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**AN INFORMATION COMPONENT FOR THE PROPOSED
USAID PRIVATE SECTOR HEALTH
AND FAMILY PLANNING PROJECT:**

**WHAT IS NEEDED, WHAT IS AVAILABLE,
HOW MIGHT IT BE ORGANIZED?**

USAID/Jakarta

October, 1986

**Resources for
Child Health
Project**

REACH



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ACRONYMS

ASKES	Civil service employees health insurance; recently renamed to Husada Bakti, administered to a governing board which reports to the Minister of Health and Minister of Finance
ASTEK	Social insurance for private workers, administered by the Ministry of Manpower Development
BAPPENAS	Ministry of Long Range Planning for Health Services and Expenditures
BP	Bureau of Planning, Department of Health
BPS	Bureau of Statistics
EPI	Expanded Program on Immunization
GOI	Government of Indonesia
IDI	Indonesian Medical Association
PERSSI	All Indonesian Hospital Association
PERTAMINA	Nationally Owned Oil Company
PHB	Civil Service employees health insurance (ASKES is new name)
SUPAS	Inter-censal survey
SUSENAS	National socio-economic survey
USAID	United States Agency for International Development

I. INTRODUCTION/SCOPE OF WORK

The scope of work developed for this consultancy included the following:

1. Identify essential health economics data needed to plan, monitor, and evaluate the proposed private sector health and family planning project;
2. Identify where such data can be obtained;
3. Design a system for its routine collection and monitoring;
4. Recommend how the project can institutionalize its routine collection and reporting.

This consultancy benefitted from the completed work of the previous consultants, Jeffers, Torrens, Hunter, and Stevens. In considering the developing of the proposed project, all of them have recognized the critical importance of appropriate information. A great deal of data relevant to the health sector exists in Indonesia. Some of it is analyzed and accessible. Much of it needs to be more systematically compiled and presented. The previous consultants have made recommendations on this topic, which I will try to incorporate and develop further.

This report begins with a discussion of the objectives of the proposed project and their implications for data needs and analysis. There are three main applications for the information component of this project: policy and planning; development of projects and programs to test and disseminate interventions to improve health sector finance and management; and monitoring and evaluation. For each application, specific types of data needed, key indicators, and likely data sources are discussed. There has been a significant increase in interest and activity to provide data for policy analysis and planning over the past several months. These activities and the relevant institutions are reviewed. The last section presents some observations on strategy for an information component in the proposed project and how USAID can support these activities in the short-term. Appendix II defines the terms used in this report to avoid confusion with other authors.

I would like to acknowledge the assistance received from the other consultants on this project. Also, my thanks to Dr. Thomas D'Agnes and Dr. Emmanuel Voulgaropoulos for their feedback and help in making arrangements.

II. OBJECTIVES OF THE PRIVATE SECTOR HEALTH AND FAMILY PLANNING PROJECT: IMPLICATIONS FOR INFORMATION NEEDS AND SYSTEM

The proposed USAID project is still being developed. While a number of specific objectives have been put forward in the February, 1986, "New Project Description" paper, discussions with USAID personnel and government counterparts made it clear that there was still much flexibility in the design of the project. In fact, several meetings with the other USAID consultants were held to discuss the possible design of components.

This flexibility makes it difficult to outline here a detailed structure of information needs and data handling for the project. However,

the main objectives of the project are fairly clear, as is the thrust of several likely central components. This section will review some of these objectives and discuss likely needs for information and analysis. Specific categories of data needed are then described. Appendix I describes in more detail specific indicators and measures and how they can be applied.

Project Objectives

The basic goal of the proposed project, in keeping with USAID's overall health policy, is the reduction of fertility and infant, child, and maternal mortality, especially for underserved groups. From my reading of the project description, there are two basic objectives underlying proposed project components:

1. Increased real resources for health programs. This can be attained in two ways: first, through tapping new sources of financial and material input for health, primarily from private sector providers and households since the potential for increased government financing is likely to be limited in the foreseeable future; and second, through improving the productivity (or efficiency) of the use of resources, so that more can be achieved with what is available. This latter approach is what Jeffers calls "operating efficiency" in his report.
2. Improved allocation of resources in both the public and private sector to achieve greater health impact, in keeping with social preferences. This is what Jeffers refers to as "allocative efficiency." Improving allocative efficiency may include improving the balance of private versus public involvement in the health sector. It could also affect the allocation of resources to curative versus preventive and promotive services, or the allocation between rural and urban areas. A key question here, of course, is social preferences: who defines them, what values and priorities do they reflect?

How are these objectives to be achieved? Clearly, it is important for the project to strengthen capacity for identifying problems in these areas. This could include, for example, analysis of resource limitations and potential sources of increase, inefficiencies in service delivery and methods for their improvement, potential health gains from resource reallocation, etc. While the information needed to analyze these issues is discussed in more detail below, support for ongoing policy analysis and planning will certainly be needed to develop specific project activities and to monitor and evaluate them.

Within the general directions set by the policy process, or at least temporary guidelines, the project will probably support specific innovations at the service delivery level. These will include attempts to improve health care management, organization, and financing. These may be in the public or private sectors, or some combination of the two. An example in the management area is the idea now being discussed of involving the private sector in managing the very inefficient public hospitals. If this is not an easily acceptable idea for government, a similar result might be achieved by instituting stricter financial accountability for public hospitals or setting budgets and incentives based on efficiency targets. This is simply a way of instituting a private-sector-like discipline on public sector facilities. In terms of health care organization, both public and private sectors have experimented with different ways of providing

services. For example, simple outpatient curative care visits are provided in government health centers, hospital outpatient departments, modern urban group practices, factory clinics, etc. Similarly, family planning services are provided in a variety of individual and group settings. There has been little assessment of the effectiveness of these alternatives, or of their equity or efficiency. In health care financing the field is wide open for experimentation and reform in such aspects as user fees, prepayment, and insurance, among others.

The project description outlines specific outputs from these kinds of activities, including development of alternative health care financing mechanisms, an active private sector role in outreach primary health care services, institutional development for health policy research including private sector participation, and strengthening the policy making apparatus within the GOI. Each of these proposed outputs requires monitoring and evaluation -- another important role for an information component of the project. Individual projects and programs of innovative management and financing must be monitored and evaluated in terms of their immediate goals. Larger-scale trends in the level of health resources and their allocation must also be monitored in terms of the medium and long-term objectives of the project as a whole.

In addition to supporting experimentation leading to program reform in these areas of health care management, organization, and financing, the project description cites social marketing and health technology development and production as specific areas for support. Similar data needs can be identified for these components as well.

Translating Project Objectives into Information Needs and a System for Meeting Those Needs

Clearly, at this stage the project's objectives are quite broad and give high priority to strengthening data and analysis. Information collection and presentation is included amongst the project's direct outputs in the context of policy analysis and assessment of innovations in health care management, organization, and financing. That is, the project will directly support development and maintenance of the capacity to carry out data analysis and applied research relevant to health policy and service delivery. The project will also have an interest in monitoring progress towards specific project objectives and ultimately in being able to evaluate project results in terms of these objectives. These "internal" needs should be built into the broader policy analysis work. But they may also require additional efforts. A range of different types of data collection, analysis, applied research, etc., will be needed across the different components now envisaged for the project. The information components needed by the project may be defined as follows:

Analysis for Policy/Planning This component is concerned with broad brush assessments of current status, goal setting, and identification of the medium and long-term requirements for achieving these goals in terms of both financial and real resources. The focus is primarily macro or sector-wide. Initially, a situation analysis is needed to determine specific targets/goals for project inputs. For example, there is a sense that the current distribution of public and private sector health resources between curative and preventive care programs

is inappropriate, i.e. does not adequately reflect national objectives for the health sector. Yet our understanding of the overall quantities in this distribution as well as its component parts is still incomplete. If increasing the proportion of total health sector resources to primary care by a certain amount is the objectives, what are the possible sources of funds to be shifted? How much is needed and how will this be reflected in improvements to services and health status?

Project/Program Development This component relates to development of specific methods to meet the objectives identified by policy-makers and planners. The focus is mainly micro, initially in terms of pilot projects, but ultimately towards expanded programs. Data and analysis are needed to identify specific problems and potential solutions. For example, what are realistic potential productivity gains in government hospitals, or, what is the potential for increasing resources for health facility operating expenses by raising user fees and what are the equity implications of this? Investment analyses and feasibility studies are needed to support the development of pilot projects and larger programs. For example, what are the capitalization requirements for community financing schemes or comprehensive care for factory workers? These analyses should include assessment of the financial, behavioral, and health impact aspects of programs. We need better understanding of costs, the health service production process, and consumer behavior.

Monitoring and Evaluation Intervention at both the macro sector level and the more micro project or program level require ongoing monitoring and evaluation of results. For pilot projects and programs, the GOI needs to assess the costs of intervention, the effects on utilization and equity, and, occasionally, health impacts before embarking on expanded programs of national policy. At the sector level, medium and long-term objectives of increased resources or shifts in priorities and allocation must be assessed.

The scope of data and analysis needed to support the project is quite broad and needs to be analyzed more systematically for us to move towards design of an information component. A first step in this direction is presented in Figure 1, which links specific types of data needed with their principal application in supporting the goals of the proposed project. Horizontally across the top are listed the data "applications" just discussed: policy/planning; project/program development; and monitoring/evaluation. Vertically on the left there are four categories of data needed: public sector resources and outputs; private sector resources and outputs; data from the service provider or service delivery level; and data from households. (Within each of these categories, more detailed breakdowns of specific indicators and sources of data are presented later in this report.) The figure simply shows that the more "global" data on resources and outputs has its primary application at the policy and planning level and in monitoring the longer-term changes related to project inputs or other factors influencing the composition of the health sector over time. The more "operational" data on service costs and productivity and household behavior in use of services and expenditures has its main application in the design of interventions and their immediate monitoring and evaluation to identify and expand successful innovations.

Figure 1

THE LINK BETWEEN CATEGORIES OF DATA NEEDED
AND THEIR MAIN APPLICATION IN THE PROJECT

Data Applications			
Categories of Data	Policy/ Planning	Proj/Prog Development	Monitoring/ Evaluation
<hr/>			
Public Resources and Outputs			
Physical Resources	X		
Budgets, Expenditures, Revenues			Longer- term
Outputs			
<hr/>			
Private Resources and Outputs			
Physical Resources	X		
Income			Longer- term
Outputs			
<hr/>			
Service Providers			
Costs			
Utilization		X	
Efficacy			Shorter- term
Institutional Factors			
<hr/>			
Households			
Use and Expenditure		X	
Behavior Determinants			Shorter- term
Health Needs & Impact			
<hr/>			

III. WHAT INFORMATION IS NEEDED AND WHERE DOES IT COME FROM?

Within each category of data listed in Figure 1, I have listed several sub-categories of specific types of data. For example, under "Public Resources and Outputs" are listed physical resources; budgets, expenditures, revenues; and outputs. Within each of these sub-categories, one can identify specific measures and indicators -- e.g., number of hospital beds per capita in Java, or recurrent budget for EPI and ORT programs nation-wide for a given year. Each relevant indicator can be related to a specific data need of the project.

Obviously this could lead us to a very detailed and sterile exercise in cataloguing indicators and potential applications. I do not think this would be too useful at this time. However, it is helpful to specify further examples of these different types of data and how they can be applied in the proposed project. Appendix I provides a set of tables with examples of specific indicators, and suggestions of how they can be applied in the project. The following paragraphs summarize some of the main points in these tables.

The first category listed in Public Sector Resources. Data in this area represent the physical and financial inputs available from government for the health sector. Physical resources include facilities and manpower. Financial resources refers to budgets (the planned availability and use of resources), expenditures (the actual use), and revenues (the "income" to health facilities from fees, reimbursement, etc.) I have also included aggregate measures of outputs in this category, such as the number of health center outpatient contacts. These data are needed to assess the capacity and potential of the public sector to provide services. They also are used to describe the existing allocation of resources and trends in resource levels. Monitoring of specific indicators from this category will provide one of the main components of tracking project-related improvements in the public health sector.

Private Sector Resources provides the non-government analogue to the first category. Again, physical resources refers primarily to an inventory of facilities and manpower. While this may be straightforward for registered practitioners, there is also a large non-formal medical sector that may be quite significant in terms of both practitioners and finances. On the financial side, I have listed private sector "income" as a data category. The earnings of private health practitioners are the analogue to expenditures in the public sector. (Another measure of such earnings are household expenditures on private services.) Outputs such as outpatient contacts, bed-days, deliveries, etc., are again an important measure of the role (and possibly capacity) of the private sector in providing services.

While the preceding two categories deal with resources and outputs on a general or sector-wide level, the Service Provider category relates more to the operational aspects of health services, mainly on a micro level. Data are needed on the total costs of different types of services (curative care, maternal and child health, hospital care, for example) as well as on the cost per service provided (e.g. clinic outpatient contacts, inpatient days, immunizations, etc.). The latter unit or average cost measures combine service costs with utilization or output. These indicators are needed for planning the financing of service delivery programs. They are also important for identifying low productivity or inefficiency in existing service programs and assessing interventions to improve operating

efficiency. Cost comparisons of different types of health care organization providing similar services (primary curative care visits to hospital outpatient departments, health centers, and subcenters for example) can be used to identify potential efficiency gains from changes in health care organization or utilization patterns.

Assessment of the efficacy or health impact of services (and related to that, the quality of care) is included in this category. This is technically difficult to do and may not be practical in most situations. Nonetheless, the health impact potential of different types of services (treatments, immunization) and different types of health care organization (treatments at health center or hospital) should be a key consideration in resource allocation decisions. We generally assume that some kinds of services are more efficacious than others, for example that medically supervised deliveries are lower risk than those done by traditional midwives, if maternal risk factors are held constant. Such assumptions may not be valid if quality of care is poor. It is not difficult to imagine situations in which quality improvements might give greater returns in improved health than expansion of infrastructure or coverage. I mention this issue here not to call for massive studies on health impact. Rather, this issue should probably be addressed carefully and gradually. But it should not be entirely ignored in the discussion of resource levels and resource allocation. This is an important component of what Jeffers refers to as allocative efficiency and it is one that is usually omitted from the analysis.

Another sub-category listed are institutional factors. By this I mean analysis of the organizational parameters affecting the efficiency of the health sector. For example, we have discussed the potential for increasing financial accountability in public hospitals -- what Stevens has called putting hospital managers at "risk for success". To develop experiments in this area we need to understand better the factors affecting the management behavior of hospital directors. What are their financial responsibilities towards their staff and their superiors? How would regency administrators react to loss of control over hospital revenues? Another example relates to improving regency level planning and management, also a subject of much discussion. But how much authority for resource reallocation resides at the regency level? Inquiry into these types of questions does not require sizable research, but rather informed investigation by objective observers.

The fourth category is Households and of course the individuals who make up households. Data from households is a crucial source of information on the levels and patterns of use of all kinds of health services -- traditional, public, private, informal, etc. Another dimension to service use is household expenditures on health care -- the financial contribution. Data on patterns and trends in use and expenditures is needed to develop interventions in health care organization and financing as well as to evaluate the coverage and equity results of such interventions. For example, we currently know that average per capita health service use is very low in Indonesia, suggesting that there is significant unmet need for services. There has not been a careful attempt to estimate the potential market for certain services in order to develop fee schedules or estimates of potential enrollment for prepayment schemes. At a later stage in the proposed project, experiments with fees, prepayment, or other innovations need to be evaluated in terms of their impact on service use and spending in the population in general and for specific target groups.

Beyond description of utilization and expenditure patterns, applied research should focus on identifying determinants of these behaviors by households. This requires both ethnographic and survey research. What factors account for the current low level of service use? What types of interventions will increase coverage with high priority services (like EPI, MCH) most efficiently -- social marketing addressing knowledge and beliefs, outreach campaigns removing price and time constraints, or a package of curative and preventive care appealing to felt needs as well as epidemiology?

Monitoring and evaluation for the project must also include ongoing assessment of changes in health indicators. Without a viable vital events recording system, this will necessarily be based on some kind of household enumeration.

Even to supply the data and analysis outlined in this summary seems an imposing task. Fortunately, Indonesia has a strong base of routine data collection and research in most of these areas already. Much of the data needed on public sector resources can be gleaned from existing government sources. Similarly, there are rich sources of data on service utilization and expenditures available from existing studies. For some important aspects, particularly details on the income and outputs of private sector services, total and unit costs, and determinants of health service demand, additional special studies may be needed.

Figure 2 presents the different categories of data in terms of whether they are adequately covered by existing secondary sources, available surveys, or whether special studies will probably be needed. Where data are currently available, it may be necessary to do additional collection and analysis. There is an ambitious data collection and analysis effort not being undertaken by the Department of Health which will meet some of these needs. These current efforts are described in the next section.

Figure 2

DATA NEEDS -- WHAT IS AVAILABLE NOW,
WHAT NEEDS ADDITIONAL STUDIES

Types of Data	Routinely Reported Secondary Data	Existing Surveys/ Studies	Special Studies Planned or Needed
<u>1. Public Sector Resources</u>			
Budget/Expenditures/ Resources	X		
Physical Resources	X		
Outputs	X		
<u>2. Private Sector Resources</u>			
Physical Resources	X		
Income			X
Outputs			X
<u>3. Service Providers</u>			
Cost of Service			X
Utilization/Output		X	
Efficacy/Quality of Care			X
Institutional Constraints			X
<u>4. Households</u>			
Levels/Patterns of Use and Expenditures		X	
Determinants of Use and Expenditures		X	X
Health Needs Impact		X	X

IV. EXISTING DATA AND DATA SOURCES: WHAT IS AVAILABLE AND WHO IS DOING IT?

Much of the information needed to initiate the proposed project is already available in Indonesia, although not always adequately analyzed and accessible. This includes both baseline data on the health sector, as well as data needed for identification of a first round of financing and health care organization innovations. While for some aspects existing data may be inadequate, lack of information is not so serious to delay early initiation of project activities, part of which can be devoted towards improving the existing base of information.

Several important sources of data should be noted. First, over the past few months the Bureau of Planning, Department of Health (BP) and BAPPENAS have collaborated on a major data collection effort which they refer to as "health sector work". This has been funded in large part from an existing World Bank loan. BP and BAPPENAS have enlisted assistance from a variety of other sources including the University of Indonesia (FKM and Lembatga Demografi), other divisions in the Department of Health, and the private sector.

The health sector work is directed by Dr. Brotowasisto. There are three working groups: cost analysis; resource mobilization; and situation analysis. The cost analysis group is looking mainly at total and unit costs of health programs, including hospitals, health centers, and vertical programs. Dr. Ascobat Gani (FKM-IU) heads this group. The resource mobilization group is trying to estimate the total amount of resources going into the health sector from public, private, and foreign sources. It is headed by Dr. Ridwan Malik (BP). This situation analysis group is reviewing data on health needs, existing service infrastructure, and utilization.

The results of these three working groups were expected to be available by late 1986. They should permit a comprehensive review of health needs, resources, and programs -- both public and private. The overall objective is to revise resource allocation priorities in the future and to develop meaningful targets for planning and financing. Tom D'Agnes has a copy of the terms of reference for this activity.

While the health sector work is extremely valuable, it is also very ambitious. Funding is limited and the time allotted for departments and institutions, each with demanding ongoing responsibilities. It is likely that all components of the work will not be completed with the same quality and thoroughness. This should not be taken as a criticism. Rather it points out the need to continue this kind of sectoral analysis beyond this activity. The single-mindedness with which this comprehensive agenda is being tackled by so many different agencies in the health sector is a very positive development which should receive USAID support. In addition, the results of the health sector work will provide much of the data needed to improve health planning and policy analysis as outlined in the proposed project design.

A second important source of data are the national household surveys routinely carried out by the Central Bureau of Statistics (BPS) and the Health Research and Development Board (Badan LitBangKes). The main BPS surveys of interest are the national socio-economic survey (SUSENAS), the census sample survey, and the inter-censal survey (SUPAS). The census and

inter-censal survey mainly provide data on morbidity and coverage with specific services such as family planning and immunization. SUSENAS is done annually with one of three alternating modules -- a household consumption and expenditures module, a morbidity module, and a health and environment module. Badan LitBangKes has supported three national health household surveys since 1972, most recently in 1985/6. These national sample surveys focus in more detail on morbidity and health service use. These different data sets are usually analyzed cross-sectionally and simple tabulations are available directly from BPS. There has not been much effort to explore regional differences or to document trends over time and their correlates.

The civil service employees health insurance scheme (ASKES, now called Perum Husada Bakti (PHB)) is another potentially important source of information. To date, PHB has mainly analyzed data on service use and costs manually, producing fairly basic results. However, the University of Indonesia computer center has recently designed a computerized database for them. If implemented, this database could provide valuable data on the health needs, service use, and health care costs of a large insured population in different parts of the country.

In addition to these major sources of data, there are a large number of other organizations which now have useful information or could be motivated to collect such information. A variety of small health service delivery and household studies have been done by universities and research institutes, including the University of Indonesia, Gajah Maeda University (Yogyakarta), Udayana University (Bali), and the Center for Health Services Research and Development (P4K, Surabaya). Provider organizations such as the All-Indonesia Hospital Association (PERSSI), the Indonesian Medical Association (IDI), and others are interested in improving their data on the activities of their members. Some of these are involved with the efforts of BP to estimate private sector health resources as part of the health sector work. Reports of the other USAID consultants provide more detail on these organizations. Market research firms and companies currently insuring their employees are other potential sources of data that have yet to be fully explored.

The following section reviews the major data now available and where they are located, according to the categories used in the preceding section. During my consultancy, I assisted Lembaga Demografi at the University of Indonesia in preparing a detailed inventory of these and other data sources, which should provide more specific information than I was able to gather.

Public Sector Resources

Collecting and organizing data on public sector financial resources in health -- budgets, expenditures, and revenues -- has been the major activity of the resource mobilization working group under the BP's health sector work. These data from 1979-1986 should ultimately be available in a micro-computer data base. This will be an extremely valuable source of information on the existing allocation of public sector resources and trends in allocation. This database should permit tabulation of financial inputs by sources of budget (routine, development, INPRES), by level of government (central, province, regency), type of program (Medical care, community services, vertical programs), and type of expenditure (salaries, drugs, etc.). It will also provide a baseline against which to measure

changes over the period of the proposed project. Unfortunately, I was not able to review any of the results of this exercise. Data are still being entered. It will be important to keep up this data base into the future.

Physical inputs in the public sector and health service outputs are probably best recorded through the Department of Health's recording and reporting system (R/R Terpadu) and the annual health center stratification reports. These efforts are coordinated through the Data Center (Pusat Data) in the Department of Health under Dr. Sriati Da Costa. Additional data (or more detailed breakdowns of these data) are available from the different Directorate Generals. While reports are collected regularly, it is likely that compiling this information is not up-to-date. In addition, data quality in routine health service reports may be variable, although there is little one can do about that in the short run. Most utilization data from public health facilities are assumed to be reasonably valid. Data on high priority programs with ambitious quantified targets (like EPI, family planning) are probably less reliable.

Private Sector Resources

Numbers of formal facilities and authorized personnel in the private sector can be approximated with data from the department of Health, which licenses private practitioners. Of course, there is an unknown, probably large, number of unlicensed practitioners.

At present, there are not adequate data on the outputs of private services or their economic value, except in very aggregate terms. For example, we can estimate the proportion of illness cases which consult "private" treatment sources from national household survey data. However, we cannot differentiate reliably between different types of private treatment -- especially the large amount of "informal" use of drug sellers, pharmacies, and unlicensed practitioners. There is no data on utilization from the provider side: for example, how many patients are treated in private doctor or paramedic practices. Similarly, private health expenditures can be estimated from national household expenditure surveys, but no one has quantified the importance of different types of provide[B in total spending or the income of the providers themselves.

The resource mobilization working group in the health sector work activity has organized a sub-group to estimate the size and composition of private health care utilization and expenditures. This sub-group is headed by Dr. Soemardi, the head of PERSSI, the hospital association. I was able to attend one of their working meetings. They are planning a mail survey of private hospitals, clinics, individual practitioners, and pharmacies in a sample of provinces throughout Indonesia. At this time, the instruments consist mainly of dummy tables listing types of facilities, number of contacts or outputs, and estimates of unit costs. It is unlikely that these data will be readily available from most practitioners. There was also some uncertainty in the group about how to sample. As currently designed, this survey will probably not give very useful results. However, this exercise is clearly worth doing well. Immediate financial and technical support from USAID might make the difference. In general, it would be better to have a well-designed and careful enumeration from a few areas than unreliable results from many different places. Dr. Ridwan Malik indicated that he could benefit from some assistance to this group.

Provider organizations are potentially an important source of information on private sector services. Some of these organizations are already represented in the health sector work team. I would recommend initiating support for that group and building further work from there.

Service Providers: Outputs, Costs, Other Aspects

To date, studies linking service outputs with productivity and costs at the provider level have been limited to a few small efforts. For primary care services, the most recent assessments were a time allocation study carried out by P4K-Surabaya in 1982 and the functional analysis studies done by FKM-UI in 1985. I have also been analyzing (with Dr. Suomi Sakai) some data I collected in 1982 on health center costs and productivity which I have passed on to Dr. Voulgaropoulos. For hospital services, ASKES has recently done a unit cost study in Jakarta. There may be other small hospital cost studies available elsewhere. BP (Dr. Ridwan and Oscar Gish) has also done budget and utilization assessments in a few regencies in West Sumatra and East Java. In general, these studies show large variations in unit costs and productivity within generally low levels of efficiency. However, they do not provide sufficient data for national unit cost estimates for planning or fee-setting for health facilities. They do indicate a major problem of low productivity which suggests that much greater attention be paid to demand and efficiency than to continued expansion of facilities and staff.

One of the working groups under health sector work is charged with estimating the total and unit costs for hospital, health center, and vertical service programs. Dr. Ascobat at FKM-UI is coordinating this group and also directing a proposed rural health center cost study, to be carried out this Fall. Dr. Prijono at Lembaga Demografi-UI has been commissioned to carry out a hospital cost study and also to estimate the unit costs of specific vertical programs like EPI and CDD. These different studies could provide the first data on service costs, productivity, and output from a larger area.

While little is known about costs and productivity, even less is known about the effectiveness of services and quality of care. Lack of data on these issues reflects the difficulty of measurement. Infant and child mortality rates have been declining in Indonesia since the 1960s. These improvements are often attributed -- especially by the Department of Health -- to progress in providing health care. As resource allocation issues gain attention in the health sector, it is important to be able to assess the effects of alternative types of services or service organization on target mortality and morbidity rates. While little can be done on this question in the short term, it should be considered in any program of resource to improve policy analysis and planning. This point was also made in Paul Torrens' report, and bears repeating here. The Mortality/Morbidity (M/M) Project at the School of Public Health, University of Indonesia, may provide a good resource for future work in this area.

Another important topic related to service providers is analysis of management issues and institutional constraints to improved coverage and efficiency. Three main actors in this area have been P4K-Surabaya, FKM-UI, and the Centers for Education and Training in the Department of Health. Not much formal research is available, but numerous papers have been prepared for workshops, training courses, and the like. The Department of Health's stratification assessment of health centers also has potential to contribute to management assessment.

Households

Three types of household data are listed in Figure 1: health needs data; the quantity and pattern of household health care utilization and expenditures; and assessments of the determinants of health care use and expenditures.

National data on household health status, morbidity, and mortality are mainly found in the Department of Health's National Health Household Surveys and in the surveys conducted by BPS. There is probably significant under-reporting of morbidity and mortality in these surveys. This under-reporting is partly cultural and partly related to problems in questionnaire design and survey organization. It will probably be difficult to eliminate this problem from any large cross-sectional study. The effect of this on the data is uncertain -- we are not sure about what kind of biases by type of illness or socio-economic class are introduced. The under-reporting problem also affects smaller scale more-intensive studies such as those carried out by FKM-UI and Lembaga Demografi. One much more intensive study recently completed by the Community Medicine Program at Gajah Mada University should be reviewed from comparison to these other sources of data.

As mentioned above, national data sets on health services utilization can be accessed through Badan LitBangKes and BPS. The SUSENAS data also include health expenditures, although these are not broken down into detailed sub-categories -- by type of provider for example. A number of small studies on these topics have been done in different parts of the country. These are summarized in a paper prepared by Ann McCauley for the HDPM project entitled, "Summary of Previous Research on Health Needs and the Utilization of Health Treatment Resources in Rural Java" (Attached). The functional analysis studies done by FKM-UI also provide quite detailed breakdowns of health care expenditures by households. We are currently analyzing these data at Johns Hopkins. The study by Community Medicine at Gajah Mada mentioned above should also provide detailed information on these topics.

The third area of interest in household studies is the determinants of household service utilization and expenditures behavior. The national survey data can provide some insights into the role of economic factors in determining use but are weak on behavioral aspects. The smaller scale studies provide a richer source of information, although these have usually not been analyzed adequately. In general, the results of these studies to date have been unsatisfactory. They have not provided clear guidance on interventions to improve utilization of services. They have also not been used to develop new approaches to financing, organization, or management of services and certainly have not contributed to evaluation of such changes.

I feel further work in this area is critical both for the development of interventions and their evaluation. USAID support is probably needed. However, this should follow clear identification of intervention options and a program for use of the data. Both studies and "social experiments" should be considered. For example, what can be done to increase utilization of key "child survival" services? Ethnographic and survey research could be used to identify the role of beliefs and perceptions about needs and services versus the effects of time and other costs. Results could be used to develop social marketing or service extension strategies. Another example relates to development of community financing.

What is now being spent, by whom, and for what kinds of problems and services in urban and rural communities? What factors explain differences in use and spending? Can these data be used to stimulate community interest in risk-sharing or to modify facility fees or service provision? Can the results of such experiments be assessed in terms of use, spending, equity, attitudes/practices?

Towards an Information Component for the Project: Strengthening Capacity for Policy Analysis, Applied Research Monitoring and Evaluation

The preceding sections indicate that there are substantial data relevant to the policy analysis and health sector development objectives of the proposed project. There is also a sizable community of researchers and policy makers in Jakarta and other sites in Indonesia. Researchers, planners, and policy analysis are collaborating -- their common framework and goals in the health sector work are an impressive achievement. While there is much that needs to be done, there is also significant capacity to carry out the work envisioned in the proposed project. An there is potential for further development of that capacity.

Three issues for the development of the project, then, are:

1. What are the basic constituents for an information component for the project and how can they be linked?
2. What institutional structures should be considered in order to foster a continuing capacity for policy relevant research and analysis in the health sector?
3. What support is needed in the short- and medium-term for this type of work and what can USAID do?

Strategy for an Information Component

As mentioned in the beginning of this report, it is difficult to outline in detail the information strategy for the proposed project before the project itself is reasonably clear. The following are some thoughts on strategy which must be further developed in preparing the project.

At the level of policy analysis, there is clearly a need for supporting more extensive and ongoing capacity to monitor resources in the health sector, both public and private. This should include financial resources (budgets, expenditures, private sector earnings), physical resources in terms of facilities and manpower, and outputs. The "health sector work" coordinated by BP is leading the way in this area.

USAID's assistance should try to strengthen the positive steps already taken. This could include helping to set up an institutional "home" for this type of work with initial support for personnel, equipment, etc. The capacity for collecting data not available routinely also needs to be strengthened, as is shown by the difficulties in mounting a satisfactory analysis of the private sector with the limited resources and personnel available. Training, advanced education, and technical assistance could all support this effort.

Policy analysis supported by the project should provide the information needed for the projects own internal monitoring as well. For

ample, one project goal is increasing the proportion of public and private sector resources allocated to preventive and promotive care. This could be monitored through an annual analysis of government expenditures by type of program and geographic area. Monitoring of private sector resources may be possible through use of national survey data or local provider surveys in a few sentinel areas. Protocols for specific indicators can be laid out once the objectives of the project are clearly defined.

One of the main areas for project assistance will be support for program experiments to test innovations in health care financing and management. It is likely that these will require support for applied research, financial analysis, and evaluation. At this time, the capacity to provide these services is probably better not concentrated in a single institution. Current efforts to strengthen health services research through the development of new FKMs will help set up this capacity in different regions of the country. Other universities and research institutions in the Department of Health also have an important role to play in supporting these activities.

Although decentralization of capacity is advantageous, it will be important to have some more focused source of technical assistance and institutional memory for documenting successes and failures and disseminating the results. If the project moves to supporting some kind of financing agency which can provide funds for innovations in finance and management, this would be a logical place for development of a core applied research and evaluation capacity. This could be a second focus of support in an information component, along with the policy analysis focus. Again, AID could support the start-up costs of equipment and personnel, as well as training, education, and technical assistance. A grant fund for studies would also be useful.

The above discussion suggests a two-pronged strategy for an information component -- support for policy analysis probably linked closely to the Department of Health (the Bureau of Planning is the strongest actor in this area now) and a more flexible focus for project funding and applied research in both the public and private sectors. Both of these activities could provide the data needed to monitor and evaluate the USAID's project -- the former on the macro or sector-wide level, the latter in terms of the micro or intervention specific results.

What are the main tasks to be accomplished in these two areas? First, in terms of policy analysis:

- * A repository for up-to-date data and analysis relevant to health policy, financing, and management.
- * Compilation and publication, or the capacity for it, of a periodic status report on health sector structure and finance. Such a report could function as a kind of monitoring paper, to document changes in organization, levels and flows of funds, utilization, etc.

and, second, in terms of the program experiment activity:

- * Technical support for the development, monitoring, and evaluation of pilot projects and field experiments in health care organization and management, cost recovery, prepayment, financial management, etc.

This would include capacity to set-up or organize pre-investment analysis, information systems, and evaluation. Technical skills would be needed in accounting, computing, actuarial science, economics, health service management, and health services research.

- * The capacity to design, carry out, and analyze household surveys of health status, utilization, expenditures, and their determinants. This would require some social science expertise, applied statistics, and the ability to recruit and manage enumeration and data processing.
- * A capacity for organizing and analyzing large health service record databases, such as might be generated by insurance schemes or a health information system.
- * A center for exchange of ideas and experiences related to health finance and management. This could include facilities for local and visiting foreign researchers and students, organization of meetings, publications, etc.

What could USAID provide? The likely composition of project inputs includes:

- * Support for start-up costs, i.e. equipment, furniture, computers, some salary support, supplies.
- * Funds for data collection and analysis, including travel, enumerators, data processing.
- * Support for dissemination of results such as publications, workshops.
- * Support for in-country in-service training.
- * Technical assistance.
- * Financing for grants program.
- * Fellowships for short- and long-term training in health economics, finance, policy, management.

Institutionalization

The agenda put forward in this report is substantial. The logical next questions are who or what institutions can be mobilized to carry out these tasks?

There are a number of strong actors in this field, many of whom have been mentioned in earlier sections of this report. Within the Department of Health, the Bureau of Planning has a central role in the "health sector work". This is certainly the main health policy analysis activity underway at this time. BP is now de facto the focus of health policy analysis for the Department of Health and should clearly play an important role in the proposed project. In the short-run, this situation should be supported. There is a unique commonality of interest that has formed between BAPPENAS, universities, BP, and private sector agencies that should be fostered. However, one might question whether BP can or should be in this central role in policy analysis in the future? It has fairly heavy ongoing responsibilities for planning and monitoring health programs. And it is

clearly not a research institution. This should be considered carefully in project development.

The Centers for Research and Development in the Department of Health have so far not played a major role in the areas discussed here. There should, however, be scope for expanding their participation. Specifically, the periodic national health household surveys are important sources of data. And the Center for Health Services Research and Development should properly contribute to field trials related to management.

Increasingly, universities are playing a key role in health policy, finance, and management discussion. FKM-UI and economists at the Lembaga Demografi are closely linked to the health sector work. Other universities have active community medicine programs (Bajah Mada, Udayana, Andalas) that provide much of the energy for field innovations in service delivery. The new FKMs will provide additional sources of technical expertise.

While the range of academic institutions is impressive, the absolute number of qualified people in health economics, finance, and management is still very limited. Good people are stretched to the limit. Major institutional development for health finance and management work should proceed slowly and include significant support for training.

Perum Husada Bakti is another potentially significant participant. They possess the most comprehensive database on public and private sector illness treatment, both out and inpatient. They have strong internal incentives to improve their data collection and analysis. I discussed briefly with Dr. Brata Ranuh the possibility of PHB taking a larger role in applied research. However, he felt that they needed to get their own house in order first. Assistance to accelerate that process might be well spent.

We have also discussed possible roles for PVO foundations like YIS or YKB. These agencies have been quite active in health service development. They are able to provide service to government and outside agencies flexibly. However, their strengths in the past have been in community-based programs and training. They have had experience with managing health services delivery and some more "entrepreneurial" projects. In order to play a major role in a project of this type they would need to strengthen their technical capacity in economics, finance, survey research, data processing, and technical assistance. Discussions I have had with YIS indicate that they would be very interested to move more substantially into this area. They perceive that this is a growth area for the future. The growing private sector in health may also provide a market for technical services that could support their other community-oriented activities.

Hard and fast recommendations about the institutional bases for the information activities envisaged in this report do not seem appropriate at this time. The GOI is in the midst of a major analytical exercise, drawing assistance from all quarters. For the near future, the wisest tack for USAID would be to support activities now in progress and initiate discussion with all interested parties about future roles and commitments. Any future institutional structure must be acceptable both to the Department of Health and key actors in the private and parastatal sectors. One can envisage the development of such institutional bases as final outcomes of the project -- not initial inputs.

Still, one can make out in the current environment the outline of possible future configurations. The strong collaboration between BAPPENAS, BP, and universities could lead easily into formation of some type of "Center for Health Finance and Management". Such a center could provide the focus for the policy analysis function outlined in the previous section. This might be based at a university or given some special status within Health. Its work should be independent of the day-to-day demands of Health and BAPPENAS, but these institutions should probably be represented on some kind of board of advisors or steering committee to influence its agenda.

A second focus -- for the project development function outlined above -- could be developed through a PVO-based institution. Again, this might be best in collaboration with a university center. However, the non-governmental character of a PVO would give added flexibility in working in both public and private sectors.

How might future work in this area be financed? Initially, funding for health finance and management work may come primarily from international agencies (USAID, World Bank, foundations). In better financial times in Indonesia, there has been funding for these kinds of activities available directly from the government. However, it would be crucial for institutions in this area to be able to receive funding (either core or contract) from public enterprises such as ASKES, ASTEK, and PERTAMINA. Provider organizations may also seek to commission work. As insurance plans grow in Indonesia, it may also be possible to commit a small percentage of premium income to support of a non-profit public service institution to support health policy.

Suggestions for USAID Support Over the Next 12 Months

What activities can USAID support pending approval of a longer-term project? I would suggest the following:

- * Financial and technical assistance to the private sector provider survey now being planned by the resource mobilization working group under Dr. Ridwan Malik.
- * Analysis of levels, patterns, and trends in health care utilization and expenditures at national and regional level. This would involve support for data analysis and write-up based on three existing sources of data -- SUSENAS, Health Household Survey, and ASKES. Trends could be estimated from the early 1970s until the present. Both curative and preventive services should be assessed, as well as both public and private sources. These are large data sets and so would require access to large computers (BPS?) and a team with adequate data analysis experience. Dr. Berlian Siagian might be an ideal investigator for this type of project, jointly with Dr. Sudarti at BPS. This idea might be discussed in more detail with Dr. Brotowasisto.
- * If needed, financial and technical support should be provided to continue the development and maintenance of the computerized data base of public sector budgets, expenditures, and revenues in health. Now that this has been established, it shouldn't be allowed to languish for lack of support. It will probably be an essential component for monitoring the proposed project.

- * Support for some kind of national forum or meeting to discuss possible institutional bases for ongoing health policy, finance, and management work.

APPENDIX I:

INDICATORS AND APPLICATIONS OF DATA

Tables 1-4

Table A1: PUBLIC SECTOR RESOURCES

Type of Data	Specific Measures/Indicators	Applications	Current Sources	Comments
<u>Public Sector Resources</u>				
1.1 Budget/ Expenditures	<p>Current levels and trends from preceding 5 years of government planned (budget) and actual expenditures: by source and level</p> <p>Rutin/Pembangunan/Inpres APBN, APBDI, etc.</p> <p>by geographic area . province rural/urban specific regions of interest</p> <p>by type of service or program or facility*</p> <p>Curative/Preventive Hospital/Primary Care Specific programs (e.g., EPI)</p> <p>by type of expenditure</p> <p>Capital Personnel Drugs Transport Honoraria Travel, etc.</p>	<p>Monitor total public sector resources and trends</p> <p>Describe current allocation of resources and trends, compare with policy priorities</p> <p>Identify priorities for altering resource levels, allocation</p> <p>Monitor changes in sector resources related to project goals</p>	<p>"Health Sector Work" Bureau of Planning and BAPPENAS using official government fiscal data.</p> <p>BP developing computerized database of budget/ expenditures</p> <p>BAPPENAS developing detailed breakdown of budgets by type of expenditure</p> <p>Some work also done by Ridwan/Gish on this</p>	<p>Generally available from existing records, but needs to be pulled out and analyzed-good work now in process. Possible continuing USAID support needed</p> <p>*Very difficult to make these distinctions from budgets alone, may require detailed studies to break out joint costs</p>
1.2 Revenues	<p>Current levels and trends (5 yrs.)</p> <p>by type of facility</p> <p>by level of government receiving funds</p>	<p>Describe current level of cost recovery and compare to expenditures</p> <p>Identify potential/priorities for financing improvements</p>	BP	

Type of Data	Specific Measures/Indicators	Applications	Current Sources	Comments
1.3 Physical Resources	<p>Number of facilities-- Hospitals by type Health center, sub-center Mobile units Other facilities --by province urban/rural</p> <p>Number of personnel-- by type of personnel MD, nurse, paramedic by level of posting province Kabupaten, etc. by type of posting Health center Hospital Administration</p>	<p>Describe size and composition of public sector resources</p> <p>Baseline data to estimate scale of problems or changes required</p>	<p>Depkes records/ Pusat data? BP</p> <p>Biro Pusat Statistik</p>	<p>All data probably available in tabulated form -- might usefully be entered in micro-computer database for cross classification-- check with Soekirman</p>
1.4 Outputs	<p>Total contacts of public health system by type: - Hospital inpatient days - Hospital outpatient contacts - PHC outpatient contacts - MCH contacts etc.</p> <p>Per capita contact rates by geographic area and urban/rural type of service</p> <p>Coverage with specific priority programs - e.g., % <5's with EPI coverage % <5's weighed each month % pregnancies with PNC etc. by region, urban/rural, etc.</p>	<p>Aggregate estimate of output/productivity of public services</p> <p>Describe relative importance of different components of delivery system</p> <p>Estimate frequency of use of public service by population and type of service</p> <p>Identify regional differences in intensity of utilization</p> <p>Identify important gaps in priority preventive care programs</p>	<p>Depkes HIS Pusat data Bagia Statistik</p> <p>Existing data (Depkes) and population base Health HH Survey Small studies</p> <p>Depkes data Health HH Survey Susenas Small studies</p>	<p>Aggregate data probably easily available</p>

Table A2: PRIVATE SECTOR RESOURCES

Type of Data	Specific Measures/Indicators	Applications	Current Sources	Comments
2. Private Sector Resources				
2.1 Physical Resources				
	Number of private facilities National, - Hospitals Province, - Group practices Urban/rural - Clinics - Individual private practices - MD, Nurse, Midwife - Pharmacies - Drug sellers Number of private practitioners National, - MD's Province, - Nurses Urban/rural - Miarorges - Traditional - Informal	Describe existing structure of private sector Estimate relative size of different actors (facilities, providers) in private sector	Proposed private sector inventory included in "health sector work" Existing Depkes data (registrations) by administrative level.	-Registered facilities should be listed with Depkes as should practitioners. Unclear how accurate this is. Careful enumeration and description of available resources in a few urban/rural areas needed. Special study? -May be difficult to estimate size of traditional/informal sector -Need to pay special attention to providers in cities outside Jakarta and to rural areas
2.2 Income				
	Total earnings of private health sector Total earnings classified by: -geographic area (province, urban/rural) -type of facility/practitioner -type of service - curative PHC, MCH, secondary/tertiary, specialist, etc.	Estimate total financial size of private sector services Estimate relative size of different components of sector Identify priority areas for intervention Monitor changes in private sector size/composition financially	Proposed private sector provider survey Provider organizations (IDI, PERSSI, etc.) Askes database Household expenditure surveys (Susenas, etc.)	-Probably difficult to do reliably by mail survey-- may be better to have detailed survey in a few provinces/cities-- USAID support?

Type of Data	Specific Measures/Indicators	Applications	Current Sources	Comments
2.3 Outputs	<p>Total private care contacts (estimate) by type-- Hospital inpatient day Hospital outpatient day Clinic outpatient visit Practitioner outpatient visit by region, etc.</p> <p>Per capita contacts with private service by type of service, region, etc.</p>	<p>Estimate quantity of private services being provided</p>	<p>-Expected to be part of "health sector work" private sector study</p> <p>-Provider organizations</p> <p>-Health HH Survey</p> <p>-Health HH Survey</p>	<p>May require some special enumeration</p> <p>Probably doesn't provide level of detail required. Should develop utilization (and expenditure) module for future national HH surveys with sufficient detail (USAID inputs?)</p>

Table A3: SERVICE PROVIDER/DELIVERY INFORMATION

Type of Data	Specific Measures/Indicators	Application	Existing Sources	Comments
<u>Service Providers</u>				
3.1 Costs of service production	<p>Total cost by type of facility/provider ("unit" cost of facility) breakdowns by capital and recurrent cost and more detailed cost components</p> <p>Hospitals HC Specific vertical programs - EPI, Pos Yandu</p>	<p>-Assessment of levels and variation in costs of operating facilities for planning projections</p> <p>-Estimation of future financial requirements for program expansion</p>	<p>"Health sector work"</p> <p>-Hospital cost study } LD- -Vertical program cost study } FEUI</p> <p>-Health Center Cost Study - FKMUI</p> <p>-Previous small-scale studies</p> <p>-Berman -FKMUI-FA -PERSSI-FKM</p>	<p>Cost analysis using budget or expenditure data is not adequate to determine actual costs of specific program or outputs--except for a few vertical programs. This is because of joint costs, especially manpower and drugs--two largest components.</p>
	<p>Average (unit) cost of service outputs by - type of output type of facility</p> <p>breakdown of unit cost by type of cost (K/R etc.)</p> <p>tabulation across regions</p>	<p>-Identification of differences in service efficiency across delivery units, regions, etc. for development of interventions to increase productivity</p> <p>-Monitoring and evaluation of changes in productivity or total expenditures</p>		<p>Special studies are needed. These need not be too expensive or difficult. Current UI efforts should lead to standard methods for these studies.</p> <p>Eventually, cost accounting and reporting procedures of govt. should be improved to allow routine monitoring in a few areas. USAID support?</p>

Type of Data	Specific Measures/Indicators	Application	Existing Sources	Comments
3.2 Utilization/ Output	Level and variation in use of specific type of services at different types of facilities e.g., curative contacts per hc per year -BOR per hospital per year by population geographic area -antenatal care contact per hc per year	To estimate realistic levels of facility capacity for planning purposes To identify role of utilization in improving service productivity To monitor changes in utilization levels related to project inputs, e.g., social marketing	Existing Depkes R&R data Cost Studies Household survey	Existing data probably adequate although may need improvements to make more accessible/better analyzed If very detailed utilization data needed, special facility or even household studies may be needed, e.g., to know percentage of low income women attending PNC
3.3 Efficacy/ Quality of Care	Evaluations of the technical quality of provision of specific services for both public and private services, e.g., -correct diagnosis/prescription for high risk curative care cases and drug use -proportion of EPI vaccinations correctly given (age, vaccine efficacy, etc.) -hospital-based infection rate	To identify improvements in efficiency and effectiveness attainable from quality improvements To assist in design of management improvements to increase effectiveness To monitor and evaluate project input to improve quality of care To estimate the financial and health status costs of low quality	Virtually none-- perhaps recent drug use studies done by MSH in CHIPPS provinces are example	These issues may be sensitive but should not be overlooked. Special studies required.

Type of Data	Specific Measures/Indicators	Application	Existing Sources	Comments
3.4 Analysis of Institutional Constraints	Qualitative analysis of management and administration at kecamatan and kabupaten level - address issues of constraints to authority/capacity for change in improving management/organization, finance. E.g., Can health center doctor change allocation of resources? Do local authorities have control over fee income? Can facility-based cost responsibility be implemented under current regulations?	Identification of limiting factors to improving efficiency Source of issues for ongoing policy dialogue with GOI	References in consultant reports, previous studies by FKM-UI, Depkes, P4M-Surabaya	Use of consultants emphasized Possibly some small special studies by management groups

Table A4: HOUSEHOLD INFORMATION

Type of Data	Specific Measures/Indicators	Applications	Existing Sources	Comments
<u>Households</u>				
4.1 Level and patterns of service use and expenditures	<p>Household and per capita rates (annual) of treatment use for different types of treatment</p> <p>Curative care - PHC</p> <p>Hospital</p> <p>Traditional</p> <p>Self</p> <p>MCH</p> <p>Other preventive services by SES, regions, etc.</p> <p>Household and per capita rates of health expenditures--as above by SES regions</p> <p>Proportions of total household treatment use allocated to different sources of care</p>	<p>Description of the amount and type of services used by HH's and individuals</p> <p>Estimate of potential demand for services-- outputs and financial potential</p> <p>Identification of key target groups/area for intervention</p> <p>Monitoring of changes in rate and composition of service use to assess project impact</p>	<p>Health Household Survey Susenas</p> <p>Estimates from secondary data</p> <p>Small studies (see McCauley paper)</p>	<p>Existing national survey data should be reviewed and synthesized for base-line report. USAID could support joint project between DEPKES, BPS, universities with outside technical assistance if needed.</p> <p>Future national surveys should have strengthened component for use and expenditure</p>
4.2 Determinants of household service use and expenditures levels and patterns	<p>Estimates of effects on service use and expenditures of important independent variables: "marginal propensity to consume" different types of health care with changes in income, prices, convenience, insurance, etc.</p>	<p>Estimate effects of changes in service prices, location, information and other factors on use and expenditures</p> <p>Identification of useful areas for project-supported innovation/intervention</p> <p>Estimate likely impact of changes in service management, organization, financing</p> <p>Evaluate changes in HH use and expenditure behavior</p>	<p>Health HH Survey Susenas</p> <p>Small studies</p>	<p>Better design, implementation analysis of micro studies and national surveys needed</p> <p>Also must better integrate qualitative studies on perceptions of health needs and quality of care</p> <p>Mainly small-scale special studied will be relevant to project pilot interventions</p>

Type of Data	Specific Measures/Indicators	Application	Existing Sources	Comments
4.3 Health Needs and Impact of Services	<p>Infant, child, and maternal mortality rates--broken down by target groups/regions of interest</p> <p>Incidence/prevalence of key diseases</p> <p>Contacts with services related to important causes of death/disease</p>	<p>Identify priorities for project action</p> <p>Identify priorities for GOI resource allocation</p> <p>Monitor changes in conditions</p> <p>Assess results of project unputs</p>	<p>Census and Intercensal Survey</p> <p>Susenas</p> <p>Health HH Survey</p> <p>Small studies</p> <p>Askes data?</p>	<p>Existing data not too useful but reasonable estimates are available</p> <p>This is very difficult research area--should not be major activity</p>

APPENDIX II:

DEFINITION OF TERMS

Total Cost: Estimated total value of resources used in a specific activity. Usually calculated for a given time period.

Fixed Cost: The cost of resources used in an activity whose quantity does not vary with the level of output in the short run. For example, the costs of buildings are fixed costs in analyzing rural health centers.

Variable Cost: The cost of resources used in an activity whose quantity varies with the level of output. For example, drugs are a variable cost in most health service programs.

Investment Cost: Costs of an activity incurred at one time but which produce benefits or output over a longer period. Investment costs are often fixed costs as well. This term however, distinguishes those costs that may need to be pro-rated over more than one accounting period for more accurate estimates of the true costs of an activity in each period. Vehicles are often an investment cost of PHC programs.

Recurrent Cost: Costs of an activity incurred in each period which can be related only to the outputs of that period. For example, salaries of staff in rural health centers.

Average or Unit Cost: One encounters two common uses of these terms in Indonesia. First, they refer to an average cost for budgetary requirement for provision of health facilities or a package of services to a given area or population. For example, planners would like an estimate of the average budget requirement of running a rural district health center each year. They could then estimate their recurrent budget by multiplying the number of health centers by the health center average or unit cost -- the cost of a health program "unit" or input package. A second usage is the more usual one in economic analysis of the production of health services. The average or unit cost is the cost of a given health service output, for example, the cost of an inpatient day or an outpatient visit. This is calculated by dividing the total cost (fixed and recurrent) of inputs used to provide such services by the total output over a given period of time. Average or unit costs of this type can also be used for planning -- to estimate the costs of covering a population with a certain service. They can also be used in management and evaluation, to assess the efficiency of resources use in different types of health care organization (health centers versus hospitals, for example) or in comparing different units with the same type of organization.

Budget: Budgets contain a plan for spending by a program agency. This, of course, may be quite different from the resources that are eventually available. Budgets are an indirect way of measuring the financial resources put into a program and may be inaccurate.

Expenditure: Where budgets represent planned resource use, expenditures are the actual use of resources.

Revenue: The income to health care organizations gained from providing services. Where budgets are the resources provided to meet the costs of operation, revenues are resources gained in exchange for giving services.

Income: Large organizations like government or hospitals may need to work from budgets in their financial planning. Small private providers may not. Thus, to estimate the costs of services provided by individual practitioners, we may need to estimate their earnings from health care. Assuming that they are profitable (and on average most of them have to be), this includes their costs as well as profit and return to their own labor.

Input: This term is used here mainly to refer to the physical resources used in providing health services, e.g. buildings, vehicles, manpower, drugs, fuel, etc. Inputs have a financial value and could be measured in those terms. I have tried to use the terms of costs, expenditures, or budgets when discussing the financial aspect of inputs.

Output: This is the countable product of health services -- what the inputs produce. Typical measures include child immunizations, ante-natal care visits, inpatient discharges, etc.

Throughput: This term is used in some of the previous consultant reports. It probably refers to measures of patient flow or the process of service delivery, as opposed to the actual product. For example, a bed-day reflects patients in the process of treatment. A discharge is potentially a better output or product of hospital services. Total bed-days divided by average length of stay equals the number of discharges -- completing the relationship between throughput and output measures.

Outcome: This is the benefit from health services measured in terms of improved health. Ultimately, health services are expected to produce health outcomes, by using inputs to provide outputs. Typical measures include deaths averted from specific diseases, gains in days of healthy or active life, etc.

Facility/delivery Unit: I have used this term to refer to different modes of health care organization. One can distinguish somewhat the organization of services from the specific types of care they provide. For example, immunizations can be provided in a health center, a health post, a hospital outpatient clinic, or a mass community campaign. The immunization is fundamentally the same in technical or medical terms. However, the mode of organization has a lot to do with what immunization costs and who in population is likely to get it. It may also influence the quality of service provision.

Technical Quality of Care: In order to be efficacious, specific services must be provided according to certain technical conditions. For example: some immunizations must be provided a certain number of times; vaccine must have been kept consistently cold enough, and children must be vaccinated at the right ages. The value of a vaccination depends in large part on these "technical quality" characteristics. These can be distinguished from the "perceived quality" of care as judged by beneficiaries, which may be more a function of their beliefs, attitudes of providers, convenience, etc.

Utilization/Coverage: These two terms are related. Utilization refers to more general measures of use of services by individuals and households. A typical example of a measure of utilization is the number of outpatient contacts per capita per year for a given population. In contrast, coverage measures link utilization to some estimate of the need for services. Coverage can be defined as the proportion of a population judged in need of a specific service who receive that service during a given time period. For example, if it is judged that all pregnant women should receive at least three routine ante-natal care visits then coverage would be the proportion of pregnancies with three or more such visits.