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Executive Summary

The Kyrgyzstani health financing and delivery system reflects—to a relatively large extent—the old regime of rational planning and hierarchic structure found throughout the former Soviet Union health system. Historically, the system has been financed in a centralized top-down bureaucratic allocation process, based upon national budgets formulated and passed by the central legislative and policy-making bodies. Allocated budgets for the health system have tended toward chronic underfunding. A second problem with the former Soviet approach to health care is that there is no incentive for efficient use of resources by or between providers.

The Kyrgyztani government has proposed a series of health sector reforms such as the Health Protection Act that was passed and signed into law in July 1992. The Health Protection Act calls for a shift in priorities toward health promotion and disease prevention policies and a new emphasis on primary and family based care. Concerns about rapid implementation of health reforms, problems with reforms in other sectors, and a general lack of technical expertise have delayed progress on health sector reforms.

However, some health sectors changes have occurred. The Ministry of Health has begun the implementation process for a health reform demonstration in Issyk-Kul oblast. USAID/Abt Associates is providing technical assistance in this health reform experiment. The Issyk-Kul experiment provides the first opportunity to implement the new law in systematic way for a specific geographic area. A detailed outline of the proposed and subsequent technical assistance provided by USAID and Abt Associates is provided in this document.

An additional component for provider payment reforms in new demonstration sites for the World Bank to execute is also explained in detail in this document. Provider payment reforms are important because they improve the efficiency of care and uses of funds during a period of severe economic and resource constraints and they also redress imbalances of funds toward prevention, primary care, and ambulatory care.

Background

The Kyrgyzstani health financing and delivery system reflects—to a relatively large extent—the old regime of rational planning and hierarchic structure found throughout the former Soviet Union health system.[1] Historically, the system has been financed in a centralized top-down bureaucratic allocation process, based upon national budgets formulated and passed by the central legislative and policy-making bodies.

However, the health financing system has been beset by two significant issues related to sources of funds and uses of funds. Allocated budget levels historically have tended toward chronic underfunding. The old Soviet system allocated funds for health protection on a residual basis from general tax revenues; levels of funds were determined only after budgets were allocated for other "productive" sectors such as industry, manufacturing, and defense. Over the last several years, national independence and the general economic decline have exacerbated the issue of underfunding. Independence from the Soviet Union has forced self-sufficiency for the Republic which historically enjoyed a positive net transfer of resources from Moscow through the tax system (World Bank, 1992). The economic decline that Kyrgyzstan (and most other parts of the NIS) has suffered over the past several years has resulted in reduced locally generated tax revenues. An emerging funding crisis in health services has resulted.

The share of the region's GDP devoted to health historically has been low and erratic since the 1980s—falling from 6 percent of GDP to just over 3 percent for the New Independent States (NIS) as a whole. In Kyrgyzstan, health spending as a percent of GDP was 4.1 percent in 1990, but has fallen for three of the last four years. Schieber (World Bank, 1995) reports that the most complete information available is for public spending including spending from the consolidated budget (including all Ministries not just the MOH), extra-budgetary public expenditures on health, and enterprise spending on health. The ratio of public health expenditures to GDP declined from 4.2 percent of GDP in 1990 to 2.6 percent in 1993, with an increase to 3.9 percent in 1994. The GDP in 1994 is only 50 percent of the 1990 level. Similarly, 1994 real (GDP deflator adjusted) health expenditures are only 46 percent of the 1990 level, up from 40 percent of the 1990 level in 1993. In short, there has been a 50 percent reduction in real output in Kyrgyzstan since 1990, accompanied by a 54 percent reduction in real public health spending.[2]

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[1] Each individual is assigned to a clinic and has a primary care physician in the urban areas; in rural areas, there is a basic health unit of one or more physician-extenders (e.g., feldshers or nurses) and some limited supply of medicines. Depending upon the seriousness and complexity of a patient's condition, he or she would be referred progressively to better equipped facilities—local hospitals, a central rayon (district) hospital, and an oblast-level hospital. Each level hospital has both inpatient and outpatient (polyclinic) facilities associated with it. There also are a limited number of national or republican level centers of research and treatment for both inpatient and outpatient care.

[2] According to Abel-Smith (1994), there has been a fall in output of the industrial sector of 50 percent, and a drop in export revenue by 65 percent between 1991 and the end of 1993. Between 1992 and 1993, there was a decline in real GDP by 16 percent and tax revenue fell from 14 percent of GDP to 8 percent. The economy has

Schieber (World Bank, 1995) further found the picture even more bleak when per person spending is converted into U.S. dollars using purchasing power parities (i.e., exchange rates which adjust for cost of living differences across countries). Public budget health spending in Kyrgyzstan in 1993 dropped to only one-fourth the 1990 level.

A second problem with the former Soviet approach to health care delivery is that it does not encourage the efficient use of resources by or between providers. This was due in part to a system which allocated resources based on traditional central planning production input measures, such as occupancy and numbers of staff and beds, rather than services performed, relative complexity of services, or changes in health status. Schieber (World Bank, 1995) reports that recent trends are somewhat encouraging, but overall numbers suggest a system that remains bloated. The number of beds per 1,000 population has declined from 12 in 1981 to 9.5 in 1994, but this is still some 15 percent above the OECD average. Similarly, while hospital admissions rates have declined from 25 percent of the population being admitted in 1987 to 18 percent in 1994, Kyrgyzstan is still 20 percent above the OECD average. The average length of hospital stay has declined by about one day over the past 15 years to 15.6 days in 1994, but remains slightly above the 14 day OECD average. The average number of inpatient days of care per year per person has declined from 3.6 days in 1978 to 2.8 in 1994, but is still some 15 percent above the OECD average. The hospital occupancy has declined from 90 percent in 1978 to 81 percent in 1994, compared to an OECD average of 75 percent.

The number of physicians per 1,000 population has increased by some 30 percent over the past 15 years to reach 3.1 in 1994 (of which 0.45 are dentists), somewhat above the OECD average of 2.2. Only 35 percent are generalists (defined to include therapists, pediatricians, and obstetricians), whereas the percent share in many OECD countries (excluding the U. S.) is closer to 50 percent (e.g., United Kingdom) to 70 percent (e.g., Canada). The number of physician contacts per year is comparable to the high utilization rates in the OECD countries.

There are other health financing sector problems as well including an acute shortage of pharmaceuticals, equipment, and supplies.[3] These shortages have occurred partly at the expense of an overemphasis of resources placed in staff and beds.

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further suffered from hyperinflation. Retail prices have been rising by 15-25 percent a month.

[3] Many reports, including Abel-Smith (1994), a comprehensive review by Welsby (1994) and most recently Haycock (1995), report that supplies of drugs, equipment, and consumables remain inadequate. Shortages specifically mentioned include anesthetics, X-ray plates, surgical supplies, food for patients, gasoline for ambulances, fuel for heating water and even sheets. There is often no replacement or repair of equipment needing spare parts. Equipment includes ambulances, incubators, respiratory equipment, autoclaves and washing machines. Schieber (1995) nicely summarizes the pharmaceuticals problem.

Current Flow of Funds for Health Care

The health sector is financed (at least formally) from general taxation revenues. In general, the responsibility of collecting general taxes has devolved over the last few years to the oblasts and rayons, not the central government. At the same time, the scope and authority to tax remains inflexible and is largely determined by the central government. Once collected, money is either passed on to the central Ministry of Finance or kept at the individual oblast level depending upon the central allocation formulas. In some cases, the oblast receives additional subsidies beyond the general taxation base. Currently, Bishkek and Chui pass along some of their revenues to the central government, while two oblasts—Osch and Djal Abad—keep what they collected. The remaining oblasts—Naryn, Talas, and Issyk-Kul—receive central government subsidies in addition to what they collect. A few taxes (e.g., the road tax and Presidential tax) remain strictly federal taxes.[4]

The allocation or disbursement of funds work in parallel. The central government develops allocation norms across and within sectors, but the actual budget process has generally devolved to the oblast and rayon levels.

Within the health sector itself, there are three levels of disbursement of funds for facilities. The first level is comprised of the Republican institutions which are designed to serve the whole population and are generally highly specialized. At the second level the six oblasts and Bishkek city operate institutions of a mixed primary and specialized nature that are open to all citizens within the oblast. Each oblast is further subdivided into rayons which operate primary care facilities and local hospitals. The central Kyrgyztan Ministry of Finance does allocate funds directly towards budgets for the national specialty facilities or the Republican institutions. The central government also allocate budgets directly for medical education and research and more

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[4] A good example is the recent Presidential Decree on the Budget for the First Quarter of 1995 (dated January 25, 1995) which states that "the size of allocations to the local budgets of provinces and Bishkek city in the following amounts:

- from the VAT tax on Osch, Issyk-Kul, Naryn, Talas, Jalal-Abad provinces—100 percent; on Chui province 42 percent, on Bishkek city 22 percent;

  from the excise tax on Osch, Issyk-Kul, Naryn, Talas, Jalal-Abad provinces—100 percent; on Chui province 42 percent, on Bishkek city 23 percent;

- from the profit tax on enterprises, incorporation, and organizations on all forms of ownership on Osch, Issyk-Kul, Naryn, Talas provinces—100 percent; on Jalal-Abad province, 31.8 percent, Chui province 42 percent, on Bishkek city 23 percent;

- from the tax on turnover in retail trade and service to the population on Osch, Issyk-Kul, Naryn, Talas, Jalal-Abad provinces—100 percent; on Chui province 42 percent, on Bishkek city 23 percent."

traditional public health activities.[5] About six percent of the federal budget is earmarked for certain pre-determined health care activities such as public health.

The Ministry of Finance also sets expenditure norms for oblast and rayon level administrations. Individual facilities at the oblast and rayon levels develop proposed budgets with these norms. For inpatient facilities, the norms include nominal numbers of beds and senior medical personnel. For outpatient facilities, the norms are based on capacity as measured by numbers of physicians and "potential" numbers of visits. Budgets are reviewed and approved by local oblast and rayon finance administrations; the local ministries of health and the local exchequer office review the budgets after consultation with facilities. The budgets are handed down in 18 restrictive budget categories such as salary, utilities, and pharmaceuticals. Traditionally, funds could not be spent outside of categories, although there are reports of some increased flexibility (Haycock, 1995).

Local and oblast budgets are aggregated and returned to the central Ministry of Finance which uses them to develop a tax plan to match expected revenue and spending.[6] The central Ministry of Finance then informs the oblast administrations of the final approval for public spending levels with a recommendation (but not a necessary condition) for allocation between the sectors (Haycock, 1995). This means that spending patterns between local sectors can be altered (for fiscal, political or other reasons), though discussions with oblast and rayon leaders in other parts of the NIS suggest the shifts are minor and infrequent (see Schieber, Back-to-Office Report, February 1995).

Recent Reforms

The Kyrgyzstani government proposed a series of health sector reforms, including the Health Protection Act which was passed and signed into law in July 1992. The Health Protection Act calls for a shift in priorities toward health promotion and disease prevention policies and a new emphasis on primary and family-based care. It calls for property changes—conversion of pharmacies and pharmaceutical institutions into private and joint-stock companies; conversion of medical institutions into joint-stock companies; incentives to establish private hospitals, polyclinics, and physician practice; private pay and leasing arrangements within public facilities.

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[5] These traditional public health categories include orphan homes, treatment of AIDs, support of infectious disease hospitals such as TB sanitoria, basic sanitation and epidemiologic activities, emergency hospitals and transport vehicles, blood transfusion centers, cancer treatment, narcotic addiction centers, and medical supply storage.

[6] For example, the Presidential Decree on the Budget for the First Quarter of 1995 (dated January 25, 1995) stated that the income tax "levied from the citizens by enterprises, institutions, and organizations in Chui province in the size of 58 percent and in Bishkek city 78 percent."

The law also provides for diversification and decentralization of sources of revenue. Financing of health care can be moved off-budget, and no longer solely reliant on general government revenues. At least one public health insurance fund, Territorial Health Insurance Fund (THIF), can be created in each oblast and financed through multiple sources of revenue.[7] Additional sources of revenue include private or voluntary health insurance coverage, local user fees for pharmaceuticals and outpatient services,[8] and donor funding.

More importantly, the recent legislation separates financing and payment for services from the direct provision of care. This means that payers of health care services can contract with providers and determine the method of payment, payment amounts, or rates to providers. Third-party payers of services act as a catalyst for the prudent purchase of care on behalf of individual consumers by changing the incentives faced by hospitals, polyclinics, and individual providers.[9]

Sources of revenue include:

- funds from the current 34.5 percent Social Insurance and Pension Fund payroll tax, which are currently used for payment of temporary and permanent disability, social security, other forms of cash assistance, and health. (Approximately 86 percent of the payroll tax is used for sick leave, pregnancy, adoption of children, child care up to 3 years of age, care of disabled children up to 14 years, sanitoria and resort stay entitlements of from 18-24 days per year per worker. The remaining 14 percent is used for "other purposes".)

- a new, minimum 6 percent payroll contribution paid by employers;

- a capitated rate paid by the oblast government into the fund to cover non-working and exempted populations not contributing through the employer payroll-employees of public budget organizations (e.g., schools and hospitals), elderly, unemployed, disabled, women and children. While the payments would continue to be made by the oblast government, actual source of funding would be split about 75 percent/25 percent between revenues raised by the oblast and central government.

The oblast government would also continue to allocate funds directly to hospitals and clinics for construction/capital improvements, expensive equipment, and education/training programs. The central government would continue support of medical education and research and more traditional public health activities.

While this funding approach decentralizes decisionmaking, it also raises concerns about perpetuating or exacerbating inequities in funding across individual oblasts (see Haycock, 1995).

[8] See, for example, Haycock (World Bank, 1995) and Abt Associates (July, 1994) for more complete discussions of user fees and user charges.

[9] Importantly, the reform law generally follows an approach familiar to NIS countries that stems from initiates starting in 1989 when the so-called New Economic Mechanisms (NEM) were announced and approved in Moscow under the former Soviet structure. The NEM provided for greater local autonomy and a number of demonstration sites in each of the republics. For example, Kemerovo, Kaluga, Samira, and St. Petersburg were demonstration sites in the Russian Federation.

Three areas of change were focused on:

Likewise, administrators could receive payments based on the number of cases, the severity of the case, and the performance of treatment. These payment changes would create incentives that encourage more efficient organization and management of service delivery and improved quality of care. The focus of care could shift toward primary and outpatient care. Accordingly, polyclinic and hospital administrators would have increased flexibility to utilize resources as they see fit to produce services efficiently. Public sector providers now provide the bulk of services, though private sector providers could compete to provide services.

Payment changes are consistent with donor organization recommendations over the last few years. Bobodilla and Ellis (World Bank, 1992), for example, called for incentive-based payment systems to replace the current budgeting approaches. Abel-Smith (1993) and Holmes (June 1994 Manas Conference) have called for capitation-based physician payments and bulk-billing arrangements for inpatient care.

Current Status of Reforms

The insurance reform law was originally written to be implemented in 1993. Concerns about its design and rapid implementation schedule, problems with reforms in other sectors (e.g., the banking system), and a general lack of technical expertise have delayed the implementation date several times.[10] However, other health sector changes have occurred. Most notably, direct payments for outpatient services and for outpatient pharmaceuticals have been introduced. Haycock (1995) notes that current law prohibits users fees for inpatient services. Nevertheless, there is a sizable base of anecdotal evidence (e.g., discussions with hospital administrators) indicating user fees are applied to inpatient services. Patients also frequently must provide their

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- restructuring of financing—health budgets would be developed differently. A formula of 18 production input categories was replaced by a standard per capita payment based on a mix of measures of resource use and historic trends;
- organization and management restructuring—through greater autonomy and management systems;
- improved internal efficiency in the delivery of care—through improved payments for services within and across facilities.

The NEM demonstration sites were cancelled or superseded by subsequent health insurance laws in Russia and other NIS countries, but the general principles of NEM took root in terms of the recognition of the need for greater flexibility of resource allocation, payment to personnel and some limited management restructuring approaches.

[10] Greater detail about the health insurance law and the reasons for the delay in its implementation can be found in Abel-Smith, 1993. More recently, Abel-Smith (1994) noted some progress has probably been made in assuring a reasonably efficient and safe system of banking transactions.

own food, drugs and consumables for inpatient stays.[11] The recent United Nations Development Program (UNDP) 1995 report found that user fees account for an increasing and sometimes majority portion of revenues for some facilities. A small number of employer groups negotiate contracts with hospitals for services to their employees; public sector physicians accept private pay patients through special leasing arrangements, and at least four new private or "voluntary" insurance companies have emerged in Bishkek and elsewhere in the country.[12]

Health Reform Demonstration in Issyk-Kul

These activities point to a health sector in transition in Kyrgyzstan, moving from a publicly-based central planning scheme to a more privatized, public/private mix of organization and financing of care. At the same time, these activities are incremental and may have unintended consequences for efficiency and access to care. As a result, the government decided to test its legislated financing and delivery system reform model as a more comprehensive strategy for change. While implementation of its 1992 law is still delayed, it has chosen to pilot test the model in at least one geographic area.

The Ministry of Health has begun the implementation process for a health reform demonstration in Issyk-Kul oblast. An implementation task force was assembled and the experiment is being phased-in over the April 1994 to December 1995 period.

The demonstration does not cover the entire oblast. The demonstration was designated to begin in a Free Economic Zone (FEZ) of the town of Karakol, and three surrounding rayons within the oblast.[13] The site was chosen because of the FEZ designation, the relatively strong

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[11] Haycock (1995) has found that inpatient facilities also accept "informal payments" for pharmaceuticals, food, consumables, even access to basic services.

[12] These initiatives are described in greater detail in the Wein and Langenbrunner Trip Report of March 22-April 2, 1994, Abt Associates, Inc. under its Health Financing and Sustainability Project for USAID.

[13] The demonstration site is approximately 100 kilometers south and east of Almaty. The demonstration site has a population of about 253,000 according to the official Ministry statistics.

The town of Karakol has about 70,000 residents, and is best known for its production of submarine torpedoes and testing at nearby Lake Issyk-Kul. The FEZ designation for Karakol allows the city to have more autonomy in raising and spending revenues. Karakol has initiated several promising tax changes as of January 1994 to spur new investment: 5-year "tax holidays" for new businesses, 10 year "tax holidays" for new firms employing more than 300 Kyrgyz and providing investments of at least 1.5 million corn, tax deductions for all employers and individuals for all spending on health, education, and "communal" activities.

The three adjacent rayons of Dzhetiougouz, Ak-Sou, and Tyup are largely agricultural, though there is some manufacturing in the three rayons. Throughout the area there are mining deposits and increased mining activity related to gold, uranium, and other deposits. Sheep herding also continues, especially near the mountainous areas which surround the area's lake.

industrial base and potential mining resources, and the relatively high per capita level of spending on health care in this oblast relative to the rest of the country (Kyrgyzstan MOH, 1994). According to statistics provided by the Ministry of Health the site contains 26 hospitals at the oblast and district levels, 45 polyclinics, and basic medical units (FAPs) in rural areas. Table 1, located on the next page, provides some comparative health infrastructure, utilization, and outcome data for the demonstration area.

In spring 1994, the Ministry of Health requested technical assistance from USAID/Abt Associates in implementing the Issyk-Kul health reform experiment as well as assistance in training personnel who would help implement the experiment. Many of the details of the demonstration follow from the principles of the health reform legislation. At the same time, the legislation left many specific implementation issues to be addressed by the task force during the transition period. This was particularly true in the areas of payment methods, quality assurance, information systems design and cost accounting methods.

Issyk-Kul Demonstration Design and Current Status

The pilot demonstration provides the first opportunity to implement the new law in a systematic way for a specified geographic area and to use lessons from it for a longer-term national implementation. An initial proposal was developed by USAID/Abt Associates (see report of July 15, 1994) for the demonstration design and implementation; the proposal was subsequently finalized and agreed upon with the oblast and central governments. A number of activities and initiatives started over the latter part of 1994 relative to implementation of the demonstration.

The outline of the proposal with subsequent technical assistance activities and training is briefly described below.

- Pooled funds: a Territorial Insurance Fund would be organized and established, but the new employer payroll tax would be delayed indefinitely due to the severe economic conditions. Russian experts from Kemerovo oblast have provided TA and expertise on management and use of funds, staffing, and contractual processes.

- Primary care groups/outpatient payment methods: to accelerate the focus of care toward prevention and primary care services, existing polyclinics would be restructured into small group practices consisting of a therapist (internal medicine), an obstetrician/gynecologist, and a pediatrician. These primary care groups (PCGs) would be given a per capita budget (risk-adjusted) for patients registering with the group.

Table 1

Data on Issyk-Kul Oblast Demonstration Area
1993

Category	Karakol	Dzhetiougouz	Ak-Sou	Tyup
Demographic				
Population	70,000	81,000	62,527	56,000
Infrastructure				
Physicians/1,000	7.9	1.7	1.6	1.5
Ratio GPs to physicians	.16	.24	.20	.27
Nurses/1,000 beds	9.7	3.0	5.5	3.2
Hospital beds/1,000 pop.	19.4	4.0	5.4	4.6
Hospital Resource Use				
Average Length of Stay	23.4	12.0	11.8	11.9
Outcomes				
Crude Birth Rate/l,000	20	27	26	28
Crude Death Rate/1,000	8.0	8.0	8.0	7.0
Infant Mortality Rate/1,000 (1991)	32.1	30	29.8	20.8
Source: Oblast Ministry of Health, Issyk-Kul, 1994				

- In the first year, physicians would form groups by mutual selection, and they could receive training that emphasized care in a community setting. Group practices would have the right of referral to any accredited hospital or specialist.

- In the second year and third year, their budget would cover—on a phased-in basis—not only the costs of their own services, but also the costs of referral services used by their referred patients. In effect this would establish a fundholding system.

Group practices could operate in the first two years as economic units operate under the general oversight of polyclinics. Thereafter, they could be established as independent legal entities and reinvest some or all of budget surpluses in the practice or pay staff bonuses. To date, several PCGs have formed and payment system changes are to phased-in beginning at the end of 1995.

- Incentive-based payment methods for inpatient care: hospitals would receive simplified global budgets initially and payment systems would move toward a case-based approach within the first few years. Hospitals would be free to accept referrals from anywhere.

  - The current Medical Economic Standards should not be used to determine financing. At the outset, budgets would have to reflect historic experience only. The global budget (versus the 18-line item budget), however, would increase opportunity and flexibility for administrators.

  - Beginning in the second half of the first year, funding to hospitals would be based on the number of cases they treated in the first half of the year with a simplified 5-category adjustment for severity within diagnostic categories. Case-mix adjusters could improve with improved data over time.

  - In the second year, hospitals would be paid on a per-case basis. Prices for the cases would be developed by the THIF using the costing data collected by the hospitals in the first 9 months of the demonstration.

In addition, a plan for rationalization of facilities has been developed for restructuring and downsizing of beds.

- Capital loan fund: a revolving capital fund administered by the THIF for construction, renovation, and major equipment purchase through low interest loans.

- Managerial autonomy: all facilities—inpatient and outpatient—should begin moving immediately toward more autonomous managerial status and decentralized decisionmaking. All staff—physicians, nurses, and others—should sign annual contracts with facilities which choose to employ them at the start of the demonstration period.

A phase-in schedule has been developed and key personnel have been trained on concepts and strategy. For example, over 40 key personnel have been trained in concepts of financial accounting, management principles, business planning and productivity, including performance-based payment.

- Quality assurance: a complementary quality assurance (QA) system should be developed as these new organization and payment policies and incentives are phased-in. Four areas of concern were identified for development of QA mechanisms. They include:

  - less than timely or lack of referrals from the small group practices to hospitals;
  - inappropriate hospital admissions;
  - inappropriate referrals out of the demonstration area;
  - premature discharge from inpatient settings.

  A initial design for a QA system has been developed and presented for inpatient and outpatient facilities. In addition, an action plan for facility accreditation has been developed and agreed upon.

- Management and information systems: basic infrastructure changes and support would be developed to track costs and utilization patterns. Clinical and cost information including cost accounting systems would be organized and used in ways that encourage good decisions concerning resource use and optimal mix of clinical inputs for good care.

  To date, computer-based cost accounting systems and training manuals have been developed in Russian. Nearly two dozen key facility personnel have received training to date. In addition, a model computer program has been designed for a patient discharge system.

- Rural areas: the demonstration would be phased-in from Karakol city first; rural areas would be excluded (at least in the initial stages).

Additional technical assistance and training are planned for both 1995 and 1996. Progress on the demonstration has been hindered by several problems, such as lack of computers, delays in computer procurement by USAID, and some unexpected turnover of key personnel. Nevertheless, the demonstration is expected to be fully implemented by the end of 1995. Full development of a provider payment component is critical to implementation and would be phased-in no later than the end of calendar year 1995.

Bank Project Component: Provider Payment Reforms in New Demonstration Sites

The World Bank can use this base of experience in Issyk-Kul for extending financial reforms to additional geographic areas. Not all of the components of the Issyk-Kul demonstration are necessary, nor is there a reason that components have to be replicated with the exact design features found in the Issyk-Kul demonstration. The demographic, epidemiologic, and economic features of a particular geographic area may dictate design modifications. Local preferences and values will also be important. Nevertheless, the general outlines of reform provide a useful starting point to initiate incentives that will create a beneficial effect for reallocating resources toward prevention, primary care, and outpatient medical delivery of care.

The Bank project would focus on one area of the Issyk-Kul demonstration-provider payment reforms through incentive-based payment systems. A provider payment reform focus is important for two reasons: 1) to improve the efficiency of care and use of funds during a period of severe economic and resource constraint, and 2) to redress the imbalance of funds toward prevention, primary care and ambulatory care. This component would change the methods used to pay hospitals, polyclinics, and physicians. This will encourage changes in behavior in order to foster efficiency in the delivery system. Incentives would be provided for primary care and the treatment of patients on an outpatient as opposed to inpatient basis. Unnecessary referrals to specialists and for diagnostic tests would be discouraged.

Small primary care or family practice physician groups would be formed. Through payment policy changes these groups would be encouraged to be case managers of care. Payment for care from oblast and city budgets would no longer be made on the basis on production input measures such as numbers of beds and staff. Rather, payments would be made on the basis of performance (e.g., services provided, completed episodes) or outcomes (changes in health status). During a phase-in period each practice would begin to receive payments based on numbers of enrolled individuals; hospitals would receive global budget and (later) case-based payments on a per admission basis.

Provider payment reforms would change the financing and the organization of care in two important ways. Payment for care would be separated from delivery of care. The payer would focus on paying for the best care at the lowest cost. The provider would have more flexibility to focus on delivering the most optimal mix of services with the best outcome. Secondly, providers would be at risk in that they would be now be fully responsible for differences between payments received and costs of care. Providers would be accountable for more efficient care and higher quality of care.

The expected outcomes of these changes will be evident in clinical practice and in the restructuring of the delivery system inherent in the other project components. It will promote the long-run financial sustainability of the system and rationalize the current base by promoting primary and outpatient care, while providing strong incentives to eliminate unnecessary inpatient bed capacity. It reinforces the other components of the World Bank Loan proposal which also

promote outpatient care through the availability of essential drugs and outpatient practice protocols.

This proposed project component does not directly address the creation or organization of new insurance funds. General reforms already occurring in Kyrgyzstan exhibit a broad range of activity related to new sources and pooling of finances—such as insurance, insurance funds and organizations. The German donor fund GTZ also is providing support and technical assistance related to insurance. The Bank and remaining donors can provide only marginal benefit in including this component. Secondly, the best model of organization and pooling mechanisms of funds is not clear; the topic remains one of intensive controversy and debate across countries.

Complementary Sub-components

A number of sub-components to the provider payment reforms are critical. A provider payment reform component, to be successfully implemented, would be supported by three areas of complementary activity and change: 1) increased autonomy, flexibility, and accountability for individual polyclinics and hospitals, 2) integrated management and information systems (MIS), such as cost accounting systems to track resource use and utilization patterns, and 3) quality assurance systems to monitor care and prevent "gaming" or abuse under new payment incentives. Together, these initiatives can improve efficiency and the organization of care, as well as improve the quality of care.

Site Selection

The most favorable geographic areas for extending the demonstration would be Bishkek city and Chui oblast. These sites are preferable for several reasons: 1) relative urban and dense population, 2) affluent geo-political units (in terms of per capita income and taxes revenues paid), 3) relative sophistication of medical institutions and trained personnel, 4) relative excess of medical providers, especially physicians per capita in Bishkek, 5) contiguous geographically and effectively share market areas for medical services, 6) proximity to health sector leadership for observation and evaluation and 7) proximity 'to technical coordinating staff for implementation purposes under the loan. Selected data comparing features of these two geographic units and Issyk-Kul to national averages are provided in Table 2 on the following page.

Additionally, discussions with leadership (e.g., central and oblast-level MOH, Manas team) indicated interest and agreement in using these geographic areas as demonstration sites.

Table 2

Data on Issyk-Kul Oblast, Chui Oblasts and Bishkek vs. Kyrgyzstan Overall

1993

Category	National	Issyk-Kul	Chui	Bishkek*
Demographic				
Population (000's)	4,429.9	419.1	741.6	601.0
Public Budget Spending				
Per Capita	30.4	27.9	31.0	27.0
Infrastructure				
Physicians/1,000	3.17	2.95	2.0	8.4
Nurses/1,000 pop.	9.28	10.07	7.9	10.76
Hospital beds/1,000 pop.	10.79	9.37	10.8	14.49
Hospital Resource Use				
Average Length of Stay (days)	15.3	13.1	16.6	18.1
Outcomes				
Crude Birth Rate/1,000	26.1	25.1	17	13.1
Crude Death Rate/1,000	7.7	8.2	9.8	10.4
Infant Mortality Rate/1,000	31.9	34.5	20.8	50.0

** Numbers for facilities include city-level plus other such as national level facilities.

Source: Central Ministry of Health, Bureau of Medical Statistics, 1995

Financial and Training Plan

The component described above requires approximately $2 million in Bank funds to implement over a four year period. Kyrgyzstan would be required to provide similar contributions in terms of staff time, expertise, and primary care training of physicians in these two geographic sites.

A broad strategy would make use of Issyk-Kul oblast demonstration site and one or two local training institutes for intensive in-country training—either through workshops or classes/seminars. A number of management institutes—located in Bishkek city, Chui oblast, and the town of Karakol in Issyk-Kul oblast—could be suitable sites for the project's training. A limited number of leaders would be offered the opportunity for out-of-country study tours and training.

Up to 1,000 health care personnel would receive training under the project. A sizable portion of the training would occur in Years 1 and 2 under the loan program. For physicians and hospitals the training would be in preparation of the financial reforms which would begin in Year 2 and be phased-in over Years 2 through 4. The Kyrgyzstan government also would provide opportunities for retraining of physicians during periods of l-2 months during the first two years. Internists, pediatricians, and gynecologists would be trained in outpatient management of major illness through on-site internships. A retraining program for specialists also could be offered. USAID/Abt Associates is currently pursuing contact with the new faculty for general practice in Bishkek to determine if they could help set up a training program for USAID/Abt Associates. This program could add to the overall training activity. Another option would be to establish a new training center under the loan.

Hardware and software procurement—approximately 1 computer per facility—would be needed to streamline and re-design MIS components. These would be procured immediately and placed in participating institutions.

Only limited outside technical assistance would be necessary, and would occur primarily in years 1 and 2 under the loan. Some outside mid-term evaluation of the component would be necessary in years 3 or 4. A detailed financial-training plan is attached below.

Project Component Implementation Arrangements

The central Ministry of Health would have overall responsibility for the component, but with close coordination with several other critical organizations such as the central Ministry of Finance and the oblast (city in the case of Bishkek) level administration. These changes will require collaboration and agreement from both Ministries. The oblast level and city level administrations will require active interest and coordination by at least the oblast Finance authority and the oblast health authority. The geographic proximity to the demonstration areas will facilitate project management and coordination from Bishkek.

The implementation process can use the Issyk-Kul experience as a model. An implementation task force was assembled reflecting an agreement between the central ministries and the oblast itself. The experiment is being phased-in through a task force composed of individuals from the central MOH, the central MOF, the oblast, and local providers. The central MOH has created a new health reform organizational component with staff which have previously worked on development of the health reform law.

The task force would be composed of individuals with expertise in provider payment, management autonomy, management and information systems, and quality assurance. The task force would coordinate with the Manas project, and would include a number of members from the Manas team. The task force and the World Bank would continue its close collaboration with other relevant donors, notably USAID, ODA, and GTZ.

While legislation exists for implementing these changes, a number of regulations, decrees, central normatives may need to be waived at least for some limited time period such as 5-10 years to allow the expansion and extension of the Issyk-Kul pilot. Again, the Issyk-Kul pilot provides a 1-year lead timeframe that will identify potential obstacles. Nevertheless, a useful process would be to systematically review potential administrative changes necessary concurrent with the Bank loan review and approval process.

Next Steps

These arrangements suggest several steps that could be started over the next few months:

1) Organization of a task force composed of (1) central MOH and central MOF leaders and technicians, (2) Manas team members, and (3) oblast (city in the case of Bishkek) level MOH and MOF and other leaders from Chui and Bishkek. The task force would be composed of experts in several substantive areas, such as payment reforms, management autonomy, management and information systems, and quality assurance.

2) The task force should examine the Bank's project component and general strategy for proposed changes. The task force should identify concerns with the Bank's proposed approach, and it should also identify issues not addressed by the Bank's proposal. During the Bank's next mission, the Bank should be ready to discuss these concerns and develop alternative proposals (within current budget constraints) where improvement is needed.

3) The task force should initiate a study of legislation, regulations, decrees, and normatives to identify potential barriers to the successful implementation and extension of the financing reform component. Examination of normatives should include at least those related to financing, payment, resource use, facility autonomy, quality control, and structural standards for facilities. A report should detail what barriers exist and provide recommendations for abolishing them in a interim period (e.g., 5-10 years) in the new demonstration areas.

4) The task force should begin to identify approaches to on-site training and classes/seminars that might be provided for extending the reforms. Institutes of Management and technical training should be identified in the geographic areas of Bishkek city and Chui oblast. A preliminary curriculum should be developed. Potential trainers should be identified, from within Kyrgyzstan, from within the five Central Asian Republics, from Russia and from other NIS countries, and from other countries around the world.

5) The central Ministry of Health should evaluate progress in Issyk-Kul and monitor the implementation of the demonstration in Issyk-Kul. It must assure that critical implementation steps related to the provider payment reforms, facility autonomy, management and information systems, quality assurance proceed and remain on schedule.

The World Bank, for its part, would continue to monitor the progress of Issyk-Kul demonstration to assure timely technical assistance and training by Abt Associates, and by the central government and Issyk-Kul oblast. It also should coordinate with relevant parties on the implementation progress.

Implementation Plan

The key design features of a demonstration extension under the loan are outlined in Table 3 located on the next page. As outlined in the table, there are additional design options which can be considered. A preferred approach is detailed below in a step-by-step in chronological order; major design features are presented. Some follow from the Issyk-Kul model; others reflect areas specific to the loan program and the sites under consideration.

Table 3

Health Financing Proposal

Design Features	Design Options
1) Incentive-Based Payment Systems	
a. formation of primary care groups in polyclinic; capitation payment	full or partial capitation to primary care groups
b. prospective "at-risk" payment to hospitals	global budget or negotiated rates initially, depending upon polyclinic payment systems
c. case management for selected groups	
d. fee-for-service or other approach for "priority" services, e.g., preventive services	
e. health price index	
2) Facility Autonomy	
a. Federal norms for staffing "waived" for minimum 5-year period	
b. contractual arrangements with: (1) payers and other providers (2) internal staff	
3) Management and Information Systems	
a. "Western" cost accounting approaches	
b. streamline/re-design information systems-administrative, clinical, financial	Number of computers/software per facility
c. management and budgeting systems	

Table 3

Health Financing Proposal

Design Features	Design Options
4) Quality Assurance System a. facility-level cadre of experts b. information flows to monitor potential abuse under new incentives c. develop "CQI" approach d. incorporate new treatment guidelines for selected groups	National-Level Accreditation System to establish standards: - structural - modify treatment guidelines - outcomes-based comparisons
5) Implementation in "Urban" Financially-Viable Oblasts a. Bishkek city and Chui oblasts	Wider Implementation: - extend to Osch oblast only - extend to Osch plus rural areas

1) Develop Provider Payment Reforms to Promote Primary Care

a) Physicians and Outpatient Care

Year 1

(1) Establish PCGs groupings in urban areas and the more densely-populated rayon center settlements first. Rural areas would not be included initially.

(2) Encourage physicians over the first six months of the loan to form PCGs. Physicians who are unable to form PCGs would be assigned to PCGs.

(3) Offer physicians opportunities in retraining. Internists, pediatricians, and gynecologists could be trained in outpatient management of major illness. A retraining program for specialists also could be offered. USAID/Abt Associates is currently pursuing contact with the new faculty for general practice in Bishkek to determine if they could help set up a training program for USAID/Abt Associates. Another option would be to establish a new training center under the loan.

Year 2

(4) Implement an annual capitation payment to PCGs. Use the initial capitation payment to PCGs to cover outpatient services only.

(5) Give PCGs the right to refer their patients to any accredited specialist and/or hospital.

(6) Base the initial risk adjustment for the capitation formula on historical utilization.[14]

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[14] In the polyclinics, this would based on the traditional categories (under 1, 1-14, 14-16, adults, and chronic patients):

- in year 1, the capitation formula would be based on the following age/sex bands: 0-1, 1-4, 5-9, 10-14, 15-25, 25-40, 41-65, 65-75, 75-85, >85;
- in year 2, capitation payments that included hospital budgets would be calculated using historical utilization;

A specialist from Issyk-Kul oblast could help the new sites to calculate the capitated payment to PCGs. Available survey data on health expenditures (e.g., the ODA survey expected for completion in early 1995; the Central Gosskomstat family diary component on spending) should be considered to add in calculating the capitated payment.

(7) Allow PCGs to use the remainder of their budget not used for referrals to reinvest in the practice and to pay bonuses.[15]

(8) For Year 2 and 3 under the loan, allow PCGs to exist only as economic entities functioning autonomously under the auspices of the polyclinic.

Year 3

(9) Adjust the capitation formula for high-utilization individuals. This must occur at least annually.

(10) Include payments for hospital care in the capitation formula. The PCGs would pay 50 percent of the hospital cost.

Year 4

(11) PCGs would have the option of becoming legal entities, not just economic units. An in-country Kyrgyzstani specialist could develop a legal framework for developing legal independent PCGs.

b) Hospital Payment

Year 1

(1) Provide training for hospital managers, in topic areas such as economics, management, cost-accounting, and information systems. USAID/Abt Associates is currently investigating the possibility of setting up a training center using the Institute of Management in Karakol for its demonstration participants; there is a similar institute in Bishkek.

Year 2

(2) Allow hospitals to accept referrals from any area PCG in the demonstration site.

(3) The Medical Economic Standards should not be used to form the case-based pricing system.

(4) Allocate funds to hospitals using a global budget based on their historic budget in the first half of Year 2 under the loan.

[15] A technical specialist from Issyk-Kul could develop detailed rules for how PCGs could use unspent funds.

(5) Hospitals should receive a global budget based on their historical budget. Hospitals should receive approximately 70 percent of the total health budget. The budget should be a lump-sum payment that is not based on the 18 chapters. Hospitals would be at-risk in that facilities could retain unused funds and correspondingly be responsible for unfunded expenses.

(6) Beginning in the second half of the Year 2, allocate funding to hospitals based on the number of cases treated in the first half of the year with an available adjustment for severity. Each clinical department in the hospital could develop five severity-based cost bands, as used in Issyk-Kul oblast. A simplified severity adjustment system could then be used to adjust global budgets to hospitals.

Year 3

(7) Pay hospitals on a per-case basis. Prices for the cases would be developed by the payer (either the THIF or the Oblast Health Authority) using costing data available from and collected by the hospitals for a set period in the first 21 months of the loan.

(8) For each admission, allocate funding to hospitals based on half payment from the PCG and half from the payer (either the THIF or the Oblast Health Authority).

c) Case Management of Special Diagnostic Categories Under the Loan

Year 1

(1) Establish special payment approaches tailored to specific categories of care under the loan program, such as tuberculosis, acute respiratory infection, etc. For example, with tuberculosis patients, providers will be eligible to receive l-2 bonus payments for treatment and cure of TB patients. One bonus payment will occur when the positive smear finding changes to a negative smear under a provider's care. A second bonus will be paid when treatment is completed and the patient is cured. Similar approaches will be examined for other special categories under the loan program.

Year 2

(2) Begin phase-in of payment approaches.

d) Priority Services Payment

Year 1

(1) Establish needed adjustments to general payment policies related to high priority services such as preventive care. Two general approaches should be considered: (a) fee-for-service payments by the payer outside the capitated and case-based amounts, (b) bonus payments for meeting standards or targets of care (e.g., percentage of enrollees with all vaccinations).

Year 2

(2) Begin phase-in of priority services payment.

e) Development of Health Price Index

Year 1

(1) Provide outside technical assistance on the development of a demonstration area health price index. The federal statistics department, Gosskomstat, should be responsible for calculating a monthly index using data from the health care providers. The index probably should be broken out by urban and rural areas. One possibility (ODA, 1994) is to start with a 1996 base-weighted Laspayres index and that could be developed into a chained index with annual links.

2) Develop Organization Changes that Promote Autonomy, Flexibility, and Accountability

Year 1

(1) Complete a study of federal and oblast normatives and regulations governing the administration and policies of facilities. Identify needed changes to allow greater flexibility in the organization and management of facilities.

(2) Move health care institutions towards autonomous status. Each institution should have the option to establish a board of governors (this would consist of prominent members of the community, representatives from the largest employers, a representative for doctors, and a representative from the city and oblast government). The hospital administrator would be responsible to the board of governors. An in-country specialist could help health care institutions develop an independent structure. This could be, for example, modelled on the Institute of Management in Karakol.

Year 2

(3) Place all health personnel on short-term contracts (e.g., one year). This will give institutions and health personnel the opportunity to change in response to changing environment. An in-country organization specialist could help design contracts for health personnel.

3) Develop Complementary Management and Information Systems in Participating Facilities

Year 1

(1) Procure and install computer hardware, software, and printers for facilities participating in the demonstration.

(2) Refine current cost accounting manuals or use available manuals through USAID for the Kyrgyzstan health care system. The manuals should be translated into Russian. The manuals should include an outline spreadsheet on floppy disk showing how the methodology works.

(3) Training on the use of spreadsheets should be initiated for those responsible for developing the cost accounting system. These individuals should then begin to construct spreadsheet cost accounting model.

(4) Establish a model cost accounting system in the oblast level and central rayon level facilities—hospitals and polyclinics—to support the reforms. These systems would track resource utilization and costs for individual services and patients. Para-clinical services, such as EKGs, lab tests, etc., would be costed, and prices would be developed. Prices would also be developed for general overhead and included in the rent.

(5) Provide in-country training on uses of cost accounting information for broader business planning, objective setting, and performance management.

(6) Provide computer training on financial functions, general administration, and prospective budget management. This should include the use of databases for stock and inventory systems and spreadsheets for cost accounting, financial and patient activity planning.

(7) Adopt clinical information systems that include minimum uniform data sets for inpatient and outpatient episodes of care. The minimum data set should be collected by all hospitals on discharged patients. Similarly, polyclinics should collect a minimum data set for each episode of care. The respective data sets

should reflect the most significant but minimal information on patient episodes relevant to multiple users both within the hospital and external to the hospital and polyclinics.

(8) Adopt and implement a classification system for procedures, including (a) surgical procedures and operations; (b) radiology, laboratory and histology tests; and (c) pharmaceuticals; and (d) other services including visits and other medical services.

(9) Provide program for training medical and clerical staff in the use of the procedure coding system. The training should be implemented in urban areas for staff from the Oblast hospital and polyclinic and the central rayon facilities first.

(10) Develop an integrated automated medical information system. A medical information system provides a comprehensive system of recording and reporting medical data. Data collected in a medical information system is usually categorized as: a) demographic data; b) clinical data; and, c) financial data.

(11) Provide training in use of automated medical information system.

(12) Develop training manuals in the use of automated medical information systems: distribute manuals to all facilities participating in the demonstration areas.

(13) Beginning with the October 1 outpatient encounter and inpatient discharges in Year 1 under the loan, code the complete data set for each patient encounter.

Year 2

(14) Define standard reports to be generated from the medical information systems and provided to internal managers and to outside organizations such as the public insurance trust fund, oblast health authority, accreditation entities. A set of standard management reports should be designed to provide managers with quantitative information about volume of services, quality, and outcome data.

(15) Completion of the cost accounting models and implementation in all participating facilities. A set of apportionment criteria and weights for each of the overhead and paraclinical departments should be developed. (Total costs at each clinical department average departmental prices per patient can then be derived.)

(16) Develop inventory and tracking systems for facilities. A materials management position could be created to inspect and maintain all equipment and furnishings.

(17) Develop a human resource management system for hospitals and polyclinics. This is essentially an automated system for collecting and tabulating data on personnel, staffing, related costs.

(18) Develop annual auditing and reporting mechanisms. Mechanisms for the auditing of the providers financial accounts should be agreed between the Ministry of Health, the providers and (if exists) the health insurer (THIF).

(19) Provide training in the reporting and auditing of financial reports.

(20) Develop costs on a per case basis. Using the utilization data from the first 3 to 6 months of the demonstration, the costs of individual cases can begin to be estimated. This may lead at first to all cases being coded as one of five severity bands, with average departmental costs weighted appropriately.

(21) Provide training and in-country TA for calculating costs per case.

Year 3

(22) Develop a physician data base for public use. Reports on physician practice are to be made available to health care consumers and managers. The content, format, and distribution schedule for these reports must be established. Reports should be distributed to physicians, public officials, THIF Fund, and health care consumers.

(23) Establish a department of Medical Practice Patterns either within the Oblast Health Authority, THIF Fund, or Accreditation Organization. Actual hospital practice data across settings and facilities should be compiled and compared with differences or variations in outcomes.

(24) Develop regional and national level reports of hospital and polyclinic data. Data from each rayon and unit should be aggregated to produce a report on inpatient discharges and polyclinic visits. The format, content and distribution schedule for these reports should be developed.

4) Develop a Complementary Quality Assurance System

Year 1

(1) An in-country quality expert should provide training to help departments set up an internal quality improvement plan. The goal would be for physicians,

departments, polyclinics and hospitals to see continuous quality improvement as opposed to externally derived rules, as part of their mission.

(2) An in-country information specialist should develop methods for collecting information on referral rates, disenrollment, and resource utilization of PCGs.

(3) At the hospital level, statistics need to be developed on nosocomial infection rates, re-admission rates, and other statistics that would be used for monitoring and quality assurance.

(4) Adapt existing standards from the Issyk-Kul demonstration site for hospital admissions with the help of one or more quality experts.

Year 2

(5) Establish an accreditation committee that is independent of the MOH and the THIF authorities. USAID/Abt Associates work to establish a national accreditation organization and process should be considered.[16]

(6) With the help of one or more in-country experts, establish the specific standards used by the accreditation committee in the first three to 6 months of the year.

Monitoring and Evaluation

At its most basic level, the demonstrations would not if there were not continued and measurable progress of components at the Issyk-Kul pilot. The approximate 1-year lag time between Issyk-Kul and the anticipated World Bank loan timetable provides a useful vehicle at the start point for evaluating level of readiness and for identifying potential problems and issues throughout the term of the loan. The 1-year time difference can be used to address problems through design changes or implementation activity.

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[16] The goal of the USAID/Abt Associates task is to develop an independent national accreditation process, to increase both independence of review and flexibility in updating standards. It should be composed of independent experts and funded jointly by payers of care and health care facilities. It should charge fees for accreditation. The USAID project envisions:

- an accreditation process to review established basic standards for facilities. Particular emphasis should be placed on hygiene; inspectors should be sent on a monthly basis;
- that each hospital department and PCG would be accredited yearly. If the oblast health authority or THIF identifies problems in specific departments (e.g., high re-admission rates), the accreditation committee should be notified and it should review that department.

Technical assistance also would be provided in Year 1 to evaluate the Issyk-Kul pilot from the standpoint of financial sustainability, changes in efficiency, quality of care, and access to care. Recommendations would be developed that would be used to modify and implement demonstrations in the new sites.

An outside technical evaluator, who would be part of the ongoing monitoring and evaluation, would examine the demonstration in Years 2, 3, and 4 once the phase-in of the financial reforms started. Evaluations and monitoring activity would not focus on one measure only (e.g., reduction in numbers of beds), but would develop a set of indicators that will provide a broader pattern or "picture" of impacts. These include measures such as:

- outpatient services such as annual per capita utilization of preventive, diagnostic, and curative ambulatory care (e.g., numbers of visits); active physicians per capita; cost per episode by enrollee and by type of facility; costs per inhabitant, by type of facility and by visit;

- for the hospital setting, beds per capita; staff per bed and by facility type; occupancy rates; rates of admission; ratios of capital and pharmaceuticals to staff; costs per admission (adjusted for case-mix); and average length of stay (ALOS) adjusted by diagnostic category and demographic categories;

- "system" level patterns of relative shares of spending for inpatient, outpatient, and pharmaceuticals over time.

Based on similar demonstrations in other NIS countries (see, for example, Abt Associates, May 1994), a number of specific changes would be anticipated. These changes would improve allocative efficiency and technical efficiency. Key performance indicators would be reflected in data such as

- an improved ratio of general practitioners to specialists;

- increased number of outpatient visits and services;

- decreased hospital referrals, admissions, and per capita days in the hospital;

- decreased average lengths of stay;

- decreased staff and beds per capita;

- increased salaries/income for primary care physicians relative to specialists.