

REPUBLIC OF  
MACEDONIA

Ministry of Health

# FINAL REPORT

*March 31, 2004*

**HEALTH SECTOR REFORM PROJECT**  
**Japanese Grant JPN 26814-MK**  
*Health Services Contracting and  
Modernization Component*

Submitted by:  
James A. Cercone

*San Jose, Costa Rica*

*Tel.: +506-291-1200*  
*Fax: +506-232-0830*  
*E-Mail: [jcercone@sanigest.com](mailto:jcercone@sanigest.com)*

---

<b>EXECUTIVE SUMMARY</b> .....	<b>2</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>5</b>
<b>ABBREVIATIONS</b> .....	<b>6</b>
<b>1 INTRODUCTION</b> .....	<b>7</b>
<b>2 DETAILED PROJECT DELIVERABLES</b> .....	<b>9</b>
2.1 <i>THE TERMS OF REFERENCE</i> .....	10
2.2 <i>INPUTS AND PROJECT ORGANIZATION</i> .....	10
2.3 <i>OUTPUT/RESULTS DELIVERED BY THE PROJECT</i> .....	11
<b>3 ELEMENTS OF A WELL-RUN PROVIDER ORGANIZATION</b> .....	<b>15</b>
<b>4 OVERVIEW COMPONENT III: IMPROVING SERVICE DELIVERY</b> .....	<b>29</b>
4.1 <i>SUMMARY OF COMPONENT DESIGN</i> .....	29
4.1.1 <i>Subcomponent I: Strengthening PHC and Hospitals</i> .....	29
4.1.2 <i>Subcomponent II: Grant Facility</i> .....	35
<b>5 PENDING ISSUES AND RECOMMENDATIONS</b> .....	<b>40</b>

Annex 1

Annex 2

## EXECUTIVE SUMMARY

This report has been prepared as part of the preparatory work for the Health Sector Reform Project (HSRP), supported by a PHRD Grant. The consultancy has been a collaborative effort between the principal author, James Cercone, and supporting authors: Andrei Mosneaga and Javier Jahnsen, all consultants working with Sanigest Internacional. The purpose of the report is to summarize the final results related to the 'Hospital Contracting and Modernization component of the proposed project. Specifically, this report includes a summary of the main issues addressed by the multiple products presented under the consultancy and highlights critical issues related to implementation of the proposed component.

The basis for the development of Component III activities was established based on a framework for strengthening hospital performance. This framework will provide the basis for strengthening hospitals under the proposed World Bank project and should guide efforts to improve performance in the future. The proposed framework is based on six pillars which are related to the figure above:

- Strong and capable management
- A clear and well-defined business plan
- Presence of well defined structure and processes, including protocols and key committees for oversight of these instruments
- Performance measurement of the facility and its staff
- Adequate financial management
- Continuous quality improvement

The design of Component III aims to support the implementation of actions to strengthen the management and operational capacity of health care providers that are contracted by HIF under the new contracting scheme. In order to support the development of these actions, the component would include two subcomponents.

- The first would aim at **core strengthening** all providers that are undergoing, or have finalized, the contracting process with the HIF. This will focus on strengthening the providers in a number of core areas.
- The second subcomponent would implement a **Grant Facility** to fund subprojects submitted by the providers. The Grant Facility will be implemented through two rounds of financing, as discussed later on.

The *Core Strengthening* activities of the Grant Facility will focus on leveling the playing field for all providers that have entered contracts with the HIF. The resources available under this activity will apply only to those facilities contracted by the Health Insurance Fund.

Technical assistance would be provided by foreign and local individual consultants and consultancy firms under the coordination of the Project Implementation Unit, to guide the stakeholders during the implementation of the two phases. Investments will be made in training activities for Hospital staff, medical equipment; medical supplies; small civil works for rehabilitation and information systems.

**Main Activities:**

- Management Training
- Business plan development
- Strengthening organizational issues in providers including changes in the scope of services provided, organizational and functional structures and implementation of key structures and processes.
- Debt restructuring for hospitals
- Continuous quality improvement training
- Performance scorecard for measuring results
- Customer focused healthcare training-client satisfaction
- Organization of information flows – implementation of clinical guidelines and clinical pathways

It is expected that an estimated 17 hospitals, which are currently contracted by the HIF, will participate in the core strengthening stage. This subcomponent is estimated at US\$800,000.

The *Grant facility* will make a additional investment and technical assistance available to hospitals and provider networks that submit, and are awarded, subprojects to improve performance. The Grant Facility would finance subprojects in two phases.

The **first phase** would include demonstration projects aimed at showing early results in improving quality and efficiency of health services. The demonstration project sites will be selected based on the results of the management survey and then through expressions of interest from the individual providers.

The **second phase** of support, building on the core strengthening and the demonstration projects, would include the implementation of a competitive fund to support further modernization. Examples of the grant projects are outlined in Annex 3. A pre-defined menu of options will be part of the Project Operational Manual.

This Final Report concludes that the Project has achieved all its objectives: the detailed action plan for implementation of the third component of the Health Sector Reform Project has been developed and an Operational Manual was prepared to guide the Project Coordinating Unit through its implementation. The component was designed with the objective of providing tangible improvements for the

population in general and in particular for the patients, as well as savings for hospitals (and the HIF).

This report also highlights some critical issues related to the implementation of health reform, in particular hospital management restructuring, in Macedonia. These issues, which are highlighted at the end of this report, establish core issues related to policy and legislative issues that should be addressed in order to maximize the effective implementation of the proposed reforms.

## ACKNOWLEDGEMENT

The results achieved during this Project are not based on any single individual effort but are due to the engagement of all parties involved. In this regard, we would like to thank the Dean of the Medical Faculty, the Macedonian Medical Association, the Hospital Working Group, all Hospital Directors, the Health Insurance Fund, the Ministry of Health and the World Bank for their collaboration and support. We would also like to recognize the translating work of Lazlo Popov. Their input and efforts enabled us to communicate and understand the context in Macedonia.

Finally we would like to thank the Honorable Minister of Health, Director of the Health Insurance Fund and above all, Prof Dr Dragan Gyorgiev (Director of IPU) and Prof Dr. Fimka Tozija for going above and beyond the call of professional duty to support the partnerships which were needed, and therefore developed effectively during this project.

To the World Bank's resident mission in Skopje where especially Ms Rajna Krtova Cemerska (Social Sector Project Officer) provided invaluable support.

A special thank is also addressed to all from the World Bank HQ who have provided valuable comments contributing to a much improved project. In particular, we thank Dr. Jan Bultman, Ms. Maria Gracheva, and Mr. Gheorge Novotny.

## ABBREVIATIONS

CQI	Continuous Quality Improvement
DRG	Diagnosis Related Groups
GoM	Government of Macedonia
GFEC	Grant Facility Executive Committee
HIF	Health Insurance Fund
HSRP	Health Sector Reform Project
IDA	International Development Association
MIS	Management Information System
MoF	Ministry of Finance
MoH	Ministry of Health
MoLSP	Ministry of Labor & Social Policy
PC	Project Coordinator
PHC	Primary Health Care
PSMAC	Public Sector Management Adjustment Credit
PSMAL	Public Sector Management Adjustment Loan
ToR	Terms of Reference
TQM	Total Quality Management
WHO	World Health Organization

## 1 INTRODUCTION

The Macedonian health system is undergoing important changes in the organization, financing and delivery of services aimed at improving efficiency and quality. These changes began nearly 5 years ago with efforts to strengthen primary care, introduce capitated payment models, strengthen the purchasing of pharmaceuticals and through the privatization of some primary care services. The changes in Macedonia vary slightly from other countries in the region where consolidation of facilities and staff were underlying factors. Macedonia ranks favourably vis a vis other countries in the region in terms of beds per 100,000 and doctors per 100,000, highlighting that the need for reform is driven by patient dissatisfaction and the need to improve quality.

The latest phase of reform focuses on improving the purchasing capacity of the Health Insurance Fund (HIF), improving the contracting process and signing contracts with 17 specialty hospitals, and introducing performance-based payment for providers. The underlying objective of these changes is to improve efficiency and quality in health services delivery.

These changes introduce a series of new challenges for providers as they will have to adapt to these challenges and redesign the way care is provided. These challenges can be summarized in the following strategic objectives

- To improve the capacity of the purchasing agency, the HIF, to obtain better outcomes within the existing resource framework.
- To strengthen the institutional and governance issues related to the key institutions involved in the sector: HIF, MOH, MOF and the providers.
- To provide hospitals and primary care centers with increasing autonomy to manage resources.
- To reorganize the way care is provided by shifting from a curative model to an integrated care approach that is strong on promotion and prevention. This would also include introducing modern care paradigms that would reduce hospitalization through increasing ambulatory procedures and improved capacity at the PHC level, as well as increasing standardization of clinical procedures and treatment protocols.
- The need to strengthen the management capacity of providers by providing them with increasing levels of management skill, modern organizations, incentive schemes and information systems that will lead to improvements in organizational efficiency.

In addition to these changes, there are signs that the territorial-administrative framework may undergo some changes. Currently, there is one level of administrative division in Macedonia: 123 municipalities. Seven of them make up the capital city and the others comprise about 12,000 residents on average (there

might be substantial variations in size). Effective planning and coordination of health services in such small territories is unfeasible, and there is an impression that hospitals do not have sufficient ties with local power. This makes it difficult to improve coordination of care networks, which ideally would cover populations of between 100,000 to 150,000 people.

In this context, there are many question marks over the present situation and future perspectives of decentralization in the system. In addition, many changes in the legislative framework add additional elements of confusion, opportunity and threats to the successful implementation of the reform process. The key legislative changes that affect the environment in which providers are operating include:

- The Health Insurance Law, with 12 supporting by-laws
- The Law on health care which was passed in 1996
- The Collective Agreement on health care of the Republic of Macedonia
- The 1993 law on salaries and amendments which outlines the salary limits that hospitals are subject to and could have a bearing on the extent to which salaries can be linked to performance.
- There is also a Law on Health Record Keeping
- The by-law on the contracting of Primary Care providers which, like the hospital by-law, outlines the key elements of the contracting scheme.
- The law on the allocation of physical space and conditions in facilities which limits the extent to which providers can restructure their facilities.
- Other laws that affect operations include: the national Labor Law, the National procurement laws, laws on financial management of public resources and anti-corruption policies, as well as other laws that govern public administration.

The proposed World Bank loan will address these issues through the development of technical assistance, equipment, information systems and training that providers will need to respond to the challenges. The issue of HIF strengthening is addressed through a complementary consultancy focused on identifying the needs of the HIF. This consultancy focuses primarily on the needs of hospital providers in the face of these challenges.

The final report is divided into 5 core sections. After this introductory section, the second section outlines the expected deliverables and the actual status of each aspect of the project. The third section outlines the key issues that were identified to build a better provider network. The fourth section outlines the project design for component III. The final section highlights critical issues that could affect implementation of the hospital strengthening actions covered under the component.

## 2 DETAILED PROJECT DELIVERABLES

World Bank involvement in the health sector in Macedonia started with the Health Sector Transition Project (HSTP) that closed on March 30, 2002, and was rated satisfactory by the World Bank's Implementation Completion Report. The HIF has received continuing support from the Bank as part of the Public Sector Management Adjustment Credit (PSMAC), and this program is continuing with the Public Sector Management Adjustment Loan (PSMAL) currently under discussion and the support of Dutch Trust fund resources.

The proposed second HSRP will build on the foundations laid by HSTP and PSMAC, in the areas of health insurance, primary care reform, pharmaceuticals policy, information systems and primary care and hospital contracting. Agreement was reached, following discussions with the Ministry of Health (MOH), Health Insurance Fund (HIF) and Ministry of Finance (MOF) to carry out project preparation activities in the following areas:

1. HIF Governance Reform
2. Improving Services Delivery
  - a. Contracting and licensing of health care providers;
  - b. Primary Health Care
  - c. Supply and distribution of pharmaceuticals
  - d. Improving efficiency and quality of services
3. Improvement of Management Information Systems
4. Project management

The Government of Macedonia (GOM) secured a PHRD Grant made available by the Government of Japan and supervised by World Bank to help the project preparation of the health sector component of HSRP. In this context, the consultancy focuses on the project preparation activities related to activities to support the objective of Improving the Efficiency and Quality of Services (originally component 2.d and finally component 3).

The sub-component is directed principally at the hospital level of the Macedonian health system, but is also envisaged to support activities to support the shift of care out of hospitals to the primary care level; thus the component will also provide support to the PHC sector so that increased capacity is developed. Overall, the sub-component is designed to improve managerial and financial control and performance and to stimulate modernization and increased efficiency and effectiveness in service delivery arrangements, in the face of increasing accountability introduced under the HIF contracting scheme..

The Improving Efficiency and Quality of Services sub-component is targeted mainly at the hospital level of the health care system, and at optimizing the role and interface between hospitals and primary care.

## **2.1 *The Terms of Reference***

The TOR for the original contract, signed in December 2003, identifies two main objectives for the Project as follows:

The aim of the consultancy is to support the Project Preparation Unit in the MOH in clarifying the objectives and methodologies for this sub-component and producing full and detailed specifications for the contractors, who will be invited to deliver the sub-component starting in the second half of 2004.

The project design must reflect the main aims of the Improving Efficiency and Quality of Services sub-component and in particular the development of contracting capacities at both the HIF and HI levels; improvement in managerial capacities in public hospitals and health centers in a number of key areas of management activity and the use of the competitive fund to establish a small number of working pilot projects which can be used as exemplars to demonstrate key aspects of health service modernization and development, with the aim of setting in train more widespread organic change in what remains a traditional and highly institutional model of hospital and primary care services.

The outputs should also identify the principles, methodologies and processes governing the planning, allocation, distribution and execution of projects under the fund, which satisfy the objectives described above.

After the December mission of the World Bank, it was agreed that the component should focus on improving the capacity of hospitals to meet the demands of the new contracting relationship with the HIF, rather than to attempt to address the contracting issues of HIF which were being assessed by another consultancy. For this reason, the design of the project component proposed focuses on improving hospital performance through strengthening of providers and provider networks as well as through the implementation of small grant projects associated with improving performance.

The following sections describe the key project inputs and outputs, in accordance with the terms of reference.

## **2.2 *Inputs and Project Organization***

The Project has been implemented over 4 calendar months using approximately 7 consultant months of resources during its execution

The international expert inputs of 76 consultant-days have been provided via 4 missions covering both home based support and preparation and by on the spot assistance in Macedonia. At the management level the Project has enjoyed direct access to the Minister of Health and diverse department directors who have offered considerable support and time for the Project.

In terms of local expertise input and commitment from the counterpart the Project has enjoyed optimal conditions.

### 2.3 Output/Results Delivered by the Project

The status of the implementation of the Project is as follows at project close: 31.03 2004:

Benchmark	Results/output/status
<b>I) Key Activities</b>	
<p>a. The provision of TA to support the development of the health services contracting process, with a particular focus on contracting for hospital and specialized services;</p> <p>b. The provision of skills and capacity building and education and training in key areas of health services management including business planning, budget management, capital management, human resource development, negotiation and contracting. (Training activities should be linked, where appropriate to skills/capacity building and education/training initiatives developed in HIF Governance Reform and with similar initiatives developed in Improvement of Management Information Systems component, which will deal with contract management and information systems development at purchaser and provider levels of the hospital system);</p> <p>c. The development, identification and enforcement, through the contracting process and other systems and processes, more explicit systems of devolution and accountability for hospital and primary health center directors and boards;</p> <p>d. An analysis of organizational development needs in hospitals and primary health centers to support improved efficiency, performance and</p>	<p>The inception report addressed the key issues facing hospitals in light of the contracting process. Training sessions were carried out with hospital directors regarding modern management techniques and the implications of contracting</p> <p>The inception and mid-term report provided a detailed diagnosis of the current situation in the hospitals regarding management knowledge, business process, and core management areas through the application and analysis of a survey instrument.</p> <p>The survey results were then converted into recommendations for skills and capacity building through a core strengthening component of the project.</p> <p>The inception report provided an extensive analysis of the implications of decentralization and the core functions that should be considered as part of any decentralization process.</p> <p>As discussed above, this was carried through the application of the survey instrument and presented in the Mid-Term Report.</p>

Benchmark	Results/output/status
<p>modernization;</p> <p>e. The identification of detailed objectives, criteria and processes for selecting pilot projects for funding under the HSPP to finance strategic and tactical developments, whether in the form of small infrastructure developments or equipment purchases, aimed at stimulating new more cost-efficient and effective service delivery models;</p> <p>f. The range of objectives to include:</p> <ul style="list-style-type: none"> <li>• Increased efficiency in the use of inpatient and outpatient resources;</li> <li>• The testing of new more efficient and cost effective models of health care delivery;</li> <li>• The provision of higher levels of services quality, including issues of patient privacy and dignity;</li> <li>• Improved use of medical and non-medical manpower;</li> <li>• More effective models for the development of specialist ambulatory services;</li> <li>• More rational and effective use of capital, revenue and manpower resources;</li> <li>• Organizational developments which promote the above</li> <li>• Supporting increased management of patient diagnosis, treatment and care at primary care level.</li> </ul> <p>g. The design of the competitive processes by which to identify, evaluate and distribute the allocations of funds to pilot projects and the identification of success criteria against which the value of the investment can be measured;</p> <p>h. The estimation of the costs for the types of pilot subprojects eligible for funding and /or provide a simple costing template based on key parameters of specific project sites.</p> <p>i. Proposals for effectively disseminating and using experiences gained through</p>	<p>The detailed project design outlines the criteria for selecting pilot projects and presents the final selection of demonstration sites that was proposed by the hospital working group. The detailed operational manual for the Grant Facility outlines the typology of projects to be supported and estimated disbursement areas.</p> <p>These objectives were incorporated into the background work undertaken as part of the inception report and serve as the guiding objectives for the design of the Grant Facility. The final operational manual outlines how these objectives are addressed by the proposed Grant Projects.</p> <p>The Operational Manual outlines the Grant Project Cycle, indicating how projects are selected, evaluated and monitored.</p> <p>The estimated component costs, broken down by disbursement category, were provided in the Detailed Project Design Report.</p> <p>The lessons learned section of the operational manual outlines how the proposed demonstration projects can be</p>

---

<b>Benchmark</b>	<b>Results/output/status</b>
these pilot demonstration projects to set a more general direction and benchmarks for the future development of the healthcare provision.	analyzed to better understand the route to performance improvements and to serve as input to the competitive grant facility stage.

Benchmark	Results/output/status
<b>II) Key Products</b>	
Inception Report	Completed -Presented on 29/12/03
Mid- term Report	-Presented on 19/1/04
Draft Report (Component Design and Draft Operational Manual)	-Presented on 2/2/04 and 5/3/04 respectively
Final Operational Manual	-Presented on 6/4/04
Final Report	-Presented on 6/4/04

### 3 ELEMENTS OF A WELL-RUN PROVIDER ORGANIZATION

The successful implementation of the reforms in contracting and health services administration will require significant changes in the way hospitals (and other providers) are run. While a part of this is defining clearly what the providers are able to do, in terms of the degree of autonomy they are granted, the second area to be considered is what people (staff and management), processes, technology and skills are required to improve efficiency and quality. The following figure shows how these elements interact and should frame the performance improvement process.



The development of Component III activities was established based on a framework for strengthening hospital performance. This framework will provide the basis for strengthening hospitals under the proposed World Bank project and should guide efforts to improve performance in the future. The next section will discuss the specific actions that are proposed in the context of the project. The proposed framework is based on six pillars which are related to the figure above:

- Strong and capable management
- A clear and well-defined business plan
- Presence of well defined structure and processes, including protocols and key committees for oversight of these instruments
- Performance measurement of the facility and its staff
- Adequate financial management
- Continuous quality improvement

The following sections summarize the main issues related to each of these six points.

#### Strong and Capable Management

The key to improving performance is to have **strong and capable management** which is given authority and responsibility to make decisions that will drive efficiency and quality in the system. This requires improvements in skills, clear devolution of authority to hospital directors, redesign of the management structures in hospitals and the implementation of incentives that align the interests of the system with the interests of the directors.

There are a few critical management skills that a hospital director will need in the new environment include: skills related to finance, marketing, human resources, procurement, business management strategy and finally medical management strategy. Each of these will be briefly reviewed below.

### *Finance*

As explained earlier, governments are often compelled to undertake hospital reform to address inefficiency, insolvency and financial mismanagement. In most cases, financial health of the hospital is therefore a foremost concern of hospital managers. Hospital managers need not be financial experts. Rather a good manager must be able to communicate with financial specialists by asking meaningful questions that lead to sound financial policy. The fundamental questions to be posed would encompass topics such as financial statements, capital assets, profit, debt, pricing and payment and long-term financial management. Formulating and asking the right questions will enable managers to select and subsequently monitor financial policy.

### *Marketing*

Corporate managers have relied too much on traditional financial measures when evaluating behavior of business entities. These measures reveal past accomplishments but fail to foretell future directions of the organization. Therefore, a balanced evaluation framework needs to include measures of dimensions that can serve as leading indicators. One of these dimensions, conventionally known as marketing, measures business operations from a customers' perspective with a view toward assessing long-term potential for profitability and growth. Various components of customer attitudes and behaviour are connected like a chain which in turn is linked to business performance. Profit and growth are linked to customer loyalty which results from customer satisfaction. Customer satisfaction, in turn, is determined by quality and price. For hospitals, customer attitudes will be affected by what they hear from their physicians, relations, friends, and neighbors. Hospital reform should ideally improve all of these indicators.

### *Human resources*

This chain of customer attitude and behaviour can feed into another chain in the human resources dimension: the service value is linked to employee productivity

which is in turn linked to employee loyalty, then to employee satisfaction, and finally to internal quality of work life. It would be safe to assume that this dimension becomes more important as a business becomes more service oriented since the nature of hospital services require direct interaction between care providers and their patient. It is likely that more satisfied employees not only produce better services, but also are more pleasant to customers and therefore provide utility directly to the customers.

Although producing satisfied employees is not the objective of hospital organizational reform, failure to satisfy physicians and other hospital workers can create political obstacles to the reform. Thus, assuring that those employees who remain with the hospital during the reform are those who can most contribute to and gain from the reform will help protect the reform process from political backlash.

On the other hand, employees who are forced out of the hospital or otherwise disadvantaged by the reform may oppose the reform for personal reasons. In some cases reform deprives an individual of opportunities to profit illegally from the sale of drugs or other public property. In other cases, reform might simply force workers to exert more effort or be present a larger proportion of the work day. One reason for thorough timely evaluation of organizational reform using methods described in this paper is to protect a well-performing reform from misguided or misleading criticism. To the extent that the evaluation reveals problems in the reform process which support the claims of reform opponents, reform and public health are both best served by revealing these problems and discussing their solutions in public.

### *Procurement*

Procurement refers to purchasing procedures for hospital equipment, medical and non-medical supplies. These inputs constitute a large part of factor inputs required for hospital production process, especially in developing countries where labor is relatively cheap. A cost analysis of hospitals in a group of developing countries by Barnum and Kutzin (1993) suggests that drugs and other non-labor costs account for 21% in Nigeria to 78% in China of the total recurrent cost. A recurrent-capital ratio for another group of developing countries which averages 0.20 highlights the relative size of non-labor component of hospital cost. When the hospital management does not face a hard budget, lack of accountability often leads to irrational investment and purchasing decisions. Effective management would address this issue and ensure a sound decision making process by incorporating the procurement dimension into its evaluation norm.

### *Business management strategy*

Hospital management affects all the stages in the hospital production process that, in turn, influence hospital performance. The key to successful organizational reform is to link an organization's long-term strategy with its short-term actions. The first step of such strategic management is for the senior managers and the hospital board to

define the organization's mission or, in their terms, its "vision." For the vision to bear practical relevance it must be closely tied to specific objectives and measures that are endorsed by senior managers. The long-term plan should be defined with input from the marketing department regarding consumer attitudes. It should state the hospital's objectives over the next few years, including its product mix, its projected patient mix the communities it intends to serve and the quality of that service.

The second step is communicating and linking, which refers to dissemination of the mission set by senior managers to all the levels of the organization in order to ensure that departmental and individual goals are not just limited to short-term financial goals. The next process is business planning, which consists of setting the priorities, based on the organization's performance goals, among potentially conflicting reform programs in order to allocate scarce resources in the most efficient way. These three processes set the context within which management can define and subsequently monitor managerial and administrative procedures for managing human, physical and financial resources. The final step is feedback and learning, which enables strategic learning based on the review of departmental and individual performance.

### *Clinical Management Strategy*

In contrast with business management strategy, medical management strategy concerns hospital behaviour at the level of direct patient care. Its main purpose is to improve clinical standards and practice patterns in order to achieve better health outcomes, with cost control typically a secondary, but important, concern. Through improved medical management, improvements in primary and hospital care can be introduced that will lead to lower levels of hospitalization and significant savings in costs. Indicators of the quality of medical management can include whether or not the work of individual physicians is reviewed by a quality control committee of their peers and whether or not the hospital is developing and applying a set of recommended "clinical pathways" for specific, frequently encountered sets of presenting conditions.

Clinical pathways, along with the "integrated package," are a widely accepted disease management approach. Investigation of many common conditions follows a pathway that can be clearly defined. For example, a woman with a lump in her breast that turns out to be malignant will undergo mammography, biopsy, surgery and rehabilitation, yet a failure to coordinate care pathways can make this journey seem like a pioneering exploration. People with chronic diseases also often follow an unnecessarily complex pathway on the interface between primary and secondary care, seeking the skills of each sector when needed but with little to guide them. And patients often remain in hospital for longer than necessary because of an absence of alternative, more appropriate facilities. The challenge facing health policy-makers is how to design a system that recognizes this interconnectedness. Increasingly in health systems in industrialized countries a family doctor serves not only as a primary care giver, but also as a competent manager who helps the patient negotiate

ever more complex choices by interpreting diagnostic and treatment options and offering a focus of continuity.

Disease management aims to improve effectiveness of care and cost effectiveness and involves shifting away from more expensive inpatient and acute care to areas such as preventive and ongoing care, health promotion and education, and outpatient care. Once clinical pathways have been adopted, the quality of medical management can be judged by the degree to which physicians apply those pathways in actual practice.

Too often, difficulties with the implementation of improvements in care management are the reason for problems in health care delivery. In many countries, general practitioners lack the skills and facilities, appropriate economic incentives and the professional ethos to provide treatment for many disorders, with the result that these are unnecessarily referred to hospitals. Other patients, with diseases that are treatable if detected early, are seen by specialists when it is too late to do anything.

### *Hospital Information Systems*

The final aspect that is critical to strong and well run management is the availability of information systems that facilitate the hospital manager's job. A commonly used term to describe the total data collection and analysis in an organization is management information systems. Gillette et al (1970) suggest that a complex organization like a hospital is composed of at least six subsystems:

- Patient diagnosis and treatment system, which includes information derived from various hospital departments such as pathology, diagnostic radiology, pharmacy, rehabilitation, etc.
- Patient record system, which includes medical records, admissions, discharges, insurance details, etc.
- Expenditure and general accounting system, which includes budgeting, payroll, materials, plant systems, etc.
- Personnel system, which includes information on all employees and positions in the facility.
- Support services system, which includes information on departments such as engineering, vehicles, plant management, etc.
- Management control system, which includes organizational information, inter-group dynamics, internal controls, communication, etc.

Hospital information systems are expected to fulfill the following important goals:

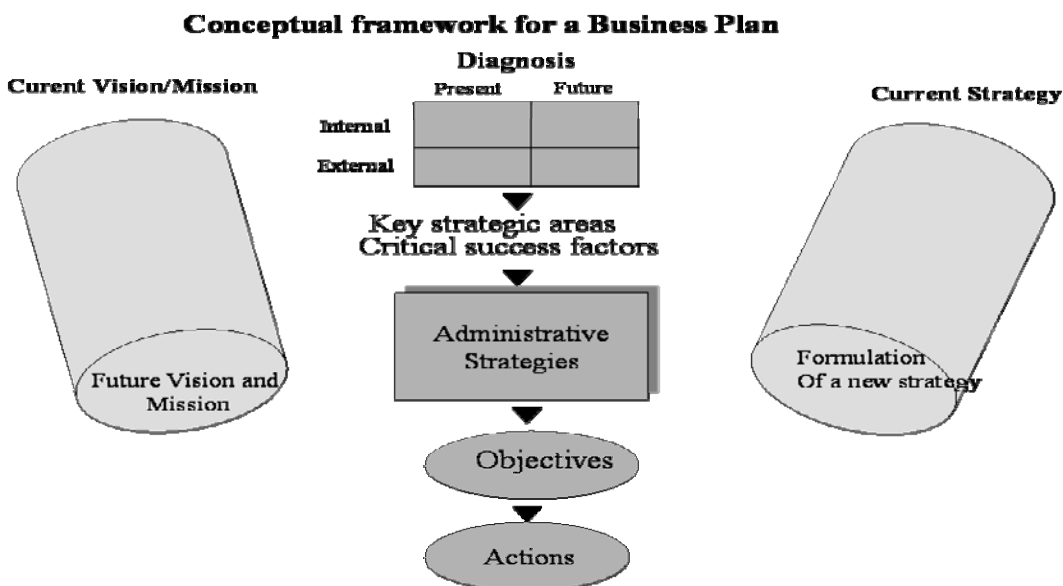
- Patient scheduling and order system, which includes patient care and support services, such as food, housekeeping, etc.
- Patient accounting system, which includes all financial accounting related to patients, credit and collections, subsidies, etc.

- Provide key users with access to timely and comprehensive information about health services delivery, costs and performance;
- Provide necessary information for strategic planning;
- Provide necessary information to facilitate monitoring and reporting;
- Provide concurrent indicators of occupancy, length of stay, repairs, maintenance, etc.

The success of hospital information systems depends on a variety of factors, not the least important of which is how easy it is to use the system. Pre-designed systems can be adapted to the Macedonian context, however, it is important to highlight that implementation of these eight modules is a long and complex task. Successful implementation of an integrated MIS system will typically require between 12 and 18 months for a medium-size facility and over two years for a large hospital.

**A Well-Defined Business Plan**

The second element is a **clear and well-defined business plan** which analyzes the hospitals current environment, highlighting strengths, weaknesses, opportunities and threats and proposes an integrated set of strategies to improve performance. The plan contains the high level objectives, projected capital expenditures, plans for service changes, changes to asset configurations, projected revenues, projected costs and the financial forecasts. The following figure highlights the key aspects of this Plan.



Fuente: Carles Alcarat en: Servei Catala de la Salut, Planificaci3n hospitalaria a nous: papeles, nous instruments

**Structure, Process and Procedures**

The improvements of processes and procedures is a critical aspect to the performance improvement process. Improving processes and procedures requires

the existence of an underlying ethos of serving the patient, key structures and execution of critical procedures. The framework in which teams can operate and function effectively is an historical tradition which provides the ethos within which staff function. An approach to problem solving which is proactive, strengthened by a structure and systems will allow various teams to interact effectively.

### ***Historical Ethos***

An historical ethos develops over time. It is encapsulated in a tradition of commitment, associated with continuity of leadership at all levels and long-serving staff who together maintain a heritage often preserved from the mission era. This ethos also derives from a close relationship with the community. The result is that staff is often working for reasons that go beyond the financial reward.

### ***Problem Solving***

*"We turn our problems to challenges"*

Problems are turned into challenges by an attitude of determination to solve problems and to succeed, through meeting together in teams and using whatever resources are available. Quality improvement projects at unit level facilitate this. Steps in the process of problem solving are clearly described. Problem solving depends on:

- Keys to problem solving
  1. Deal with problems immediately.
  2. Identify problems at the functional unit level.
  3. Use a team approach.
  4. Give/get support from top management.
  5. Consult outside of the hospital when necessary.
- Start quality improvement projects at unit level develop teamwork and facilitate problem solving.
- Use the process of problem solving to develop the hospital.

Part of the culture - whether inherited or acquired - in the various hospitals appears to be a way of dealing with problems. Once again, although difficult to define specifically, it was mentioned repeatedly, and can almost be described as the *raison d'etre* of teamwork, the process of finding, or:

### ***Structure and Systems***

Structures and systems are needed within which teamwork can happen and thrive. An orderly system, based on generic management principles, must be functioning at all levels, with continuous monitoring, feedback and evaluation. Good

administration is essential, but people are developed rather than piles of paper. Head office directives are applied only when they are relevant and practical.

As much as relationships, unity, and commitment, processes are important, a solid underlying structure is needed, to allow for this kind of problem solving and quality improvement to happen. In combination with the structure is the implementation of key processes that will help providers to improve performance. The key processes that should be incorporated into the hospital's operating strategy include:

- a) Scheduling of routine work assignments
- b) Development and implementation of standard treatment guidelines and protocols
- c) Working with Drug and Therapeutic Committees
- d) Improvement of patients' medical records system and clinical information processing
- e) Setting up and support to multidisciplinary Quality Improvement Teams based on Implementing of the Continuous Quality Improvement (CQI) system
- f) Establishment and monitoring of quality indicators, standards and quality improvement targets
- g) Establishment and ongoing work to reduce hospital infections, including but not limited to existence of a hospital infection committee
- h) Establishment and ongoing work to reduce hospital mortality, including but not limited to existence of a hospital mortality review committee
- i) Coordination of patients' flow with other levels of care / other hospitals and improvement of referrals procedures
- j) Utilization review procedures
- k) Use of appropriateness of care evaluation protocols (AEPs)
- l) Implementing case management practices
- m) Implementing a system of clinical pathways
- n) Use of Clinical Audit practices
- o) Development and implementation of patient safety standards (in relation to: hospital-acquired infections, transfusion of blood and blood products, equipment and facility safety)
- p) Participation in medical rounds and internal clinical conferences
- q) Work with the hospital's Ethics Committee
- r) Promoting clinical research

### **Performance Measurement for Results**

This section presents measurement indicators for four dimensions of hospital performance including technical efficiency, allocative efficiency, quality and equity. Since the manifest inefficiency of government-owned and operated hospitals is typically one of the most important motivations for hospital reform, tracking the impact of reform on efficiency is clearly a high priority. However, opponents of hospital reform frequently point to reductions in quality or equity or increased

corruption as side effects of reform which are so detrimental to public well-being as to negate any purported efficiency improvements. Thus, the complete story of the impact of hospital reform can only be told with measures on all four dimensions.

### *Technical efficiency*

A production process is technically efficient if it wastes nothing. If it is possible to reorganize the hospital's existing inputs so as to produce more output with no more resources, then the hospital was not previously operating efficiently. Alternatively if the existing flow of outputs could be maintained with fewer or less costly inputs, the hospital is not currently efficient. Technical efficiency can thus be measured by any of a list of indices of hospital output per unit of hospital input. In outpatient clinics, patients seen per clinic hour is a useful measure. In inpatient wards, average length of stay and bed occupancy rate are useful and frequently used measures of technical efficiency.

In principle, these measures of technical efficiency apply only if the quality of the output (i.e. health outcomes, consumer satisfaction, etc.) are held constant. However, the measurement of "quality-adjusted" output is in fact quite difficult. So we follow the practice of other authors and separate quality into a second dimension.

### *Allocative efficiency*

While technical efficiency is a matter of achieving the maximum output with any given mix of inputs, allocative efficiency means producing the "correct" mix of outputs using the "correct" mix of inputs. Technical efficiency is doing things right, while allocative efficiency is doing the right things.

Society will view some hospital services as "social functions" which deserve some degree of protection from the forces of the marketplace. Measuring the "allocative efficiency" dimension of hospital performance requires the identification of some hospital services as serving social functions to a greater degree than do other hospital services. The criteria for selecting these services could be derived from public economics (i.e. services that are public goods or produce positive externalities deserve protection), but government decision-makers may sometimes identify a hospital service as a "social function" for other more political or subjective reasons. However the hospital's social functions are identified, the allocative efficiency dimension of hospital performance can then be judged by measuring the production of both social functions and other services over time. If the hospital's production of social functions slips backward after reorganization, either relative to other hospital outputs or relative to the population to be served, there is cause for alarm on this dimension.

Society will view some hospital services as “social functions” which deserve some degree of protection from the forces of the marketplace. Measuring the “allocative efficiency” dimension of hospital performance requires the identification of some hospital services as serving social functions to a greater degree than do other hospital services. The criteria for selecting these services could be derived from public economics (i.e. services that are public goods or produce positive externalities deserve protection), but government decision-makers may sometimes identify a hospital service as a “social function” for other more political or subjective reasons. However the hospital’s social functions are identified, the allocative efficiency dimension of hospital performance can then be judged by measuring the production of both social functions and other services over time. If the hospital’s production of social functions slips backward after reorganization, either relative to other hospital outputs or relative to the population to be served, there is cause for alarm on this dimension.

Setting aside the problem of protecting social functions, two special features of the market for hospital services can impede the achievement of allocative efficiency. First, third party payment provisions may elicit overuse of one service and underuse of another because the ratio of the prices paid by the patient for the two services bears no relation to their relative costs. An example is when patients bypass nearby primary care facilities to go directly to the hospital, because the hospital’s more costly care is cheaper to the patient. Overuse of health care in response to third party payment provisions is called “moral hazard”. Organizational reform can address it by instituting nominal charges for the more costly service. For example some reforms introduce “bypass fees” charged to patients who come to the hospital without having been referred by a primary care center.

At the input stage of the production process, the most important issue relating to allocative efficiency is the relative compensation received by different categories of personnel. It is important to collect data on wages paid by the hospital before and after the reform and to compare those wages not only across categories within the hospital but also with other comparable employers outside the hospital setting. When these wage ratios do not accurately reflect the relative values of categories of personnel to the hospital production process or are higher or lower than wages paid for comparable work outside the hospital, every area of hospital performance is threatened.

## *Quality*

Because of information asymmetry, an essential aspect of measuring the impact of organizational reform is to track its impact on the quality of care. There is substantial discussion in the literature about how to measure quality of care. Some of the disagreements among authors stem from a failure to distinguish measures by the stage of the production process. The issue of quality indicators is discussed again in the section on continuous quality improvement.

*Input stage.* The simple availability of specific drugs has been used as an index of the quality of care in rural primary health care facilities. This index is obviously imperfect, since it can not capture how effectively drugs are used when they are available. But in the absence of other measures, it is informative to know that some facilities have basic drugs in stock while others do not.

*Process stage.* Indices from the input stage can be supplemented by process measures of quality, such as an index of how well the hospital maintains patient records from one visit to the next. A more difficult, but more revealing, measure of process quality is for an expert physician to observe patient treatment and judge the adequacy of treatment protocols. Comparison of treatment procedures to accepted standards for quality care has been emphasized by several analysts.

*Output stage.* The most useful measures of quality include measures of outcome from the final stage of the production process – such as rates of adverse outcome from specific procedures adjusted for the severity of presenting cases, or rates of iatrogenic diseases such as staphylococcus infections in hospital wards.

## *Equity*

An analysis of the equity impact of reform can begin by examining the impact of the reform on the mix of patients to see if either the percentage or the number of poor patients served has fallen. This measure of equity at the input stage of the production process can be supplemented by re-examining any of the measures of the quality of care at the process or final product stages with a view towards learning how that index of quality is distributed according to the income class of the patient. For example, are drugs less available to poorer patients than prior to the reform? Or are poorer patients less satisfied with the care they receive?

Analyses of the equity impact should ideally not be restricted to the hospital undergoing reform, but should look at the reform's impact on access by the poor to health care in general. Sometimes the poor are discouraged by higher fees from presenting minor complaints at a hospital's outpatient clinic, but find equally good care in less expensive primary health care facilities outside the hospital. In this case the reduced percentage of poor patients in the hospital's patient mix might be

interpreted as an improvement in allocative efficiency, with little offsetting reduction in quality or access. While it is expensive and time-consuming to collect data on health care utilization of the entire local poor population before and after hospital reform, the analyst concerned to measure the impact of reform on equity should collaborate with local statistical offices and poverty programs in order to identify a more population based measure of access to care than would be available from the hospital's patients alone.

Another way in which superficial analysis might suggest a reform to be inequitable when its net effect is in fact equity enhancing involves the reform's effect on the practice of requesting side-payments from patients. The existence of such side-payments in many government hospitals and the fact that poorer patients are rarely exempted from their payment means that the hospital's apparently pro-poor pricing policy is much less equitable than it seems. A hospital reform which raises the official prices but eliminates side-payments may appear to raise the price of care to the poor although it is actually reducing the net cost of care for that group. Exit polls that are primarily designed to measure patient satisfaction can also capture the effect of reform on the net price the patient must pay and thus allow inferences about the true impact of the reform on prices paid by the poor.

### **Improved Financial Management**

The shift from budgeting to performance-based pay will require a radical change in the capacity providers have to plan and administer their finances. Greater autonomy is likely to lead to a change in government financial allocations from line budgetary allocations to block grants whereby managers have to administer a pool of resources, in the most efficient manner, to produce the services required in the contracts, at the level of quality required. In addition, there may be increasing opportunities for the hospital to raise their own resources, through user charges, institutional finance, donations, etc. At the same time, changes in the procurement and personnel processes may put additional demands on the financial managers in the hospital. And finally, reporting and auditing requirements may also be challenging tasks in an autonomous hospital. Thus, changes in financial management may become necessary because of:

- change in the budgetary process of allocation
- non-government sources of revenue changes in procurement
- maintenance and inventory control policies
- changes in personnel policies changes in audit and reporting requirements

Macedonian hospitals typically have very small finance departments, since the hospital itself manages very little of its finances. The needs of autonomy will thus require the management to build up this department almost from scratch, and this can be a very challenging task. The areas that will need particular attention are accounting, auditing, budgeting, financial planning and financial reporting.

## Continuous Quality Improvement

The introduction of selective contracting and changes in the reimbursement systems make it imperative to establish continuous quality improvement programs and standards in the Macedonian health sector. Well-run health care facilities will have to adapt quality assurance programs and the HIF and MOH will have to work aggressively to establish quality standards. While the performance standards establish a series of quality indicators, considerable challenges remain to expand these quality indicators, to develop the processes that will ensure that these indicators are collected and used and to develop licensing, accreditation and certification procedures to ensure quality across all facilities. The proposed project would support the implementation of quality assurance standards and procedures. It remains to be determined where the quality assurance standards will be established. Given the highly politicized environment and the high levels of patronage it is advisable that quality assurance standards and accreditation be developed either by the MOH or by an Non-Governmental Organization (NGO) established especially for this purpose. Many countries including the US and European countries have established separate, independent agencies to deal with quality assurance and accreditation.

In the past decade, the quality movement that has been embraced by the service and manufacturing sectors has spilled into the health care sector. The fundamental quality assurance and improvement theories of Joseph Juran and W. Edwards Deming, as well as the comprehensive quality management approaches of Total Quality Management (TQM), Continuous Quality Improvement (CQI), and Six Sigma are finding their way into the daily operations of health care organizations around the world. Most health care managers and policy makers now view as imperatives the evaluation and control of quality and improvements in quality. Less agreement exists, however, as to a quality evaluation approach that will meet the needs of a particular health care organization, regulatory agencies, those who pay for health care services, or those who purchase services. In addition, there is an increasing expectation that the community and patients should have access to quality information to assist with choices between health care facilities and health care providers.

At the same time, many countries are attempting to efficiently manage excess capacity in their health system and rein in total cost. The hope is that this can be done without deterioration in the availability and quality of health care services. New methods of payment for services are being designed to introduce efficiencies into the provision of health care services and thus reduce cost. For instance, centralized systems that previously paid all costs for facilities' operation and services delivery to the population are implementing payment controls through the introduction of payment linked to diagnosis, employer-supported insurance, and private insurance.

Centralized systems are also finding that the efficiencies found in networks and integrated delivery systems hold promise. Privatization efforts in the industrial sector of some economies have been introduced into the health sector in terms of private professional practices and private ownership of health facilities. Also evident around the world is the movement to provide services to patients in less costly ambulatory care and community-based settings. The introduction of home care, long-term care, and even hospice care is most frequently in response to the need to use acute care facilities more efficiently, reduce the length of stay, and thus increase the utilization of beds and services.

In both developed and developing countries, the significant cost of health care, thrusts health issues onto legislative and regulatory agendas with great frequency. Legislative and regulatory approaches are typically fragmented and result in change that may or may not be an improvement. Rarely is a country afforded the opportunity to significantly redesign its health sector. Thus, incremental change, frequently through the micro-management of individual elements of the system, is commonly encountered. Such incremental change is accompanied by the high expectation that improvements in access to health care, greater efficiency in the delivery of services, and ultimately improvement in the health and well-being of the population will result. In the case of Macedonia, the introduction of contracts, and the challenge imposed on providers, offers an excellent opportunity to introduce a culture of quality improvement.

Patients commonly do not have sufficient information to effectively navigate through repeated changes. As information of all kinds becomes more accessible in a society, the expectation is that this will also be true for health care information. Information is needed that will help identify sources of care that meet certain "quality" expectations. These expectations can relate to structures ("Where is a clinic with an X-ray machine?"), processes of care ("How long is the wait at the clinic or emergency department?"), and outcomes of care ("Will my child get well?"). Objective information that can answer these questions is most frequently not available to the public, and frequently not even available to the health care facility, health care professionals, and responsible regulatory agencies.

These and other factors have created a climate in which decision makers at all levels are seeking objective quality evaluation data on health care organizations. Licensure, accreditation, and certification are systems available to meet the need for quality and performance information. The project would address the building blocks to establish quality standards and to assist the providers with implementation of operational measures to improve quality.

Quality improvement indicators should be developed both for PHC and for hospitals. The quality indicators should be developed in three main areas:

- **Prevention Quality Indicators.** These indicators consist of "ambulatory care sensitive conditions," hospital admissions that evidence suggests could have

been avoided through high-quality outpatient care or that reflect conditions that could be less severe, if treated early and appropriately.

- **Inpatient Quality Indicators.** These indicators reflect quality of care inside hospitals and include inpatient mortality; utilization of procedures for which there are questions of overuse, under use, or misuse; and volume of procedures for which there is evidence that a higher volume of procedures is associated with lower mortality.
- **Patient Safety Indicators.** These indicators also reflect quality of care inside hospitals, but focus on surgical complications and other iatrogenic events.

## 4 OVERVIEW COMPONENT III: IMPROVING SERVICE DELIVERY

This section outlines the specific objectives, activities and estimated costs associated with the development of the Improving Service Delivery component of the proposed health reform project. The detailed activities are based on the background analysis presented in the inception and mid-term reports and provide a road map to improving the quality and efficiency of services.

### 4.1 Summary of Component Design

This component aims to support the implementation of actions to strengthen the management and operational capacity of health care providers that are contracted by HIF under the new contracting scheme. In order to support the development of these actions, the component would include two subcomponents.

- The first subcomponent would aim at **core strengthening** all providers that are undergoing, or have finalized, the contracting process with the HIF. This will focus on strengthening the providers in a number of core areas.
- The second subcomponent would implement a **Grant Facility** to fund subprojects submitted by the providers. The Grant Facility will be implemented through two rounds of financing, as discussed later on.

This section summarizes the key aspects of each subcomponent and outlines the operational mechanisms proposed for implementation of the component. The annexes provide detailed estimates of costing and activities.

#### 4.1.1 Subcomponent I: Strengthening PHC and Hospitals

The aim of the activities under the **Core Strengthening** is to prepare the service providers for an organizational change and strengthening required for the implementation of the contracting scheme. The activities will address three key areas:

- Clinical

- Organizational
- Financial

### Specific Objectives

The Core Strengthening activities of the Grant Facility will focus on leveling the playing field for all providers that have entered contracts with the HIF. The resources available under this activity will apply only to those facilities contracted by the Health Insurance Fund.

Technical assistance would be provided by foreign and local individual consultants and consultancy firms under the coordination of the Project Implementation Unit, to guide the stakeholders during the implementation of the two phases. Investments will be made in training activities for Hospital staff, medical equipment; medical supplies; small civil works for rehabilitation and information systems.

### Main Activities:

- Management Training
- Business plan development
- Strengthening organizational issues in providers including changes in the scope of services provided, organizational and functional structures and implementation of key structures and processes.
- Debt restructuring for hospitals
- Continuous quality improvement training
- Performance scorecard for measuring results
- Customer focused healthcare training-client satisfaction
- Organization of information flows – implementation of clinical guidelines and clinical pathways

It is expected that an estimated 17 hospitals, which are currently contracted by the HIF, will participate in the core strengthening stage.

### Specific Activities:

The following sections outline the detailed activities that would be financed under the core strengthening subcomponent.

#### A. Management Training

The key areas that have been identified for skill development would be divided into two parts. The first part would include core courses which would be offered as part of a management strengthening course for all hospitals and PHC managers. The second part would offer additional course under an optional scheme whereby courses would be provided on a short-term, seminar basis.

The *core courses* would include:

- Trends in health services management
- Health system organization and financing (health economics)
- The changes in the Macedonian health care system: legal, regulatory and challenges
- Human resource development and performance evaluation
- Quality management, patient safety and clinical audit
- Contractual arrangements in the health system
- Data for decision-making – benchmarking performance
- Economic evaluation of health care programs
- Planning health services
- Financial management
- Project management
- Training in clinical management, introduction to DRGs
- Monitoring and evaluation for results

The *optional courses* would include:

- Computer technologies in medical practice
- Workplace health and safety
- Patients' rights and professional ethics
- Basic epidemiology
- Appropriateness of care evaluation and utilization review
- Basics of clinical and health services research
- Risk management in health care organizations
- Applied epidemiology
- Industrial relations in health sector

## **B. Business plan development**

Establishing business plans for all hospitals will be an important step in the performance improvement process. The issues discussed in business plan development should be considered in this process. Technical assistance will be required to operationalize the business plans in Macedonian hospitals. The main actions would include:

- Technical assistance to develop business plans for hospitals contracted.
- Development of business plan implementation strategies.
- Training in business process reengineering.

## **C. Organizational Strengthening**

The main opportunities for improvement in terms of organizational issues will include changes in the scope of services, organizational and functional structures

and implementation of key structures and processes. The main changes envisioned include:

- Promoting greater use of ambulatory procedures, including surgical, internal medicine and diagnostic techniques that will low the demand for hospital beds and yield considerable savings to the system.
- Improve coordination with primary care facilities to strengthen the capacity of the PHC clinics and to introduce disease management strategies that focus on improving the management and referral patterns for key diseases such as: Antenatal and perinatal care, IMCI, Diabetes, Asthma and Cardiovascular disease (hypertension, ischemic heart disease/ AMI and cerebrovascular disease). This will include the implementation of disease management techniques and will build on the development of protocols and pathways.
- Technical assistance to support institutional assessments of the hospitals which will facilitate the redesign of organizational and functional structures in hospitals. This will allow hospitals to introduce more flexible management techniques, within the new organizational structure, and to more clearly outline the responsibilities and authorities of all key staff in the hospitals.
- Support the introduction of the key committees and processes outlined in the previous section.

#### **D. Debt restructuring for hospitals**

The high level of debt facing many hospitals introduces an additional challenge. Those facilities with higher than average debt levels will face an uneven playing field as the contracting process develops. Expert assistance should be provided to estimate, negotiate and manage the debt structure of each facility. The key actions to consider would include:

- Technical assistance to estimate the existing debt structure for each facility
- Development of strategy for renegotiating the debt of all hospitals
- Support implementation of the debt negotiation strategy.
- Evaluation of the impact of the debt restructuring plan.
- Financial forecast of revenues and expenditures for 2005-2008

#### **E. Continuous quality improvement training**

Continuous quality improvement is at the basis of performance improvement. Applying the techniques outlined in the previous section will allow facilities to improve both efficiency and quality. The main actions to be supported include:

- Basic training in continuous quality improvement techniques.
- Support implementation of CQI programs in at least 10 hospitals.

- 6 month guidance and TA of the implementation of CQI programs.
- Evaluation of the impact of the CQI program on individual hospitals.
- National implementation strategy presented.

## **F. Performance scorecard for measuring results**

The scorecard will serve as the basis for the monitoring and evaluation of results at the hospital level. The development of a scorecard in each facility will provide managers with key information that is required for day-to-day decision-making and also serve as the underlying basis for performance improvement. The main actions to be supported would include:

- Training on performance measurement
- Technical assistance on the development of performance scorecards for at least 5 hospitals involved in contracting
- Implementation of the methods and systems required to collect all information for the performance scorecard
- Establish a baseline and benchmarking for all demonstration hospitals
- Provide 6 months ongoing support to ensure that the system is understood and is being used appropriately by hospital managers.

## **F. Customer focused healthcare training-client satisfaction and patient safety**

Putting the patient first, at the center of the health care system, is critical to improving performance. Patients require additional information and hospitals need to reorganize processes and procedures to improve services for their clients. The main actions considered would:

- Training on client satisfaction.
- Support implementation of mechanisms to allow consumers to express satisfaction/dissatisfaction with the health care providers.
- Develop user satisfaction surveys for PHC, Hospital inpatient and Hospital outpatient services – apply survey.
- Implementation of at least 5 demonstration projects to improve client satisfaction.
- Monitoring and evaluation of results, including a baseline survey and final evaluation.
- Development of actions aimed at improving patient safety. The main areas that have been demonstrated through studies of evidence based studies indicate that the following areas offer the most value for money:
  - Improved perioperative glucose control to decrease perioperative infections;
  - Localizing specific surgeries and procedures to high volume centers;

- Use of supplemental perioperative oxygen to decrease perioperative infections;
- Changes in nursing staffing to decrease overall hospital morbidity and mortality;
- Use of silver alloy-coated urinary catheters to prevent urinary tract infections;
- Computerized physician order entry with computerized decision support systems to decrease medication errors and adverse events primarily due to the drug ordering process;
- Limitations placed on antibiotic use to prevent hospital-acquired infections due to antibiotic-resistant organisms;
- Appropriate use of antibiotic prophylaxis in surgical patients to prevent perioperative infections;
- Appropriate use of prophylaxis to prevent venous thromboembolism in patients at risk;
- Appropriate provision of nutrition, with a particular emphasis on early enteral nutrition in critically ill and post-surgical patients;
- Use of analgesics in the patient with an acutely painful abdomen without compromising diagnostic accuracy; and
- Improved handwashing compliance (via education/behavior change; sink technology and placement; or the use of antimicrobial washing substances).

## **G. Improving Estate Management of Hospitals**

The hospitals suffer from years of under-investment and a lack of appropriate maintenance. As an integral part of the investments envisioned under the Grant Facility, it is important to establish the current status of the infrastructure and equipment in the hospital network and to establish a scale of investment need. Additionally, the actions will focus on identifying opportunities to produce savings in energy or operating costs in the facilities. The main actions under this aspect will include:

- Evaluating the current state of buildings in all Macedonian hospitals
- Evaluating the current status of electrical systems
- Evaluating the current status of heating systems
- Carry out an inventory of all medical equipment (excluding instruments) in the hospitals, including information on # and age of equipment
- Establish maintenance requirements for equipment and building and develop a maintenance plan covering major items

## **Estimated Financing Requirements**

The total financing requirements estimated for this subcomponent is \$1.2 million. The detailed breakdown of financing was provided in previous reports.

### 4.1.2 Subcomponent II: Grant Facility

#### Objective

The Grant Facility objective aims to build on the core strengthening process and to implement changes in the hospitals that aim to improve efficiency, quality, user satisfaction and coordination in the provider network.

The Grant facility will make a additional investment and technical assistance available to hospitals and provider networks that submit, and are awarded, subprojects to improve performance. The **Grant Facility** would finance subprojects in two phases.

#### *Specific Objectives*

The *first phase* would include demonstration projects aimed at showing early results in improving quality and efficiency of health services. The demonstration project sites will be selected based on the results of the management survey and then through expressions of interest from the individual providers.

The *second phase* of support, building on the core strengthening and the demonstration projects, would include the implementation of a competitive fund to support further modernization. The grants would be based on the appraisal of the Hospitals' Business Plans from the health care providers. The Business Plans should be ready at the finalization of the Core Strengthening. A pre-defined Table of contents and menu of options will be part of the Project Operational Manual.

#### *Key Mechanisms*

The process of implementing the Grant Facility will depend on the articulated implementation of the following stages:

- A maximum budget of \$200,000 will be established for the first round of sub-projects. The estimated budget for this round of sub-projects would be \$1.2 million.
- A maximum budget of \$150,000 will be established for the second round of sub-projects, conditional upon obtaining an additional \$1,000,000 for the Grant Facility.
- Any funds that are not awarded to the highest 6 ranking proposals will be allocated to the subsequent technical and financial proposals, in the case of both rounds of financing.
- The first round of sub-projects would include a maximum of 6 projects accepted and evaluated according to the criteria established.
- The second round of sub-projects would include a maximum of 6 projects accepted and evaluated according to the criteria established.
- The menu of projects is outlined below.

- An estimated \$100,000 should be allocated to technical assistance to assist the hospitals/provider networks with the preparation of proposals. This would be provided by a combination of international and local TA, whereby the international TA works on defining facilitation methodology and oversees first round of proposals. On ground facilitation could be then taken over by local firm or NGO.
- Determination of eligibility. The eligibility criteria are established in the operational manual.
- The eligibility criteria are established in the operational manual and highlighted in this section.
- Establishment of evaluation criteria
- Flow chart of subproject presentation and award
- Projects will then be ranked from highest to lowest and the top six will be selected, unless the total amount required to finance these projects is less than the budget envelop for the financing round in which case the next highest scoring project will be awarded a subproject.
- All procurement required for the subprojects will be carried out by the project implementation unit.

### **Phase I: The Demonstration Projects**

It is proposed that four to six hospitals are selected as sites for demonstration projects; these projects are to be carried out during Phase I of the Grant Facility. The demonstration projects will aim at introducing initial changes in a number of key areas that will be further supported during Phase II (competitive funding).

The demonstration projects would support implementation of some of the activities outlined in the core strengthening component. While focusing on improving internal hospital operations, these would include actions to promote better coordination between the hospitals and between PHC and the hospital care. Annex 3 includes a summary of examples of activities that will potentially be financed under the demonstration projects.

While each demonstration project will have different focus, all are expected to contribute to further development of integrated hospital care model, which will provide for addressing priority population's health needs, better quality and efficiency of hospital services, continuum of care across different levels and customer participation in operating the Macedonian health system.

### **Specific Activities**

The following areas (themes) are proposed to be worked on during the demonstration projects' phase. These suggestions have been confirmed with the working group. The selected hospitals would have to agree to carry out the implementation of one of the options listed below. It is estimated that 4 of the 6

potential demonstration projects will be financed under the first phase. The maximum budget for this phase would be \$800,000. The potential projects include:

- Improvement in Hospital Energy Efficiency
- Development of the Quality Management process
- Implementation of strategies to reduce ALOS: Appropriateness of Care Evaluation Protocol (AEP) and ambulatorization
- Strengthening interaction of the hospital with other institutions
- Development of general practice / family medicine
- Improving patients' satisfaction, participation in the clinical care process and patient safety

Annex 2 provides a summary of the demonstration projects.

### *Selection of demonstration sites*

The demonstration sites that have been recommended by the consultant and the working group, include the following sites:

- Family medicine center Skopje
- Gostivar Medical Center
- Gevgelia (acute care only) Medical Center
- Kolchény Medical Center and
- Struga Medical Center

The demonstration sites were selected to respond to the following criteria:

- Produce an impact on the over-referral of patients to Skopje
- Maintain geographic equity in the distribution of resource
- Work on areas that require strengthening of coordination between PHC and Hospitals
- Focus on areas that have not received excessive investment in the past and
- Strengthen areas that have weaknesses in management and/or equipment capacity

Obviously the pre-selected sites should express clear willingness and commitment to be involved in demonstration projects; otherwise the next in line on the list will be contacted.

### *Financing*

It is suggested that an estimated \$ 800,000 of the project budget are allocated to the demonstration projects. Categories of funding would have to include: technical assistance (external and local consultants), training, computer equipment and minor civil works. The estimated breakdown is included in annex 1 and annex 2. The financing would be carried through the procurement of individual, turn-key projects

for each of the demonstration sites. Rather than procuring equipment, consulting, training and other components separately, the turn-key approach will enable faster execution and a more integrated approach to development of the demonstration projects.

## **Phase II: The Competitive Grant Facility**

### **Objective**

The competitive grant facility will finance sub-projects submitted from the providers in the network. The sub-projects should build on the activities outlined in the business plans prepared in the core strengthening subcomponent or extend the successful demonstration projects to other areas. The competitive process will include two phases of implementation.

It is expected that 6 subprojects will be awarded in each phase. These projects will be awarded on a competitive basis, by ranking the financial and technical proposals according to the evaluation criteria and the financial criteria outlined in the beginning of this section.

While the hospitals will have some freedom to make proposals based on the individual conditions in each facility or provider network, the sub-projects should focus on specific aspects that aim to improve quality, efficiency and user satisfaction. The menu of options is outlined below.

### **Menu of Subproject Options**

The subprojects should be clearly oriented to improving quality, efficiency, user satisfaction or coordination between the PHC and hospital levels. The criteria that will be used to evaluate this include:

- i. **improve quality of care:** must identify a specific problem with quality and propose to address it through the investment.
- ii. **improve efficiency:** the proposal must aim to reduce average length of stay, increase ambulatory activities (surgery or diagnostic services), reduce costs or increase productivity.
- iii. **improve user satisfaction:** proposal must respond to needs identified by users through participatory activities or surveys.
- iv. **improve coordination between PHC and hospitals** or within hospital referral system

The projects should be formulated based on actions outlined in the business plan or as an extension of actions that were carried out in the demonstration projects. The types of projects should generally follow the menu of options established for the

demonstration projects. Other innovative projects can be considered as long as they comply with the terms outlined above and achieve a high enough ranking in the evaluation criteria outlined in the next section.

All details on the operation of the Grant Facility, including a description of the project cycle, were presented in a Grant Facility Operational Manual. This is available from the Project Coordinating Unit.

## **Financing**

The financing for the competitive Grant Facility window will be based on two successive phases of implementation. The first phase will allocate an estimated \$1.2 million and the second round would include an additional \$1.0 million, conditional on obtaining additional funds for the Grant Facility.

- A maximum budget of \$200,000 will be established for the first round of 6 sub-projects. The estimated budget for this round of sub-projects would be \$1.2 million.
- A maximum budget of \$150,000 will be established for the second round of sub-projects, conditional upon obtaining an additional \$1,000,000 for the Grant Facility.
- A total of \$100,000 would be provided as technical assistance to support the preparation of hospital subprojects.
- Any funds that are not awarded to the highest 6 ranking proposals will be allocated to the subsequent technical and financial proposals, in the case of both rounds of financing.

## 5 PENDING ISSUES AND RECOMMENDATIONS

The implementation of the proposed reforms will require support from HIF, MOH, World Bank, Republican Institute for Health Protection, other donors and leadership at all levels. While most of this final report has focused on what can be done to improve efficiency, quality and satisfaction in the hospitals, there are a number of additional issues that require more immediate attention, or solutions which are outside of the specific scope of the Bank project. These issues will potentially limit the effectiveness of any intervention under the project and should be carefully considered by policymakers. These issues include:

- The overall resource envelope of HIF should be preserved by the PSMAL conditionality. It will be critical that full credibility is maintained during the implementation of contracts. A key element of this credibility is the assurance the resource and payment mechanisms proposed are respected by the HIF. As an important part of this is the overall level of transfers from MOF to HIF, this should be protected.
- The hospitals/providers should be allowed to keep savings from efficiency and improved quality. Encouraging greater efficiency, shifting more care to ambulatory and PHC setting and improving quality should lead to reductions in expenditures. These savings should remain in the system. HIF should allow hospitals to keep most of the savings they produce. In the case where care is shifted to a different level, it is important the money follows the patient and that additional resources are shifted to meet the changing pattern of demand.
- Selective contracting will be critical to the reform's success. The criteria for selection of the providers should be buffered from politization by the HIF – this begs for the development of an external agency that accredits- certifies the selection process of providers. Significant energy should be directed at the development of a selection and evaluation process that is insulated from political 'selection' and performance evaluation. One proposal that has been discussed, and would satisfy this requirement, would be to initiate the development of an independent agency to accredit and evaluate providers. This could be established as an NGO, with a mixed public-private board.
- The providers that will enter into the Grant facility should included primary care centers that are working with contracts and under capitation – not historical budgeting. The project interventions should be targeted to those facilities that show signs of change, both at the level of management practices but also in terms of the use of modern instruments.
- Funds should be dedicated now to the implementation of the HIF contracting prior to the implementation of the Bank project. The HIF has signed 17

contracts and expects to start 2004 with the implementation of the reformed structure. Given the lack of management capacity and the need to strengthen HIF, there is a considerable risk that this effort will meet with considerable difficulty, without outside support. First year of contracting will not be supported by project activities (effectiveness is expected at the end of 2004 implying that real support would initiate in 2005). HIF or MOF should commit funds to execute some of these activities or retroactive financing should be arranged. Early estimates indicate that roughly \$0.5 - 1.0 million could be used to support technical assistance, training and some basic information system development required to ensure smooth operation during the first year.

- The implementation of DRGs is critical to the reform's success. It is likely that DRGs will take several years to implement. This is an activity that may be later supported by the Bank project but waiting for the Bank money to flow into the system would potentially delay implementation of DRGs until 2006, thereby limiting the effectiveness of implementation in the early years. Furthermore, Macedonia should take immediate actions to seek support from Austria or Australia, both of which would likely be willing to provide Macedonia with licenses for DRGs and potentially bilateral support for implementation. These issues highlight the need for HIF money early to support development of DRGs. If adequate resources are not obtained the Bank project could support further implementation of demonstration projects executed in the first two years.
- The approval of the *by law* and the signature of contracts is a significant and notable achievement. Nonetheless there is a need for further development of the technical instruments that will be required for implementation of the proposed framework. One area that is critical is the monitoring and evaluation of contracts. In the shortest period possible, the HIF should prepare guidelines regarding how the performance evaluation of the hospitals will function. These should spell out clearly the indicators, definition, collection methods, timing, etc. and provide hospital directors with a clear indication of how they will be measured.
- There is a need to clarify the legal status of hospitals contracted by the HIF. For example, regulations could be prepared to introduce a special autonomous status to those providers that have signed a contract with HIF and have been awarded the right to autonomous management. The right to autonomous management would be established by the HIF and MOH. Careful attention needs to be paid to enabling the hospital providers the necessary responsibility and authority to manage the results in function of the contracts. There are competing legislative frameworks, such as the *by law* and the labor laws, that need to be reconciled and a specific regulation should be prepared spelling out what hospital can and cannot do within the context of the *by law* and the contracts.

- The law on health care should be carefully analyzed to eliminate barriers to autonomy for health facilities and to eliminate areas where politicization affects outcomes in the sector. Two of the key areas that require examination in light of the law are: (i) the hiring practice for hospital managers; and (ii) the contractual/salary arrangements with professional staff.
  - Since one of the key areas is the management capacity of providers, one proposal would be to remove the contracting and dismissal of hospital directors from the purview of the MOH or the HIF and to devolve this responsibility to the hospital management boards. This would require three important aspects:
    - The management boards would have to be strengthened with a clear framework and bylaws for their operation and responsibility.
    - The implementation of a performance contract, at least 3 years for hospital managers, which would allow hospital directors to be named and removed exclusively by the management board of each hospital. This could be proposed as a change to law, removing the power from Minister of Health and giving it formally to the management board of each hospital.
    - In the first stage, it would be proposed that detailed terms of reference are prepared for to recruit hospital managers, that an outside firm is retained to recruit hospital directors that fit these criteria, that the outside firm creates a short-list of the 3-5 best qualified and that these people are subject to internal interviews and then leading candidate chosen by the board.
  - The second key area is the development of performance based salary arrangements. This should be implemented in the context of a performance based contract that allow professional staff to obtain access to a performance bonus that is based on the performance contract established with the HIF and that links a variable part of the salary with performance indicators which are related to group and individual performance. A tentative proposal would include the following elements:
    - Workers would accept performance contract on a voluntary basis, allowing those older workers that are unwilling to accept performance contract to remain under current employment status.
    - Workers accepting the performance contract would have 2 years to assess the outcome. After two years, they could have the option of returning to life-long contract.
    - Fixed salary would have to remain nearly constant, although slightly below, the existing salary levels.

- Variable salary, however, could be equivalent to 4-5 times the base salary.
  - Variable salary would be awarded based on combination of factors related to performance contract with HIF: production, quality indicators, personal evaluation, user satisfaction and others. Incentives would be arranged to meet production targets but not to increase production beyond required level.
  - Further analysis of law on public salaries required to ensure consistency with this proposal.
- 
- There is a considerable lack of information regarding the implication of the reforms for providers and patients. There is an immediate need for information campaign targeted to informing patients and providers and to instructing users on how they should behave in the new system.

## ANNEXES

### Annex 1: List of Documents Prepared by the Consultant for the Project

No.	Title	Type of contribution
1	Inception Report	Elaborated
2	Mid Term Report	Elaborated
3	Executive Summary Mid Term Report	Elaborated
4	Detailed Component III Action Plan	Elaborated
5	Operational Manual	Elaborated
6	Final Report	Elaborated

No.	Title	Type of contribution
7	Hospital Performance Survey	Elaborated
8	Working Session with Hospital Directors: Modern Hospital Management	Elaborated
9	Overview of Component III: Working Group Presentation	Elaborated
10	Overview of Component III: Presentation for Ministry of Finance	Elaborated
11	Overview of Component III: Presentation for Ministry of Health	Elaborated
12	Examples Clinical Protocols and Pathways	Provided

**Annex 2:****Potential Demonstration Projects**

<i>Area</i>	<i>Description</i>
1. Improvement Hospital Energy Efficiency	Improving energy efficiency in the hospitals including projects to reducing heating costs or reduce electrical costs through investment in more energy efficient equipment or consolidation of existing buildings.
2. Development of the Quality Management process	<p>A multidisciplinary Quality Improvement Team will be set up, trained and supported to implement selected quality improvement techniques. Depending on the profile of the institutions selected, technical assistance will be provided to facilitate introduction of elements of Total Quality Management (TQM) and / or Continuous Quality Improvement (CQI). Quality initiatives may take various forms, but most initiatives will be focused on reducing errors in clinical practice and introducing changes in the system that will save the hospitals money and improve patient outcomes. The successful candidate hospital(s) may become a pilot national site. Afterwards, it would be implemented countrywide. Examples might include efforts to:</p> <ul style="list-style-type: none"> <li>o reduce the hospital infections by installing more sinks and soap dispensers throughout the hospital and publishing information and education materials on handwashing for staff and patients;</li> <li>or</li> <li>o reduce repeat laboratory and diagnostic exams which are carried out due to a breakdown in the business process.</li> </ul>
3. Implementation of strategies to reduce ALOS: Appropriateness of Care Evaluation Protocol (AEP) and ambulatorization	<p>Strengthening ambulatory surgery through investment in surgical equipment, improved OR equipment, training for surgeons and minor civil works to prepare day surgery centers (beds) in hospitals.</p> <p>Review utilization in the hospitals in order to reduce unnecessary hospitalization and reduce extended stay cases which increase the ALOS. An internal Utilization Review Team (URT) will be set up, trained and assisted in putting in place to review the appropriateness of care.</p>
4. Strengthening interaction of the hospital with other institutions	<p>This site should be in a general hospital that will work on optimizing its relationships with primary care institutions located in the hospital's catchment area on one hand (referral to the hospital from lower levels of care) and with other hospitals to where the patients are to be referred for more complex and more specialized procedures (referral from the hospital to higher levels of care). The activities will lead to development of a set of clear criteria for admission, referral and follow-up after treatment that can be further implemented in other hospitals. A component of this project may be establishing a "network" between the hospital and PHC providers - to exchange patient data, e.g. computer connection and prototype of the Electronic Medical Records (EMR). Another emphasis could be a pilot project for emergency care development. This would include the identification of the optimal structure for emergency services, services, costs, management both at the ambulatory-transport issue but also the hospitalization of patients.</p>
5. Development of general practice / family medicine	<p>Establishment of a family medicine clinic (in Skopje, attached to school of medicine). This clinic would serve as a 'model' for further implementation of the family doctor practice in the primary care; also, mechanisms of interaction between PHC and other (secondary and tertiary) levels of care will be piloted.</p>

<p>6. Improving patients' satisfaction, participation in the clinical care process and patient safety</p>	<p>This project would aim at improving institutional responsiveness to the patients' non-medical needs. The following aspects can be addressed by initiatives in this area: privacy and confidentiality, patient consent, patient information (on benefits and risks of treatment interventions), conditions at premises, complaint handling, etc. Patient Satisfaction Surveys will be carried out at the site; a "model" survey questionnaire will be designed for further application in all hospitals afterwards. Hospitals may implement a number of patient safety initiatives, which in general include the following:</p> <ul style="list-style-type: none"><li>- prevention of hospital acquired infections</li><li>- prevention of adverse effects of drugs</li><li>- medical equipment safety (like prevention of burns from electrical coagulation during surgery)</li><li>- water and food safety</li><li>- improved use of protocols to reduce risk of mortality and improve surgical outcomes</li><li>- facility safety (e.g. elevators, stairways, height of bars in the balconies, etc.)</li></ul>
---	---

### Annex 3: Overview of Grant Facility Project Typology

The following tables display the potential investment areas for component III. The first table shows the principal objectives and investment areas for the component, followed by a description of the expected impact of the proposed interventions.

The second table shows the estimated intervention areas and the breakdown of costs by investment category.

**Table 1: Principal Activities and Expected Benefits**

Objective	Expected Impact
<b>Subcomponent I: Management Strengthening</b>	
<b>Capacity strengthening through information systems, training and technical assistance for 17 contracted providers and key PHC managers</b>	<ul style="list-style-type: none"> <li>☐ Improved management capacity to manage HIF contracts</li> <li>☐ Improvements in financial management</li> <li>☐ Business plans for 17 hospitals to clearly define investment and operational strategies</li> <li>☐ Initiation of continuous quality improvement processes in all hospitals</li> <li>☐ Patient satisfaction surveys and reorientation of services to patients</li> <li>☐ Reorganization of business processes in hospitals</li> <li>☐ Improved management of performance indicators</li> </ul>
<b>Subcomponent II: Grant Facility</b>	
<b>Improving energy efficiency in hospitals</b>	<ul style="list-style-type: none"> <li>☐ Reduction in heating costs</li> <li>☐ Reduction in electricity costs</li> <li>☐ Greater patient and staff satisfaction due to improved internal temperature</li> </ul>
<b>Increasing ambulatory surgery or home care.</b>	<ul style="list-style-type: none"> <li>☐ Increase in percentage of surgeries performed on with ambulatory procedures</li> <li>☐ Reduced average length of stay</li> <li>☐ Increase in percentage of patients receiving home care</li> <li>☐ Increases in patient satisfaction</li> <li>☐ Reduction in hospital infections</li> </ul>
<b>Improving patient satisfaction.</b>	<ul style="list-style-type: none"> <li>☐ Improved patient satisfaction</li> <li>☐ Reductions in waiting times in hospitals</li> <li>☐ Increased community participation</li> </ul>
<b>Improvement of the Hospital Information System</b>	<ul style="list-style-type: none"> <li>☐ Improved management of hospital information flows</li> <li>☐ Increase in real time availability of information</li> <li>☐ Improved management decisions based on hospital information</li> <li>☐ Greater knowledge of hospital costs</li> </ul>
<b>Improving the quality of care</b>	<ul style="list-style-type: none"> <li>☐ Reductions in hospital infections</li> <li>☐ Reductions in errors in hospitals leading to extended stays or hospital deaths</li> <li>☐ Reduction in duplication of laboratory or diagnostic exams</li> <li>☐ Reduction in overall cost of care through improved quality</li> <li>☐ Improved patient satisfaction</li> <li>☐ Greater productivity</li> </ul>
<b>Improving patient safety</b>	<ul style="list-style-type: none"> <li>☐ Reduction in injuries to patients</li> <li>☐ Improved patient flow</li> </ul>

Objective	Expected Impact
	<ul style="list-style-type: none"> <li>□ Improved patient satisfaction</li> </ul>
Cooperation with other institutions (PHC and Hospital coordination)	<ul style="list-style-type: none"> <li>□ Reduction in unnecessary hospitalizations</li> <li>□ Improved capacity of PHC clinics</li> <li>□ Improvements in referral system</li> <li>□ Reduction in costs through improved cooperation and economies of scale</li> </ul>
Improving Emergency Care Centers	<ul style="list-style-type: none"> <li>□ Increase in on-time response of emergency units</li> <li>□ Greater capacity of regional medical centers to resolve emergency cases</li> <li>□ Reduction in mortality</li> </ul>

These investments are presented as an example of the potential investments that could be made under the component, since the actual investments under the Grant Facility will be driven by the grant projects presented by the hospitals. Nonetheless, this shows the type of projects and the estimated investment required for each area.

**Table 2: Interventions, Investments and Estimated Investment Total (US\$)**

Objective	Investment Areas	Estimated Investment	Total
<b>Subcomponent I: Management Strengthening and Organizational Development</b>			
Capacity strengthening through information systems, training and technical assistance for 17 contracted providers and key PHC managers	□ Management Training	Training: US\$200,000	
	□ Business plan development	Technical Assistance:	
	□ Strengthening organizational issues in providers including changes in the scope of services provided, organizational and functional structures and implementation of key structures and processes.	US\$700,000	
	□ Debt restructuring for hospitals	Goods: US\$140,000	
	□ Continuous quality improvement training	Subtotal:	
	□ Performance scorecard for measuring results	US\$1,140,000	
	□ Customer focused healthcare training-client satisfaction		
	□ Organization of information flows – implementation of patient referral protocols	US\$2,050,000	
	□ Electronic clinical records	<b>Total: US\$3,190,000</b>	
<b>SubComponent II: Grant Facility Investments (Demonstration projects + Competitive Grant Projects)</b>			
Improving energy efficiency in hospitals	□ Replacing heating systems	Training: US\$10,000	
	□ Introducing energy efficient windows	Technical Assistance:	
	□ Changing electrical/lighting systems	US\$10,000	
	□ Closing off heating systems in unused buildings	Goods: US\$200,000	
	□ Information to staff and patients about saving electricity	Civil Works: US\$120,000	
	<b>Total: 340,000</b>		
Increasing ambulatory	□ Operating room equipment: lamps, tables,	Training: US\$60,000	

Objective	Investment Areas	Estimated Investment	Total
surgery or home care	<p>medical equipment, instruments and supplies (include diagnostic and intervention such as laparoscope).</p> <ul style="list-style-type: none"> <li>□ Beds for day surgery</li> <li>□ Home care equipment and supplies including: medical equipment (ventilators, wheel chairs, beds, etc.) required to deliver home care, vehicles required to initiate outreach programs, computer equipment to provide staff with small information system to manage home care and ambulatory patients.</li> <li>□ Materials and supplies for the education of patients and PHC physicians.</li> <li>□ Materials for surgeons on new techniques</li> <li>□ Training for surgeons on new techniques.</li> <li>□ Training for PHC physicians on management of ambulatory surgery cases at home or home care patients.</li> <li>□ Civil works to prepare special areas for day surgery in medical centers</li> </ul>	<p>Technical Assistance: US\$40,000 Goods: US\$420,000 Civil Works: US\$180,000</p> <p><b>Total: US\$700,000</b></p>	
Improving patient satisfaction.	<ul style="list-style-type: none"> <li>□ Improving patient privacy and confidentiality by investing in screen, civil works to improve the layout of consultations and changing areas;</li> <li>□ Materials to allow for the incorporation of patient consent</li> <li>□ Training aimed at improving the client focus of providers</li> <li>□ Materials to improve patient information (on benefits and risks of treatment interventions);</li> <li>□ Improving conditions at premises through investments in furniture, lighting and civil works to rehabilitate patient areas;</li> <li>□ Introducing patient information kiosks in hospitals to improve patient information and complaint handling; and</li> <li>□ Improving 'signs' in hospitals to improve patient flow and patient information.</li> </ul>	<p>Training: US\$60,000 Technical Assistance: US\$20,000 Goods: US\$200,000 Civil Works: US\$210,000</p> <p><b>Total: US\$490,000</b></p>	
Improvement of the Hospital Information System	<ul style="list-style-type: none"> <li>□ Software for information systems</li> <li>□ Hardware for hospitals: servers and workstations</li> <li>□ Training for hospital staff</li> <li>□ Materials and supplies for operation of the system</li> </ul>	<p>Training: US\$20,000 Technical Assistance: US\$30,000 Goods: US\$150,000 Civil Works: 20,000</p> <p><b>Total: US\$220,000</b></p>	
Improving the quality of care	<ul style="list-style-type: none"> <li>□ Reduce the hospital infections by installing more sinks and soap dispensers throughout the hospital</li> <li>□ Materials for patients and staff on handwashing for staff and patients; or</li> <li>□ Information systems to reduce repeat</li> </ul>	<p>Training: US\$60,000 Technical Assistance: US\$40,000 Goods: US\$240,000 Civil Works:</p>	

Objective	Investment Areas	Estimated Investment	Total
	laboratory and diagnostic exams which are carried out due to a breakdown in the business process and lack of information systems to control utilization.	US\$160,000 <b>Total: US\$500,000</b>	
<b>Improving patient safety</b>	<ul style="list-style-type: none"> <li>□ Equipment and supplies to increase the use of supplemental perioperative oxygen to decrease perioperative infections;</li> <li>□ Prevention of adverse effects of pharmaceuticals;</li> <li>□ Medical equipment safety (for example investments in equipment to prevent burns from electrical tissue cautery during surgery);</li> <li>□ Water and food safety through investments in equipment, civil works and materials;</li> <li>□ Facility safety (improving condition of elevators, safety on stairways, height of bars on the balconies and handicap bars in bathrooms through investments in equipment and civil works).</li> </ul>	Training: US\$30,000 Technical Assistance: US\$10,000 Goods: US\$220,000 Civil Works: US\$80,000  <b>Total: US\$340,000</b>	
<b>Cooperation with other institutions (PHC and Hospital coordination)</b>	<ul style="list-style-type: none"> <li>□ Glucometers and strips for PHC clinics to reduce the hospitalization of diabetics;</li> <li>□ Equipment for PHC that has been demonstrated to reduce the demand on hospitals;</li> <li>□ Training for PHC and Hospital staff on referral and disease management</li> <li>□ Renovation and equipment in PHC clinics to improve minor surgery capacity in PHC clinics to reduce demand on hospital OR;</li> <li>□ Improving efficiency by strengthening a central laboratory or diagnostic center (purchasing lab or diagnostic equipment) and taking advantage of economies of scale on production and purchasing of reagents;</li> <li>□ Two hospitals decide to set up a joint purchasing unit for pharmaceuticals and supplies and require computer equipment, furniture and civil works to create a joint purchasing unit; and</li> <li>□ Improving connectivity and communication between PHC and Hospitals by implementing electronic scheduling mechanism that allows PHC providers to see the hospital database and thereby improve referrals.</li> </ul>	Training: US\$30,000 Technical Assistance: US\$10,000 Goods: US\$200,000 Civil Works: US\$76,000  <b>Total: US\$316,000</b>	
<b>Improving Emergency Care Centers</b>	<ul style="list-style-type: none"> <li>□ Defibrillators for medical center emergency departments</li> </ul>	Training: US\$20,000 Technical	

Objective	Investment Areas	Estimated Investment	Total
	<ul style="list-style-type: none"> <li>☐ Crash carts for medical center emergency departments</li> <li>☐ Training on emergency medicine</li> <li>☐ Medical equipment for emergency departments in medical centers</li> <li>☐ Civil works for minor improvements to emergency departments</li> <li>☐ Ambulances for medical transport</li> </ul>	Assistance: US\$10,000 Goods: US\$240,000 Civil Works: US\$60,000  <b>Total: US\$330,000</b>	