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# INNOVATIONS IN RESOURCE ALLOCATION, POOLING AND PURCHASING IN THE KYRGYZ HEALTH SYSTEM

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## Background and conceptual approach for analyzing health financing reforms

As with the other Central Asian countries of the former Soviet Union, Kyrgyzstan experienced a very painful social and economic transition in its first decade since independence in 1991. During the Soviet era, health care and education were free, and there were extensive social services and transfers. Kyrgyzstan in particular benefited from subsidies from Moscow. Shortly after independence, these subsidies ended, and the country's real per capita GDP fell to about half its 1989 level by 1995. This decline was accompanied by a drastic decline in government spending, as not only did GDP fall but the ratio of public revenues to GDP also fell. This led to a decline in public spending of 67% between 1990 and 1996 (Pomfret 2002).

The economy grew steadily since the mid-90s, but by 2000 per capita GDP remained less than two-thirds of the pre-independence level.[1] Public revenues have remained below 20% of GDP, which corresponds to the revenue raising capacity of other low-income countries (Schieber and Maeda 1997). Although health spending ranged from about 12%-13% of government spending between 1995 and 2000, the low level of revenue collection, combined with stabilization plans that reined in public spending, meant that government budget health spending declined steadily over the period from 4% of GDP in 1995 to 1.9% in 2000.

The above summarizes the economic context in which the Kyrgyz government introduced its health reforms. To understand and draw lessons from the current resource allocation and purchasing arrangements in the Kyrgyz health care[2] system, it is necessary to understand how these have changed over time. We identify three distinct periods in the development of the health system: (1) independence until the end of 1996; (2) 1997 until the end of 2000; and (3) 2001 and beyond. Each of these is described in the following sections.

Frameworks for describing health care financing and provision functions and resource allocation methods (Kutzin 2001a; Preker *et al*. 2001) are adapted to portray the organization of the health care system and its institutional arrangements in each of these periods. The functions include:

- collection/sources of funds
- pooling (accumulation) of funds
- purchasing of services (allocation of resources to providers)
- provision of services

These arrangements are summarized for each period, including a description of the agencies responsible for implementing each of the functions and their market structure. This also includes an assessment of the extent to which responsibilities for the implementation of several functions are integrated within a single organization or separated between different organizations. In addition, we assess the extent to which the purchasing of services was

[1] The World Bank (2001a) classifies Kyrgyzstan as a "low income" country with a per capita GNP of US$270 in 2000. About 52% of the current population of five million lives below the poverty line.

[2] The focus of this study is on the system for delivering personal health care services (i.e. services provided to individuals), rather than the health system (i.e. including population-based services) more broadly.

*strategic* or *active*, i.e. linking decisions on resource allocation to information on the performance of providers or the needs of the population.

An integral part of the framework is policy and practice with regard to out-of-pocket payment and the benefit package. It is useful to conceptualize benefit packages "as those services, and means of accessing services, for which the purchaser will pay from pooled funds" (Kutzin 2001a, p.190). This concept implies that services outside of a package must be funded on an out-of-pocket basis (or from another purchaser's pooled funds). Between the extremes of "fully covered" and "fully excluded" services are services for which partial payment (cost sharing) is required. In Kyrgyzstan, as in many low and middle-income countries, the gap between the allocation of pooled funds plus formal cost sharing revenues has often been filled by informal payments by patients.

## Independence - 1996: the health system inherited from the Soviet Union

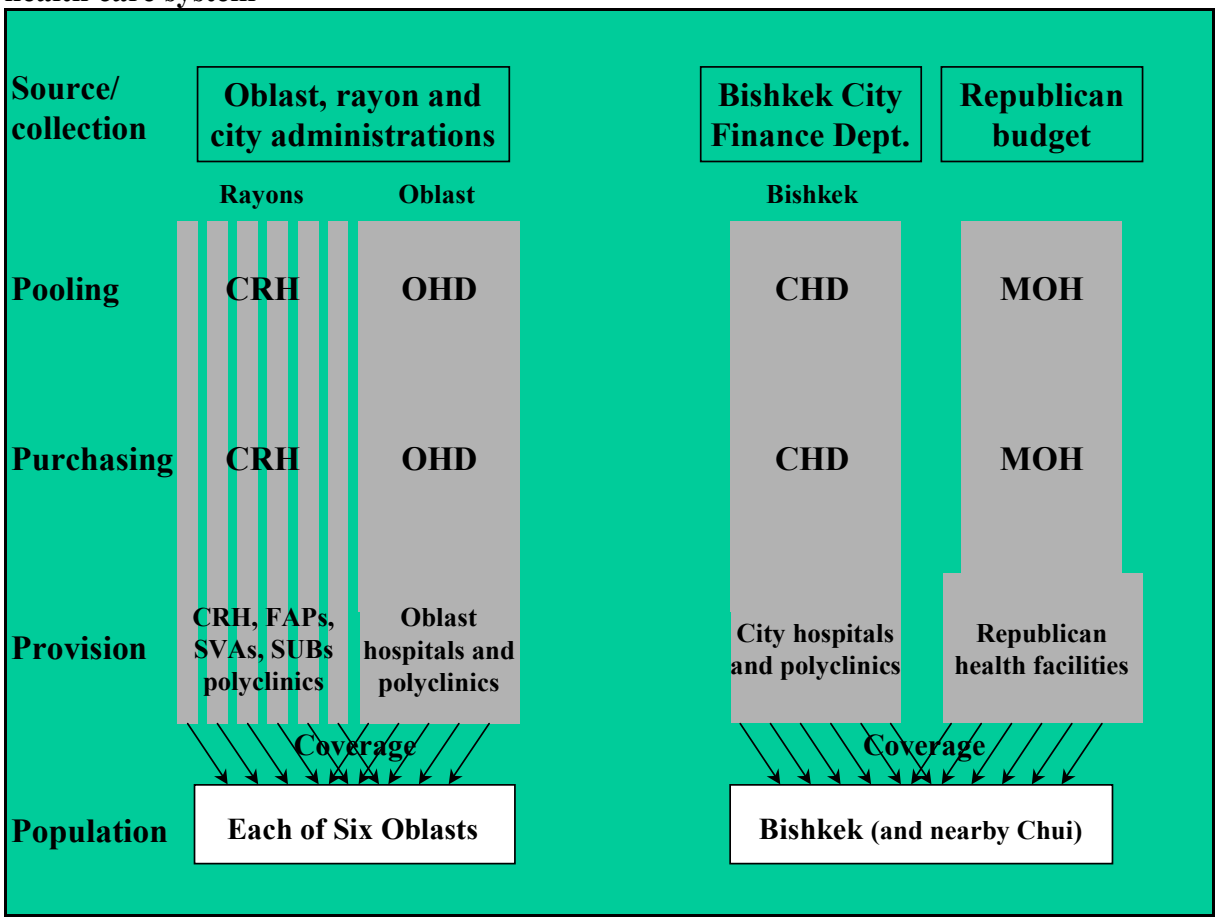
*Overview: organization of health system functions*

The organization of the health care system in the initial post-independence period is summarized in Figure 1's *function and coverage chart*. Fragmentation of the health care system resulted from each level of government having its own vertically integrated system of pooling, purchasing and provision for their populations. Within each oblast,[3] these functions were implemented by each rayon (or municipal) government and also by the oblast government. In the capital, Bishkek, these functions were implemented by the Republican MOH and the City Health Department (CHD). This resulted in duplication of functional responsibilities and overlapping population coverage.[4]

[3] Levels of government are divided into rayons (districts), municipalities/cities, oblasts (states or provinces), and the Republican (central) level.

[4] This is described in more detail later in this section.

**Figure 1. Organization of functions and population coverage in the post-independence health care system**




Note: CRH = Central Rayon Hospital; OHD = Oblast Health Department; CHD = City Health Department; FAP = rural physician assistant and midwife post; SVA = rural primary care center; SUB = rural hospital.

*Source/collection of funds*

There were two categories of public funding sources: Republican budgets, formed from general taxes and accumulated at central level, and local (i.e. oblast, rayon, municipal and village) budgets, formed from local taxes and accumulated at the (mainly) oblast, rayon and city levels. The government also had (and still has) a revenue redistribution system (equalization grants) to subsidize those oblasts that do not generate sufficient local tax revenue, and so these centrally allocated funds were also a source of revenues to some oblasts. While the total level of out-of-pocket payment is unknown, survey-based evidence suggests that private payments were an important source of revenue to the health care system, even in this early period. A 1994 survey found that 69% of outpatients and 86% of inpatients contributed something towards the cost of their care in what were ostensibly free (except for some limited official user charges) government health facilities (Abel-Smith and Falkingham 1995).

*Service delivery*

The health system inherited from the Soviet Union was organized hierarchically, with a service delivery infrastructure (and integrated financing system) associated with each level of government. Service provision was predominantly in public sector facilities, although some private providers emerged during the period.

The health service provision market was characterized by extensive physical infrastructure providing good access to services. It was also characterized by an abundance of specialized facilities at oblast[5] as well as Republican[6] levels. In urban areas, both outpatient and inpatient care were fragmented into multiple but non-competing facilities, and the catchment areas of oblast and rayon facilities often overlapped. In Bishkek, the coverage of Republican and City health facilities overlapped, with Republican facilities serving mainly the nearby population despite their official role as national referral centers. In rural areas, the delivery system was less specialized, and there was less overlap in population coverage. The central town of each rayon had a Central Rayon Hospital (CRH, a multi-specialty general hospital) and general polyclinic. Municipalities had a similar structure to that of the rayons. Most primary care was organized at the rayon or village level. For rural populations, the main primary care providers were the feldsher-midwifery post (FAPs) and the rural physician center (SVAs). There were also basic rural hospitals (SUBs).

Use of the public sector delivery system was subject to very strict rules of access and referral. Catchment areas in rural and urban areas defined people's entry point into the system on the basis of their residence. "Catchment physicians" in separate adult and pediatric polyclinics provided urban primary care. There were also separate polyclinics ("women's consultation centers) for gynecological, antenatal and postnatal services. Throughout the system, however, primary care was undervalued, weak and ineffective.[7] Most physicians were trained as specialists, with few having the skills to work as effective generalists. There was a compulsory referral system from lower levels of care to secondary and tertiary care for a wide range of clinical indications. Some diagnoses were indications for direct referral from primary care to tertiary care facilities. These factors combined to create an excess (by western medical standards) number of referrals, with catchment physicians working more as "dispatchers" than as clinicians (Sargaldakova *et al*. 2000; Borowitz *et al*. 1999).

*Pooling of funds and purchasing of services*

The pooling of public revenues for health care was organized according to level of government, and the implementation of this function was, as noted above, integrated with purchasing and provision. As shown in Figure 1, there were several organizational units in the health system responsible for pooling health care revenues and allocating resources to providers. These included the Ministry of Health for allocations to Republican facilities, the Oblast Health Departments (OHDs) for oblast facilities, and the Central Rayon Hospital (CRH) for itself and the other rural health facilities. The market structure of fund pools[8] was fragmented in the sense that each level of government had a separate pool of funds for its health facilities. Because rayons and municipalities exist within oblasts, and because most Republican facilities were located within Bishkek, these pools overlapped. Because

[5] The oblast level included a range of 3-6 kinds of specialty hospitals and dispensaries (e.g. oncology, narcology, tuberculosis), plus maternity hospitals, pediatric hospitals, general adult hospitals, and general and specialist polyclinics.

[6] The Republican MOH level included the national referral centers, the clinical care part of research institutes, and other specialized hospitals. The Republican level also included the health facilities "owned" by other government ministries and departments (e.g. Defense, Interior).

[7] Despite the rhetorical support given to primary health care in the USSR.

[8] Because pooling and purchasing were integrated within a single organizational unit, this also describes the market structure of purchasers.

some of the services funded from the rayon pool were the same as some of the services funded from the oblast pool (e.g. general adult, pediatric, and maternity inpatient services), the result was a duplication of coverage for many services.

While pooled financial resources did pass through the agencies that appear as "purchasers" in Figure 1, this was largely just a passive accounting relationship. *Decisions* on how, and how much, to allocate to specific providers were not made by the purchaser but were instead driven by normative principles inherited from the Soviet system. The norms used as the basis for resource allocation related mainly to the size of the physical infrastructure (i.e. number of beds) as well as certain measures of capacity utilization (e.g. occupancy). Staffing norms were also established for inpatient facilities according to the number of beds of various specialties and for polyclinics according to the size of the catchment population and the number of visits. In addition, there was a growing share of purchasing coming directly from individual patients through the payment of formal user fees (legalized in 1991) and informal payments to providers or for the purchase of inputs in government health facilities.

*Out-of-pocket payments and benefit package*

There was not an explicit benefit package during this period. Some limitations on the capacity of public finance to fund all services were recognized, and user fees were permitted officially in 1991.[9] Given the widespread existence of informal payments (as noted above), however, the actual benefit package (i.e. those services fully paid for from pooled funds or with explicit rates of co-payment) was undoubtedly quite small. No attempt was made to set priorities for public health care spending in ways that were reflected in revisions to policies on charges for specific services.

*Resource allocation and provider payment*

It is conceptually useful to distinguish two kinds of resource allocation in the flow of funds: (1) from sources/collection to intermediaries, and (2) from intermediaries/purchasers to providers. In the post-independence health care system, however, these two processes were collapsed into a single decision. Although local administrations (i.e. oblast finance and health departments) had the legal power to alter allocation patterns, the allocation process for all government health providers was essentially the same, driven by the norms inherited from the Soviet health system. The "purchasers" acted as passive intermediaries that simply allocated pre-determined budgets to 'their' facilities. Even as the level of funding fell far below what was required by the norms, this process was still used to determine the relative allocation of resources.[10]

[9] A government edict issued in 1992 specified types of services for which fees could be charged, and this list was updated in 1998. At this later date, exemptions from payment were introduced for persons in defined "privileged" categories and persons with specific diseases/conditions. The MOH is responsible, jointly with the Anti-Trust Committee, for the development and implementation of a pricing methodology for user fees. Medical facilities formed user fee departments, and a regulatory base was developed for this type of economic activity. User fees were accumulated on the regional treasury accounts under the chapter *special means*. Expenditures from user fees were regulated and could not exceed the approved chapter budgets.

[10] Because of the dramatic drop in revenues, however, the system functioned like one with historically-based budgets. Finance authorities attempted to provide the same level of funding as in the previous year, while an attempt was made to "protect" certain items in the budget, such as salaries.

A third aspect of resource allocation that is crucial for understanding the system is the extent of managerial control (autonomy) that health facility managers could exercise over the resources that they received. Resources were allocated as strict line item ("chapter") budgets. There were 18 such chapters (e.g. salaries, social fund contributions, utilities, food, drugs, repairs, etc.), and the managers of health care provider units had no authority to make transfers between chapters without the approval of the financial institutions (Ministry of Finance (MOF) or oblast finance department (OFD)). Financial management of the system consisted of checking expenditure levels against the line item budgets. Hence, authority over the internal allocation of resources at provider level was also collapsed into the single decision made centrally on resource allocation to intermediaries and service providers. Overall, the allocation process can be characterized as "input-driven" and was based, in a sense, on meeting the perceived (based on the inherited norms) financial "needs" of the service delivery infrastructure.

*Problems arising from organizational and institutional arrangements*

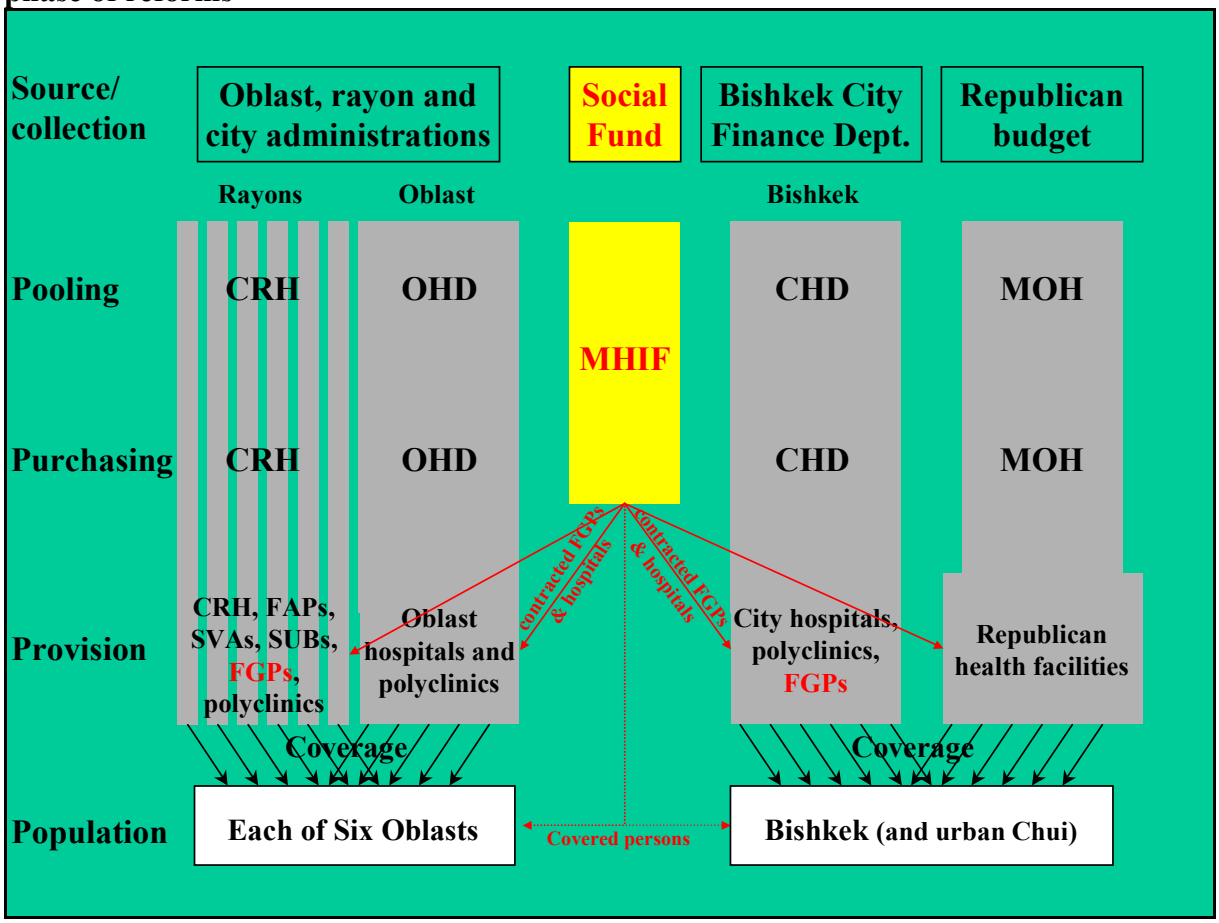
The inherited system for resource allocation and purchasing was associated with many problems. With regard to efficiency, the greatest problem was excess capacity, particularly at the hospital level. Kyrgyzstan (and the NIS countries on average) had substantially higher numbers of hospitals and beds than, for example, the countries of Central and Eastern Europe (WHO/EURO 2000), much more than a low-income country could sustain, especially from public funds. Several factors contributed to this. The method for allocating resources to providers, driven by input norms, rewarded expansion in the number of hospital beds. The vertical integration of the health systems of different levels of government, combined with overlapping geographic population coverage, resulted in duplication of service delivery responsibilities. With this organizational structure, there was no incentive to plan health services on a population basis, and no incentive for different levels of government to coordinate service delivery. These organizational and financial incentives reinforced the way that health professionals were trained in the Soviet system. Clinical protocols and norms encouraged, and even required, an emphasis on specialized hospital care, and the principal role of primary care providers was to "dispatch" patients to specialty providers and facilities (Borowitz *et al*. 1999). Nor were there any incentives for either quality or productivity. Moreover, the growth of informal payments that is believed to have occurred during this period suggests that providers became increasingly responsive to those patients with the means to pay and less responsive to the rest of the population.

## 1997-2000: The first phase of reforms

*Organization of health system functions*

As summarized in Figure 2, the government launched a number of reforms in 1997 that effected some changes in the organization of health care system functions. In particular, the Mandatory Health Insurance Fund (MHIF) was created and brought new resource allocation mechanisms to the sector. While integrating pooling and purchasing as in the budget-funded health system, the MHIF established a split between purchasing and provision. The MHIF also differed in that its pooling and purchasing were national in scope, rather than confined within an oblast or rayon. Consequently, population coverage was not limited by geographic considerations. Many other aspects of the system did not change. In particular, there was no change to the organization of functions and population coverage in the "budget-funded system", though attempts at reform were made.

**Figure 2. Organization of health care functions and population coverage in the first phase of reforms**




*Sources/collection of funds*

In 1997, a 2% tax for health insurance was added to the existing payroll tax schedule. All contributions were collected by the Social Fund, the agency that also collected money for pensions, unemployment benefits, and "social insurance" (cash benefits, etc.). In 2000, the Republican budget also became a direct source of funds to the MHIF, transferring revenues to provide MHIF coverage for all children (persons under age 16 and students under 18) and persons receiving some categories of social benefits from the government.[11] While the separation of collection and pooling responsibilities between the Social Fund and MHIF were well defined, the amounts allocated to the MHIF were always less than the amounts that should have been transferred. As shown in Table 1, there was an increase from 1997 to 1999, followed by stagnation and decrease after that (MHIF data). The execution rate of the planned transfers from the Republican budget that began in 2000 was higher than that coming from the Social Fund, but this also showed a steep decline in 2001 as compared to 2000.

[11] This development provided an exception to the limitations governing the use of money coming from the state budget. New line items were created, and the only condition placed on the use of these funds is that providers and the MHIF must report that the money was used for health care for children or persons receiving benefits.

**Table 1. Revenue transfers to the MHIF**

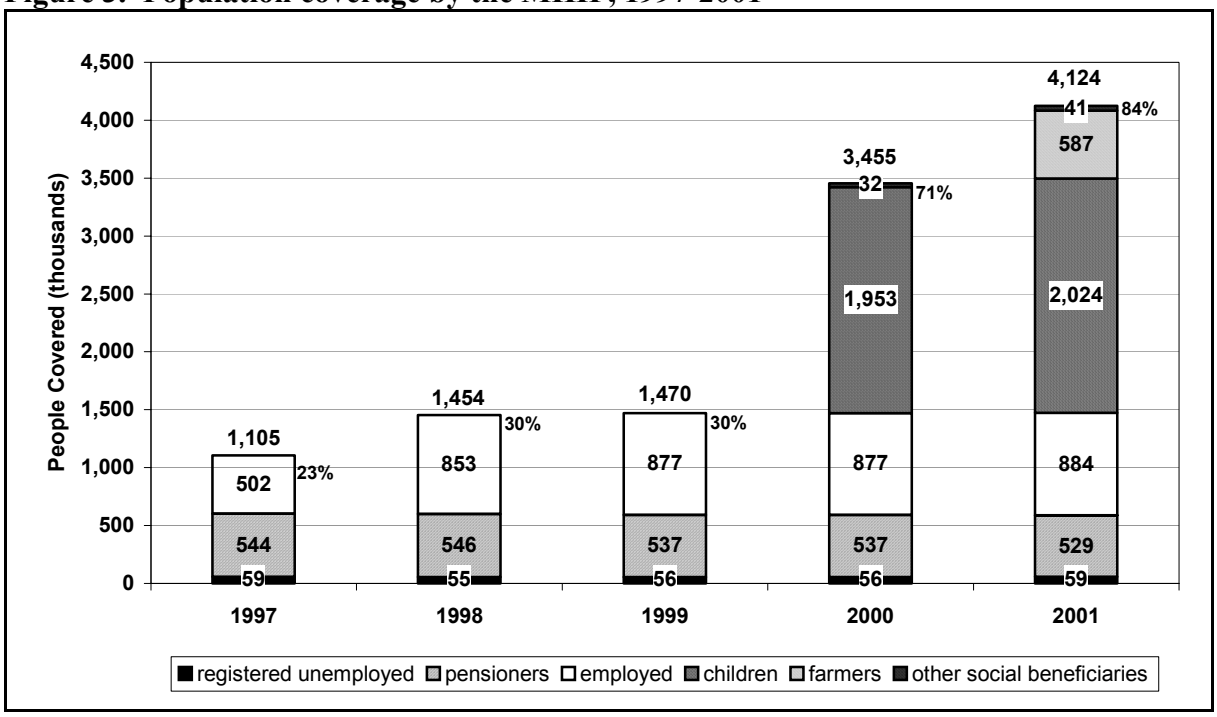
| (million soms) | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|
| MHIF premia collected by Social Fund | 41.0 | 82.8 | 117.1 | 138.3 | 166.6 |
| Revenues transferred to MHIF for employees | 9.2 | 30.9 | 73.1 | 89.4 | 80.5 |
| **Percent of collections transferred** | **22.4%** | **37.3%** | **62.4%** | **64.6%** | **48.3%** |
| Planned revenues for pensioners | 15.0 | 38.0 | 48.0 | 48.0 | 80.0 |
| Revenues transferred for pensioners | 0.0 | 9.8 | 14.5 | 12.5 | 7.8 |
| **Percent of planned transferred** | **0.0%** | **25.8%** | **30.2%** | **26.1%** | **9.8%** |
| Planned revenues for unemployed | 0.0 | 8.5 | 9.0 | 9.0 | 9.0 |
| Revenues transferred for unemployed | 0.0 | 1.3 | 6.0 | 3.1 | 2.5 |
| **Percent of planned transferred** | | **15.3%** | **66.7%** | **34.4%** | **27.8%** |
| Total planned/collected revenues by SF | 56.0 | 129.3 | 174.1 | 195.3 | 255.6 |
| Revenues actually transferred by SF | 9.2 | 42.0 | 93.6 | 105.0 | 90.8 |
| **Percent of planned/collected transferred by SF** | **16.4%** | **32.5%** | **53.8%** | **53.8%** | **35.5%** |
| **Republican Budget transfers** | | | | | |
| Planned transfers for children | | | | 35.0 | 46.5 |
| Actual transfers for children | | | | 25.5 | 24.7 |
| **Percent of planned transferred** | | | | **72.9%** | **53.1%** |
| Planned transfers for social beneficiaries | | | | 5.0 | 3.8 |
| Actual transfers for social beneficiaries | | | | 4.2 | 2.3 |
| **Percent of planned transferred** | | | | **84.0%** | **60.5%** |
| Republican Budget planned transfers | | | | 40.0 | 50.3 |
| Republican budget actual transfers | | | | 29.7 | 27.0 |
| **Percent of budget actually transferred** | | | | **74.3%** | **53.7%** |
| Total Planned MHIF Revenues | 56.0 | 129.3 | 174.1 | 235.3 | 305.9 |
| Total Actual MHIF Revenues | 9.2 | 42.0 | 93.6 | 134.7 | 117.8 |
| **Actual MHIF revenues as a percent of planned** | **16.4%** | **32.5%** | **53.8%** | **57.2%** | **38.5%** |

Source: MHIF data.

Figure 3 shows how population coverage by the MHIF has increased since its introduction. In 1998 and 1999, the insured comprised just over 30% of the population, including pensioners, registered unemployed, and employed persons for whom employers had made a contribution. In 2000, the inclusion of children raised coverage to about 70%, and in 2001, the inclusion of farmers who had paid land tax raised the coverage level still further. While the overall level of population coverage has increased rapidly, there were not significant changes within any category of the insured.[12]

[12] The increase in the number of employed insured in 1998 was due to the exclusion in 1997 of civil servants and employees of public enterprises. They were included in 1998 and each year thereafter.

**Figure 3. Population coverage by the MHIF, 1997-2001**




Source: Meimanaliev (2001). Percents next to each "bar" refer to extent of population coverage by MHIF.

Despite this widespread population coverage, the revenues mobilized for/through the MHIF were small in comparison to the budget, as shown in Table 2. The expenditures of the MHIF were less than 1% of total prepaid/pooled (i.e. budget plus MHIF) health spending in 1997, but this grew to just over 10% by 2000. The percentages suggest that while the MHIF was a "small player" in terms of national health system financing, it made an important contribution to the funding of general hospitals and primary care, particularly in 1999 and 2000. Moreover, due to the purchasing strategy used by the MHIF (described below), these aggregate data understate the impact of the MHIF on health care providers during this period.

**Table 2. Budget and MHIF shares of pooled health financing**

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| Total health spending | | | | |
| From Budget | 99.4% | 95.6% | 91.6% | 89.9% |
| From MHIF | 0.6% | 4.4% | 8.4% | 10.1% |
| **MOH general hospitals** | | | | |
| From Budget | 99.7% | 92.9% | 86.1% | 82.3% |
| From MHIF | 0.3% | 7.1% | 13.9% | 17.7% |
| **MOH primary care providers** | | | | |
| From Budget | 100.0% | 89.6% | 75.7% | 80.8% |
| From MHIF | 0.0% | 10.4% | 24.3% | 19.2% |
| **MOH general hospitals and primary care providers combined** | | | | |
| From Budget | 99.7% | 92.5% | 84.4% | 82.1% |
| From MHIF | 0.3% | 7.5% | 15.6% | 17.9% |

Source: Kyrgyz government treasury data (excluding official fees) and MHIF data.

*Service delivery*

In 1997, Family Group Practices (FGPs) were introduced as a new organizational entity for the provision of primary care in a pilot project in Issyk-Kul oblast. This pilot was then "rolled out" in the following years with the creation of FGPs in Bishkek and Chui oblast. By the end of 2000, about 800 FGPs were functioning with a presence in every oblast. The main objectives of the FGP reform were to create a single entity capable of providing most primary care services for families and to change and strengthen clinical capabilities at this level. Another important objective of the FGP reform was to offer the population greater choice in health care. In particular, rather than being assigned to a primary care provider on a catchment area basis, people were entitled to enroll with the FGP of their choice. FGPs were meant to compete for enrollees, and the payment received by each FGP was meant to be determined by the size of their enrolled population (i.e. capitation). The competitive incentives of this payment system were intended to stimulate responsiveness to consumer demand among the newly formed FGPs. In practice, this choice was only operational in more urban parts of the country in which the conditions for a competitive market existed.

1997 also witnessed the adoption of a new drug policy that included the privatization of pharmacies. This constituted a significant expansion of officially recognized private service delivery in the health sector. The MOH established a Department of Pharmaceutical Provision and Supplies as the main regulatory body, and it issued licenses to about 400 legal entities for the distribution and retail sales of pharmaceuticals. These 400 entities had a network of over 3,000 pharmacies in the country. In addition to this legal and regulated growth in private provision, a black market in pharmaceuticals also emerged during this period. Reportedly, this grew rapidly after mid-1998 when Kazakhstan eliminated VAT and customs duties on pharmaceuticals, whereas the Kyrgyz government maintained these.

Other than pharmacies, the private provider sector was small. There were three small private specialty (ophthalmology, surgery and narcology) hospitals in Bishkek,[13] and, similarly, a small number of private clinics and specialists offering services on a fee-for-service basis in some urban areas. It is not possible to assess precisely the current market share of private sector providers, though the limited available evidence suggests it is small but growing.

*Purchasing of services*

Initially, the MHIF was an independent legal entity under the government but not part of any government agency or ministry. In 1999, however, the MHIF was brought under the jurisdiction of the MOH, though it retained its independent legal status and its ability to receive revenue transfers from the Social Fund. This move brought the MHIF more explicitly under the policy direction of the MOH.

As reflected in Figure 2, the MHIF contributed revenues to providers that also received allocations through the routine government budgetary process. The MHIF administered payments through its "territorial departments" (TDs, one in each oblast, plus one for Bishkek city), although payment was made out of a single national MHIF pool. Unlike the passive relationship between purchasers and providers characteristic of the budgetary system, the MHIF functioned as an active purchaser. More specifically, it exercised its

[13] In the Narcology and Ophthalmology hospitals, services are quite expensive by national standards, and a large proportion of patients come from other countries.

authority to link decisions on the allocation of resources to providers to *information* on population needs and provider performance. The MHIF began paying for inpatient care in 1997 and added primary care in 1998.

**Payment for inpatient care.** Hospital payment was made on a case basis, with reimbursement rates varying according to the category into which each case was grouped. The payment rates per case were defined prospectively, and payment to hospitals was made retrospectively. The system for grouping cases is translated as "Clinical Cost Groups" and goes by the Russian acronym KZGs. This was modeled on the Diagnosis Related Groups (DRGs) from the United States but created from Kyrgyz utilization and cost data. Each KZG had a relative weight (meant to reflect the relative costliness of the cases in the group as compared to other groups) that was used to adjust payments to hospitals based on the data from the inpatient Clinical Information Form (CIF) reported by hospitals to the MHIF for each case. The initial set of groups was quite simple. There were 28 categories, most of which reflected a relative average cost for an entire hospital department or sub-specialty. 56 groups were created by counting cases in each of these 28 groups with and without a stay in the intensive care unit (28 x 2). This set of case categories was used for about 20 months. A first revision of the KZGs containing 140 groups (see Annex 1) was approved by the MOH and put into use in March 1999, based on accumulated cost and clinical data. The basic formula for payment per case is:

payment/case = base rate x KZG weight x economic adjustment factor

Understanding the calculation of the base rate is critical to understanding this payment system. Unlike a system intended to reimburse hospitals for the average *cost* per case in each group, the MHIF system was, due to its limited funding base and strategic decisions, designed to provide *incremental* payments to hospitals already receiving funding from the budget. Therefore, the calculation of the base rate was *budget-driven*, not cost-driven.

Initially, the MHIF had to estimate the size of the total pool of funds to devote to inpatient care in a year. In 1997, all revenues for patient care were devoted to inpatient services. Since 1998, the MHIF decided to maintain the 1997 base rate in nominal terms.[14] The total size of the inpatient payment pool was thus determined by multiplying this base rate by the projected number of inpatient cases. This process made the size of the primary care pool a residual (total MHIF revenues less administrative costs and the inpatient payment pool), and effectively gave higher priority to inpatient care.

The economic adjustment factor was introduced into the formula to account for uncertainty in the projection of expected MHIF revenues and in the volume of inpatient cases. Varying this factor during the year allowed the MHIF to adjust its payment rates in line with actual resources in order to maintain budget neutrality. Importantly, this could be done without altering the conceptual integrity of the payment calculation and without the approval of the MHI Observation Board.[15] Incorporating the actual KZG weights and economic adjustment factors, the average amount of payment per case increased from 1997 to 1999 but then

[14] This remains unchanged.

[15] According to health insurance legislation approved in 1999, all programs of the MHIF must be approved by the MHI Observation Board. The "programs" include the MHIF's planned activities as well as the inpatient base rate and the primary care capitation rate. In practice, the functions of this Board were transferred to the Health Reform and Health Insurance Coordination Commission under the Presidential Administration.

decreased in 2000, as shown in Table 3. The reason is that the economic adjustment factor was greater than 1 in the earlier years, but in 2000 was reduced to 1 (Meimanaliev 2001).

**Table 3. Average annual MHIF payment per hospital case (soms)**

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| Base rate | 113 | 350 | 350 | 350 |
| Annual average payment | 362 | 429 | 475 | 392 |

Source: Meimanaliev (2001).

Another reason why the average payment per case may have increased is if there was an increase in the CMI. However, data from the MHIF rule this out as a possible cause. Table 4 presents data on the CMI for patients in MHIF-contracted hospitals from 1997 through the first quarter of 2001. The data show, surprisingly, no increase in the CMI, but rather a decline. Moreover, the decline applies to both insured and uninsured patients (though the rate of CMI decline for insured persons was slightly less between 1998 and 2001 than for uninsured persons). This suggests that, in general, there was no tendency of hospitals to "game the system" by inflating the severity of diagnostic and treatment information on the clinical information form. There were individual examples of such "upcoding", however, as shown in Box 1 below.

**Table 4. Case Mix Index, hospitals contracted by the MHIF**

| | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|
| **Adults** | | | | | |
| Insured | 1.150 | 1.116 | 1.088 | 1.091 | 1.060 |
| Uninsured | 1.108 | 1.115 | 1.026 | 1.056 | 1.036 |
| All adults | 1.129 | 1.115 | 1.058 | 1.074 | 1.049 |
| **Children** | | | | | |
| Insured | 1.090 | 1.109 | 1.077 | 0.966 | 0.966 |
| Uninsured | 1.097 | 1.082 | 0.983 | 0.988 | 0.959 |
| All children | 1.096 | 1.095 | 1.030 | 0.977 | 0.962 |
| **Total** | | | | | |
| Insured | 1.148 | 1.115 | 1.086 | 1.070 | 1.043 |
| Uninsured | 1.105 | 1.109 | 1.019 | 1.044 | 1.020 |
| All patients | 1.125 | 1.112 | 1.053 | 1.057 | 1.033 |

MHIF data. The CMI calculations are based on the Grouper in use at the time. In 1999, therefore, the calculations combine the CMI derived from the initial set of 56 KZGs and the first revision that generated 140 KZG categories.

The MHIF paid contracted hospitals on a monthly basis for services provided to insured persons through its Territorial Departments (TDs) located in each oblast. The system did not provide additional payments for long-stay outlier cases. Estimated prepayments (advance payments) were allowed to reduce financial uncertainty for the facilities.

The case-based payment system introduced the concept of output-oriented payment to the Kyrgyz health system. In doing so, the MHIF challenged one of the fundamental weaknesses of the former system: low productivity.

**Box 1. *Upcoding* in the early life of the MHIF: an example**

The initial version of KZGs gave higher weights (and payments) to cases with Intensive Care Unit (ICU) treatment; hence, the MHIF deemed it necessary to review these cases to confirm that the ICU was really needed. The experience with two hospitals (a CRH and an enterprise-based hospital) in Jayil rayon of Chui oblast provides a useful lesson. They were both contracted by the MHIF and thus operated under the same payment rules. The enterprise-based hospital understood the case-based formula and "upcoded" cases by putting *yes* in the ICU field in the discharge form in a high percentage of cases. The ICU rate there increased significantly as compared to the CRH, a fact identified by the utilization management experts of the TDMHIF. After revision of the KZG categories in 1999, the direct connection between ICU admission and payment level was eliminated. Following this, the ICU admission rate dropped from 59.9 per 1000 hospital admissions (in 1998) to 50.4 per 1000 (in 1999). This experience suggests that some hospitals did try to *game the system* by coding cases to maximize reimbursement.

**Payment for primary care.** The MHIF paid for primary care on a capitation basis from FGPs. Implementation of this system required that:

- FGPs were formed and functioning;
- the population made a choice among FGPs during an enrollment period;
- the MHIF created a pool of funds for primary care; and
- providers were paid according to the enrollment choices of the citizens.

The speed of FGP formation and population enrollment throughout the country placed a limit on the speed with which the MHIF could enter into contracts with FGPs and pay them on a capitation basis. In addition, the MHIF database was unable initially to support a system for paying each contracted FGP on the basis of the number of insured enrolled persons. By mid-1999, however, the relevant databases in Issyk-Kul, Bishkek and Chui were sufficient to support a capitation payment system by the MHIF to contracted FGPs on the basis of the number of enrolled insured persons with each. Thus, real capitation was implemented in these three regions.[16]

The capitation rate is a parameter set by the MHIF Observation Board. The rate is based on the size of the MHIF pool for primary care and a forecast of the number of insured persons enrolled in FGPs for the year. As described above, the size of the primary care payment pool was a residual following the determination of the size of the hospital payment pool. Given the limited budget of the MHIF and the implicit priority given to contracting for inpatient care, the MHIF was only able to contract with about half of the country's FGPs in 1999 and 2000.

[16] FGP enrollment, capitation payment and MHIF coverage are related but separate activities. Enrollment is not limited to insured persons; everyone is meant to make a choice of FGP and enroll. The initial experiment with FGP enrollment and capitation payment took place in Issyk-Kul oblast in 1998 and involved the use of budget funds as well as MHIF revenues. See discussion in the *Pooling* subsection below

The capitation formula includes risk adjustment factors, such as for age and sex, geographic location[17] and an economic adjustment factor. To date, however, all adjustors (except for the economic adjustment factor which has been modified to achieve budget neutrality) have been set equal to 1. Thus, the payment regulations and formulae were designed to incorporate adjustors, but these were not implemented.

**Utilization management for inpatient care.** The incremental revenues made available to hospitals from the MHIF through its case-based payment system created an incentive for hospitals to increase the volume of hospitalizations 'game' the coding of procedures and diagnoses, and 'skimp' on the quantity (and usually quality) of care provided to each patient. From its inception, therefore, the hospital payment system of the MHIF included utilization management (UM) and quality assurance (QA) processes. Each Territorial Department of the MHIF (TDMHIF) employed two to three "quality experts" responsible for these functions. These experts received a printout summarizing specific information for each case in contracted hospitals, based on the Clinical Information Form (CIF) data that is also used as the information source for the case-based payment system. The selection of records (cases) for evaluation was made based on a certain set of parameters (included in the printout) as well as on a random basis. The parameters that required a detailed quality evaluation/investigation (i.e. chart review) were:

- length of stay (LOS) less than three days;
- LOS greater than 20 days;
- treatment in the Intensive Care Unit (ICU);[18]
- death of patient; and
- surgical complications or two surgical operations within one hospitalization.

Upon their review of the record, the quality expert completed an evaluation report for the case, which included a description of any specific defects or violations that were found. Such defects could result in the withdrawal of partial or full payment[19] per case, according to an MHIF list of specific financial penalties for various types of defects. In 2000 for example, financial sanctions imposed on hospitals for services of poor quality or inappropriate use of resources amounted to 1.42 million soms, about 1.3% of the total amount paid to hospitals. The quality system has begun to move beyond financial punishments to more sophisticated assessments. Hence, for example, the MHIF's annual report for 2000 notes a relationship between the incidence of ulcers in two oblasts and admission rates for this condition. This is further related to the promulgation of new guidelines for managing ulcers at primary care level (MHIF 2001).

[17] The geographic adjustor depends on the climatic peculiarities of regions and the remoteness of a location from the administrative centers, as well as highland areas. Highland areas had different staff norms and salary scales in the Soviet system, and this still applies, as highland coefficients affect salary levels paid through the budget.

[18] In 1997, some hospitals became aware that placing patients into ICU (or at least coding ICU treatment on the CIF) increased case-payment substantially. This means of *upcoding* was a product of the first version of KZGs that included ICU treatment as a reason for grouping cases into higher weighted categories (see Box 1).

[19] This penalty was applied only to the staff incentive payment component of the case payment; therefore, the amount of sanctions for a case could not exceed the total staff component of the payment.

**Utilization management for primary care.** At the primary care level, the MHIF's procedures for UM/QA were far less developed than those for inpatient care and posed significant implementation challenges. In large part, this was due to the much greater number of FGPs and ambulatory visits than the number of hospitals and admissions. Thus, if organized along the same lines as UM/QA for hospital care, it would be a much bigger task. Moreover, clinical data on primary care was only computerized during 1999-2000, and this only in a few pilot sites, since not all FGPs had computers. Another important conceptual issue with the FGP information system is that there is no direct connection between payment and data submission. Unlike hospitals, FGPs were prepaid on a capitation basis according to the number of enrolled persons, and therefore had no real incentive to enter complete information for each encounter with a patient.

As a consequence of these factors, the MHIF used a different process to monitor FGP performance than it did for hospitals. The quality experts in each TD made site visits to every contracted FGP in their region to check a random set of charts. But they were only able to review a small proportion of FGP cases. In Chui oblast, for example, there were 171 FGPs under contract to the MHIF in 1999, and the experts could only make one visit per quarter to each one. If the reviewers found problems during these visits, they could penalize FGPs by reducing their next capitation payment (Gedik *et al*. 1999).[20]

**Information systems.** For purchasing to be considered "active", the purchaser must be able to link its resource allocation decisions to *information* on provider performance. The information system that was developed for provider payment by the MHIF enabled it to become an active purchaser, particularly for the inpatient care payment and UM/QA systems. The data from the inpatient CIF was central to the case-based payment system using KZGs and also supported the UM/QA process by generating information on the parameters used by the experts to determine if a case warranted detailed evaluation. The link between financial and clinical information was very strong for inpatient care but did not really exist for primary care.

The information and payment systems were designed with an eye towards an eventual move to universal coverage. Contracted hospitals were required to report data to the MHIF on all admissions, not just those for insured patients, using the same CIF. The MHIF received and managed the data for all cases but only paid for insured persons. This detail in the reporting system established the technical basis for the future development of a universal system. By using a common form for all patients, it also minimized administrative costs for providers.

The information system needed to support capitation payment to FGPs has taken longer to develop than that used for inpatient care. This has proceeded in line with the process of enrollment with FGPs. A new CIF was also developed for ambulatory care. The information contained on this form is meant to be used for the UM/QA system at primary care level, and later, at the level of ambulatory specialists. Currently, the information system in place does not yet support "active purchasing" at the primary care level.

The thinking underlying the development of the information system was to link financial and clinical information on a single form. The Health Information Center (HIC) of the MOH had input into the development of the CIFs, and ultimately adopted them while

[20] As with the inpatient care review system, penalties were applied only to the staff component of the capitation payment. In FGPs, sanctions could not exceed 30% of the total staff incentive payment.

eliminating several previous forms used to capture clinical information from health care facilities (Gedik *et al*. 1999). Ultimately, the idea is to develop a streamlined and fully integrated information system that will meet multiple needs, including:

- financial systems and provider payment for the purchaser;
- statistical reports on health status for the HIC;
- evidence to inform policy decisions for policy makers;
- for health policy and scientific research; and
- the needs of other users by providing wide access to information.

Currently, the information from these forms is being used primarily by the MHIF for the purpose of provider payment (to hospitals). The HIC has also begun to use the information for its periodic routine reports. For other purposes, notably the needs of policy makers, only limited use has been made. The information system is recognized as a tremendous resource, but one that the system has only begun to tap.

**Pharmaceutical management and procurement policies.** The MHIF used its financial power to improve pharmaceutical management at the system and facility levels by promoting rational drug use and procurement policies. Based on its monitoring of purchasing patterns, the MHIF recommended to health facility managers to use bulk purchasing methods,[21] and to use VEN/ABC analysis[22] for assessment of the volume, content and cost of purchases from all sources. The VEN/ABC analysis was implemented in 1999 with the support of WHO. This, combined with bulk purchasing, appears to have had positive effects in terms of reduced price levels for some drugs and greater price stability. For example, analysis by the MHIF shows a 10-15% reduction in price for a frequently used type of intra-venous solution ("hemodes"). One oblast that used the new purchasing method achieved a 24% price reduction for this IV-solution as compared to another oblast that did not (Ibraimova 2000). Overall, the MHIF estimates that its purchasing methods reduced the unit cost of drugs by about 12 percent.

*Strategic orientation towards providers (contracting)*

Through the budget process, all public sector providers were financed, so there was not a process of selective (or any) contracting between budget-funded purchasers and providers. Conversely, the MHIF imposed limitations on the types of hospitals with which to contract, and therefore the number of hospitals as well. This strategy was not based on an assessment of provider performance. Instead, the MHIF contracting strategy was to contract general hospitals rather than narrow specialty (including maternity) facilities and to ensure that there was sufficient geographic coverage to offer universal physical access. It paid for specialty care (e.g. TB, psychiatric, etc.), but only in general hospitals. This corresponded well with MOH plans (though not reflected in the allocation of budget resources) to rationalize the service delivery infrastructure by merging specialist facilities into general hospitals.

[21] The MHIF provided centralized procurement of drugs on behalf of its contracted hospitals for 36 priority items.

[22] "VEN" is an acronym for **V**ital, **E**ssential, and **N**on-essential, and is used to categorize drugs by their relative contribution to public health. "ABC" analysis is used to analyze drug consumption patterns by dividing items into groups that reflect their relative use and cost, based on the reality that a relatively small number of items account for a majority of drug expenditures (MSH with WHO 1997). These methods were used by the MHIF to establish recommended proportions of the various categories of drugs to have in stock at the facility and system levels. One goal was to reduce purchases of expensive non-essential drugs.

Initially, however, the main criterion for contracting was the premium collection rate in the region. By 1998, it was important politically to achieve full geographic coverage (i.e. to contract hospitals in every region). By the end of 1998, therefore, all oblast hospitals and all CRHs were covered by the MHIF system. Universal population coverage by hospitals contracted by the MHIF has been largely achieved, but FGP coverage is still in a process of expansion (indeed, FGPs do not yet exist in some parts of the country). Growth in the number of facilities contracted by the MHIF is shown in Table 5.[23] The table reflects the gradual, but nonetheless rapid, increase in the number of contracted providers.

**Table 5. Cumulative number of health facilities contracted by the MHIF, by year**

| | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|
| Hospitals | 13 | 60 | 66 | 82 |
| FGPs | | 279 | 422 | 413 |

Source: MHIF data showing total number of contracted providers at the end of each year.

Operationally, the main criterion for contracting was that a facility must be licensed and accredited before it could sign a contract with the MHIF. Hence, the system of licensing and accreditation was a means to regulate the entry of health providers to the market. It also encouraged many facility managers to seek (and sometimes obtain) additional funds for renovation from local public administrations in order to qualify for a license. Although the principle of only contracting with licensed and accredited providers was established, there were exceptions. In particular, some geographically remote CRHs were contracted by the MHIF before they were licensed because of the need to improve access.

If a provider did not meet the conditions of the contract, it was possible for the MHIF to terminate the agreement. Indeed, the MHIF terminated contracts with two private providers in 1999 for reasons of non-compliance. Such extreme action was not implemented with public sector providers. Instead, the contracts provide for the suspension of the personnel component of the hospital payment by the MHIF for up to three months, and one such case involving a public hospital did occur.

*Strategic orientation towards services*

The country's epidemiological situation, as well as stated health policies, demanded a shift in resource allocation away from specialized and inpatient services and towards primary care and public health services (World Bank 2001b). From 1995 to 2001, however, the percents of government health spending allocated to hospitals and ambulatory care did not change, with hospitals absorbing between 70% and 74% of spending and ambulatory care between 9.5% and 10.6% (see Table 6). This suggest that no action was taken to re-prioritize broad spending patterns.

[23] The number of FGPs in 2000 was reduced in connection with the merging of some FGPs in Issyk-Kul and in Chui Oblasts.

**Table 6. Distribution of state budget health spending, by program**

| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|
| Wide profile (child and adult general) hospitals | 53.3% | 52.3% | 48.6% | 49.1% | 47.6% | 51.0% | 50.2% |
| Specialty hospitals | 14.5% | 15.6% | 18.2% | 19.7% | 21.3% | 19.9% | 19.8% |
| Maternity hospitals | 3.8% | 3.1% | 3.0% | 3.4% | 3.2% | 2.5% | 2.0% |
| Rehabilitation hospitals | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% | 0.0% | 0.2% |
| Other hospitals | 0.2% | 0.3% | 0.2% | 0.2% | 0.2% | 0.2% | 0.1% |
| **Hospital sub-total** | **71.7%** | **71.3%** | **70.2%** | **72.5%** | **72.3%** | **73.6%** | **72.3%** |
| General polyclinics & OPD physicians | 7.9% | 8.0% | 7.5% | 7.3% | 8.0% | 7.7% | 7.9% |
| Specialty polyclinics and specialty physicians | 0.2% | 0.2% | 0.2% | 0.2% | 0.3% | 0.1% | 0.0% |
| Dental polyclinics | 1.2% | 1.3% | 1.1% | 1.1% | 1.1% | 1.1% | 1.0% |
| Ambulance stations | 1.0% | 1.1% | 0.9% | 1.0% | 1.1% | 1.0% | 1.1% |
| **Ambulatory care sub-total** | **10.3%** | **10.6%** | **9.7%** | **9.5%** | **10.5%** | **10.0%** | **10.1%** |
| **Public health (SES, etc.)** | **7.1%** | **6.8%** | **6.5%** | **5.7%** | **6.1%** | **5.7%** | **5.6%** |
| **Health research institutes** | **0.7%** | **0.6%** | **0.6%** | **0.7%** | **0.8%** | **0.6%** | **0.7%** |
| **Administration and accounting** | **0.7%** | **0.6%** | **0.7%** | **0.8%** | **0.9%** | **0.7%** | **0.7%** |
| **Central maintenance services** | **0.9%** | **1.3%** | **0.0%** | **0.1%** | **0.1%** | **0.1%** | **0.2%** |
| **Capital investments** | **4.4%** | **5.2%** | **3.5%** | **1.7%** | **1.6%** | **1.6%** | **2.2%** |
| **Education of health professionals** | **1.9%** | **1.5%** | **1.8%** | **1.5%** | **1.4%** | **1.1%** | **1.3%** |
| **Other services not included in other categories**[a] | **2.4%** | **2.1%** | **7.0%** | **7.5%** | **6.3%** | **6.6%** | **7.0%** |
| **Consolidated Budgetary Health Spending** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

Source: Kyrgyz Government Treasury data. Data include non-MOH as well as MOH health spending. Percents exclude special means and transfers to the MHIF. Beginning in 1999, centralized utility costs for Republican level are attributed to national hospitals and research institutes in proportion to their other costs.
[a] Includes Department of Drugs and Supplies (beginning 1997), Republican Immuno-Prophlaxis Center, Medical Information Center, and a variety of other centralized units of the MOH.

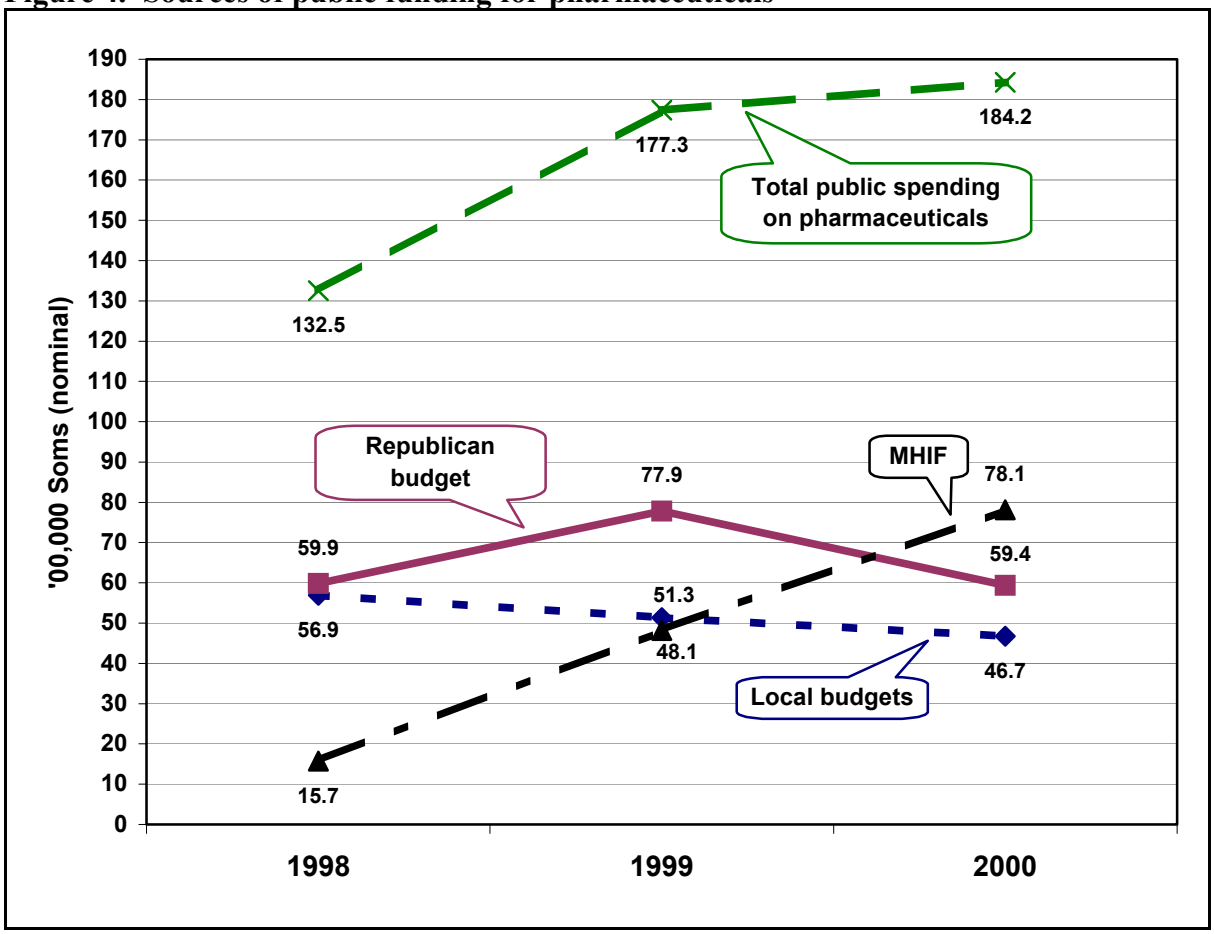
Conversely, the MHIF had a clear strategic orientation towards services. It developed funding priorities based not on defining a narrow package of services to cover fully for its beneficiaries, but rather on the choice of specific inputs to fund. Given its low level of funding, the MHIF management decided (in conjunction with the MOH) to use its resources to provide incremental funding to selected health facilities that were also financed through the budget. MHIF money was directed at improving the pharmaceutical situation in hospitals, supporting the provision of urgent services at primary level, and providing bonus payments to staff. This was a strategic decision for political as well as technical reasons. The management of the MHIF needed to ensure that its limited resources had an effect that was perceived by providers as well as the population.

At the hospital level, this strategy was made operational by restricting the use of MHIF payments to specific inputs. In particular, 70% of revenues had to be used for drugs (68% for items on the essential drug list), and 30% was used for supplemental payments to staff (salaries and Social Fund contributions). FGPs could use their MHIF revenues as follows: 35% for staff, 10% for drugs, and 55% for equipment and supplies. The FGP drug revenues were specifically for urgently needed ("emergency") drugs. As a consequence of this strategy, the resources provided by the MHIF did have a noticeable effect. As shown in Figure 4, the MHIF accounted for over 40% of public spending on drugs by 2000, up from only 12% in 1998.[24] Hence, by targeting its resources to drugs and personnel, the MHIF

[24] However, it is possible that there may have been an offsetting negative effect in terms of reductions in drug spending from Republican and local budget sources in response to the increase from the MHIF.

payment system stimulated increased efforts by health workers and enabled substantial improvements in the quality and quantity of output (as well as diminishing the need for out-of-pocket payments for drugs). In other words, with budget monies largely tied up in the fixed costs of health facilities, we hypothesize that MHIF payments had a large marginal productivity impact, much beyond that suggested by a simple comparison of the total levels of budget vs. MHIF funding. As a result of this, the incentives from even the small level of MHIF funding had important effects at the provider (mainly hospital) level.

**Figure 4. Sources of public funding for pharmaceuticals**




Source: MHIF data.

*Pooling of funds*

It is useful to distinguish two aspects of pooling. The first is an administrative or accounting aspect of the flow of funds: in which organizational units are prepaid health care revenues accumulated before they are allocated to providers? The second has to do with which organizations or individuals bear the financial risk of health care costs.

**Pooling structure.** The pooling structure of the health care system during this period is summarized in Table 7. The table shows the large number of pools (61) that existed within the budget-funded health system in addition to the single national MHIF pool.[25] The main

[25] City and rayon pools are shown together because these do not overlap geographically with each other. Private health insurance, though legal, was (and remains) almost non-existent, and thus there was only a negligible amount of pooling of funds in the private sector.

overlaps were between each oblast pool and the city/rayons within it, as well as between the pools managed by the Bishkek CHD and the Republican MOH.

**Table 7. Health care revenue pools, by oblast, 2000**

| "Owner"/level of pool<br>Region | Rayon + City | Oblast | Republican | MHIF | Total |
|---|---|---|---|---|---|
| Bishkek city | 1 | | [a] | | 1 |
| Chui oblast | 9 | 1 | | | 10 |
| Issyk-Kul oblast | 7 | 1 | | | 8 |
| Naryn oblast | 6 | 1 | | | 7 |
| Osh oblast | 8 | 1 | | | 9 |
| Jalal-Abad oblast | 13 | 1 | | | 14 |
| Batken oblast | 4 | 1 | | | 5 |
| Talas oblast | 5 | 1 | | | 6 |
| National | | | 1[a] | 1 | 2 |
| TOTAL | 53 | 7 | 1 | 1 | 62 |

[a] The Republican pool is meant to be national in scope, but it mainly serves the local (Bishkek and nearby Chui) population. The table does not reflect the multiple pools that exist within the Republican level (mostly but not exclusively in Bishkek) that arise from 5 non-MOH ministries that allocate budgets to their own hospitals for the exclusive use of particular population segments (e.g. military, police, cabinet ministers, etc.). This adds to the fragmentation of pooling in the country.

Within these geographically based pools, funds were also divided into specific budgets for each health facility. Within any budget year, there was little scope for moving funds across facilities, even facilities of the same type. From an accounting standpoint, therefore, the pools were fragmented to the level of the health facility.[26]

Because of concerns about possible incongruity between the MHIF pooling and payment systems and those of the "budget-funded system", efforts were made to coordinate policies and systems between the MOH and MHIF at oblast level. Under this *joint systems* approach, several administrative systems and functions were meant to be performed together (e.g. using a common approach and information systems for accounting and quality management) by the OHDs and the TDMHIFs. This approach was quite successful in terms of policy coordination between the MOH and MHIF.[27] While the MHIF represented an additional pool, its role as a source of incremental funding to facilities that also received budget allocations, and its lack of vertical integration with providers, meant that it did not add to the problematic aspects of fragmentation that were associated with the pools belonging to the various levels of government.

Though not reflected in Figure 2 or Table 7, there was an attempt to create a single pool of budget funds for primary care on a pilot basis in Issyk-Kul oblast. In 1998, amounts for primary care from the oblast health budget as well as from all of the rayon budgets were accumulated at the oblast level. FGPs were paid from this oblast pool. In 1999, however, the oblast government reversed this (ostensibly because of concerns about a conflict with the decentralization law), and rayon level pools were reinstated. During 1999, however, funds for primary care were pooled at the city level in Bishkek, and FGPs were meant to be paid

[26] And beyond this, funds could not be moved across line items ("chapters") within one facility.

[27] This was enhanced with the government decision to place the MHIF under the authority of the MOH in 1999.

on a capitation basis from this pool. Capitation payment from these funds was not introduced, however. Other attempts to accumulate rayon health care funds at the oblast level (for hospitals in Chui oblast, for example) during this period were not successful. Hence, while the MOH recognized the problems of the fragmented pooling structure and attempted to reform this, these attempts did not succeed. Population coverage remained duplicated between the oblast and city/rayon pools, and between the Republican and Bishkek City pools.

**Risk-bearing by purchasers, providers and the population.** Fragmentation of pooling was a contributing factor to the very limited risk protection offered by the Kyrgyz health system to the population, because the scope for redistribution (cross-subsidy from the healthy to the sick) was limited within the geographic boundaries of the pool, and, in fact, to the catchment areas of the health facilities for which budgets were destined. This fragmentation of pooling reduced substantially the capacity of the health care system to bear risk. Conversely, the MHIF established national pools of funds for primary and inpatient care on behalf of all insured persons, and then allocated resources according to the MHIF's provider payment methods. Hence, for a given amount of money, the scope for risk protection engendered by this arrangement was far greater than that available from budget funds.

In theory, the question of where financial risk is borne in the health care system also relates closely to the provider payment methods used. The incentives of the main budget method of paying providers should have meant that the providers were at financial risk for the successful management of those resources. The falling levels of real budget allocations left providers dependent on contributions from patients, and this resulted in a transfer of financial risk (or risk of getting effective or complete treatment) from budgeted providers to patients.

Similarly to budgets, the capitation payment methods used by the MHIF should have transferred some financial risk to primary care providers. However, primary care providers could easily transfer financial risk to other providers by referring patients, since there were no effective sanctions or financial incentives to limit undue referrals, apart from the possibility that a patient may switch FGPs in a subsequent enrollment decision. In addition, some measure of the capitation/budget related risk that should have been borne by providers was also probably shifted to patients in the form of informal payments. Survey evidence[28] reported in Table 8 suggests, however, that that this was less likely to occur when people sought care from the FGP with which they were enrolled than with care from other outpatient care providers, and when it did, the amount paid was less. The cause of this is uncertain, but the need for FGPs to attract enrollees, that is, the right of the population to choose their FGP, may have reduced the extent to which these providers demanded payment for their services.

[28] The survey was implemented in February 2001 but is relevant to this phase of the reforms because implementation of the next phase of reform (described in the next section) began in March 2001.

**Table 8. Percent reporting payments for consultation and average amounts paid, by type of facility visited**

| *Type of facility visited* | Percent reporting paying for consultation | Mean amount paid (soms) | Median amount paid (soms) |
|---|---|---|---|
| Patient's home | 19 | 87 | 50 |
| **FGP (enrolled)** | **10** | **52** | **20** |
| FGP (not enrolled) | 42 | 227 | 140 |
| Polyclinic without FGP | 28 | 144 | 35 |
| SVA | 19 | 24 | 17 |
| FAP | 18 | 21 | 10 |
| Hospital | 32 | 52 | 20 |
| Private office | 73 | 448 | 140 |
| Maternity home | 12 | 52 | 10 |
| Other | 49 | 131 | 50 |
| All facility types | 22 | 111 | 30 |

Source: Falkingham 2001.

Because the MHIF made explicit purchasing decisions from its pool of funds and was accountable to its beneficiaries, it bore some degree of financial risk for the management of its resources. Because it was only an incremental source of funding to providers rather than a "true" insurance fund (i.e. "fully" financially responsible for the health care costs of a defined benefit package for its covered population), however, its risk was limited. The case-based payment system for inpatient care used by the MHIF shifted some financial risk to providers for the management of an individual case. This method also created a financial risk for the MHIF because of the incentive for providers to increase the number of admissions. For this reason, one of the main goals of the MHIF's UM process was to check for (and not reimburse) unnecessary admissions. It is likely that this payment method did transfer some financial risk to providers, but the incremental nature of MHIF payments method suggests that, by itself, it did not have a very strong effect on cost control.

It might be expected, however, that insured patients bore less financial risk than did uninsured patients, implying at least some risk transfer to the provider for the provision of the drugs.[29] This is supported by evidence from a survey of patients discharged from Kyrgyz general hospitals in February 2001.[30] As shown in Table 9, insured patients had lower mean and median out-of-pocket expenditures than uninsured patients. This was true despite the fact that, on average, insured patients suffered from more severe and costly (to treat) conditions than uninsured patients. This difference in severity is to be expected given the presence of all pensioners (men over 60, women over 55) amongst the insured. Despite the protection offered by MHIF coverage, however, the survey also revealed that even insured patients had to make informal payments and thus also bore a degree of financial risk.

[29] This is because the initial MHIF benefit package was defined as free inpatient drugs.

[30] This was just prior to the implementation of the latest phase of health financing reforms and is thus relevant to the first reform phase.

**Table 9. Patient expenditures, case mix, and insurance status**

| Patient insurance status | Expenditure | | Case Mix Index | |
|---|---|---|---|---|
| | Mean | Median | Mean | Median |
| Insured | 1,325 | 800 | 0.997 | 0.942 |
| Uninsured | 1,456 | 1,000 | 0.883 | 0.868 |
| Total | 1,388 | 890 | 0.942 | 0.892 |

The case mix index (CMI) was calculated as the average (mean and median) of the case mix weights (KZGs) for each category of patients. The survey included 2917 patients from hospitals throughout the country, including 1510 insured and 1407 uninsured patients (Kutzin 2001b).

Overall, it appears that the incentives inherent in the payment methods used were, particularly for budget funding, undermined by the need of patients to contribute informally to the costs of their care. As a result, financial risk was transferred to patients. If a patient could not pay, this financial risk was transformed into a "health risk", because it meant that they could not receive full treatment. For insured persons, these effects were mitigated to some extent.

*Benefit package and cost sharing*

In 2000, the government approved an MOH benefit package ("Program of State Guarantees"). This package established several important principles that would be implemented in the next phase of reform. Primary care was to be free of charge so long as people sought care from the FGP with which they were enrolled. Co-payments for referred inpatients would be established, with self-referred persons subject to a higher charge. Hence, the package established coordination of policies on benefits, enrollment with FGPs, referral, and explicit cost sharing. Certain "privileged" categories of patients (e.g. World War II veterans, etc.) were to be entitled to complete exemption from cost sharing, as were persons suffering from certain diseases (e.g. tuberculosis, cancer, AIDS). The MHIF was given the right to establish additional benefits (i.e. reduced co-payments) for insured persons with its available resources. Referred specialist outpatient care was to be subject to 50% coinsurance (with "full cost" to be paid by self-referred persons). A small "negative list" was also defined for ambulatory services excluded from the benefit package (i.e. subject to "full" payment).

*Resource allocation and provider payment*

Unlike the earlier period, changes introduced in 1997 separated some aspects of the resource allocation process. Pooling and purchasing remain integrated in both the budgetary and MHIF "systems, and so the main issues in resource allocation have to do with: (1) allocation from sources/collection to intermediaries; (2) provider payment; and (3) provider autonomy over the use of financial resources.

**Allocation from sources to intermediaries.** An important change was introduced in 1997 to "guarantee" payments to staff working in the education and health sectors. By this system of "categorical grants" (CGs), funding for salaries and Social Fund contributions for the staff of these two sectors was centralized at the Republican level and paid directly to the oblast finance departments on their behalf. Unlike the infrastructure-based norms governing the rest of the budget allocations, the size of the CG for health made to each oblast was intended to be calculated on a weighted per capita basis, with the weights determined by the age structure of each oblast's population and by the relative proportion of each oblast's

population living in urban, rural, and high-altitude settings (Tacis 1999). Moreover, after 1997, CGs were meant to be used for "priority" activities in health and education rather than just personnel-related costs. While this was a progressive idea, it was never implemented, and the CGs remained a vehicle for ensuring that predetermined personnel costs (wages and social fund contributions) are met (World Bank 2002). In most oblasts, a significant amount of revenues became subject to this allocation process. In 2000, for example, the share of categorical grants in total oblast health spending ranged from 39% in Issyk-Kul to 68% in Naryn. However, very small percentages of local budget health spending in Bishkek City and Chui oblast came from this source (5% and 14%, respectively, in 2000). Overall, categorical grants represented about 43% of local budget spending and 29% of total budget health spending between 1997 and 2000 (Kyrgyz government treasury data).

**Overall environment of provider payment.** Payments from pooled funds were made by one or two organizations to the same providers. For providers that were contracted to the MHIF, payment was made by the MHIF and also by the budget-funded purchasing agency. The payment methods of the MOH and MHIF, and their associated incentives, were not coordinated explicitly. However, their overall policies were coordinated, as reflected in the decision by the MHIF to contract only with general hospitals. For providers not contracted by the MHIF, budget-funded purchasers were the sole organizational unit allocating budgets. In reality, the incentive environment was more complex than this structure would imply because of the presence of informal payments to providers by patients.

While the type of payment methods to the main types of health care providers can be summarized (Table 10), it is much more difficult to characterize the overall incentive environment. This difficulty results from the lack of knowledge of the relative contribution of private payments to the total income of health facilities.

**Table 10. Summary of payment methods by purchaser and type of service provider**

| Service / Purchaser | Primary care | Inpatient care | Ambulatory specialist care |
|---|---|---|---|
| MOH | strict line-item budget | strict line-item budget | strict line-item budget |
| **MHIF (incremental)** | choice & catchment-based capitation | case-based payment | |
| **out-of-pocket** | fee-for-service | fee-for-service | fee-for-service |

Despite this knowledge gap, some reasonable hypotheses and conclusions can be formed on the nature of the incentives facing providers in this mixed payment environment. First, while the incremental funding allocated by the MHIF was small relative to budget allocations, it appeared to stimulate significant behavioral responses at the provider level. A possible reason for this is that MHIF funding was not as small as it would appear when compared to budget funding of only the items it funded (drugs and salary supplements at the hospital level, for example), as suggested by Figure 4. Moreover, it is conceivable that, by targeting its resources to drugs and personnel, the MHIF payment system stimulated increased efforts by health workers and enabled substantial improvements in the quality and quantity of output. In other words, with budget monies largely tied up in the fixed costs of health facilities, we hypothesize that MHIF payments had a large marginal productivity impact, much beyond that suggested by a simple comparison of the levels of budget vs. MHIF funding. As a result of this, the incentives from even the seemingly small level of MHIF funding had important effects at the provider (mainly hospital) level.

Second, the MOH/MHIF had lost a degree of control over the management of incentives to all providers due to the presence of informal payments. While the incentives of capitation and line item budgets were meant to limit overall costs, and that of case-based payment was meant to limit cost per case, informal payments created a fee-for-service incentive to increase the volume of all services. This created problems for management of the system because of the same marginal/average effect presumed to exist with MHIF payments. The net effect of this is impossible to determine. Table 11 is an attempt to summarize the incentive environment at provider level. Clearly, however, this is just a hypothesis, and more detailed analysis is needed to support or reject this.

**Table 11. Summary of financial incentive environment from provider payment system**

| Service / Purchaser | Primary care | Inpatient care | Ambulatory specialist care |
|---|---|---|---|
| **MOH** | minimize costs; minimize care and refer | minimize input use but extend LOS to justify expanded capacity and higher budgets | minimize input use, refer to other specialists |
| **MHIF (incremental)** | minimize costs; minimize care and refer, somewhat mitigated where payment relates to consumer choice | minimize cost per case but maximize cases, both somewhat mitigated by UM/QA mechanisms | |
| **Out-of-pocket** | maximize services up to perceived ability of patients to pay | maximize cases and services per case (for individual physicians) | maximize cases and services per case |
| **Combined** | difficult to assess; fee-for-service incentive to maximize quantity somewhat constrained by choice of FGP under capitation scheme; quantity increasing incentives also limited by low clinical capacity in primary care | difficult to assess; incentives of MHIF payment system important despite level of funding; out-of-pocket also very important in terms of access to all treatment options, and incentive to individual physicians may counter-balance incentives of case-based payment in terms of services per case | out-of-pocket payments probably dominate, suggesting strong incentive for high volume of services and limited service options for poorer persons |

**Provider autonomy over internal resource allocation.** Historically, public sector provider units had little freedom to make managerial decisions because they had little control over their resources. The introduction of new payment methods from a new source of funds was accompanied by the extension of greater provider autonomy over the use of these revenues. Because MHIF revenues were "off-budget", they were not subject to government's budgetary and accounting rules with respect to the definition of line items. This did not mean that providers were free to use this new money in any way they chose. MHIF payments to hospitals and FGPs were accompanied by the extension of *limited autonomy* to these providers over the use of their MHIF revenues. Importantly, the locus of decision-making with regard to how much autonomy to grant was at the level of the MHIF (since 1999, part of the MOH).

In fact, this autonomy was a function of the *source* of funds, not the payment methods used by the MHIF. Unlike budget funds, the MHIF was authorized to decide how much autonomy to decentralize to providers over the use of its revenues. By way of contrast, similar decisions over the use of budget funds were made by the local finance authorities, and for Republican level facilities, by the Ministry of Finance. Any unspent funds from these sources had to be returned.

*Issues, progress, remaining problems*

Significant reforms were introduced to all health care system functions in the 1997-2000 period. Most, but not all, of these reforms were associated with the introduction of the MHIF. The benefits of these changes are difficult to quantify, but the main result was that the MHIF, in close coordination with the MOH, created the appropriate institutional preconditions for sector restructuring. In part, it did so through the information and payment systems that were developed and upgraded since 1997. It also did so through the manner in which the MHIF methods were used to complement the MOH's strategy for restructuring and quality improvement. The "joint systems" approach was successful in ensuring that the overall management and direction of the health system ("stewardship") did not become fragmented with the arrival of the MHIF. The first few years of the MHIF's operations were the first steps of organizational capacity building. This experience convinced the leadership of the MOH that the MHIF was prepared to shift from managing a relatively small amount of money used for incremental funding to managing all of the pooled funds for health care.

Despite the progress that was made, several problems were not addressed during the first phase of reforms. Most importantly, the problems of fragmentation and duplication in pooling and the perverse incentives of the budget allocation system remained. One consequence of this was that the extensive physical infrastructure of the delivery system was not reduced. By 1998, Kyrgyzstan had more hospitals per capita than any other country in Central Asia and more than all but two NIS countries (WHO/EURO 2000). This failure to reduce the size of the infrastructure meant that the very limited resources provided by the budget were tied up in fixed costs. In turn, this contributed to the growth of informal payments for the variable inputs needed for hospital care. Moreover, the presence of such payments meant that policymakers in the MOH had lost a degree of control over the management of incentives to providers. Addressing these problems demanded a more radical revision to arrangements for pooling, purchasing and benefits.

## 2001 and beyond: the Kyrgyz Single Payer system

*Overview: organization of functions*

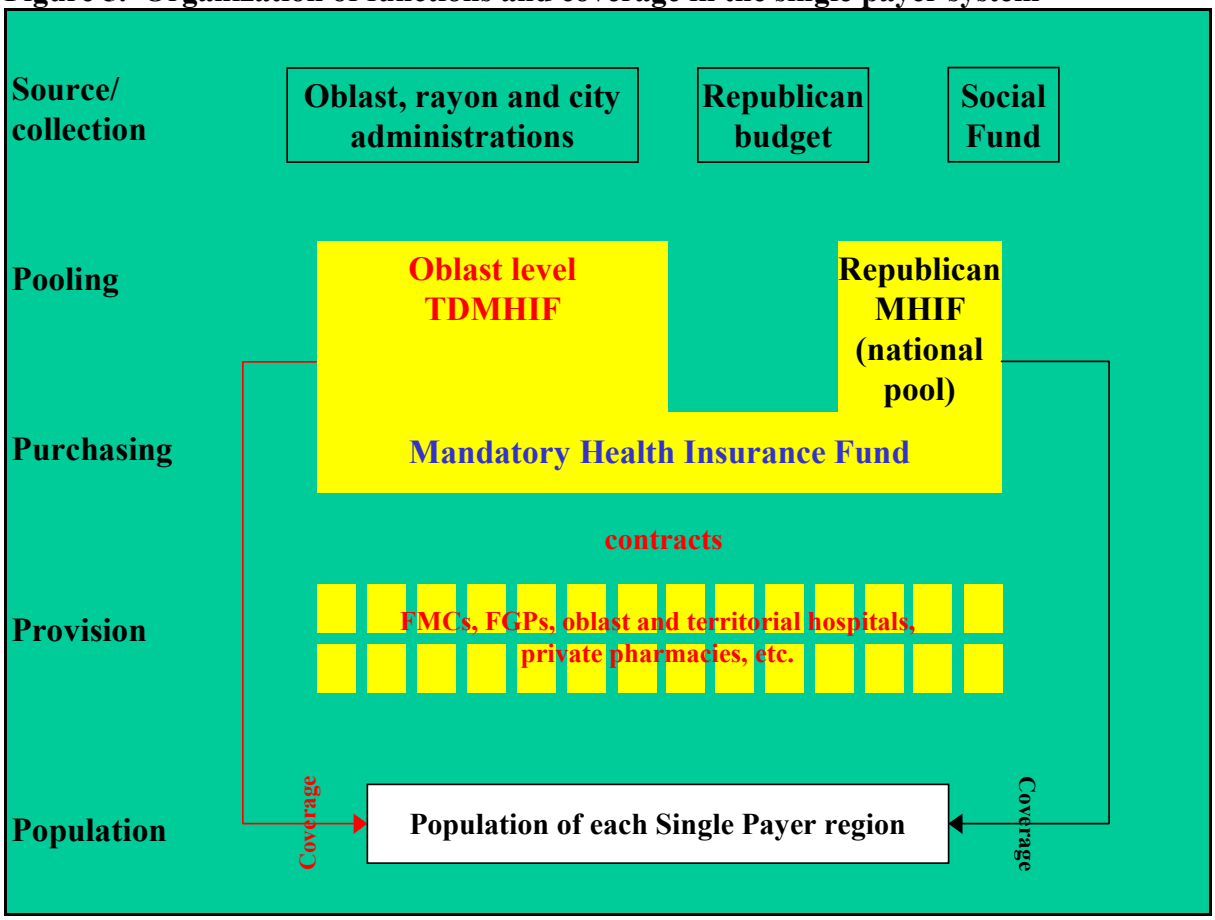
A number of policy reforms were approved in 2000 that changed the organization of functions and financial flows in the health care system. The government eliminated the Oblast Health Departments (OHDs) in 2000 and, prompted by the MOH, passed a decree to shift responsibility for pooling and allocating oblast-level budget funds for health to the TDMHIFs. This set the stage for the "Single Payer" reform that was introduced in two regions (Chui and Issyk-Kul oblasts) in 2001 and extended to two more (Naryn and Talas oblasts) in 2002. The aim of the MOH is to have this system in place nationwide by 2003.

The new system involves a radical change in pooling arrangements for budget funds, complemented by a unification of provider payment methods and measures to increase transparency of financial contributions by patients. The financing reform did not involve

any significant change in the sources of funds or collection agencies for the health system. The main organizational features of this model, summarized in Figure 5, are:

- pooling of all local budget (oblast, rayons and cities) funds in the oblast TDMHIF;
- unified system of provider payment using the methods of the MHIF (i.e. case-based payment to hospitals, capitation payment to FGPs) by the TDMHIF from these budget funds, complemented by additional payments on behalf of insured persons from the national MHIF pool; and
- purchaser-provider split, ending vertically integrated financial relations between public sector purchasers and providers, coupled with the extension of greater autonomy to providers including a reduction in line item constraints on the use of budget funds.

**Figure 5. Organization of functions and coverage in the single payer system**




Note: FMC = Family Medicine Center (more comprehensive, new setting for primary care and some diagnostic services).

The MHIF is the single purchaser in the reformed system, applying its payment methods for inpatient (case-based payment) and primary care (capitation) to the budget funds in the oblast pool managed by its TD and the national pool it manages directly.[31] It makes hospital and primary care payments on behalf of each patient/enrollee from the oblast pool, and for insured persons it makes additional payments from the national pool. For inpatient care in Chui and Issyk-Kul in 2001, for example, hospitals were paid a base rate of 750 soms

[31] Some providers, such as tuberculosis hospitals, were provided a line-item budget by the TDMHIF.

(subject to adjustment for KZG weight and other aspects of the payment formula) for each patient from the budget-funded pool. If the patient was insured, the hospital received an additional payment from the national MHIF pool with a base rate of 350 soms (subject to exactly the same adjustments). The same clinical information form data are used as the basis for both payments, so there is no additional administrative cost (at hospital or purchaser level) associated with payments coming from two pools. With the payment by the MHIF (national) still complementary to that paid from budget sources, there is no fragmentation of the population and the system into separate pools on the basis of their insurance status.

Reforms to the organization of service provision were meant to encourage consolidation of capacity. The Central Rayon Hospitals were converted to "Territorial Hospitals" (THs). This change of name conveyed the break in direct administration of the hospital by the level of government that "owned" it. It also signaled consolidation of inpatient capacity within rayons, as rural hospitals (SUBs) and other rayon hospitals were shut down, converted to primary care facilities, or transformed into "structural sub-divisions" of the TH. This followed the approval of a government decree in 2000 to combine oblast general and some specialty hospitals into a single managerial, budgetary and legal entity called the Oblast Merged Hospital (OMH). In organizational terms, this replaced several specialty hospitals with a few general hospitals. In combination with the new financing incentives coming from the Single Payer, these changes at provider level created the possibility for hospital managers to make their own, internal rationalization decisions to reduce fixed costs.

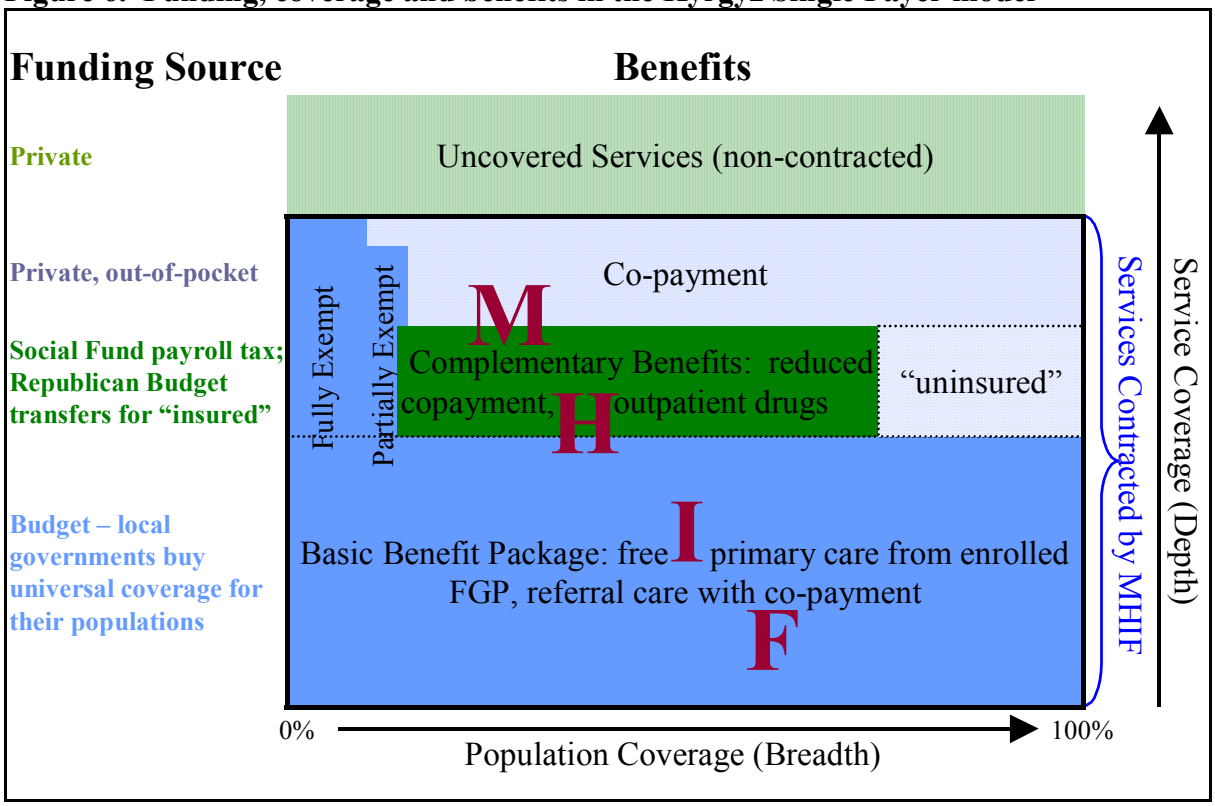
Part of the agreement under which local authorities gave their budget funds for health to the TDMHIF is that the MHIF assumed responsibility for the debts of the health facilities. These debts, mainly large amounts of unpaid bills for electricity, heat, and water, were formerly the responsibility of the local governments that "owned" the health facilities. While this was a large financial burden for the MHIF, it was also a useful policy lever to promote downsizing of the service delivery infrastructure within the oblast. The TDMHIF in Chui oblast, for example, began negotiations with providers and local authorities to develop concrete plans to bring down costs, including payment of debt, to the level of projected revenues (based on the new payment systems).

An integral part of the reform is the specification of benefits, cost sharing, and coverage for the population. Figure 6 shows how the depth (extent of services funded from pooled revenues) and breadth (extent of the population with effective access) of coverage[32] links to funding sources under the Single Payer. In effect, the Single Payer combines the universal entitlement to a basic package of benefits funded from general revenues (as in the Beveridge model) with a contribution-related entitlement characteristic of Bismarckian social health insurance. The basic benefit package for the entire population of the oblast is funded through the contributions of local governments to the TDMHIF pool. This package consists of free primary care from the contracted FGP with which the person is enrolled, and inpatient care on referral, subject to a co-payment. The basic benefit package also provides for free or nearly free referral care for persons in defined exempt categories of the population (based on individual or disease-specific characteristics, such as World War II veterans, low income pensioners, cancer and TB patients, etc.). Exemptions are funded through the establishment of higher payments to hospitals (i.e. a higher base rate) from the

[32] See Kutzin (2000, 1999a and 1999b) for a discussion of these concepts of coverage.

oblast pool.[33] For insured persons, contributions made on their behalf to the national MHIF pool of funds entitle them to a reduced co-payments for inpatient care and outpatient specialist services, and also provide access to an outpatient drug benefit package (see below). Hence, being "insured" in the Kyrgyz context is akin to having a voluntary "Medigap" policy in the US or a "*mutuelle*" in France: it is complementary coverage that entitles beneficiaries to reduced co-payments.[34]

**Figure 6. Funding, coverage and benefits in the Kyrgyz Single Payer model**




The Kyrgyz Single Payer system incorporates a clear specification of responsibility for implementing different functions in the health system. The government's tax collection agencies are responsible for mobilizing resources from general taxes and social insurance contributions. Local government authorities and the Ministry of Finance are responsible for determining the level of budget funds to provide for the health sector. The MOH is responsible for setting health policy, broad resource allocation decisions (e.g. determining the relative size of pools for different services, setting benefits and Co-payments), and monitoring system performance. The MHIF and its TDs are responsible for pooling funds, purchasing services and assuring their quality. Increasingly independent providers are responsible for service provision and the internal management of their organizations. The duplication of functional responsibility for pooling, purchasing and population coverage is eliminated. While the MHIF is the single purchaser for health care, it allocates resources to providers from two pools: the accumulated budget funds managed by the TDMHIF that provide for universal coverage to the basic benefit package, and the MHIF's national pool of funds from which additional payments are made on behalf of insured persons.

[33] Hence, the provision of care to exempt persons is not an "unfunded mandate" placed on hospitals.

[34] As described by Mossialos and Thompson (2002, p.130), "complementary voluntary health insurance provides full or partial cover for services that are excluded or not fully covered" by the main system.

In addition to these core elements of the Single Payer, the other major reform in purchasing introduced was an outpatient drug benefit for insured persons. In August 2000, the MHIF piloted its "Additional Drug Package" (ADP) with FGPs in two polyclinics in Bishkek and one in Chui. Following this, the MOH decided to begin a national rollout during 2001. The ADP is notable because it embodies strategic purchasing methods. It also led the MHIF to give greater priority in resource allocation to primary care.

*Strategic purchasing under the Additional Drug Package*

During 2001, the ADP was extended gradually throughout Chui, Issyk-Kul and Bishkek, and the MOH intends to extend it nationwide by the end of 2003. The scheme has the following features:

- the *funding source* is the capitation payment to FGPs by the MHIF;[35]
- two types of *contracts* exist, between (1) MHIF and FGPs and (2) MHIF and pharmacies;
- *covered items* include a limited list of 45 generic names that include 154 trade names, based on the essential drugs list;
- *contracting (eligibility) criteria* for pharmacies include availability of all drugs on the list, and availability of a computer to register sales of pharmaceuticals for the program;
- the *payment method* is based on the existing wholesale prices for pharmaceuticals on the list and standard daily dosages, leading to a cost calculation of the "basis price", with the average amount of reimbursement meant to be equal to 50% of the basis price, and with the difference between the reimbursement amount for any drug and the retail price paid by the patient;[36] and
- the *timing of payment* to contracted pharmacies is within one month after the pharmacy submits a report according its contract with the Fund.

The ADP embodies the *strategic purchasing* strategy of the MHIF. It requires prescribing by generic name and promotes the use of essential drugs by restricting reimbursement to a limited number of such items. The package is also intended to raise the prestige of FGPs in the eyes of the public by enabling them to meet the needs of their patients more effectively. It limits tendencies towards excess prescribing by giving each FGP a capitation limit for drugs, with the MHIF providing feedback to the FGPs on the total cost of the drugs they prescribe to help them to better manage their prescriptions. Finally, the payment method (a variant of the "reference price" system used in Germany and the Netherlands) gives an incentive to patients to "shop around" to find the cheapest price, since they are responsible for paying the extra cost if the price of the drug is higher than that used for the calculation of the basis price. Through this approach, competition between pharmacies is intended to exert downward pressure on retail prices. Concurrently, this system gives freedom of choice to patients to select a brand name item should they wish to pay for it.

[35] Because the package is funded out of the FGP capitation payment, it constitutes a type of "fundholding" by the FGPs. However, the MHIF retains a portion of the capitation payment for this purpose and administers each FGP's ADP money on their behalf.

[36] In fact, the reimbursement rate has varied by drug item, ranging from a low of about 35% to 100%, with a mean of about 60%.

One particularly strategic aspect of the ADP has been the selection of covered drugs. Based on information derived from the MHIF's inpatient database as well as clinical knowledge, the list includes drugs for four conditions that were leading causes of hospitalization: bronchial asthma, hypertension, iron deficiency anemia, and stomach/duodenal ulcer.[37] Each of these can be managed effectively on an ambulatory basis with good clinical practice at primary level, including the provision of appropriate medications. Their inclusion on the list was an explicit decision aimed at improving quality while lowering cost. During 2001, moreover, new clinical guidelines were developed for these conditions, and the MHIF is monitoring compliance with these using information from a new prescribing database that supports the ADP. Data from the pilot sites reveal some initial success with this strategy.

Table 12 shows the percentage of outpatient visits for specific conditions covered by the ADP for which patients were referred to inpatient care. In nearly all cases, the percentage decreased between 2000 and 2001. Remembering that the ADP was first implemented in August 2000, the data suggest its success in improving outpatient management of these conditions. This further implies a considerable savings on the costs of hospitalization (less the cost of the drugs covered by the ADP), as well as improved health for patients whose conditions did not deteriorate to the extent that hospitalization was required.

**Table 12. Percent of cases referred for hospitalization in ADP pilot sites**

| | Hypertension | | Stomach/duodenal ulcer | | Bronchial asthma | | Anemia | |
|---|---|---|---|---|---|---|---|---|
| Polyclinic | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 |
| Bishkek #1 | 10.8% | 2.9% | 9.6% | 7.8% | 22.0% | 17.0% | 11.3% | 1.8% |
| Bishkek #6 | 1.0% | 0.4% | 2.4% | 2.6% | 8.0% | 2.8% | 1.0% | 0.4% |
| Alamudin | 17.0% | 15.0% | 23.6% | 9.6% | 40.6% | 25.6% | 17.2% | 4.3% |

Source: MOH data (1st 9 months of each year).

Data on the share of drug costs that are reimbursed by the ADP suggests that the scheme has worked to control drug prices, thereby improving financial access. In July 2001, reimbursements were about 41% - 63% of the total retail cost of covered drugs across the range of contracted pharmacies (MHIF data). The benefits of this system were greatest in Bishkek. Data from the pilot sites reveal that the prices facing patients were higher in Chui than in Bishkek, and the corresponding reimbursement percentage was less. Even though the Chui pilot site was in a rayon adjacent to Bishkek, the private pharmacy market was essentially a monopoly, whereas the Bishkek market was competitive. This lack of competition, as well as higher supply costs, exists to a greater extent in most of Chui and Issyk-Kul than in the initial pilot sites. This gives some cause for concern regarding the extent to which rural populations will benefit from the ADP. Since the package is funded out of the FGP capitation payment, one possible response to this is to build a geographic adjustor into the payment formula to increase the per capita drug budget for FGPs located in rural areas. It is not clear that this would be sufficient, however, and policy makers are also considering the provision of incentives for private pharmacies to locate in these areas. Moreover, in markets in which a private pharmacy will have a monopoly, consideration may need to be given to some form of price regulation.

[37] Because of the prevalence in Kyrgyzstan of diseases related to iodine deficiency, the MHIF is planning to supplement the list with potassium iodide. This is another example of its strategic orientation towards services.

The positive experience with the ADP, and the desire to extend it rapidly, led the MHIF to reverse its "residual" approach to funding primary care that had left it unable to contract with about half of the FGPs. In 2002, however, the MHIF first established contracts with all FGPs in the Single Payer regions (plus those from other regions that had already been contracted in previous years) and ensured their capitation payments. This left the inpatient pool as a residual. The desire to maintain the same base rate for inpatient care with a constrained inpatient pool led to the further decision to impose facility-specific volume and budget caps on contracted hospitals.

*Effects of the Single Payer: restructuring*

The "rationalization" of the health care delivery system infrastructure was intended to be the first step of the Manas reform plan approved by the government in 1996, but this was never implemented in any significant way. Not only were there political obstacles, but the pooling and purchasing arrangements in the health system created economic disincentives to restructuring. The Single Payer eliminated the economic obstacles. The change in payment methods from budget funds, combined with the restructuring of pooling arrangements and the ability to reinvest savings, implied a complete change in the incentives facing providers. In this system, there is no longer any advantage to expanding capacity as under the old normative budgeting process. Instead, the incentives (for hospitals) are to reduce costs while increasing throughput. In Chui and Issyk-Kul, the incentives worked to reduce hospital costs, particularly those associated with buildings and staff. MOH data indicate that in 2001,

- the number of hospital beds was reduced by 32% in Issyk-Kul and 36% in Chui;
- the number of health facility buildings was reduced by 30% in both oblasts; and
- the number of health workers was reduced by 13% in Issyk-Kul and 18% in Chui.

Box 2 gives an example of hospital restructuring from one rayon of Chui oblast.

**Box 2. Restructuring hospitals under new incentives: an example from Chui**

At the beginning of 2001, Issyk-Ata rayon in Chui oblast had 580 hospital beds distributed as follows: a CRH with 305, a "numerical hospital" with 125, and 6 SUBs ranging from 10 to 60 beds. In preparation for the introduction of the new financing system, a plan was developed to restructure the system to reduce costs while maintaining access to needed services. The plans were implemented, and by the end of the year, the inpatient care delivery system was reduced by 300 beds organized as follows: Territorial Hospital (former CRH) with 190 beds, plus three branches of the TH: one with 70 beds, and two with 10 beds each. As a part of this restructuring, 28 buildings were put out of operation, and additional measures were taken to reduce utility costs (e.g. installing meters, challenging bills from the utility companies). As a consequence of these changes, utility expenses in the rayon were reduced by 1.1 million soms, which allowed for a substantial reduction in the debt of the hospitals for heat and electricity (Isakov 2002).

*Effects of the Single Payer: pooling*

Perhaps the biggest change created by the Single Payer was the restructuring of funding pools. This is captured most directly by comparing Table 7 to Table 13, with the latter showing the changes in Chui and Issyk-Kul. Prior to the single payer, there were 10 pools in Chui and 8 in Issyk-Kul. Now there is one pool in each. Nationally, this means that the

number of pools has reduced from 62 to 46.[38] The replacement of all local government pools with the single TDMHIF pool eliminated the fragmentation and duplication caused by multiple pools within these oblasts. When combined with other aspects of the Single Payer (new payment methods, reduced line item constraints, and a purchaser-provider split), this reform to the structure of pooling facilitated the downsizing of the service delivery infrastructure referred to above, by enabling health services to be planned according to the needs of the population rather than on the basis of ownership by different levels of government. In addition, the restructuring enhanced risk pooling, as it became possible for cross-subsidies to flow between rayons within an oblast rather than just within them.

**Table 13. Health care revenue pools, by oblast, end of 2001**

| "Owner"/level of pool<br>Region | Rayon + City | Oblast | Republican | MHIF/<br>TDMHIF | Total |
|---|---|---|---|---|---|
| Bishkek | 1 | | | | 1 |
| Chui | | | | 1 | 1 |
| Issyk-Kul | | | | 1 | 1 |
| Naryn | 6 | 1 | | | 7 |
| Osh | 8 | 1 | | | 9 |
| Jalal-Abad | 13 | 1 | | | 14 |
| Batken | 4 | 1 | | | 5 |
| Talas | 5 | 1 | | | 6 |
| National | | | 1 | 1 | 2 |
| TOTAL | 37 | 5 | 1 | 3 | 46 |

*Effects of the Single Payer: informal payments*[39]

Perhaps the most visible part of the reform to the population and to providers was the introduction of the formal inpatient co-payment. The principal objective of this was to replace informal payments, with the aims of increasing transparency, reducing patient uncertainty, and adding to the revenues subject to the managerial control of the health system. The evidence suggests that the co-payment was successful, though with differences observed between the two Single Payer oblasts.

Figure 7 presents data from baseline and follow-up surveys of discharged hospital patients[40] on average patient payments in hospitals in Issyk-Kul, by item of expenditure. Using Lewis's (2002) definition,[41] nearly all of these categories could be considered informal, apart from the payment for admission in the follow-up survey, which represents the co-

[38] In March 2002, the Single Payer was implemented in Naryn and Talas oblasts. This eliminated their 11 rayon and 2 oblast pools and replaced them with 2 TDMHIF pools. This reduced the number of pools nationally to 35.

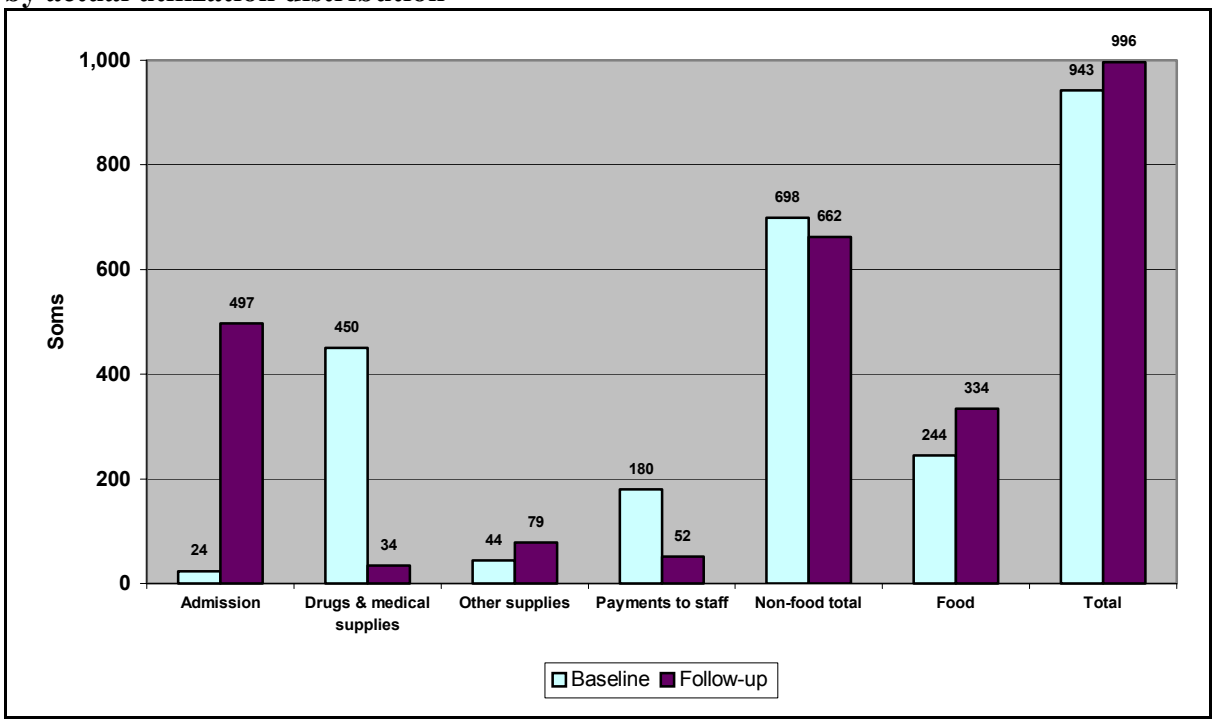
[39] The survey-based evidence presented below is drawn from Kutzin (2002).

[40] The samples were drawn from MHIF records, with patients interviewed in their homes about 3-4 months after discharge. The baseline survey comprised 2917 patients nationwide discharged in February 2001 (7.4% of total discharges in February, the month prior to the implementation of the co-payment), and the follow-up included 3731 patients discharged in July (9.9% of total discharges in that month).

[41] "Informal payments can be defined as to individual and institutional providers in kind or in cash that are outside official payment channels or for purchases meant to be covered by the health care system. This encompasses 'envelope' payments to physicians and 'contributions' to hospitals as well as the value of medical supplies purchased by patients and drugs obtained from private pharmacies but intended to be part of government-financed health care services." (Lewis 2002, p.184).

payment. The follow-up survey results suggest that, with the exception of the value of food brought for the hospitalization,[42] the policy was remarkably successful in terms of replacing informal payments with the formal co-payment. Expenditures specifically for drugs and medical supplies declined by 92%; hence, the need for patients to search for these and buy them prior to hospitalization (or for their families to do so during the case) was almost completely eliminated. Payments made directly to staff were also cut by over 70%. For all intents and purposes, the total level of patient expenditure (excluding or including food) was about the same before and after the co-payment. In Issyk-Kul, therefore, the policy achieved a remarkable degree of success in reducing informal payments, particularly for health care expenses, and replacing them with a formal co-payment.

**Figure 7. Mean expenditure by all surveyed patients in Issyk-Kul hospitals, weighted by actual utilization distribution**




The baseline survey included 381 cases from Issyk-Kul, representing 11.5% of February cases. The follow-up survey included 560 cases, representing 16.3% of July cases. The survey results were weighted to reflect the actual distribution of patients in these months by insurance and exemption status, as well as by type of case (medical, surgical, and maternity).

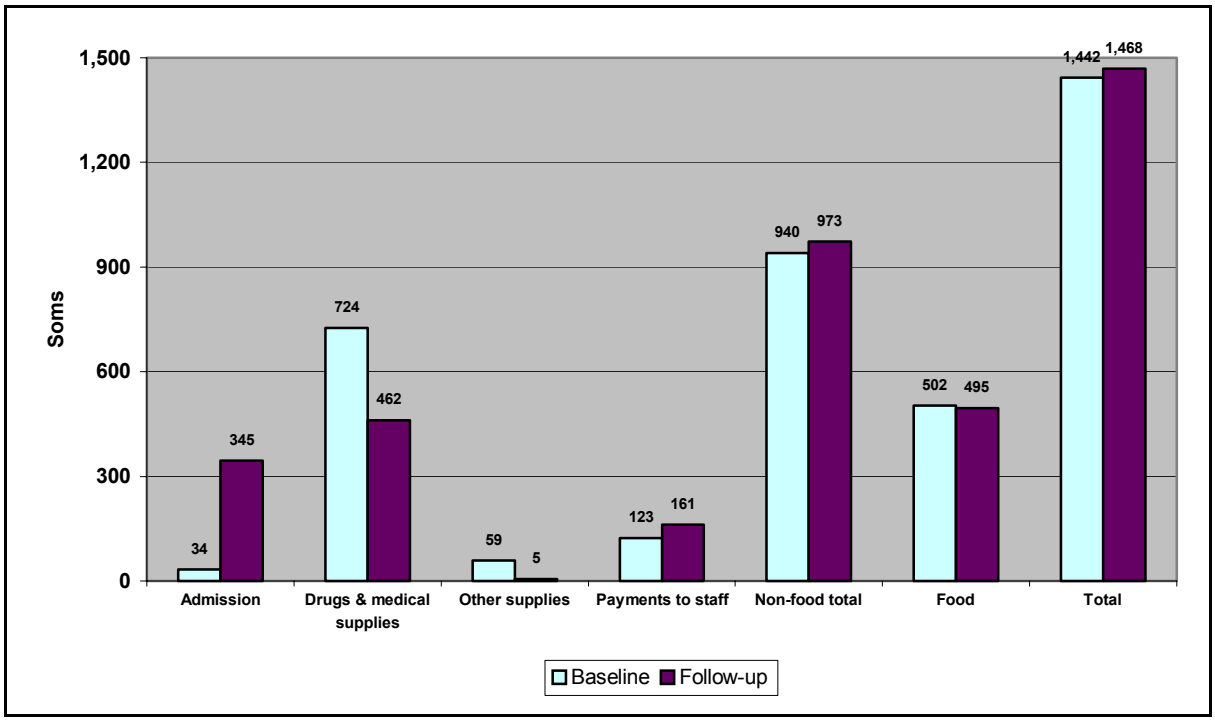
Figure 8 presents the corresponding results from Chui. The levels of out-of-pocket spending are considerably higher than in Issyk-Kul, reflecting the higher average incomes of the Chui population.[43] The results also suggest that while the co-payment seems to have had some effect in reducing patient expenditures for drugs and medical supplies (by about 36%), this was not nearly as great as in Issyk-Kul. Moreover, there was an increase in payments made directly to health workers. As in Issyk-Kul, both non-food and total patient expenditures were very similar before and after the policy. Overall, while Chui did make some progress

[42] Bringing food for a hospitalized family member is considered to be a normal "cultural practice" in Kyrgyzstan, but there is no obvious reason why this should have increased to the extent that it did.

[43] It also reflects the impact of the Chui Oblast Hospital in particular, which is located in the territory of Bishkek and appears to be, on average, the most expensive hospital in the country, particularly for surgical care.

in replacing informal with formal payments, it achieved much less success than did Issyk-Kul.

**Figure 8. Mean expenditure by all surveyed patients in Chui hospitals, weighted by actual utilization distribution**




The baseline survey included 505 cases, representing 7.5% of February cases from Chui hospitals. The follow-up survey included 622 cases, representing 10.9% of July cases.

How can the different performance of the policy between these regions be explained? The evidence is not definitive, but one possibility relates to differences in implementation of the broader package of health financing reforms in the two oblasts. In particular, the level of execution of planned budget allocations to the Single Payer was only about 70% in Chui as compared to 94% in Issyk-Kul. The Chui local finance authorities did not meet their financial commitments to the health system, in part because the appearance of seemingly new revenues from the co-payment prompted them to redirect budget funds to other sectors. As a result, greater financial responsibility was shifted to patients. This suggests that the success of the co-payment is linked closely to the magnitude of prepaid funding.

Another important goal of formalizing the co-payment was to reduce the population's uncertainty about the costs of hospitalization. When asked if, prior to their hospitalization, they had a good idea of the total amount that they would have to pay, about 17% of patients in the baseline survey in the two Single Payer oblasts responded positively. In the follow-up survey, this increased to 46% of patients, whereas the percent of patients from other oblasts responding positively to this question showed little change, falling from 25% to 21%. This suggests strongly that, even after only five months of implementation, the efforts of the MOH to inform the population about the new policy had reduced uncertainty substantially.

There were two other important achievements associated with the co-payment in the context of the Single Payer. First, the policy gained wide support among the population. Qualitative research (Schüth 2001) using focus groups found that most people (about 70% of participants) believed the new system was better than the old. The main reasons given

were more certainty about the amount to be paid, affordability (particularly for insured persons), and the improved availability of drugs in the hospital. This latter relates to the other important effect of the policy: the uses being made of the co-payment revenues.

According to MOH/MHIF regulations, hospitals could use 50% of their co-payment revenues for drugs, 20% for food, and 20% to supplement staff salaries. The remaining 10% is also meant for drugs, but specifically to create a "reserve fund" to provide free drugs to the poorest population that has no documentation to show entitlement to exemption. From March to December 2001, about 9.5% of patients in Chui and Issyk-Kul received free treatment, of whom 57% were exempted because of their personal or disease characteristics, with the remaining 43% provided care at the expense of hospital reserve funds. The co-payment revenues, in combination with cost savings from restructuring, enabled increases in average drug expenditures per patient-day of 1.9 times in Chui and 2.5 times in Issyk-Kul, and also enabled salaries to be increased (relative to 2000 levels) by an average of 29% and 24% respectively (Ibraimova 2002). Hence, by formalizing patient payments, new revenues became subject to policy and management directives. Implementation of policy on the use of funds has enabled the co-payment to do more than merely substitute for informal payments; it allowed for the targeting of subsidies to poor persons and also to key inputs.

## Conclusions

The leaders of the Kyrgyz health sector have taken a functional approach to its financing, and the Single Payer model they developed is remarkably coherent. Reforms in pooling reduce fragmentation and duplication. Reforms in purchasing address some of the major inherited problems: low productivity, poor quality, and a lack of responsiveness to consumers. There are deliberate attempts to ensure that the poor have access to services. This last is reflected not only in policy statements but also in purchasing, co-payment and provision reforms.

The MHIF has been the principal agent of change in the health sector, but success has come from the close coordination of policy and strategy with the MOH, not from its actions alone. From 1997-2000, they created the appropriate institutional preconditions for sector restructuring. Still, was it necessary to have created this agency in order to reform pooling and purchasing arrangements? The answer to this is more practical than conceptual.

Conceptually, it was possible to create a single payer system and implement new provider payment methods within the existing system without the creation of the MHIF. Indeed, several attempts were made to do so. While it was possible to pool budget funds for Issyk-Kul in one year, it was not possible to distribute funds without chapters, and the pooling was rescinded the following year. Similarly, when budget funds in Bishkek were pooled for the purpose of paying FGPs on a capitation basis, this payment method was not implemented. Other attempts to accumulate rayon health care funds at the oblast level (for hospitals in Chui oblast, for example) were planned but also not implemented. Experience gained during the early period of reforms suggests that the conceptual possibility of reform within the budget-funded health system was, in fact, not possible to realize in practice.

One reason for this was the difficulty in overcoming the constraints that the government placed on the use of budget monies (i.e. line item budgeting). Another important reason was the practical difficulty of setting aside scarce budget funds to experiment with new methods. Because the MHIF funds were "off-budget", it was politically possible to use this money to

test and develop new payment methods. These factors suggest that the scope for reform *within* the budget-funded health system, while conceptually possible, was extremely limited. Hence, the Kyrgyz strategy of having the MHIF as the agent of change, and shifting responsibility to it for purchasing from budget as well as payroll tax funds after gaining several years of experience with the new methods, was probably the only realistic option for reform. In 2001, having implemented reform somewhat 'outside' the system, the MHIF and MOH brought these reforms into the mainstream of the system under the Single Payer.

The Kyrgyz experience yields some lessons that may be of international interest. First, implementation of effective reforms in provider payment was much more difficult for primary care than at hospital level. The intended incentives of capitation were to stimulate competition and responsiveness to consumer demand among the newly formed FGPs. This incentive was muted by the administrative inability to conduct enrollment campaigns throughout the country, and, in most rural areas, the lack of effective choice for the population. In these areas, capitation could not be distinguished easily from the allocation of salaries and budgets. As with hospitals, the MHIF instituted utilization monitoring and quality review systems for FGPs. However, this posed a far greater implementation challenge than that which is functioning for inpatient care.

Second, the case-based payment system (and case mix measurement system more generally) has been a very effective tool for planning reforms. In particular, because the system provided data on both insured and uninsured cases in contracted hospitals, it was possible to simulate the budgetary implications of shifting the entire funding system to a case basis. This was essential for building confidence that the Single Payer system could be implemented.

Third, it is notable that the MHIF has had such a large impact on the system despite the small share of total health sector funding that it provided in the 1997-2000 period. It may be, as suggested above, that part of the reason for this is that the marginal productivity impact of these funds was much greater than the "average" (reflected in its percent of sectoral expenditures) implied. If so, the impact occurred because the additional payments to staff and for drugs enabled formerly idle capacity to be put to use. This further suggests that a key to improving hospital productivity is not necessarily full managerial autonomy with regard to the use of inputs, but instead autonomy over only a share of their resources (autonomy at the margin). Moreover, the experience of the MHIF as a source of incremental funds for variable costs may be useful for other countries.

Finally, the creation of a compulsory insurance fund did not fragment the health system along insured/uninsured lines. This stands in sharp contrast to the experience of most low- and middle-income countries that have introduced social health insurance schemes. The Kyrgyz experience demonstrates how it was possible for an MOH and insurance fund to work together. More generally, the Single Payer illustrates the possibility of using an insurance fund to overcome the fragmentation that existed within the government health system. This illustrates the importance, more generally, of understanding and addressing RAP arrangements within decentralized, publicly budgeted health systems.

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## Annex 1: List of Clinical Cost Group (KZG) Categories Used Currently by the MHIF for Hospital Payment

*A. Medical KZGs*

| GROUP # | GROUP TITLE | Relative Weight | |
|---|---|---|---|
| | | AGE ≤ 15 | AGE > 15 |
| 1 | INTESTINAL INFECTIOUS DISEASES | 0.6650 | 0.6650 |
| 2 | TUBERCULOSIS OF LUNG, MILIARY TUBERCULOSIS | 4.0200 | 4.0200 |
| 3 | PRIMARY TUBERCULOSIS, TUBERCULOSIS OF OTHER ORGANS | 1.9660 | 1.9660 |
| 4 | BRUCELLOSIS | 1.4720 | 1.4720 |
| 5 | SYPHILIS | 1.2940 | 1.2940 |
| 6 | OTHER PREDOMINANTLY SEXUALLY TRANSMITTED DISEASES | 0.8540 | 0.8540 |
| 7 | VIRAL HEPATITIS | 1.8400 | 1.3880 |
| 8 | VIRAL HEPATITIS | 0.8070 | 0.8070 |
| 9 | MALIGNANT NEOPLASMS OF LYMPHOID, HAEMATOPOETIC AND RELATED TISSUE | 1.4370 | 1.4370 |
| 10 | DIABETES MELLITUS | 1.2600 | 1.2600 |
| 11 | ENDOCRINE DISEASES | 1.0740 | 1.0740 |
| 12 | NUTRITIONAL AND METABOLIC DISORDERS | 0.8130 | 0.8130 |
| 13 | ANAEMIAS | 1.0620 | 1.0620 |
| 14 | COAGULATION DEFECTS | 1.4630 | 1.4630 |
| 15 | OTHER DISEASES OF BLOOD AND BLOOD-FORMING ORGANS AND CERTAIN DISORDERS INVOLVING THE IMMUNE MECHANISM | 0.8500 | 0.8500 |
| 16 | ORGANIC MENTAL DISORDERS AND MENTAL RETARDATION | 1.0970 | 1.0970 |
| 17 | MENTAL AND BEHAVIOURAL DISORDERS DUE TO PSYCHOACTIVE SUBSTANCE USE | 0.4080 | 0.4080 |
| 18 | SCHIZOPHRENIA AND MOOD (AFFECTIVE) DISORDERS | 1.2480 | 1.2480 |
| 19 | OTHER MENTAL AND BEHAVIOURAL DISORDERS | 0.8140 | 0.8140 |
| 20 | NEOPLASMS OF NERVOUS SYSTEM | 0.9290 | 0.9290 |
| 21 | MENINGITIS | 1.1090 | 1.1090 |
| 22 | DEGENERATIVE AND DEMYELINATING DISEASES OF NERVOUS SYSTEM | 0.9950 | 0.9950 |
| 23 | DISEASES AND INJURIES OF PERIPHERAL NERVOUS SYSTEM | 1.0420 | 1.0420 |
| 24 | PARALYTIC SYNDROMES | 1.1640 | 1.1640 |
| 25 | EPILEPSY | 0.8710 | 0.8710 |
| 26 | CEREBROVASCULAR DISEASES | 1.1450 | 1.1450 |
| 27 | OTHER DISORDERS OF NERVOUS SYSTEM | 0.8080 | 0.8080 |
| 28 | "MINOR" DISEASES OF THE EYE AND ADNEXA | 0.7530 | 0.7530 |
| 29 | "MAJOR" DISEASES OF THE EYE AND ADNEXA | 1.0220 | 1.0220 |
| 30 | NEOPLASMS OF EAR, NOSE, THROAT AND MOUTH | 1.0240 | 1.0240 |
| 31 | DISEASES AND DISORDERS OF NOSE AND THROAT | 0.7720 | 0.7720 |
| 32 | DISEASES OF EAR AND MASTOID | 0.9170 | 0.9170 |
| 33 | DISEASES OF MOUTH | 0.8610 | 0.8610 |
| 34 | NONRHEUMATIC VALVES DISORDERS, CONGENITAL MALFORMATIONS OF HEART; SYMPTOMS AND SIGNS INVOLVING HEART | 1.0280 | 1.0280 |
| 35 | HYPERTENSIVE DISEASES | 1.1200 | 1.1200 |
| 36 | ACUTE MYOCARDIAL INFARCTION | 1.5280 | 1.5280 |
| 37 | ANGINA PECTORIS | 1.3210 | 1.3210 |
| 38 | OTHER DISEASES OF HEART | 1.2440 | 1.2440 |
| 39 | PHLEBITIS, THROMBOPHLEBITIS AND VARICOSE VEINS OF LOWER EXTREMITIES | 0.9900 | 0.9900 |
| 40 | OTHER PERIPHERAL VASCULAR DISEASES AND DISORDERS | 1.3280 | 1.3280 |
| 41 | PNEUMONIA | 1.2750 | 1.2750 |
| 42 | ACUTE BRONCHITIS AND SYMPTOMS, SIGNS INVOLVING THE RESPIRATORY SYSTEM | 0.8820 | 0.8820 |
| 43 | CHRONIC BRONCHITIS AND ASTHMA | 1.1480 | 0.8950 |
| 44 | INTERSTITIAL LUNG DISEASES | 1.3820 | 1.3820 |
| 45 | ABSCESS, EMRYEMA, PLEURISY | 1.7200 | 1.7200 |
| 46 | OTHER RESPIRATORY DISEASES AND DISORDERS | 1.0270 | 1.0270 |
| 48 | ULCER OF THE DUODENUM, STOMACH AND ESOPHAGUS | 1.1650 | 1.1650 |
| 49 | OESOPHAGITIS, GASTRITIS AND DUODENITIS | 0.8770 | 0.7330 |
| 50 | REG. ENTERITIS, IDIOPATIC COLITIS | 0.9970 | 0.9970 |

| GROUP # | GROUP TITLE | Relative Weight | |
|---|---|---|---|
| | | AGE ≤ 15 | AGE > 15 |
| 51 | DISEASES OF GALLBLADDER AND PANCREAS | 0.9420 | 0.9420 |
| 53 | OTHER DISEASES OF DIGESTIVE SYSTEM | 0.6130 | 0.3810 |
| 54 | NEOPLASMS OF URINARY ORGANS AND MALE GENITAL ORGANS | 1.2690 | 1.2690 |
| 55 | INFECTIONS OF URINARY SYSTEM | 1.0640 | 1.0640 |
| 56 | UROLITHIASIS | 0.8440 | 0.8440 |
| 57 | DISORDERS OF THE PROSTATE | 1.4440 | 1.4440 |
| 58 | SYMPTOMS RELATED TO URINARY SYSTEM | 0.6630 | 0.6630 |
| 59 | OTHER DISORDERS OF THE URINARY SYSTEM | 1.2290 | 1.2290 |
| 60 | OTHER DISORDERS OF MALE GENITAL ORGANS | 0.8680 | 0.8680 |
| 61 | INFLAMMATORY DISEASES OF FEMALE GENITAL ORGANS (EXCEPT CERVIX UTERI, VAGINA AND VULVA) | 0.8840 | 0.8840 |
| 62 | OTHER DISEASES OF FEMALE GENITAL ORGANS | 0.6980 | 0.6980 |
| 63 | DISEASES OF BREAST | 0.6530 | 0.6530 |
| 64 | ABORTION | 0.3400 | 0.3400 |
| 65 | HAEMORRHAGE IN EARLY PREGNANCY | 0.9900 | 0.9900 |
| 66 | OTHER MATERNAL DISORDERS AND COMPLICATIONS PREDOMINANTLY RELATED TO PREGNANCY AND PUERPERIUM | 0.8030 | 0.8030 |
| 67 | DELIVERY | 0.4590 | 0.4590 |
| 68 | MATERNAL CARE RELATED TO THE FETUS AND POSSIBLE DELIVERY PROBLEMS, AND COMPLICATIONS OF LABOUR AND DELIVERY | 0.5950 | 0.5950 |
| 69 | "MAJOR" SKIN DISORDERS | 1.0890 | 1.0890 |
| 70 | INFECTIONS OF SKIN AND SUBCUTANEOUS TISSUE | 0.7540 | 0.6650 |
| 71 | "MINOR" SKIN DISORDERS | 0.6830 | 0.6260 |
| 72 | MALIGNANT NEOPLASMS OF MUSCULO-SKELETAL SYSTEM AND CONNECTIVE TISSUE | 1.1690 | 1.1690 |
| 73 | SYSTEMIC CONNECTIVE TISSUE DISORDERS | 1.1570 | 1.3840 |
| 74 | ARTHROPATHIES, BONE DISEASES | 1.1320 | 1.5090 |
| 75 | MEDICAL BACK PROBLEMS | 0.9540 | 0.9540 |
| 76 | OSTEOMYELITIS | 1.3220 | 1.3220 |
| 77 | OTHER DISEASES OF THE MUSCULO-SKELETAL SYSTEM AND CONNECTIVE TISSUE | 0.8350 | 1.3050 |
| 78 | EXTREME IMMATURITY | 2.9820 | 2.9820 |
| 79 | RESPIRATORY DISORDERS ORIGINATING IN THE PERINATAL PERIOD | 1.0130 | 1.0130 |
| 80 | OTHER DISORDERS ORIGINATING IN THE PERINATAL PERIOD | 0.7520 | 0.7520 |
| 81 | CONCUSSION | 0.8890 | 0.8890 |
| 82 | FRACTURE OF SPINE, SKULL AND INTRACRANIAL INJURY | 1.4250 | 1.1050 |
| 83 | FRACTURE OF FEMUR AND PELVIS | 2.0410 | 1.7390 |
| 84 | FRACTURES, DISLOCATIONS, SPRAINS AND STRAINS OF UPPER LIMB | 0.7700 | 0.6570 |
| 85 | FRACTURES OF BONY THORAX; INJURIES OF INTRATHORACIC ORGANS | 1.0230 | 1.0230 |
| 86 | FRACTURES, DISLOCATIONS, SPRAINS AND STRAINS OF LOWER LIMB (EXCEPT FRACTURE OF FEMUR) | 1.1640 | 0.9760 |
| 87 | SUPERFICIAL INJURIES, OPEN WOUNDS, OTHER AND UNSPECIFIED INJURIES | 0.7540 | 0.6310 |
| 88 | BURNS AND EFFECTS OF OTHER EXTERNAL CAUSES | 0.9310 | 0.9310 |
| 89 | POISONINGS | 0.4810 | 0.4810 |
| 90 | FACTORS INFLUENCING HEALTH STATUS AND CONTACT WITH HEALTH SERVICES | 0.3270 | 0.3270 |

*B. Surgical KZGs*

| GROUP # | GROUP TITLE | Relative Weight | |
|---|---|---|---|
| | | AGE ≤ 15 | AGE > 15 |
| 401 | CRANIOTOMY | 2.2020 | 2.2020 |
| 402 | SPINAL PROCEDURES | 2.0370 | 2.0370 |
| 403 | PERIPHERAL, CRANIAL, SYMPATHETIC NERVE PROCEDURES | 1.8490 | 1.8490 |
| 404 | ENDOCRINE PROCEDURES | 1.2830 | 1.2830 |
| 405 | ORBITAL PROCEDURES | 1.1040 | 1.1040 |
| 406 | EXTRAOCULAR PROCEDURES EXCEPT ORBIT | 0.7750 | 0.7750 |
| 407 | LENS PROCEDURES | 0.9560 | 0.9560 |
| 408 | RETINAL, IRIS AND INTRAOCULAR PROCEDURES EXCEPT LENS | 1.2060 | 1.2060 |
| 409 | MIDDLE, INNER EAR AND SINUS PROCEDURES | 1.4530 | 1.4530 |
| 410 | SALIVARY GLANDS AND MOUTH PROCEDURES | 1.0500 | 1.0500 |
| 411 | TONSILS AND ADENOIDS PROCEDURES | 0.8280 | 0.8280 |
| 412 | FACIAL BONES AND JOINTS PROCEDURES | 1.1540 | 1.1540 |
| 413 | OTHER EAR, NOSE, PHARYNX PROCEDURES | 0.9590 | 0.9590 |
| 414 | LUNG, BRONCHUS, PLEURA PROCEDURES | 3.0100 | 3.0100 |
| 415 | OTHER CHEST PROCEDURES | 2.3550 | 2.3550 |
| 416 | CARDIAC PROCEDURES | 3.1000 | 3.1000 |
| 417 | VEIN LIGATION AND STRIPPING | 1.5880 | 1.5880 |
| 418 | OTHER VASCULAR PROCEDURES | 2.3440 | 2.3440 |
| 419 | PROCEDURES OF THE BLOOD-FORMING ORGANS AND LYMPHATIC SYSTEM | 2.3010 | 2.3010 |
| 420 | ESOPHAGUS, STOMACH, DUODENUM PROCEDURES | 1.5310 | 1.5310 |
| 421 | SMALL AND LARGE BOWEL PROCEDURES | 1.6330 | 1.6330 |
| 422 | APPENDECTOMY | 0.9190 | 0.9190 |
| 423 | ANAL PROCEDURES | 1.3430 | 1.3430 |
| 424 | LIVER AND PANCREAS PROCEDURES | 2.1620 | 2.1620 |
| 425 | BILIARY SYSTEM PROCEDURES | 1.5240 | 1.5240 |
| 426 | HERNIA PROCEDURES | 1.0160 | 0.7440 |
| 427 | OTHER DIGESTIVE SYSTEM PROCEDURES | 1.4360 | 1.4360 |
| 428 | KIDNEY AND URETER PROCEDURES; PROSTATECTOMY | 2.5000 | 2.5000 |
| 429 | BLADDER AND URETHRAL PROCEDURES | 1.8640 | 1.8640 |
| 430 | PROSTATE PROCEDURES | 2.1000 | 2.1000 |
| 431 | OTHER MALE REPRODUCTIVE SYSTEM PROCEDURES | 0.8920 | 0.8920 |
| 432 | HYSTERECTOMY | 1.1730 | 1.1730 |
| 433 | CERTAIN OVARY AND FALLOPIAN TUBE PROCEDURES FOR INFLAMMATORY DISEASES OF FEMALE GENITAL ORGANS (EXCEPT CERVIX UTERI, VAGINA AND VULVA) | 1.0490 | 1.0490 |
| 434 | OTHER FEMALE REPRODUCTIVE SYSTEM PROCEDURES | 0.8260 | 0.8260 |
| 435 | CESAREAN SECTION | 1.1970 | 1.1970 |
| 436 | OTHER OBSTETRIC PROCEDURES FOR ABORTION | 0.3910 | 0.3910 |
| 437 | OTHER OBSTETRIC PROCEDURES FOR DELIVERY | 0.6910 | 0.6910 |
| 438 | OTHER OBSTETRIC PROCEDURES FOR MATERNAL DISORDERS AND COMPLICATIONS PREDOMINANTLY RELATED TO PREGNANCY, CHILDBIRTH AND PUERPERIUM | 0.8390 | 0.8390 |
| 439 | OTHER OBSTETRIC PROCEDURES FOR OTHER DISEASES AND DISORDERS | 0.6420 | 0.6420 |
| 440 | HUMERUS PROCEDURES | 1.8850 | 1.0460 |
| 441 | HIP AND FEMUR PROCEDURES | 2.6710 | 2.0210 |
| 442 | LOWER EXTREMITY PROCEDURES EXCEPT HIP, FEMUR, FOOT | 2.1950 | 1.3290 |
| 443 | OTHER MUCULOSKELETAL SYSTEM PROCEDURES | 1.4290 | 1.4290 |
| 444 | AMPUTATION | 2.8660 | 2.8660 |
| 445 | OTHER MUCULOSKELETAL SYSTEM PROCEDURES | 1.5610 | 1.2010 |
| 446 | BREAST PROCEDURES | 1.1340 | 1.1340 |
| 447 | SKIN TRANSPLANT PROCEDURES | 1.7450 | 1.7450 |
| 448 | WOUND DEBRIDEMENT; OTHER SKIN AND SUBCUTANEOUS TISSUE PROCEDURES FOR BURNS | 1.1430 | 1.1430 |
| 449 | WOUND DEBRIDEMENT; OTHER SKIN AND SUBCUTANEOUS TISSUE PROCEDURES FOR BURNS | 0.8190 | 0.8190 |