Health Sector Policy Reform in Macedonia: Technical Assistance Inception Report

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I. INTRODUCTION

The Former Yugoslav Republic of Macedonia (FYROM) has embarked on a series of major health sector reforms. In the broadest terms, the purpose of these reforms are to 1) achieve universal access to high quality primary (preventive and curative) care that is 2) financially sustained through more appropriate roles for the public and private sectors and more efficient allocation of resources.

To accomplish these reforms, a technical assistance team from RAND, a nonprofit research institution, will work with the Government of Macedonia on sectoral policy reforms to evaluate the sources and uses of funds. These evaluation efforts will be the core technical preparation and later collaborative technical support for the Health Sector Transition Project credit, a credit that is funded through the World Bank/IDA to the Government of Macedonia.

The team began providing technical assistance in July 1996. The responsibilities of the technical assistance team cover five core policy areas as follows:

1. **Health Expenditures**: the burden of disease and cost effective health interventions
2. **Health Revenues**: insurance, copayments and design of the benefits package
3. **Provider Payment Mechanisms and Health Manpower Utilization**: capitation and resource allocation.
4. **Information Systems**: organization, integration and informing policy
5. **Advocacy and Public Awareness Strategies**: targeting of key groups to advance reform

The overall Health Sector Transition Project credit, supported by the World Bank, is a broad based effort that has three components. These three component activities extend over three years time. The project’s effective date is September 1996. Of the three components--i) health finance and management, ii) basic health services, iii) pharmaceutical policy and supply--the first component is most closely related to the technical support provided by the technical assistance team. The first component will provide for additional training, technical studies, strengthening of management skills and the development of the information system, and public awareness campaigns in addition to the assessments and evaluations provided by the technical assistance team. A key long term objective, therefore, of the technical assistance team and the project credit is to build capacity within the MOH, the HIF and the local health facilities so that future reforms can be designed and implemented as the health sector continues to evolve.
Three members of the technical team—led by John Peabody, the team leader, Paul Gertler, senior economist and advisor to the project, and Ninez Ponce, the project’s resident advisor—arrived on July 7, 1996 for an initial visit. The purpose of the first visit was to prepare a detailed plan of activities and responsibilities from July, 1996 through January, 1997 and beyond.

During the week of July 7 to July 15, meetings were held with many of the senior staff in the Ministry of Health, the National Health Insurance Fund, the World Bank, the World Health Organization, and representative providers from primary and advance care facilities in Skopje and from outside of the capital in Belcista and Lake Ohrid (see appendix).

This inception report will give a brief introduction to the health sector in Macedonia and it will provide a description of the technical assistance activities for members of the team, local participants and international consultants.

In Part II of this report, the health care situation in Macedonia is summarized and (roughly) organized by the five core policy areas. Part III provides the approaches for consultants in the five areas and Part IV discusses the general responsibilities of the International and the Local consultants. (More detailed descriptions will be provided by the resident advisor before the arrival of each international consultant). Part V is the current Schedule of Activities and Responsibilities.
II. POPULATION AND HEALTH STATUS IN MACEDONIA

By European standards Macedonia is a poor country with a young and diverse population. Twenty four percent of the population, for example, is less than 15 years of age (1991). And although age specific fertility rates have fallen below replacement levels, the population will continue growing into the next century because of its age structure. Ethnically, Macedonians account for 65% of the population and Albanians are the second largest group (22%). Most of the population is Christian (67%) or Moslem (30%). The spoken language is Macedonian written in the Cyrillic alphabet. Literacy is estimated at over 94% and half of all university students are women (51%).

With a population estimated at 2.1 million (1992), Macedonians have enjoyed steady improvements in health status over the past 35 years. Life expectancy, for example, has risen to 72 years. This has been driven primarily by decreases in the infant mortality rate (IMR) which has declined from 112 in 1961 to an average of 28 (1991) per 1000 live births. Closer inspection, however, shows that this varies geographically from as low as 11 to as high as 84. Of concern, is that the recent external shocks to the new Republic have eroded some of the progress in the health sector evidenced by an IMR that rose to 31 in 1992 immediately after separation from Yugoslavia.

The disease patterns in Macedonia are similar to other middle income countries and reflect a demographic and a health transition. The leading causes of mortality are listed in the table below:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Cardiovascular Diseases</td>
<td>2</td>
<td>Respiratory Diseases</td>
</tr>
<tr>
<td>Malignancies</td>
<td>4</td>
<td>Accidents and Injuries</td>
</tr>
<tr>
<td>Cerebrovascular Diseases</td>
<td>3</td>
<td>Congenital Diseases</td>
</tr>
<tr>
<td>Accidents and Injuries</td>
<td>6</td>
<td>Malignancies</td>
</tr>
<tr>
<td>Perinatal Complications</td>
<td>1</td>
<td>Nervous System Diseases</td>
</tr>
<tr>
<td>Diseases of the Nervous System</td>
<td>5</td>
<td>Gastrointestinal Diseases</td>
</tr>
</tbody>
</table>

Source: Ministry of Health, 1994

Clearly, many important patterns of disease are hidden within these aggregations. For example, in recent years there has been a significant increase in the relative and absolute burden of cardiac diseases and cancer. Among children, the mortality rates for those aged 1 to 4 is significantly high due to respiratory ailments and in accidents, dominant in the 5 to 14 age group. Among morbidity figures for outpatients, hypertension, allergies, bronchitis, diabetes, ulcer disease and coronary artery disease are the leading causes.
Overall, there has been a decrease in infectious disease with eradication of some diseases such as polio, diphtheria and malaria but tuberculosis prevalence (80/100,000) and (33/100,000) incidence are high. Immunization rates are 90% or higher; only 11 cases of HIV were detected between 1987 and 1993.

**Health Services**

After independence in 1991, Macedonia suffered an economic downturn as it struggled to avoid internal conflict and gain full recognition from the international community. As a result, real income declined by 40% to an estimated per capita GDP of US$ 790 (1994). Today with widespread diplomatic recognition and economic stability, Macedonia has turned to economic reform and reorganization to preserve its tradition of strong social programs.

The economic deterioration resulted in widespread changes to the health sector. Before 1991, a decentralized social health system was owned and operated by “self managed communities of interest.” This system of financing and service delivery led to excess capacity and duplication of services. As a result, today there are complex structural limitations to providing more efficient health care. Services, and more importantly the organizational units, are not divided into levels of service such as primary health care or secondary services.

There are 2.2 physicians and 2.7 nurses per thousand population in Macedonia. By contrast, there are few trained health planners, economists, or administrators. Advanced curative services are provided by many hospitals that have catchment areas that are too small and serve an average of only 110,000 inhabitants. Hospital occupancy rates are reported at 68.5% but may be lower while the average length of stay ranges from 16 days for a complicated delivery, to 22 days for infectious diseases. The later utilization data may not be accurate as many providers report that patients are discharged early to cut costs but has patients bill for longer lengths of stay.

Services are organized into legal units which vary considerably. A unit can have different types of facilities that provide primary, secondary or even tertiary services. The facilities might include a hospital, specialized hospitals, specialty run clinics or institutes, polyclinics and health stations. Primary care is provided in different settings such as outpatient departments of medical centers, district hospitals or in health stations. Some legal units--there are seventy-five--are organized around a medical center and have all types of facilities, others only include a centralized health center and smaller health stations.
The legal units represent the managerial and financial units of care. Typically each unit will only have a single budget, limiting abilities to estimate costs for services and costs by facilities. Personnel costs tend to dominate budgets and this trend has continued to grow according to MOH officials. With contraction of revenues, capital, supplies and operating costs have shrunk in real terms so that in some places these may represent only 10% of all costs at a facility.

Health Benefits, Insurance and Financing
In 1991, the community based financing (and delivery) system was unified into a centralized National Health Insurance Fund (HIF). This continued a long tradition of the government maximizing risk pooling and guaranteeing universal coverage to pay for a comprehensive benefits package of preventive, promotive, curative, and rehabilitative care. Health Revenues as percentage of GDP in 1995 are 7.6% in 1995 (health expenditures are estimated to be 10% higher) with an average expenditure of roughly US$ 60 to 70 per capita.

The HIF is financed predominantly through a 8.6 percent payroll tax on gross wages from workers in the formal sector. Unemployment is currently estimated to be around 20-30% severely limiting payroll contributions. Payroll taxes as a whole are 31 percent of gross wages -- not counting personal income tax. Contributions from the active labor force (employees and self-employed) account for about 65 percent of revenues. Another 23 percent of HIF comes from the Pension & Disability fund to cover retirees, and an additional 3 percent from the Unemployment fund to cover the registered unemployed. The remaining 6 percent comes from profit on assets and other sources. Allocations from the central budget amount to another two percent to cover administrative costs and public health programs. Copayments and user fees account for about one to two percent but might be higher except for the numerous exemptions or reductions for the young (under 14), the old (over 65), and for those with many chronic diseases (e.g., renal failure). Total real contributions to the HIF have declined by about 40 percent in recent years due to the decline in wages associated with the severe depression.

The National Health Insurance Fund (HIF) offers universal coverage that can be used to obtain care in both the public and private sectors. Because of the generosity of the benefits package, health expenditures did not decline as quickly as HIF revenues in the early 1990s. While initially no copayments were collected, limited fees were introduced in 1993. Typically, these are 10% for inpatient and 20% for outpatient care. Despite numerous exemptions, the impression at the Ministry of Health is that the introduction of user fees helped to limit utilization and expenditures.
Private practice has been allowed since 1991 and has grown most rapidly for pharmacists and dentists. There has been less interest in the private provision of medical care because, according to varying accounts, i) there is little available capital to set up practices or ii) there are imposed quotas on the number of patients that can be seen by practitioners. To be paid by HIF, the private practitioner needs to have a contract with the insurance fund, which may also be a problem. There is little data available to estimate the impact of these policies other than HIF records on payments. In 1996, of the country’s 4,500 physicians, there are about 200 private-practice physicians who have a contract with the HIF. Almost 70% practice in Skopje.

**Health Information Systems**

In the public sector, they are required by law to submit invoices of services to the HIF. Public providers, however, are not paid on the basis of the invoicing but instead are reimbursed on a portion of a predetermined budget that is unrelated to actual invoices. Not surprisingly, some public facilities are not on contract with the HIF because there is no incentive to report actual costs by the ICD-9 (now ICD-10) and those that report are unlikely to report utilization data that is always consistent. Currently, therefore, there is no way of estimating proper staffing and other expenses. A useful and reformed information system would both be needed and more likely be developed if the budgetary control was turned over to the facilities. This would provide incentives to use the right mix of inputs and to provide efficient services.

The success of designing an appropriate capitation system for primary care hinges on information derived from an integrated medical and cost information system. An initial assessment of the health and cost data system has found the following:

- comprehensive health data is collected by providers
- facility-based data is not available electronically and is usually aggregated and only available at the municipality level
- no existing connection exists between health and financial information systems
- there are uneven levels of electronic compilation of health status data; for example, mortality data, collected at the Statistical Office is electronically compiled, but morbidity and utilization data, collected at the Institute for Health Protection (IHP), is not automated on a routine basis
- HIF data has been collected for 1991-1995 (the entire history of the HIF), but only the 1994-95 data are analysis-ready
- electronic records of copayment data can be found at the branch (district) offices of the HIF
- population data is analysis-ready (in SPSS/SAS) from the National Statistical Office
Though there are weaknesses in the current health and financial information system, the setbacks are manageable and lie largely in the integration of financial and health data and in the logistics of automation. These weaknesses are offset by existing strengths in the information systems. For example, all of the health legal units are now subject to the same stringent financial reporting conventions of private enterprises. They are accountable to a centralized authority that monitors the financial performance of all Macedonian firms. On the health data side, owing to a long legacy of embracing public health principles, the Republic health data is very rich, particularly in surveillance of diseases, in conveying the process of care within a network, and in identifying the segments of the Macedonian population most at-risk.

Specific datasets of interest are summarized in the Appendix 3.

**Advocacy and the Opportunity for Reform**

Building on the strengths of the past, the health care system is uniquely positioned to move ahead. The time is right for reform because of increasing macroeconomic and political stability, both internally and externally. Moreover, the move toward privatization and competition has heightened consumer and provider awareness on the importance of choice. Consumers feel constrained by choice in the network of health services. Providers, particularly doctors, still face barriers to entry in setting up private practice. If reforms are presented as an opportunity to exercise choice and flexibility, with a price of greater personal responsibility, then the reforms may be less threatening for the consumer, the provider and other stakeholders.

Transforming the national health system through the four core policy areas described requires raising public awareness among the stakeholders: the MOH, providers, Parliament, employers, and the public. Change will generate resistance unless the public understands how the change will lead to better quality care with better outcomes. In addition, successfully transforming the system will require patients to assume a greater responsibility for their own health care. Thus, an effective strategy for public awareness must be ongoing throughout the course of the technical assistance efforts.
III. GENERAL RESPONSIBILITIES OF THE FOREIGN CONSULTANTS

This project is fundamentally an assessment in five core policy areas. Each core area is unique and the responsibility of a separate international consultant and local counterpart staff or consultant. (The local counterpart or in some cases counterparts will be assigned to work full time with the international consultant).

Successive core components build upon the completion of antecedent core policy activities. Reports and recommendations will need to be completed and presented in draft before leaving Macedonia. The short term coordination and review of these draft reports or the policy recommendations will be done by the Resident Advisor (RA) and the Credit Project Implementation Unit (CPIU).

The long term effectiveness of the project will ultimately depend on how well the concepts are transmitted to those in the health sector and to an assigned counterpart. For these reasons the international consultants are provided the following schedule for missions starting between July and October 1996:

**Before leaving:**

- review the general information materials on health sector reform and the more detailed approaches described in Part III (above)
- discuss the mission with the Resident Advisor and Team leader and review the planned activities
- make recommendations to the Resident Advisor and the assigned Local Counterpart
- draft a one or two page outline of the trip report and forward this to the Resident Advisor and the Local counterparts before leaving for Macedonia

**In Macedonia:**

- meet and confirm the schedule and specific objectives with the RA and the local counterpart(s)
- make two presentations at the “Health sector reform and health economics MOH breakfast time seminar”
- complete a draft report before leaving for review by the resident advisor and the local counterparts
After returning:

- reviewing comments on the report
- draft TOR’s for the follow up (second) visit and send to the Team Leader and Resident Advisor (see below)

Missions beginning after November 1996:

For the late January missions and the February and April missions, the activities will center around a series of consultative meetings and workshops. The purpose of these meetings will be to:

- to provide a detailed description of the analysis and findings in a series of consultative meetings and workshops
- to finalize the technical analysis prepared during the first visits making modifications relevant to findings from other team members, comments for the Government and the CPIU
- to prepare and review series of policy options and discuss these options with the government and an extended groups of participants from the health sector throughout the country

Consultants will also likely meet with senior government officials and give a short briefing and prepare short papers or articles for dissemination in Macedonian publications.

In the course of every meeting consultants should expect to provide concurrent training and solicitation of feedback. Based on this feedback and core policy analysis, the consultants will prepare a series of policy options and final policy recommendations.

It is anticipated that all assessments will be limited by insufficient data and imprecise estimates of the policy consequences. As part of the overall project credit, each member of the team should recommend policy studies that can be introduced and completed as part of the CPIU activities. Thus, the consultants will need to make (in a separate paper) recommendations for future studies and provide these to the team leader, RA and CPIU.

General Responsibilities of the Local Experts and Credit Project Implementation Unit:

The key to the success of this project is the commitment of resources, coordination of activities, and level and timeliness of information dissemination among the local experts and the Project Implementation Unit. Concerted efforts should be made to fully prepare for the data and manpower needs prior to the arrival of the international consultants. During the international consultant’s visit, adequate resources should be provided by the
local experts and Credit Project Implementation Unit to optimize the consultant’s effectiveness in meeting his/her TOR. Specifically:

- the local counterpart, or in some cases, counterparts will be assigned to work full time with the international consultant
- local counterparts will attend meetings on a regular basis, once every two weeks for project updates, and briefings
- the local counterparts will attend presentations at the "Health sector reform and health economics MOH breakfast time seminar”
- the MOH economics adviser will be responsible for preparing 5-10 page reports on the situation analysis of the burdens of disease/cost effectiveness, copayment/user fees, and capitation payment and administration to be submitted to the RA 7 days prior to the arrival of the corresponding international consultant for the international consultants on:

  1) Financial Viability of Current HIF at Current Level of Services,
  2) Impact of current system of Copayment and User Fees on Utilization
  3) Quality of health and financial information system,
  4) Current mechanism for payment for public and private providers

- the Resident Advisor with the Credit Project Implementation Unit(CPIU) Director will ensure day-to-day management of the project
- the Resident Advisor and the CPIU Director will conduct weekly/biweekly briefings on the project’s progress with the Minister
- the Technical Committee on Health Finance and Management will review and write a 1-2 page commentary on the international consultant reports after review by the team leader and resident advisor
- the CPIU will coordinate forums for information sharing and presentations on technical areas of health care finance
- the CPIU and RA will be responsible for the preparation of the pretasks and the coordination of the consultants’ visits.
- the CPIU will provide full-time translation services for the RA and for the international consultants as needed
IV. THE ROLE OF THE BUDGET CONSTRAINT IN HEALTH INSURANCE DESIGN

The approaches for the consultants and counterparts in the five policy areas can be summarized by a set of equations. Each of the major design issues that will be investigated should be viewed as related to one another through the HIF’s budget constraint. This approach identifies issues from the key policy areas for decision makers. The major design parameters in health insurance design are:

- What services (diseases) are covered?
- What is the copayment structure?
- How are providers paid?
- What is the premium charged from beneficiaries?

These parameters cannot be set independent of one another, but rather must be set so as to satisfy the budget constraint i.e. total expenditures must be less than or equal to total revenues.

The budget constraint is formally expressed as:

$$A + \sum_{i} C_i S_{iI} + \sum_{i} C_{iO} S_{iO} = \sum_{i} F_i S_{iI} + \sum_{i} F_{iO} S_{iO} + R$$

where:

- $A$ = Administrative costs
- $C_{iI}$ = Cost of Inpatient Service $i$
- $S_{iI}$ = Utilization of Inpatient Service $i$
- $C_{iO}$ = Cost of Outpatient Service $i$
- $S_{iO}$ = Utilization of Outpatient Service $i$
- $F_{iI}$ = Copayment for Inpatient Service $i$
- $F_{iO}$ = Copayment for Outpatient Service $i$
- $R$ = Revenue from Premiums
For now, we will take as given the available revenues \((R)\). These revenues are raised from the 8.6 percent payroll tax plus contributions from the pension and unemployment funds. Given the cumulative tax burden, raising taxes further in order to fund more health benefits would likely have adverse macro-economic effects. Revenues \((R)\) may rise, however, with economic growth and, in any event, can be expected to change from year to year.

The first set of activities will be to estimate the expected expenditures—the left-hand-side of the budget constraint. The information needed is the cost and utilization of each inpatient and outpatient service. As part of these activities, we will also identify disease and, hence, service delivery priorities based on burden of disease and cost-effectiveness. This list of priorities will serve as an input into the benefit and copayment design.

The second set of activities will identify covered services and copayment rates for these services. The benefit and copayment structures affect both the expected expenditures (left-hand-side of the budget constraint) and expected revenues (right-hand-side of the budget constraint). Let \(j\) index type of service, i.e., inpatient, outpatient. Increasing the copayments, \(F_{ij}\), raises revenues. The amount of revenues raised depends on how much the increase in copayments reduces utilization of the service, \(S_{ij}\), or the price elasticity of the demand for the service. The more price elastic (sensitive) is demand, the smaller the amount of revenues raised by increasing the copayment.

While the copayments may be able to mobilize resources, perhaps their major use is to better target health insurance resources to the priority services. To see this point, we rewrite the budget constraint of the HIF as follows:

\[
A + \sum_j (C_j - F_j) S_j + \sum_j (C_0 - F_0) S_0 = R
\]

where \((C_{ij} - F_{ij})\) is the HIF subsidy rate of service \(ij\). In this formulation of the budget constraint, total HIF subsidies plus administrative costs must equal revenues. Thus, if we want to raise the subsidy rate of high-priority services, we must raise the copayment of low-priority services. The extent to which we can raise the subsidy of priority services depends on the relative price elasticities of demand for the priority services relative to low priority services.\(^1\)

Finally, the provider payment mechanism affects the efficiency with which services are provided. The more efficient the provision of services, the lower the cost of services, \(C_{ij}\). The lower the cost, the more the HIF is able to stretch its available revenues, \(R\). As costs fall, the HIF can expand the number of priority services and lower the copayments.

\(^1\) The specific formula for the rate of substitution is obtained by totally differentiating the budget constraint with respect to the \(f\)'s and solving for \(df_{ij} / df_{kl}\).
Below, is a detailed description for each consultant and counterpart staff in the five core policy areas

1. Health Expenditures: Burden of Disease and Cost Effectiveness

A. Objectives:

The broad purpose of these activities is to estimate the costs of providing health care services and establish a list of health care priorities based on burden of disease and cost-effectiveness of intervention. This will serve as an input into designing the basic package of benefits. This will require an estimation of the marginal costs of treating various inpatient and outpatient illnesses as an input into the burden of disease and cost of insurance benefits calculations.

B. Methods:

The first task is to estimate the marginal costs of treatment. The marginal costs of treatment will be calculated using multivariate regression analysis of provider level panel data. The unit of analysis will be the facility. The dependent variable will be the (natural logarithm of) total facility (variable) costs. A set of models will separate total expenditures into the expenditures on each of the inputs (drugs, personnel, supplies, etc.). The advantage of the latter approach is that expenditure projections can be made for more efficient structures that have different combinations of inputs.

The independent variables will be the changed numbers of individuals treated by illness types, facility fixed effects to control for regional differences in input costs and facility specific efficiency, and year fixed effects to control for inflation. The marginal cost will be computed by taking derivatives.

The second task is to estimate total current expenditures based on current utilization patterns. The marginal cost estimated as described above are multiplied by the utilization of services. As a check on the methods used to estimate costs and expenditures, the consultant will determine if forecasted expenditures equal actual expenditures. If not, the parameters will have to be recalibrated.

The third task is to prioritize the services based on the burden of disease and the cost-effectiveness of medical interventions. The burden of disease (i.e. the medical cost of illness) is just medical care expenditures as estimated above. Based on expert opinions regarding the efficacy of intervention, diseases will be ranked by cost-effectiveness.

C. MOH Scope of Work in Preparation for Consultant Visit:

The data on number of individuals treated for various illness and provider costs will be organized into STATA files for use by the consultant. The unit of observation (i.e. the

\[1\] The term “facility” is used generally to indicate the lowest, congruent level of health service unit that the existing health and cost data system collects.
row) will be the facility for a given year. The columns will be the variables. This will involve obtaining disease specific utilization data from the Institute of Public Health and merging those data into expenditures data files from the Health Insurance Fund. It is important that the data have facility level identifiers in order to be able to merge the data sets. Also, there should be little aggregation of the data as possible. The data will be checked for outliers and unrealistic values. In addition, the local consultants will go to several facilities to determine the accuracy of the data by checking facility records. MOH staff will present the international consultant with a background report on the basic benefit package and utilization-cost parameters for outpatient and inpatient services. The consultant counterparts will schedule necessary appointments with various facilities, medical centers, medical schools, physician associations.

D. Scope of Work of International Consultant:

The international consultants will work with the local consultant to understand the data files, provide a description of cost trends and burden of disease, and health care priorities. The international consultant will write a report on this policy area submitted to the Resident Advisor before leaving Macedonia. This report will also be submitted to an actuary for evaluation and recomputation. Before leaving, the international consultant will present their findings using an analytic framework, policy options and recommendations in a workshop to MOH and local counterparts.

2. Health Revenues: Insurance, Copayments and Defining the Basic Benefits Package:

A. Objectives:

The purpose of this activity is to put forward a set of options for which services should be covered under the basic benefits and what are the copayment rates. A critical issue is that the benefits package and copayment rates should be set so as to maximize the use of priority services and satisfy the budget constraint.

B. Methods.

Using information regarding costs and utilization provided by the first consultant and total available revenues, the first task will be to construct the budget constraint and calibrate the constraint based on current revenues. The budget constraint and the list of priorities will be the model used to identify the basic benefit package and copayments.

The general strategy for setting copays and deductibles is to provide incentives to use efficacious services, not use services with little health value, and to minimize unnecessary utilization. The approach will be to set high copays/deductibles for services with less health value. However, it is important to cap total out of pocket payments for an episode of illness in order to increase the risk reducing value of health insurance. In addition, it is important to make sure that benefit and copayment structure provide
incentives so that expected expenditures are less than or equal to total HIF revenues (i.e. are within the budget constraint).

In order to be sure that benefit/copay structure satisfies the budget constraint, we will need to forecast expected expenditures under each regime. Using the budget constraint, one can determine the extent to which an increase in a copay on a low-priority service can be to lower a copay on a high priority service. While we have data on current costs and utilization, we do not have estimates of the price elasticity of demand for health services. However, most of the literature reporting estimates from other countries suggest that the elasticity ranges from an -0.1 to -0.4. Therefore, we need to determine the sensitivity of the results over the range of feasible price elasticities.

C. MOH Scope of Work in Preparation for Consultant Visit:

The data on number of individuals treated for various illness, service costs as estimated by the first international consultant, and current copayment and revenue levels will be organized into STATA files for use by the consultant. The unit of observation (i.e. the row) will be the facility for a given year. The columns will be the variables. This will involve obtaining disease specific utilization data from the Institute of Public Health and merging those data into expenditures data files from the Health Insurance Fund. It is important that the data have facility level identifiers in order to be able to merge the data sets. Also, there should be little aggregation of the data as possible. The data will be checked for outliers and unrealistic values. In addition, the local consultants will go to several facilities to determine the accuracy of the data by checking facility records. MOH staff will present the international consultant with a background report on the basic benefit package and utilization-cost parameters for outpatient and inpatient services. The consultant counterparts will schedule necessary appointments with various facilities, medical centers, medical schools, physician associations.

D. Scope of Work of International Consultant:

The international consultants will work with the local consultant to understand the data files, provide lists of services to be included in the basic benefits package and copayment structures under a range of realistic assumptions regarding the price elasticity of demand and available revenues. The consultant will write a report on this policy area submitted to the Resident Advisor before leaving Macedonia. This report will be submitted to an actuary for evaluation and recomputation. Before leaving, the international consultant will present their findings using an analytic framework, policy options and recommendations in a workshop to MOH and local counterparts.

A. Objective:

To design provider payment mechanisms which 1) encourage efficiency in delivery of primary care 2) increase utilization of primary care services over secondary and tertiary services

B. Methods:

- estimate appropriate capitation rates subject to two criteria: 1) the budget constraint or target for primary care expenditures, and 2) equal compensation of physicians that provide the same amount of services
- develop adjusted capitation rates by age, sex and location
- define the portion of the basic benefits package as “primary care”
- design features to assure that primary care is not underprovided
- design features to assure that primary care providers appropriately refer care to higher level services
- design administrative procedures for the proposed system

C. MOH Scope of Work in Preparation for Consultant Visit:

- work with the MOH and physicians to identify the scope of work that allows the unified delivery of primary care services
- present the international consultant with background report on the basic benefit package and utilization-cost parameters for outpatient and inpatient services
- prepare packet on organizational structure of public and private health providers
- schedule necessary appointments with various facilities, medical centers, medical schools, physician associations

D. Scope of Work of International Consultant:

- review reports provided by the RA before arriving to Macedonia
- propose strategies for provider payment mechanisms
- review provider payment strategies with RA, CPIU and local counterparts
- prepare report on findings and recommendations
- present analytic framework, policy options and recommendations in workshop to MOH and local counterparts
- with local counterparts, design administrative procedures for enrollment and disenrollment, payment, and monitoring the quality of care delivered
• design computerized information flow, including forms that will allow efficient operations and evaluation activities

4. Information Systems: Integration and Informing Policy

A. Objective:

The purpose of this activity is to prepare a plan for an integrated medical and financial information system that provides routine health and financial statistics and supports the analyses of policy questions. This should be done with a view to consider the policy levers, future changes in the level of service, copayments, utilization and general macroeconomic factors. The long term goal is to build an integrated health information systems that links revenues and expenditure data with health status and health utilization data.

B. Methods:

The CPIU and the consultant will need to:

• understand the process of collection and storage of health facility utilization, health facility budgets, cost reports, national accounts figures, copayment claims
• assess the quality of data and how it can be more reliably collected.
• evaluate the connections between various, existing data gathering systems
• identify the lowest unit of aggregation that is available electronically i.e. disease category, facility
• propose how to automate the health status and financial data into electronic files
• assess what information will be needed for policy decisions by reviewing the reports from policy areas 1 or 2 (such as a total budget constraints, utilization and service efficiency.
• consider what future assessments of quality improvement policies, efficiency and the impact of policy initiatives, which will also need to monitored and evaluated, will need to be included
• design short term and long term strategy for building a health information system
• estimate the resource and time costs of upgrading the system to ensure financial sustainability in the long run.

C. MOH Scope of Work in Preparation for Consultant Visit:

In preparation for the Consultant’s Visit the assigned counterparts will complete the following tasks (coordinated by the RA):

• prepare summary document on Assessment of Health and Financial Data sets
• present the international consultant with reports on health expenditures and health revenues
• prepare packet on organizational structure of health services
• schedule necessary appointments at various facilities, medical centers, branch offices and central statistical offices

D. Scope of Work of International Consultant:

The international consultants will work with the local consultant to understand the current diffuse set of information systems, provide a description of these systems and outline a plan for cost-effective strategies for 1) integrating existing data systems and 2) making data collection more efficient in an integrated system. The new system should be easy to use and provide data that will inform policy makers. Of vital importance is to show how utilization data will be linked to financial data. The international consultant will make presentations on the information system’s strategy to the MOH and local counterparts. Finally, the international consultant should prepare training guidelines to build analytic skills among future users of the information system. The consultant will prepare the plan in this policy area and submit it to the Resident Advisor before leaving Macedonia.

5. Advocacy and Public Awareness Strategies: Targeting of Key Groups to Advance Reform

A. Objective:

The objective in thinking policy area is to prepare and carry out a public awareness campaign and a targeted advocacy program for key stakeholders. These activities need to be designed to increase public awareness, limit opposition to needed reforms and increase participation in the reform process.

B. Methods:

An information dissemination strategy will begin at the MOH. The following activities are planned:

• weekly/biweekly seminars on health care reform in the MOH. These will be sponsored by the CPIU and the MOH economist; the seminars will be provided by consultants, the RA, the CPIU, the health economist and by occasional outside experts.
• MOH Health economist preparation of background reports on the current situation
• regular meetings and consultations with MOH staff
• weekly/biweekly meetings between the Minister and the CPIU and the RA
• formal briefing (with team leader) and consultants to key legislatures and elected officials
An outreach program will need to be designed to stakeholders in the health sector. The design of this will include the following elements:

- a formal request from the CPIU and the RA that the medical association be included in briefings and program design
- regular outreach briefings be held for the HIF and district facilities explaining concepts and answering questions about reform
- regular articles and features in professional and trade journals be prepared and published

For the general public the approach will be a steady process of giving information and increasing public awareness and on i) the need for reform and ii) informing the public about key features of reform. To do this the RA will develop and implement a plan that will include:

- development of key messages for public distribution
- hiring a social marketing firm to assess market segments and public attitudes
- using expert advise, hire a public enterprise to carry out a marketing campaign
- produce regular monthly articles for the local media

C. MOH Scope of Work in Collaboration with Resident Advisor

The MOH and the CPIU will support and guide the RA in formulating the advocacy and public awareness strategy in the areas of 1) identifying target groups 2) development of effective message 3) identifying the appropriate channels of communication. The CPIU will assist the RA in the search for expert advise, e.g. the social marketing firm. The CPIU will review all press releases and public announcements prior to broadcast and dissemination.

D. Scope of Work of Resident Advisor (the International Consultant):

The RAND project team has the advantage that the consultant responsible for Advocacy and Public Awareness is the Resident Advisor. Thus the RA will carry out and implant the plan. By September 30, the RA will prepare a plan of activities and a list of completed tasks. By March 1, 1997, the RA will provide a summary report on the activities and recommended steps to be completed in the next year. Throughout the course of the project, the RA will make presentations to the MOH and local counterparts on the progress of the advocacy and public awareness strategy.
<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Consultant Dates</th>
<th>Pre-Tasks</th>
<th>RAND Project Staff</th>
<th>Project/MOH Experts</th>
<th>Other Experts</th>
<th>Consultant Activities and Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptual Outline</td>
<td>July 07-Jul 14</td>
<td></td>
<td>John Peabody</td>
<td>Ninez Ponce</td>
<td></td>
<td>Inception Report</td>
</tr>
<tr>
<td>Data Collection and Analysis</td>
<td>July 28-Aug 02</td>
<td>1. IDENTIFY Sources</td>
<td>Matthew Sanders</td>
<td>N.Ponce/G. Pecelj</td>
<td>HIF &amp; IHP Directors</td>
<td>Report on Analysis of Available Datasets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. ACCESS Sources</td>
<td></td>
<td>V.Bisheva/N. Ponce</td>
<td>Technical Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. ASSESS Automation and Information Needs</td>
<td></td>
<td></td>
<td>Faculty of Medicine</td>
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<td></td>
<td></td>
<td>4. CONSTRUCT Data-Files</td>
<td></td>
<td></td>
<td>Technical Committee</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5. TEST/CONTROL Data Quality</td>
<td></td>
<td></td>
<td>MOH Seminar on Findings</td>
<td></td>
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<tr>
<td>Effectiveness</td>
<td></td>
<td>2. SUMMARY of Situation Analysis</td>
<td></td>
<td>Blagoja Dishieski</td>
<td>Technical Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. COUNTERPART(s) Assignment</td>
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<td>Faculty of Medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. COORDINATION/ Scheduling</td>
<td></td>
<td>Vesna Bisheva</td>
<td>Technical Committee</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Ninez Ponce</td>
<td>MOH Seminar on Findings</td>
<td></td>
</tr>
<tr>
<td>II. Copayment/User Fees</td>
<td>Sept 09- Sep 27</td>
<td>1. DATA</td>
<td>Dana Goldman</td>
<td>Gordana Pecelj</td>
<td>Actuary</td>
<td>Report for Copayment &amp; User Fees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. SUMMARY of Situation Analysis</td>
<td></td>
<td>Blagoja Dishieski</td>
<td>Faculty of Medicine</td>
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<tr>
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<td>3. COUNTERPART(s) Assignment</td>
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<td>Technical Committee</td>
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<tr>
<td></td>
<td></td>
<td>4. COORDINATION Scheduling</td>
<td></td>
<td>Vesna Bisheva</td>
<td>MOH Seminar on Findings</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Ninez Ponce</td>
<td></td>
<td></td>
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<tr>
<td>III. Information Systems</td>
<td>Aug 26-Sep 21</td>
<td>1. DATA</td>
<td>Mary Paterson</td>
<td>Gordana Pecelj</td>
<td>HIF &amp; IHP Directors</td>
<td>Report for Information System</td>
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<td>2. SUMMARY of Situation Analysis</td>
<td></td>
<td>Gordana Pecelj</td>
<td>Technical Committee</td>
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<td>3. COUNTERPART(s) Assignment</td>
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<td>MOH Seminar on Findings</td>
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<td>4. COORDINATION Scheduling</td>
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<td>Vesna Bisheva</td>
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<td></td>
<td></td>
<td>Ninez Ponce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV. Capitation Payment and</td>
<td>Oct 27-Nov 10</td>
<td>1. DATA</td>
<td>Grace Carter</td>
<td>Gordana Pecelj</td>
<td>Technical Committee</td>
<td>Report for Capitation Payment &amp; Administration</td>
</tr>
<tr>
<td>Administration</td>
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<td>2. SUMMARY of Situation Analysis</td>
<td></td>
<td>Blagoja Dishieski</td>
<td>Medical Association</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. COUNTERPART(s) Assignment</td>
<td></td>
<td></td>
<td>MOH Seminar on Findings</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. COORDINATION Scheduling</td>
<td></td>
<td>Vesna Bisheva</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ninez Ponce</td>
<td></td>
<td></td>
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<tr>
<td>V. Advocacy and Public Awareness</td>
<td>Jul 7-ongoing</td>
<td>1. BACKGROUND</td>
<td>Ninez Ponce</td>
<td></td>
<td>Social Marketing Firm</td>
<td>Report for Advocacy &amp; Public Awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. STRATEGY</td>
<td></td>
<td></td>
<td>Medical Association</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3. COUNTERPART(s) Assignment</td>
<td></td>
<td></td>
<td>WHO &amp; Media</td>
<td>MOH Seminar on Findings</td>
</tr>
</tbody>
</table>
## Schedule of Workshops

### 1996-1997

<table>
<thead>
<tr>
<th>Policy Area Workshops</th>
<th>Dates</th>
<th>Pre-Tasks</th>
<th>RAND Project Staff</th>
<th>Project/MOH Experts</th>
<th>Other Experts</th>
<th>Consultant Activities &amp; Outputs</th>
</tr>
</thead>
</table>
| **I. Burden of Disease Cost-Effectiveness**| 2nd or 3rd week January 1997 | 1. AGENDA  
2. REPORT  
3. COUNTERPART(s) Assignment  
4. COORDINATION/ Scheduling  
5. OUTREACH Activities | John Peabody  
Jack Molyneaux | Gordana Pecelj  
Blagoja Dishieski | Ninez Ponce  
Vesna Bisheva  
Ninez Ponce | HIF, IHP  
Faculty of Medicine Technical Committee | Report on Findings, Policy Options and Recommendations.  
Workshop Presentations (3-4 days) |
| **II. Copayment/User Fees**                | 2nd or 3rd week January 1997 | 1. AGENDA  
2. REPORT  
3. COUNTERPART(s) Assignment  
4. COORDINATION/ Scheduling  
5. OUTREACH Activities | Paul Gertler  
Dana Goldman | Gordana Pecelj  
Blagoja Dishieski | Ninez Ponce  
Vesna Bisheva  
Ninez Ponce | HIF  
Faculty of Medicine Technical Committee | Report on Findings, Policy Options and Recommendations.  
Workshop Presentations (3-4 days) |
| **IV. Capitation Payment and Administration** | 3rd week February 1997 | 1. AGENDA  
2. REPORT  
3. COUNTERPART(s) Assignment  
4. COORDINATION/ Scheduling  
5. OUTREACH Activities | Grace Carter  
John Peabody (?) | Vesna Bisheva  
Gordana Pecelj | Ninez Ponce  
Vesna Bisheva  
Ninez Ponce | HIF  
Technical Committee Medical Association | Report on Findings, Policy Options and Recommendations.  
Workshop Presentations (3-4 days) |
| **V. Advocacy Public Awareness**           | 3rd week February 1997 | 1. AGENDA  
2. REPORT  
3. COUNTERPART(s) Assignment  
4. COORDINATION/ Scheduling  
5. OUTREACH Activities | Ninez Ponce | Vesna Bisheva | Ninez Ponce  
Vesna Bisheva  
Ninez Ponce | HIF  
Technical Committee Medical Association | Report on Findings, Policy Options and Recommendations.  
Workshop Presentations (3-4 days) |
Appendix 1

MAP OF MACEDONIA
Appendix 2

SUMMARY OF DATA SETS
<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Source</th>
<th>Lowest Level of Aggregation</th>
<th>Data Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POPULATION AND VITAL STATISTICS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mortality</td>
<td>Statistical Office</td>
<td>Individual</td>
<td>Compiled electronic records--analysis ready on SPSS/SAS.</td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
<td>Age categories, sex</td>
<td>Access to original data may be a problem. Routinely, the statistical office furnishes data in the reporting format versus the encoded entries.</td>
</tr>
<tr>
<td>Other Demographic</td>
<td></td>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td><strong>HOUSEHOLD SURVEYS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Expenditure Survey</td>
<td>Statistical Office</td>
<td>Household</td>
<td>Compiled electronic records--analysis ready on SPSS/SAS.</td>
</tr>
<tr>
<td>Labor Force Survey</td>
<td></td>
<td>Individual a household</td>
<td></td>
</tr>
<tr>
<td><strong>HEALTH DATA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morbidity</td>
<td>Institute for Health Protection</td>
<td>National</td>
<td>Some electronic records, mostly aggregated cross-tabs on Excel or Lotus.</td>
</tr>
<tr>
<td>Utilization</td>
<td>Health Care Units (n=167)</td>
<td></td>
<td>Acquiring data at the lowest level of aggregation may require collection from local sources.</td>
</tr>
<tr>
<td>Network (Organization)</td>
<td>Health Care Units (n=167)</td>
<td></td>
<td>Standard operating procedure at IHP is to compile data at the municipality level (n=30).</td>
</tr>
<tr>
<td>Staffing (Manpower)</td>
<td>Health Care Units (n=167)</td>
<td></td>
<td>Investment in staff training will facilitate the speed in compiling data at the level of legal units (n=76).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FINANCIAL DATA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources of revenue, including revenue from co-payments and user fees</td>
<td>Health Insurance Fund (HIF) and Institute for Payment Operations</td>
<td>Municipality (n=30)</td>
<td>The data source is a Revenue and Expense report filled out by all Macedonian firms.</td>
</tr>
<tr>
<td>Structure of expenditures</td>
<td>HIF and Institute for Payment Operations</td>
<td>Legal Unit (n=76)</td>
<td>Immediate availability for electronic records at the Legal Unit level from the Institute for Payment Operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>There is no accounting/reporting convention of preparing Revenue and Expense Forms at the facility level. Invoices are collected, but these are compiled, summed and sent to the Legal Unit.</td>
</tr>
</tbody>
</table>
Appendix 3

LIST OF PERSONS MET
List of Persons Met

Minister of Health
H.E. Ilija Filipje MOH Minister

World Bank, Resident Representative
Ms. Ellen Goldstein

Credit Project Implementation Unit
Ms. Vesna Bisheva Director, Department for Implementation of Health Transition Project
Ms. Gordana Pecelj Long Term Consultant on Data, Finance and Management, Department for Implementation of Health Transition Project

Ministry of Health
Dr. Ilir Ljuma Deputy Minister
Dr. Elisabeta Stikova Director, Institute of Health Protection
Dr. Violeta Malinska Undersecretary, Sector of Primary and Preventive Health Care
Dr. Borce Naumovski Director, Health Insurance Fund
Dr. Liljana Ivanovska Assistant Director, Health Insurance Fund
Mr. Blagoja Dishlieski MOH Economist, Adviser

Statistical Office
Ms. Slavka Atanovskava Assistant Director
Mr. Dunce Gerasimovski Vital Statistics
Ms. Blagica Nouovsiva Salaries and Living Standards
Ms. Valentina Stoevska Salaries and Living Standards
Mr. Stase Nolev Adviser on Information Flow to Foreigners

Other Counterparts
Dr. Georgi Masin Director, University St. Kiril and Metodij Clinical Center
Ms. Maria Kischman WHO Liaison Officer
Mr. Slagian Mihajlovski University Clinical Center, Clinical Computer Center
Mr. Goce Petreski Director, Ohrid Branch Office Health Insurance Fund
Dr. Ožhan Clinical Director, Belcista/Ohrid Rural Ambulatory Care Center
Dr. Nikola Razmoski Clinical Director, Ohrid Orthopedic Specialty Care Clinic
Dr. Liljana Arnadevska Private Practice Ambulatory Care Practitioner
Dr. Ugrinovski Director, Emergency Medicine, Ohrid Medical Center