Health Services Staff: In August 1975, the funds from the Columbian Government were inadequate for the service staff necessary to implement a PRIMOPS health delivery system. This is not an area of contractual concern to PRIMOPS/Tulane, but P/T activities could not be meaningful without resolution of this problem.

Comments January 1976: The December documents indicate this problem has been resolved although it is not clear whether the PRIMOPS services are in full operation now.

Comments June 1976: The April 1976 documents indicate

that the PRIMOPS services would be in full operation in May 1976.

3.2 Training and Supervision: This is an area where the "Model Design" is incomplete (see our October Report, 35-36) and the subject does fall under P/T contractual purview. We understand the administrative reasons for the incompleteness in these areas; namely, that while training is under P/C direct control, supervision is not. However, the implications for the Model Design are so far-reaching that we consider this area to be vital to the completion of the Model Design. The reason for our concern is that until these areas are integrated, shortcomings in task specifications for the PRIMOPS system will not become evident. In our previous Report we felt that the following were not yet adequate:

- 3.2.1 Job description, task specification and decision trees (algorithmus) in diagnosis and therapy for each staff member of PRIMOPS.
- 3.2.2 Patient flow charts specifying not only the staff decisions about referrals but also the specifications of what patients are supposed to do.
- 3.2.3 Specification of tasks to be performed by the Hospitals. If only the primary care system is under analysis, this specification may refer only to assured hospital admittance upon referral by PRIMOPS, as well as compliance with the PRIMOPS

Model Design information flow. The specification of information flow essential for evaluation should be considered separately.

- 3.2.4 Certain significant points should be identified in the above specifications that are susceptible to measurement (adequate/inadequate performance) which taken together give a good idea of whether the quality of care given is that specified. This will permit continuous quantification (both by staff members or institutions) and longitudinal analysis of the quality of care. This supervision system should also have a rapid feedback mechanism to train those who make mistakes. (See for instance, "Primary Medical Care by Non-Professional Personnel: Quality Control" by Habicht, J-P. et al).

Comments January 1976: Integration of training and supervision is clearly perceived as a problem by P/C. Integration of the administrative structure (Memo 75146, Pages 5-12) is an important prerequisite for supervision. However, no specific information was contained in the recent documents as to how P/C plans to integrate training and supervision. We suggest that an approach to this problem could be accomplished by performing the steps 3.2.1 - 3.2.4 enumerated above together with the supervisors of the health delivery system outlined graphically

on Page 6 (Memo 75146) and with Drs. Henao and Herrera. The participation of those providing the services in the specification of training and supervision will hopefully ensure the implementation of appropriate supervision.

Comments June 1976: According to the March 1976 documents, the integration of training and supervision is now a reality. Appendix A of the March 1976 documents is a masterful "Survey of Supervisory Methodology with Focus on Quality Control at Home and Health Post Levels" prepared by P/C, which indicates a clear understanding by P/C of process quality control in the provision of health care services, and which exceeds our expectations related to supervision. This is an outstanding document. We are now confident that P/C is competent to extend these concepts to all of the PRIMOPS services, to pilot testing the ensuing protocols as needed including any flaws in their patient flow specifications, and finally to implement this supervision. We would expect that experience with this supervision system will permit ultimately a reduction in the tasks that require supervision and a marked decrease in the amount of paper work as compared to that initially required of the supervisors. This reduction in supervisory tasks and in paper work is necessary for the final costs to fall low enough so that this

supervision will become an integral part of PRIMOPS Services as these services are more widely extended throughout the country.

The report on the "Monitoring System", by C. Corzantes, Appendix C of the March 1976 report, complements Exhibit A. "Summary of Supervisory Methodology with Focus on Quality Control at Home and Health Post Levels" by P/C. Like Appendix A, Appendix C does not yet cover all the PRIMOPS services, but it underscores the concern showed by P/C and P/T for the ongoing supervision and monitoring of the PRIMOPS System. This monitoring, streamlined with experience will also become an integral part of the PRIMOPS System which will be taken over by the Ministry of Health. It would be helpful if the Monitoring Reports of each round could be sent to AID with an indication of when the previous round had been performed, so that AID could see how the monitoring system actually works in practice.

AID should not judge the adequacy of the supervision and monitoring system by how well the PRIMOPS medical delivery systems works, but by how well the monitoring system succeeds in reflecting how well PRIMOPS works. The development of a practicable monitoring system which succeeds in this task should be recognized as a major contribution of P/T and P/C.

We encourage P/C to proceed in the steps they have planned as quickly as possible, including the specifications of tasks and monitoring at the health center level. Monitoring, should, if possible, also permit evaluation of the referrals to the hospital, i.e., were they appropriate referrals and did the patients referred actually go to the hospital?

As contrasted to this integral part of PRIMOPS Services, the study developed in Appendix B of the March 1976 report, will be discussed under "5.7 Evaluation of Task Performance" because it refers to an evaluation study.

#### 4. Evaluation Studies

##### 4.1 Data Handling

The overriding concern, which we had in August 1975, relative to the Evaluation Studies was in the area of data collection and its quality control, data flow, data cleaning, data reduction, and data analysis necessary for the "Evaluation of the Program as a Model". (See Memo 75146, Page 9c). We feel on the basis of Exhibit 5, that Dr. Levine clearly conceptualizes the problems and the necessary steps that should be taken. It is not clear, however, whether these concepts have been understood by PRIMOPS, much less the urgency of immediate action in some of these areas in order to be ready to fulfill Phase II.

##### 4.1.1 Computer facilities and computer programs.

There is a temptation for PRIMOPS to deal with these areas in the order presented above, (from collection through analysis) because this is the order in which the problems present themselves. Unfortunately, the computer programming and analytic capabilities necessary to deal with data cleaning, data reduction and data analysis take time to acquire.. If one waits until they are needed to acquire them, then Phase II cannot possibly be finished by 1978 or even 1979.

Comments January 1976: It is now clear from the reports that the computer facilities are inadequate, with little hope of improvement under present plans. Neither P/C nor P/T has the sophisticated computer management staff necessary to solve this problem. Their consultant, Dr. Levine, identified the problem in his report, Exhibit 5. Is his computer management background sufficient for him to coordinate the solution to this problem? If so, would he be willing to take responsibility for seeing that the necessary computer facilities are provided for PRIMOPS? He would probably have to coordinate the consultation of other computer management experts to help him.

The computer requires programming staff to adapt "packaged" programs to PRIMOPS needs, and also

to develop new programs, especially to check data completeness and for data cleaning. These data control programs will take 3 to 6 months to produce and "debug". It can take anywhere from a few months to a year in order to assure that adequate software is available for analysis. Thus the problem of assuring adequate programming staff depends upon what computer facilities are used.

Our experience has been that programmers seriously underestimate the time necessary to have a specified software functioning (by factors of 2 to 4) so that their advice is misleading. Computer management experts give better estimates, providing they have experience with similar systems.

Comments June 1976: We are reassured that P/T has taken an active responsibility through Dr. Levine, for assuring that the computer facilities are ready for data analysis in useful time. We would suggest that AID receive a trimesteral report from Dr. Levine through P/T about how this is proceeding until the computer facilities and programs are performing satisfactorily.

The statements by P/C, that P/T has not followed their recommendations in analysing data, as it became available from the area profiles for better estimates of available sample sizes and of actual

prevalence rates, underscore the urgent need for adequate computer and analytic capabilities.

- 4.1.2 Data coverage control: Computer managers will persuasively argue that all routine data control activities should be done by the computer. Our experience has been that this is disastrous because the computer systems are too slow and too unreliable (other urgent demands often interfere). Data completeness checks and data cleaning must be done by the computer, but the initial data completeness checking must occur where the data is collected. Simple systems, which are easy to perform manually, could be adapted from other projects with similar data flow characteristics.

Comments June 1976: The Data Coverage Control for the Evaluation projects should be operational by now, because data is already being collected. How often is data coverage inspected? How? We would appreciate seeing some of the actual reports devolving from this inspection.

- 4.1.3 Data quality control: Data quality control (is the measurement being performed correctly?) as contrasted to data coverage (was the data that should have been collected, indeed collected?) depends upon the measurement specifications. It must be assured by standardization and it must be documented. The methods of standardization and of documentation

will, however, depend upon the data needs for hypothesis testing. The documentation of this quality control has only been implied in the PRIMOPS documents to date but as the item measurements are specified in the July 1976 report the methods of standardization and documentation should be made explicit.

- 4.1.4 Data Flow: A reasonable approach to data collection forms, data transformation to "computer-readable-data" and data reduction is presented in Exhibit 5. We expect that the documents promised for "July 1976" (Memo 75146, Page 10) will allay our concerns at all levels of data flow and analysis.

Until the needs discussed in this report have been met, we strongly urge PRIMOPS not to use any resources for implementing "Step 5" Page 3.2, Exhibit 5. Simulation modeling is intellectually more appealing to many than the work that must be done to provide the quality of data necessary to make meaningful simulation models. It is especially appealing to the limited personnel available, which PRIMOPS must use for the above tasks. This recommendation in no way implies our rejection of simulation modeling or its utility. It is, however, not a task which PRIMOPS can accomplish and also fulfill its primary objectives because of the limits on time, money and staff available for the task. We are, therefore, relieved to read in the March 1976 report that simulation modeling is not contemplated until these primary objectives are attained.

## 4.2 Designs for the Evaluation Studies

The evaluation is being done within the context of a well-defined final goal. That goal is that P/C will provide the Public Health Authorities of Colombia with a more efficient and effective system of providing primary medical care (Primary Model Design) within the context of an integrated health service, as well as the methodology to evaluate the effectiveness and efficiency of this system. The general health objectives based on the goal are found in the "Model Design". In August 1975 we felt that the translation of these general objectives into specific hypotheses to be tested and to the specification of items to be measured was uneven. (See our comments Pages 42-52, October Report).

In approaching each evaluation study, we asked ourselves the following questions:

- a. Are the objectives clear for the study?
- b. Given the objectives, are specific questions formulated which the data to be collected will answer? In other words, are testable hypotheses presented?
- c. How will the variables to be measured be analyzed to answer the questions?
- d. Given the above, is the experimental design adequate as to its logic, its sampling, the sample number and its consideration of confounding factors?

Before addressing these specifics one must first determine who and what is being evaluated.

### 4.2.1 What is the scope of services to be evaluated?

P/C has carefully defined the first target population to benefit from this system. It is defined both geographically and by sex, age, and physiological status (pregnancy, breast feeding, etc.) P/C has been less careful in defining exactly what part of the total health system they are going to evaluate. According to the documents submitted to us in January 1976, clear progress has been made in defining the extent of the system (See for example, Exhibit 2 and 8). It appears, however, that the proposed cost analysis (Exhibit 6, Page 12) plans to analyse costs of a much more extensive system.

Comments January 1976: The scope of the health system to be evaluated must be defined. This does not mean that it should not be evaluated at different levels, e.g., up through the Health Center or up through the Hospital, but the evaluation must be consistent with whatever scope is chosen. For instance, we could agree to evaluate the effectiveness and efficiency of PRIMOPS' primary medical care component (i.e., through the health center, but not into the "Carlos Carmona" or the University hospitals) relative to conventional primary health services. In such a case, knowledge of the extra or reduced patient loads on the hospitals is important, but evaluation of the effect of these hospital services, their quality (internal evaluation) and

costs (except in general terms) are not necessary. This would still require inpatient and outpatient hospital attendance data as now planned--but would reduce the needs for other data considerably. We are encouraged to suggest this approach because we feel that completing Phase I in early 1976 up to the level of the Health Center will tax PRIMOPS resources sufficiently without going to the level of the Hospitals.

We also recommend this course for another reason: though hospital backup is essential to an integrated health system, PRIMOPS' major contribution is the rationalization of the entrance into the flow through a primary health care system. The effect of this innovation of health outcome, on cost and on self-referral or system-referrals to hospitals can be compared with the control areas in Cali. The effect and costs of the hospitals themselves cannot be compared to controls. Any differential in health outcome due to more timely hospital referral is a benefit clearly attributable to PRIMOPS and not to the backup hospital, unless PRIMOPS patients receive preferential hospital treatment. Our impression was that the patients receive no preferential treatment once they are admitted to the hospital.

Comments June 1976: The definition of the scope of services (Home, Health Posts and Health Center but not Hospital) to be

evaluated now appears to be adequately resolved according to the "Updated Report on Phase I" of March 1976, Pages 4-5, Item 6 and Page 8, Item A.

None of the above comments mean that we feel the planned integration into the PRIMOPS plan of the Carlos Carmona hospital is any less urgent. This is essential if only to be able to collect the patient service information, which would be an outcome measure of PRIMOPS. It is clear that comparable information must be collected for the control area hospital patients.

#### 4.2.2 Methodology for choosing a control area and area profiles

The choice of a control area and the measurement of possible "confounding" variables in the PRIMOPS and control areas is essential for most of the evaluation studies. P/T points out that their contract specified only the development of a methodology to make a selection of a control area and that their actual selection of control area and the development of a profile for the PRIMOPS area went beyond the requirements of their contract. We felt that the choice of a control area and the development of area profiles before the generation of hypotheses to test across the major areas considered for evaluation was theoretically premature, because without these hypotheses it was impossible to develop an appropriate methodology to choose a control area or to develop an area profile. In practice, the choice of a control area and the development of area profile was perhaps wise because this pin-pointed deficiencies in "methodology" which we outlined

in our October Report, Pages 44-45. Progress since August is found in Memo 75146, Pages 13-17. That section of the memo discusses in turn the sample size, sampling and community profiles. The section below comments on these items.

#### 4.2.2.1 Sample sizes

Considerations of sample size are discussed in Memo 75146, Pages 13-15 and the March 1976 report Pages 9-10. These are important considerations, but as is stated in the March 1976 report they cannot be judged out of the context of the hypotheses testing under each substantive area, where the necessary sample size should be specified for each important hypothesis, based on data from the area profile and expected change in the items measured. AID should expect this in the "July 1976 Report".

#### 4.2.2.1 Sampling Design

One general point is made, namely, that the "Cluster effect" is eliminated by the sampling procedures outlined. This is explained in more detail in the March 1976 report on Pages 9-10. P/T is aware of the problem of clustering as related to statistical hypothesis testing and will hopefully present in their analyses the variance tables showing that the within cluster variance is not smaller than the rest of the within-class variance. If it is, the degrees of freedom can be reduced appropriately.

#### 4.2.2.3 Area Profiles

The approach outlined to develop the area pro-

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files and to test differences between the PRIMOPS and control areas appears excellent (Memo 75146, Pages 15-16, items b-e). It would be helpful when presenting the indicators to be measured in the "evaluation" sections to point out which indicators were also measured in the area profiles. Will the July 1976 report present the area profiles, which are necessary to judge the feasibility of the evaluation studies?

#### 4.2.3 Evaluation of Effect on Morbidity, Mortality and Family Planning

The ultimate objectives are to reduce morbidity and mortality, and improve family living in the target population.

Comments January and June 1976: It is clear from the documentation given us (Memo 75146, Pages 19-21 and Exhibit 5) that more thinking has been given to the hypothesis specification, the description of items to be measured, the sample sizes needed and the formulation of the data collection forms and procedures. A systematic approach to this problem is presented in the "Phase I report" and in Exhibit 5. AID is promised a report in July 1976 which will complete this aspect of Phase I. Addendum to Protocol 2c (Memo 75146, Page 21 a-e) gives an excellent sample of what we could expect for the other parts of this area including "felt morbidity".

The success in meeting each of those objectives of reducing morbidity and mortality and of improving family living was to be analysed so that the contribution to success by each component of the PRIMOPS system could be identified (our October Report, Page 52). This last is so difficult to attain, and of such marginal value given the final goals of PRIMOPS/Cali that we did not discuss it in our October Report. Nor will we do so

here, considering that if the final objective can be evaluated for the whole PRIMOPS system this should be completely adequate to meet the final goals of P/C and AID. This is, in fact, PRIMOPS's present plan, according to the March 1976 report.

#### 4.2.4 Evaluation of Whether the Target Population Accepts PRIMOPS and Takes Advantages of Services Offered

An intermediary objective of P/C is to determine the extent to which the target population accepts the project and takes advantage of the services offered (Pages 50-51, our October Report). Progress in this area is summarized in Memo 75146, Pages 17, 19 and in Exhibit 1A.

Comments January 1976: While some progress has been made in response to our recommendations, AID must await the "July 1976 report" (Memo 75146, Page 12) to assess the likelihood of success in Phase II for this area. The primary focus chosen by P/T for this study (but not yet accepted by P/C) is radically different from the purpose we suggested. We are at a loss to see how the P/T purpose will be attained because we don't understand what hypotheses will be tested by what data. Other purposes, which are implicit in the questionnaire, are not specified, and their likelihood for success cannot be ascertained. For example, one purpose which should be ascertained from this longitudinal data as compared to a control areas longitudinal data is an "outcome" measure; the shift to or away from non-official sources of health care which might need to be costed out. We need to have those purposes specified and an outline of the hypothesis testing described to be able to judge,

whether this instrument, which is ready for use, will indeed be useful.

On the other hand, given the above limitations the analysis and discussion of the pretest data are masterful.

Comments June 1976: The two (Experimental and Control) by two (before and after) table has been presented as the overall strategy for analysis (March 1976 Report, Pages 12-13 and its Appendix D) and the items are grouped for this analysis (Appendix D), illustrating again that P/T can perform the analysis.

We can think of a number of pertinent hypotheses relating these questions and their analysis to PRIMOPS objectives, but still do not know what hypotheses PRIMOPS wishes to test with those questions. For instance, we can think of relevant hypotheses that require that questions about population acceptance of "promotoras" be asked in both control and experimental area--we can think of hypotheses that don't. What hypotheses is PRIMOPS testing by doing this? Doesn't their hypothesis require that the control and experimental groups never have had exposure to a promotora before the question was asked? Another hypothesis in which we would have expected PRIMOPS to be interested was to what degree the population shifts its medical care to PRIMOPS from other official and unofficial (curanderos, farmacia, inyectores...) sources of medical care, but we can't see from the questions asked how they are going to do this. If we understood the hypotheses underlying this study, we would comment on their adequacy to the objectives of PRIMOPS and on the relevance of the experimental design to those hypotheses.

#### 4.3.5 Cost Analysis

These outcomes on health, knowledge, practices and attitudes are to be judged relative to their cost. Our report of work done on Cost Analysis up to August 1975 is found on Page 39 of our October Report. Progress since then is found in Memo 75146, Page 4 and in Exhibit 6. Exhibit 6 presents various general alternative approaches to test using cost data.

Comments January 1976: In our previous report we had indicated that we would reserve judgment on the feasibility of applying the PAHO-CENDES methodology to PRIMOPS. Exhibit 6 now makes no claim to such feasibility and proposes cost analyses more appropriate to PRIMOPS.

The present plan for Cost Analysis give general theoretical guidelines as to what type of questions could be asked and what type of data would need to be collected to answer these questions. This is competently presented. But no specific design is proposed, with no consequent hypotheses to be tested, data to be gathered, and no indication of methods of data collection. This study design needs more work, in our judgment, and hopefully it will be reflected in the "June 1976 Report".

It is still not clear whether the Cost Analysis will separate development costs from operation costs of PRIMOPS. We suggest this be clarified in the Document (Exhibit 6) if there is agreement on this point.

Comments June 1976: The March 1976 report (Pages 13-20) was helpful in clearly differentiating between operational and developmental costs for PRIMOPS. We presume, but it is not clearly stated, that the cost analysis will be for the operational costs. This evaluation study continues, however, to cause us concern because it is not clear to us what questions this evaluation study addresses.

We understand the need that operational costs information fills for budgeting as one extends the PRIMOPS services to new geographical areas, and we concur that such use does not require formal hypotheses.

However, both Report No. 6 (revised) and its explication in the March 1976 report illustrate "predictions, or assumptions (even formal hypotheses) concerning cost savings possible through the use of non-physician health personnel...." (March 1976 report, Pages 15). Nonetheless, these reports give only illustrations of potential uses of cost data without presenting a clear cut plan of key questions to be addressed in the cost analysis. For example, in the context of PRIMOPS the cost-effectiveness analysis will require cost and service or health data from different primary health care systems. Is this comparative study going to compare PRIMOPS costs with usual MOH costs for similar services? What

about the costs of non-MOH services replaced by PRIMOPS. How are hospitalization costs going to be proxied? (The scope of the evaluation is clearly only of PRIMOPS, but one must know whether PRIMOPS services are accompanied by more or less hospital admissions). How is cost effectiveness going to be judged for PRIMOPS services for which no counterpart is found elsewhere? All these questions are susceptible to clear hypothesis formulation.

We believe that P/C and P/T have on their present staff the competence necessary to formulate these hypotheses, and to specify the experimental designs and variables necessary to test the hypotheses. We, therefore, recommend that P/T encourage P/C to grapple now with this problem to produce a document for cost analysis, similar to Appendices A and B of the March 1976 report, bringing into their mutual deliberations appropriate consultants for the variable specifications.

We would at this point like to warn about the difficulties of using simultaneous equations [as proposed in Report No. 6 (revised)] for estimating components in an input-output system where the causal relationships are subject to variance--which would be the case in the cost-effectiveness analysis of PRIMOPS. In such cases the estimates may be too approximate to be useful. Before opting for such a method we would suggest a careful review of the estimated variances of the estimates.

#### 4.2.6 Evaluation of Staff Roles

There are two studies planned whose purpose is to ascertain whether the actual performance of the PRIMOPS systems follows specifications and to what extent this is due to acceptance or refusal of the PRIMOPS concept of staff roles by the PRIMOPS staff. The study of staff roles and role perception was reviewed in our October Report, Pages 56-57.

Comments January 1975. It is clear that a great deal of work and thinking has gone into this topic since August, (Memo 75146, Pages 22-23 and Exhibit 1B). We feel that our concerns were all substantially addressed except the one relating to the theoretical underpinnings necessary to study roles and role structure, and the consequent hypotheses which will be tested in this study. The problem of perceived confidentiality (as seen by the service staff) is so overwhelming that we still wonder about the utility of this study unless than problem can be solved.

Comments June 1976: Appendix E of the March 1976 report does an excellent job of presenting the basic and corrolary hypotheses underlying this study. The March 1976 report also addresses itself to the actual confidentiality

of the interviews, which will meet any reasonable person's requirement. The problem, however, is not the actual confidentiality, but whether the persons being interviewed believes that the data will be truly confidential. If the interviewee is not persuaded of the confidentiality we fear the data will be of only marginal usefulness because the responses will be tailored to what the interviewees believe PRIMOPS wants. This obstacle to collecting useful data for this study has always appeared to us a difficult one to surmount.

We had wondered if a descriptive anthropological approach to this problem (i.e. an inexpensive way of collecting anecdotal evidence) would fill the MOH's needs for evidence on this subject.

We conclude that Phase I is completed for this Study. It is well conceived, investigates important theoretical and practical issues, and is well designed. We are still not sure whether it is practicable (see above). It is well worth attempting if P/T and P/C can institute some method for ascertaining if certain key questions are answered truthfully, to give them confidence in their interpretation of the data.

4.2.7 Evaluation of Task Performance

The study of the task performance of the PRIMOPS

system as compared to traditional health programs assumes the completion of steps, 3.2.1-3.2.4 under Section 3.2, "Training and Supervision". We feel that these steps are now well conceptualized by P/T and by P/C. The next prerequisite for the internal evaluation of the PRIMOPS system is the formulation of specific hypotheses and translation of these hypotheses into measureable items, including if necessary the choice of a comparison primary medical system.

Comments January 1976: This has progressed markedly (Exhibits 2 and 8) and is basically sound but is not yet integrated into PRIMOPS. A report due end of January promises such integration. This report should be reviewed by AID, but if it succeeds in using the best ideas from Exhibits 2 and 8 it will be excellent.

Comments June 1976: The conceptualization, hypotheses, and experimental designs for this study including those components referring to prenatal and perinatal care are now presented in the March 1976 report Page 24 and Appendix B. The component referring to child care was due for completion shortly after the March 1976 report was submitted. The conceptualization is sound. P/C has decided not to compare the activities within PRIMOPS to those by the traditional MOH health system which simplifies the design considerably. This is a wise decision, as the comparative data would have been of only marginal value, because the criteria of

acceptability developed for PRIMOPS activities would be challenged as biased in favor of PRIMOPS if they were applied to the usual medical care system. The strategy is logical. Although this study does not have testable hypotheses, the information will be useful to the MOH as it compares its success in setting up PRIMOPS elsewhere in Columbia with the Cali Primops pilot study. This is not an evaluation study so much as a normative study against which future PRIMOPS will be evaluated.

This study also reinforces the development of the Teaching, Supervision, Quality Control and Monitoring Activities of the PRIMOPS Services as they will be recommended to the MOH. Just because of the close association of this study (2-d) to work undertaken to develop the Quality Control and Monitoring Activities for PRIMOPS, there is a danger that this study will be confused with that work. This confusion would undermine that work, which must develop the simplest, most inexpensive way to ensure the training for PRIMOPS, and the supervision of the quality control and the monitoring of PRIMOPS.

#### 5. July 1976 Report

In July 1976, a major work in three volumes is promised by PRIMOPS (Memo 75146, Pages 10-12). In the above sections we often allude to these in expressing our expectations

of content for certain specific areas.

January Comments: The logic of the proposed presentation is not clear to us. A prerequisite for evaluation is an understanding of the "Model" to be evaluated. The "Model" cannot be assumed to be understood by readers of this document. We still have problems figuring out what is Model Design and what is Evaluation Design. It would be a good opportunity for PRIMOPS/Cali and Tulane to rewrite the "Model" from scratch, not assuming any single point to be understood, even by the PRIMOPS staff writing the documents.

Will proposed Volume I contain more than what is presented in outline in Exhibit 5? It would be more useful to use the outline in Exhibit 5 to bring Phase I to conclusion, study by study and within each study hypotheses by hypotheses. Proposed Volume II contains a description of the actual administrative structure of PRIMOPS better contained right after the "Model" because this is essential to understanding certain problems in experimental design and implementation.

Simulation models are so far down the road, or should be, that they don't belong in this document. The special surveys are presumably necessary for some of the studies proposed, and that is where

they belong.

The rest of Volumes II and III seem pertinent and in a logical order except that we don't understand why the community profiles belong here and not in the section on choosing the control barrios.

Comments June 1976: Although the March 1976 report did not address itself specifically to some of our January 1976 comments, it presents a logical outline of work, and clearly defines P/T's tasks within that outline. The figure on Page 26 was most helpful. Our only serious concern is related to finding the work "monitoring" under the section of evaluation studies, when Appendix C of the March 1976 report, "Monitoring System", seems to be an information system which will ultimately be an integral part of the PRIMOPS Service Delivery, as part of the ongoing monitoring of those services. This needs clarification, because we feel that Appendix C is a good first attempt at developing such an ongoing monitoring system but would be quite inadequate as a protocol for an evaluation study. Similarly, as already stated, we understand that Appendix A of the March 1976 report relates to the "Supervision and Evaluation" part of any PRIMOPS system and not to the internal evaluation study of "Quality of Services". Is that correct?

We believe it important to identify which documents reflect P/C approval so that the reader can distinguish between a consultant's recommendations and an approved plan (or protocol) for Phase II implementation. In developing the "July 1976 Report", it is recommended that the various documents be clearly identified to indicate whether they are approved plans for Phase II. This identification was done in the March 1976 report and was a great help in helping us judge how successful P/T had been in conveying expertise to P/C.