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PERFORMANCE INDICATORS AND EVALUATION FRAMEWORK FOR 2ND WORLD BANK-FUNDED HEALTH PROJECT FOR THE KYRGYZ REPUBLIC

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Performance Indicators and Evaluation Framework for 2nd World Bank-funded Health Project for the Kyrgyz Republic[1]

1. Background

The design of the Second Health Project ("Health II") includes four components. These are:

- Health services delivery system restructuring
- Health financing
- Quality improvement
- Public health

Each of the components is divided into sub-components and activities. Part of the evaluation of the project is an assessment of the implementation process of the sub-components and activities. While important, this kind of assessment is not the focus of this report. Instead, the evaluation issues discussed here relate to the broader impacts that the project (looking across its components) is intended to have on health system performance. Such a strategy is more ambitious than what has been previously attempted in the Kyrgyz Republic (KR).

During the mission of April 2000, discussions were held with senior staff of the MOH concerning the evaluation strategy for the project. Because the project is *sector support*, aiding the government's overall health development strategy, it is desirable to have the evaluation of the project and the evaluation of sectoral performance result from the same process. The purpose of this evaluation is to contribute to the strategy of the Ministry of Health for sectoral performance monitoring as well as to the needs of the World Bank for project evaluation. It was agreed that, to the greatest extent possible, sector (and project) performance will be assessed by analysing data generated by the routine systems of the MOH. In order to understand the effects of the reforms on the population, however, it will be necessary to take advantage of past and future planned household surveys (e.g. the Demographic and Health Surveys), and also to undertake a new household survey (focused mainly on individual health care seeking and payment behaviour) this year as well as 2-4 years from now.

2. Performance assessment framework

The conceptual framework for assessing the impact of Health II begins with a definition of sectoral goals,[2] and then "works backward" through the expected outcomes or impacts of the project (and sectoral reforms) to the outputs of the project's sub-components. The terminology and approach used here also relies on the World Bank's outline for the "Project

[1] This is adapted from a technical report produced in June 2000 under a contract with the Institute for Health Sector Development (IHSD) funded by the UK Department for International Development (DFID). Dr. Rifat Atun of IHSD provided very helpful comments on an earlier draft.

[2] See: Murray, C.J.L. and J. Frenk (1999). "A WHO Framework for Health System Performance Assessment." GPE Discussion Paper No. 6. Geneva: World Health Organisation, Global Programme on Evidence for Health Policy.

Concept Document" for Health II, and in particular, the "Project Design Summary" (see Annex 1 for the draft Project Design Summary for Health II). Important terms used in this report are:

Sector Performance Goal: broad goal of the health system, which should normally be monitored by the MOH, to which the project is meant to contribute even if the extent of this contribution cannot be measured plausibly.

Outcome/impact: the effects of the project outputs that are defined in terms of the objectives of the project. These should be measurable, with changes occurring either during the life of the project ("outcome") or at some point after project completion ("impact").

Output: the direct result of the implementation of the activities comprising the project's components and sub-components.

The project and sector performance assessment strategy described below is organised by the broad goals of health sector performance. The strategy does not include the process- or input-oriented assessment of the implementation of the project's sub-components. The main focus of the strategy is to assess the extent to which the outputs of the project and sector reforms contribute to the outcomes and impacts. It is recommended to define and monitor indicators of sector performance, but it is not anticipated that it will be possible to assess the extent to which different outcomes contribute to changes in sectoral performance indicators. The reason is that these broad goals tend to be determined by multiple factors, only some of which are part of the project and sector reforms. Indeed, extra-sectoral factors (e.g. income, education) also tend to be important determinants of these goals, and it is not proposed to try and measure these.

As is suggested below, outcomes and sectoral performance are affected by many factors. Therefore, the analysis of project/reform outcomes can be undertaken without the need to separate the relative contribution of the different components of the project. This is desirable based on an *a priori* belief that there are multiple determinants of performance, and the art of the reform process is to combine them effectively.

3. Project components and sub-components

As noted above, the Health II project has four components. Each of these has two or more sub-components. These are described briefly here.

Health services delivery system restructuring sub-components

Upgrading and extending Family Group Practices (FGPs). This will involve extending FGP coverage to the entire population and equipping these practices to enable them to expand their scope of services.

Upgrading Central Rayon Hospitals (CRHs) and Oblast Merged Hospitals (OMHs). This will involve modernising the diagnostic and outpatient departments in these facilities, as well as planning for the streamlining and "right-sizing" of this element of the health care delivery system.

Restructuring hospitals in the territory of Bishkek. This will involve the development of plans for joint development of hospital services in Bishkek, incorporating both city and Republican facilities.

Human resources. This will involve the completion and routine updating of a national health system human resources database, and to improve planning processes for the health workforce.

Mental health. This will support the MOH strategy to rationalise the delivery of mental health services and improve their clinical quality.

Health financing sub-components

Health financing policy development. This will support MOH financing policy and implementation, including the strengthening of policy analysis capacity and the links of this to further policy making.

Strengthening the MOH/HIF purchasing function. This will support the further development of payment and quality review methods used by the MOH/HIF.

Health information systems development. This will support MOH plans to provide the data needed to manage and improve the performance of the health system.

Quality improvement sub-components

Medical education. This will support the upgrading of medical and nurse training for primary care and also health management training.

Professional development. This will support the upgrading of medical practice through the development and dissemination of evidence-based clinical guidelines and by supporting the independent professional associations (Family Group Practice Association and Hospital Association).

Pharmaceutical quality. This will strengthen the quality assurance system for pharmaceutical products and promote rational drug use.

Public health

Health promotion. This will establish a health promotion centre to carry out national advisory functions and will also support training, and local level projects and activities through FGPs, schools, and other organisations as appropriate.

Health protection. This will establish a new laboratory for the quality control of vaccines and may also upgrade other selected laboratories in the country.

4. Indicators of project outcomes and sector performance

Sector Performance Goal 1. Improve overall level of health status and distribution of health gain in the population

The priority aim of the health system is to improve the level and distribution of health in the population. The project's outputs should assist the government to improve health status through sector-specific interventions in the areas of health promotion and protection,

improved clinical practices, reallocation of resources (a) from speciality to primary care and (b) from Bishkek to the rest of the country, incentives for improving quality of care, and improved access to good quality health facilities and services. Because health status depends on multiple factors inside and outside of the health sector, however, it will be very difficult to prove a direct link between specific reforms and changes in health status (on a population basis), especially in a five year time horizon. Nevertheless, it is important to monitor health indicators to determine if specific areas for intervention are needed. Health status monitoring should focus both on levels of mortality and morbidity, as well as on the distribution of these across the population (e.g. across geographic areas, across income groups, across males and females, etc.). Some important indicators to track are:

Infant Mortality Rate (IMR) and Child Mortality Rate (CMR). The IMR is the mortality rate for children less than 1 year of age, and the CMR is the mortality rate for children between the ages of 1 and 5. For both of these, several factors outside the health system (nutritional status, income, education of parents) are important determinants. Health system factors are more important for CMR than for IMR, however. Similarly, within IMR, postneonatal (PNN, between one month and one year) mortality provides a better indicator of primary care services than does overall IMR, with perhaps greater insight into those aspects of service provision that have changed. Therefore, it might be plausible for changes in PNN and child mortality to be associated with sectoral reforms (i.e. changes in the health system).[3] In addition to tracking changes through the MOH's routine information system, it will be possible to take advantage of the Demographic and Health Survey (DHS) that was implemented in the KR in 1997 and will be repeated in 2002 or 2003. This repeat survey will allow for an assessment of changes over time in a number of key indicators of maternal and child health, including the IMR, PNN, and CMR. The DHS also provides information on the use of various services, which can provide important information on indicators of the outcomes of system reforms. The standard analyses of DHS data also enable the cross-tabulation of findings with some distributional variables, including urban-rural residence, region, maternal education, ethnicity, and sex of the child.[4] In addition, a technique has been developed to construct an "asset index" from the DHS questionnaire which allows for the disaggregation of the data into the "wealth quintiles" of the survey respondents. This has been done recently for the 1997 Kyrgyz DHS.[5] This analysis showed wide variations across wealth groups in IMR and CMR, and it will be very useful to undertake an analysis of the 2002/3 DHS data to see if the gaps are narrowing or widening.

Respiratory disease mortality. The KR has the highest rate of respiratory disease mortality of any NIS country, and strengthening clinical practices to treat respiratory infections with cost-effective interventions is a priority. While the determinants of respiratory mortality are multi-factorial, monitoring changes in this rate (from the routine health information system) will give an indication of whether changes in the quality of care

[3] Even though mortality in these age groups is more plausibly related to health system features than overall infant or neonatal mortality, non-health system factors remain important determinants. Therefore, the conclusions drawn from any such analyses are only suggestive.

[4] Research Institute of Obstetrics and Paediatrics [Kyrgyz Republic] and Macro International Inc. (1998). *Kyrgyz Republic Demographic and Health Survey, 1997*. Calverton, Maryland: Research Institute of Obstetrics and Paediatrics, Ministry of Health of the Kyrgyz Republic and Macro International Inc.

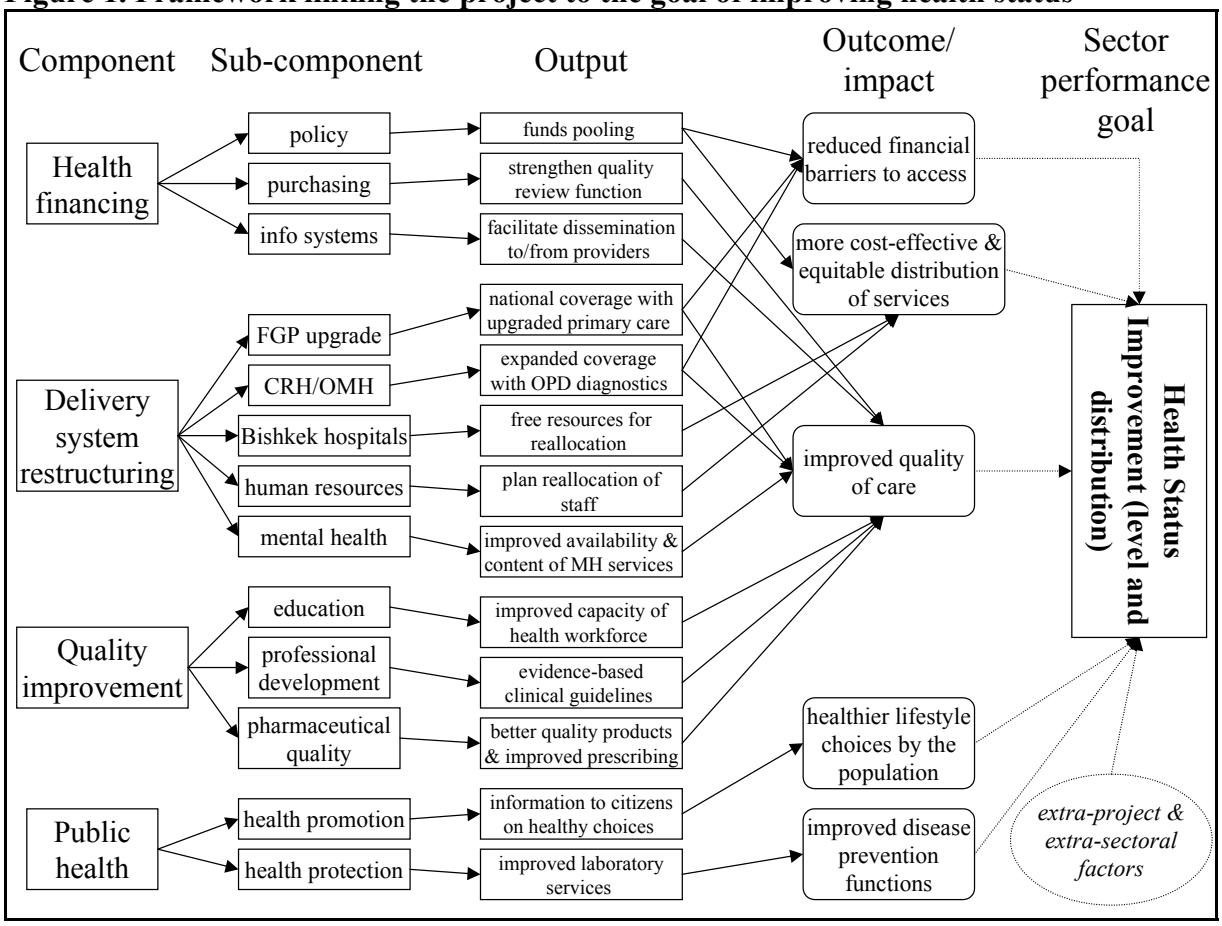
[5] Gwatkin, D.R., S. Rutstein, K. Johnson, R. Pande, and A. Wagstaff (2000). "Socio-economic differences in Health, Nutrition, and Population in the Kyrgyz Republic." Discussion Draft. Washington, DC: The World Bank, HNP/Poverty Thematic Group.

(perhaps arising from changes in clinical practice) are having any effect. For example, TB incidence, prevalence and mortality should continue to be monitored to determine the extent of the effect on each of these that the new treatment protocol (DOTS) is having.

Other indicators of mortality and morbidity. Mortality from other diseases and conditions (e.g. maternal mortality, communicable and diarrhoeal diseases, etc.) could also be monitored as desired by the MOH. Maternal mortality is a particularly relevant indicator of health system performance because it reflects the need for a variety of features (e.g. primary preventive care, emergency transport and hospital care) of the health system to be functioning well and in a coordinated manner.

To support this goal, the project outputs should contribute to the following outcomes and impacts, as shown in Figure 1:

Figure 1. Framework linking the project to the goal of improving health status



Note: Dotted lines imply that no attempt will be made to evaluate these links (i.e. attribute causality), though indicators of the goal should be measured.

Outcome/Impact 1.1: Improved quality of clinical care. Improving the quality of clinical care is the primary objective of the Quality Component. In addition, improved quality is also an objective of the Financing Component and the Restructuring Component. It is a priority to improve clinical practice at the primary care level. This should be monitored by selecting some (five or fewer) "tracer" conditions for which FGP physicians have received training, equipment, and incentives to manage effectively at the primary level. Because of the disease burden posed by acute respiratory infections (ARIs) in children, and because many of these are treatable at primary care level, at least one of the tracers should

be childhood ARIs. The source of data for this would be the primary care database, which includes all data from the primary care clinical information form (CIF). From this database, actual treatment, referral and prescribing practices for specified tracer diagnoses or presenting symptoms can be compared with desired practices. As new, evidence-based clinical guidelines are developed, actual practices can be compared with these. Specific kinds of indicators that could be measured include compliance with the guidelines, referral and hospitalization rates, antibiotic use rates, and complication rates (for ARIs, for example, the latter might include pneumonia or septicemia). Comparisons can be made of the same FGPs over time, cross-sectional comparisons of FGP performance aggregated at the oblast level (comparing performance in oblasts with different levels of experience with FGPs), or a combination of the two. In addition, comparisons can be made of treatment practices for patients with different characteristics as reflected on the CIF (e.g. insured vs. uninsured, exemption status, employment status, age, sex, etc.).

In addition, as noted above, the effects of the new treatment protocol for TB (DOTS) can continue to be monitored using routine MOH data on TB incidence, prevalence and mortality. In addition to comparing trends in these rates over time on a national basis, trends can also be compared at the oblast level to assess relative performance and identify the need for targeted efforts to improve treatment outcomes.

Some of the information generated through this process should contribute to a routine process of monitoring the quality of care. This monitoring information should become an input to a variety of methods used to improve quality, including medical education curricula, continuing medical education seminars, and quality monitoring methods.

Outcome/Impact 1.2: More equitable distribution of health services and more cost-effective mix of health interventions. Improving resource allocation patterns is the primary objective of the Financing Component. The Restructuring Component should also contribute to this objective. Current patterns of allocating government health resources contribute to inequity and inefficiency in the health system.[6] They are inequitable because public spending is heavily biased towards Bishkek, to the benefit of the citizens there but at the expense of those living in the oblasts who do not have good access to Bishkek. Public spending contributes to inefficiency because it is concentrated on hospital care at the expense of primary care, and within hospitals, on specialist facilities at the expense of general hospitals. The failure to rationalise and "right-size" the health service infrastructure, and particularly the specialized Republican Institutes based in Bishkek, has been a major contributing factor to this persistent resource allocation problem.

Patterns of resource allocation should be monitored through a routine process of public expenditure reviews and National Health Accounts (NHAs). A review of public expenditures can be undertaken on an annual basis to compare patterns of government's allocation of health sector resources with stated policies and priority needs. This can be supplemented on an annual basis with information on expenditures from payroll taxes by the MHIF, and with information on the collection of official user fees ("special means"). The Treasury system provides the information needed for the review of government health (including special means) expenditures, and annual reports by the MHIF provides information on its expenditures. A more thorough analysis of all resource flows within the

[6] Kutzin, J. (2000). "Review of Kyrgyz social expenditures, health chapter." Report to DfID. London: Institute for Health Sector Development.

health sector, as in an NHA study, should be produced every two years. This will attempt to describe the sources and uses of all health system funds, including expenditures by households (formal fees, informal contributions to government health facilities, and purchases of private health services), humanitarian aid and grants, and loans. The NHAs will be generated by a process that includes visits to all health facilities and the analysis of both routine and special household surveys.

Outcome/Impact 1.3: Improved financial access to good quality health care, especially for currently under-served persons. Improving financial access to good quality care is an important objective of the Financing Component and health financing policy more generally. The Restructuring Component should also contribute to this objective. During the Soviet era, out-of-pocket costs of care were not a significant barrier to access. As noted in the Social Expenditure Review,[7] however, available survey and anecdotal evidence suggests that the expected financial costs of care have become a significant barrier to access for many persons, especially those with the lowest incomes. Addressing this issue is a difficult but important challenge facing health system decision makers. The strategy includes restructuring and rationalising pools of funds so that available public funds are spread across a larger number of people, reducing public expenditures on services of limited effectiveness, improving clinical quality and the scope of services at primary level so that persons can spend less time and money seeking and receiving care, and broadening the availability of FGP and basic diagnostic services to the entire population.

Evidence on care seeking behavior across individuals with different socio-economic and other characteristics is needed to determine whether the project outputs and sector reform strategies are improving access to care. This evidence can be provided through a well-designed household survey that includes questions on the need for care, the decision to seek care, and factors that explain why persons did not seek care. At minimum, such a survey should be implemented twice: once prior to the start of the project, and once near the end of the project period. Additionally, the DHS planned for 2002/3 will allow for a comparison in care seeking behavior among women and children between the date of that survey and 1997 (the year of the first DHS). It may also be possible to use data from the routine MOH system to provide some indirect evidence, such as the changes in the extent to which persons referred for treatment actually seek and complete such treatment. Finally, it should also prove possible to examine prescribing practices for selected conditions for which new protocols involve a less expensive mix of drugs to see if changes are leading to both better quality and a reduced cost barrier for the population.

Outcome/Impact 1.4: Healthier lifestyle choices by the population and improved disease prevention functions in the health system. Addressing the main risk factors for ill health is the objective of the Public Health Component. Many of the causes of the high rates of non-communicable diseases in the KR are unhealthy lifestyle choices by the population, such as smoking and excessive consumption of alcohol and high-fat foods. Lifestyle choices are also associated with the growing rates of some sexually transmitted diseases that have occurred in the KR. Interventions that attempt to change these choices have been largely absent from the Kyrgyz health system, but there are plans to introduce these through this component of the project and related activities led by the MOH. "Health protection" is also meant to be improved through improved quality of vaccines and laboratory services throughout the country.

[7] Kutzin (2000).

Because these health promotion and health protection functions have been absent or weak, the effort made to introduce and institutionalise them may mean that most of the changes observed during the next five years will be of a "process" nature. Nevertheless, a system can be established for periodic monitoring of the outcomes of these new functions. For example, special surveys can be used to provide information on changes in specific lifestyle choices that relate to individual health risk factors.

Sector Performance Goal 2. Improve financial risk protection against the costs of needed health care for the population

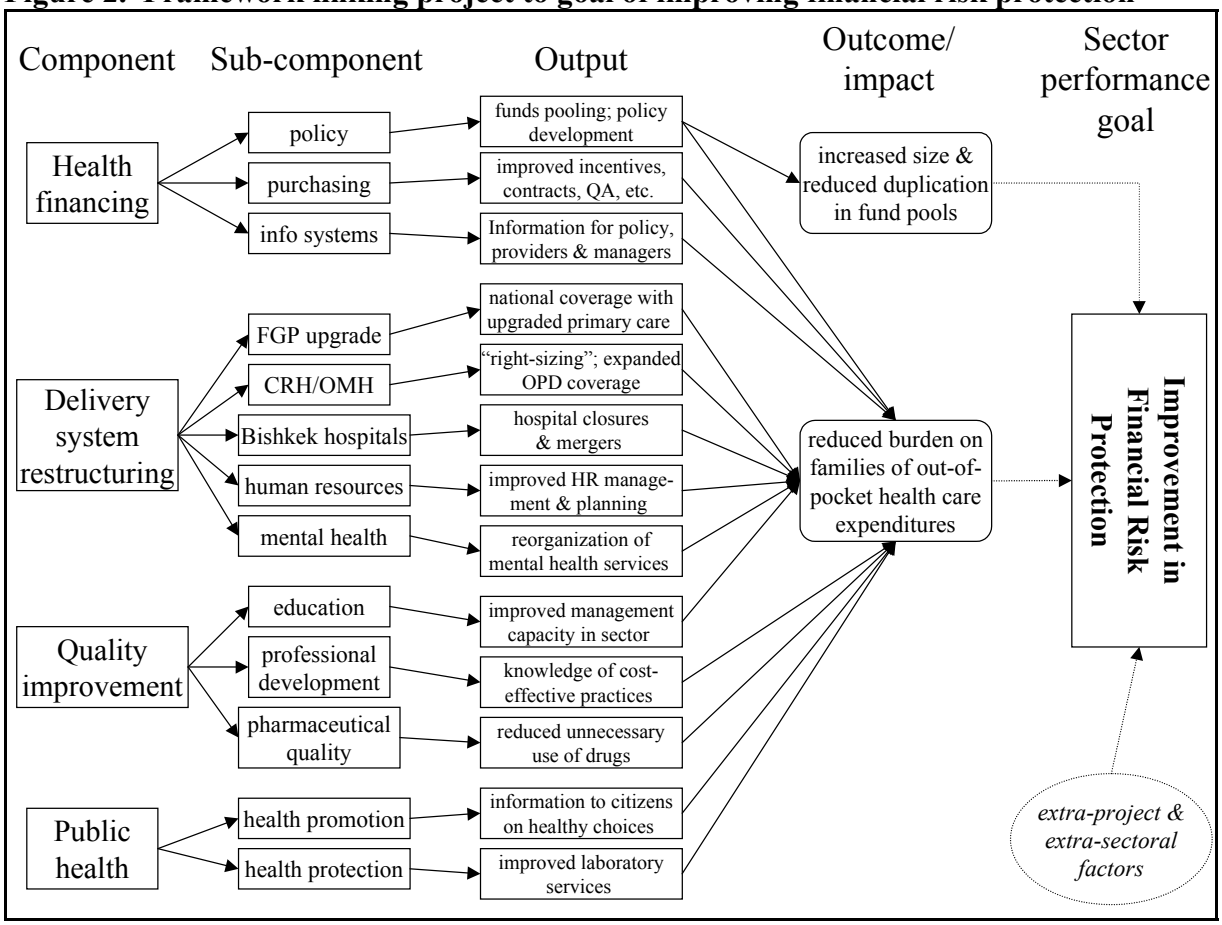
Improving financial risk protection for health care costs is an important objective of the project and of sector reforms. Protection against the financial risk of health care costs is a goal in its own right as well as a means to promote access to needed health care. It is a social goal of health systems to protect individuals (and their families) against the potentially impoverishing effect of out-of-pocket health care costs. In addition, such risk protection is a means to ensure that persons do not forego needed care because of its expected cost, thereby risking their health. As an instrument to improve the total level and equitable distribution of health gain, this aspect of financial risk protection is discussed as "financial access" (Outcome/Impact 1.3) under the health gain goal. Here, financial risk protection is discussed as a goal in and of itself in terms of protection against impoverishment.

A measure of this aspect of financial risk protection is the share of total household expenditures on health. A fairer measure of the relative financial burden of such spending would consider that there is a certain amount of spending that families must make for their basic sustenance. The share of spending on such "basic needs" varies according to a household's level of income. In particular, basic needs absorb a larger share of spending in poorer households, whereas richer households have a greater proportion of spending to devote to "discretionary" items. This non-linearity in the percentage of basic needs spending across households of different income levels can be addressed in the analysis of financial burden by analyzing health spending as a percentage on non-basic needs spending.[8] While "basic needs" spending cannot be measured precisely, food expenditure is a reasonable proxy. Therefore, a good measure of the financial burden of out-of-pocket health spending would be the share of such spending in total non-food household spending. Household survey data would be needed to produce this indicator. This could be generated from both the monthly Family Budget Survey (which includes some health expenditure questions) managed by the Kyrgyz National Statistical Committee (NSC), as well as from special health expenditure surveys to provide more complete information on health spending and care seeking behavior.

As shown in Figure 2, the project and sector reforms aim to improve financial risk protection for the population. However, this will also be affected by factors external to the health system. Most important among these are changes in the level and distribution of income in the country.

[8] Murray, C.J.L., F. Knaul, P. Musgrove, K. Xu, K. Kawabata (2000). "Defining and measuring fairness of financial contribution." GPE Discussion Paper No. 24. Geneva: World Health Organisation, Global Programme on Evidence for Health Policy.

Figure 2. Framework linking project to goal of improving financial risk protection



Outcome/Impact 2.1: Reduced burden on families of out-of-pocket health expenditures. This outcome is very closely linked to the overall sector performance goal of improved risk protection. Reducing the burden of out-of-pocket payments is an important objective of the Financing Component. In fact, however, improved financial protection should be an indirect consequence of a variety of sector reforms and all of the project components meant to improve health and lower the costs of the health system. Improved health through better health protection and health promotion should reduce the need to seek care. Improved quality of care, especially at the primary level, should reduce the number of referrals (and consequent need for travel costs and informal payments) and the amount of spending on unneeded services or drugs. Expanded coverage of FGPs and OPD diagnostics should reduce the costs of seeking such services from other (often more distant) sources. Streamlining the service delivery infrastructure should enable public "pooled" funds to be concentrated on the most needed services, thereby reducing the need for out-of-pocket payments to fund needed inputs. Similarly, financing policies and purchasing strategies should yield a better use of pooled funds in the system, thereby reducing the need for out-of-pocket payments. More generally, reforms and project investments that lead to reduced waste and better use of pooled resources should have a positive, though indirect, effect on the distribution of financial risk protection among the population. This can be measured by examining changes over time in the survey-based indicator described above. Because these effects are indirect, it is likely to be difficult to identify the precise contribution of the various reforms to changes in risk protection. Nevertheless, it should be possible to detect some impact in the next five to ten years.

Outcome/Impact 2.2: Increased size and reduced duplication of funding pools. Improving the structure of funding pools for health care is a priority objective of the Financing Component. The problems with the current fragmentation of pools combined with overlapping population coverage were described in the Social Expenditure Review.[9] The extent of financial risk protection available to the population is related to the size of the funding pools. Therefore, moving from multiple small pools (i.e. rayon, city, oblast, and Republican) to geographically distinct pools at either the oblast or national level should be associated with an improvement in risk protection. Changes in this can be measured by quantifying, at different points in time, the number of pools for health care and the size of each pool (numbers of people and amount of money). This can be done by an analysis of data from the MHIF and the MOH.

Sector Performance Goal 3. Improve the extent to which the health system satisfies the legitimate expectations of the population, and the equitable distribution of this

This goal encompasses numerous aspects of an individual's interaction with the health system other than the health and financial consequences. "Responsiveness" is something of an extension of the concept of consumer satisfaction. There are several important aspects of this concept,[10] some of which are particularly relevant to the Kyrgyz health system reforms. These are: (1) individual choice; (2) privacy; (3) prompt attention to health needs; and (4) basic amenities in health facilities. As with the gains in health status, it is a goal to improve both the level of health system responsiveness as well as the distribution of this gain across the population. Improving these aspects of health system performance are objectives that relate primarily to the Financing and Restructuring components.

While responsiveness has multiple aspects, no attempt will be made to combine these into a single summary measure. Instead, assessments will be made with respect to the different project and sector reform outcomes. As noted above and illustrated in Figure 3, these include the following outcomes/impacts.

Outcome/Impact 3.1: Increasing the role of consumer choice in the health system for the entire population. Increasing the role of choice is an important objective of the Financing Component, most directly through the process of individual enrolment with FGPs and the consequent steering of provider payments on this basis. The Restructuring Component will also contribute to this objective through the extension of FGP coverage nation-wide. Measurement of progress in expanding choice should go beyond a calculation of the percentage of the population that is enrolled with an FGP (though that will be important). Currently, many FGPs exist but are not being paid on the basis of the enrolment decisions of their clients. Therefore, a better measure of choice will be the percentage of payment (from pooled sources) received by FGPs that has been steered by the enrolment choices of the population. Comparisons across oblasts should give an idea of the distribution of choice across the population. This information can be gleaned from an informed analysis of data from the MHIF.

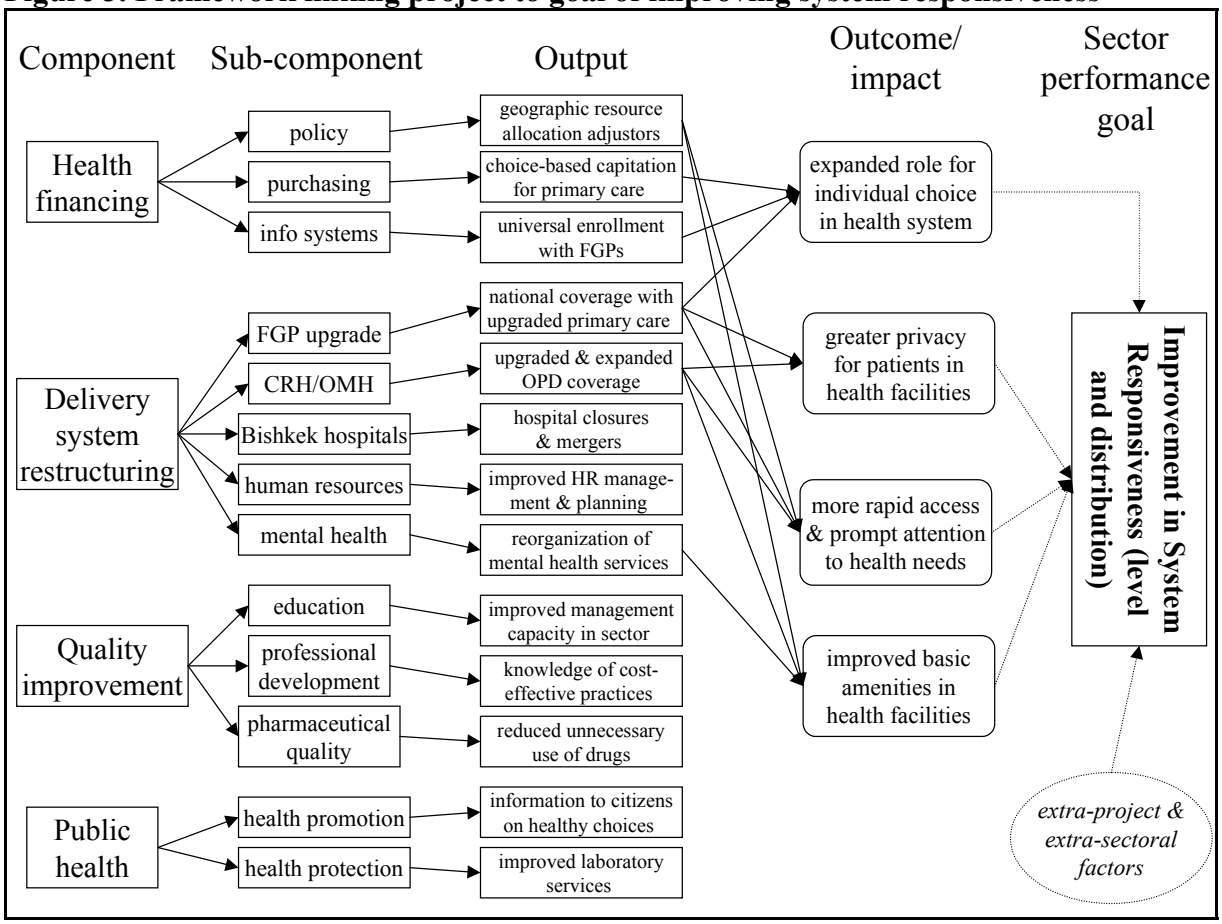
Outcome/Impact 3.2: Improved timeliness in access to care and the receipt of the results of diagnostic tests. Improvement in "prompt attention" is an objective of the Restructuring Component. The distributional equity aspects of this should also benefit from

[9] Kutzin (2000).

[10] Murray and Frenk (1999).

the geographic resource allocation adjusters to be developed in the Financing Component. The extension of coverage with upgraded FGPs and OPD diagnostic services should contribute to progress on this objective. Measurement of "prompt attention" can be derived from the health-specific household surveys to be implemented in 2000 and the 3rd or 4th year of the project. It may also be useful to supplement this with facility-specific patient surveys or case studies of waiting time for test results.

Figure 3. Framework linking project to goal of improving system responsiveness



Outcome/Impact 3.3: Improved basic amenities in health facilities. This is an important objective of the Restructuring Component, and the Financing Component should contribute as well. "Basic amenities" refer to such things as clean waiting rooms, clean and functioning toilets, adequate beds and food in hospitals, etc. The upgrading of FGPs and Central Raion Hospitals, as well as the reallocation of resources made possible by streamlining the service delivery infrastructure, should enable some improvements in these amenities. Particular improvements for psychiatric patients should be observable as a consequence of the mental health sub-component. Evaluation of this outcome may be done through a qualitative assessment and/or through patient interviews.

Outcome/Impact 3.4: Increased respect for the dignity and privacy of individual patients in health facilities. This is one objective of the Restructuring Component. In particular, the physical re-design of FGP and hospital OPD facilities should promote more privacy for patients than is currently the case. This can be analysed through an expert assessment as well as through patient interviews.

Sector Performance Goal 4. Improve efficiency/financial sustainability of the health system

In the Kyrgyz economic and fiscal context, the health system must be put on a sound financial footing. Given current and projected levels of economic output and the need to continue progress towards fiscal balance in the public sector, the only path toward a more sustainable health system is to improve the efficiency of service provision. More concretely, this means getting more from a relatively fixed pool of real resources available to the health system. The need to do this is made more urgent by the planned move to put public utilities on a "true" cost recovery basis. As a consequence of this, implicit subsidies resulting from delayed or non-payment of utility bills will no longer accrue to the health sector. The functioning of the sector cannot be sustained unless the infrastructure is streamlined, resources are put to better use, and productivity is increased. Making such gains in efficiency are priorities for Kyrgyz health policy to which the Health II project is intended to contribute.

The efficiency of health system performance is determined primarily by factors that are the responsibility of health policy makers. However, factors outside the health sector also affect this. The presence of these factors (e.g. overall macroeconomic performance, exchange rate changes, political influence) complicates the task of attributing changes in indicators of efficiency to specific reforms and project outcomes/impacts. It is also likely that substantial changes in these indicators may not be observed in a relatively short (i.e. 5-year) time frame. Nevertheless, there is a need to identify useful indicators of efficiency and financial sustainability that should be subject to routine monitoring by the MOH.

Financial sustainability is an elusive concept. A possible definition is "the extent to which…health expenditures are funded from national resources, or…the medium to long term stability in the mix of funding sources."[11] However, such a definition does not address the actual need for financial resources. Ex post, expenditures (from all sources) equal revenues, so an analysis of health spending patterns does not lead directly to conclusions concerning sustainability. The definition above does suggest that sustainability could be assessed by measuring the share of donor funding in a health system. In the context of a donor-funded project, however, this would be something to be measured in the years following project completion. More important, perhaps, is an assessment of the mix of domestic funding sources. Here, however, the question of sustainability invariably becomes intertwined with other policy objectives. For example, the extent to which the costs of the system can be funded from pooled (i.e. other than out-of-pocket) sources is really an assessment of the financial risk protection provided by the health system to the population. Similarly, the improved sustainability implied by reducing the fixed costs of the health system is derived from an improvement in operational efficiency. Therefore, it is not proposed to try and analyze financial sustainability directly. Instead, an assessment of the effects of reforms on sustainability will be made on the basis of an analysis of changes in system efficiency and financial protection.

A more useful concept of sustainability may be the following: "the capacity of the health system to function effectively over time with minimum external input".[12] This takes the

[11] McPake, B. and J. Kutzin (1997). "Methods for evaluating effects of health reforms." *Current Concerns* series, ARA Paper number 13. Geneva: World Health Organization; p.40.

[12] LaFond, A. (1995). *Sustaining Primary Health Care*. The Save the Children Fund. London: Earthscan Publications, Ltd.; p.17.

issue beyond the realm of finance. While this broader "institutional" aspect of sustainability may not be quantifiable easily, it is useful to think of it as the capacity of the health system to adapt on its own. Creating and strengthening such capacity is clearly an objective of the Kyrgyz health reforms and is also embodied in the Health II project's investments in information systems and policy analysis capacity. These changes aim to improve the capacity of the health system to generate information on its own performance and use this information to modify policies accordingly. The extent to which decisions are made based on such evidence should be monitored in the coming years for a qualitative (and possibly) quantitative assessment of this aspect of health system sustainability.

Conceptually, improving efficiency in the performance of the health system implies a reduction in the cost per unit of output of the health system. Quantifying the output of the health system poses a challenge, however, since it consists of multiple elements. Even if these are summarized as health gain (total level and equitable distribution), responsiveness to legitimate expectations (total level and equitable distribution), and a fair distribution of the burden of financing the system,[13] measurement of each of these remains a daunting task. Moreover, combining them into a single output measure invariably involves a subjective valuation of the relative contribution of each. Despite these challenges, it is still reasonable to draw some tentative conclusions about the efficiency and sustainability of the health system by analyzing changes in various indicators that are plausibly linked to these. To support this goal, therefore, the project and sector reform outputs should contribute to the outcomes and impacts described in the following paragraphs and illustrated in Figure 4.

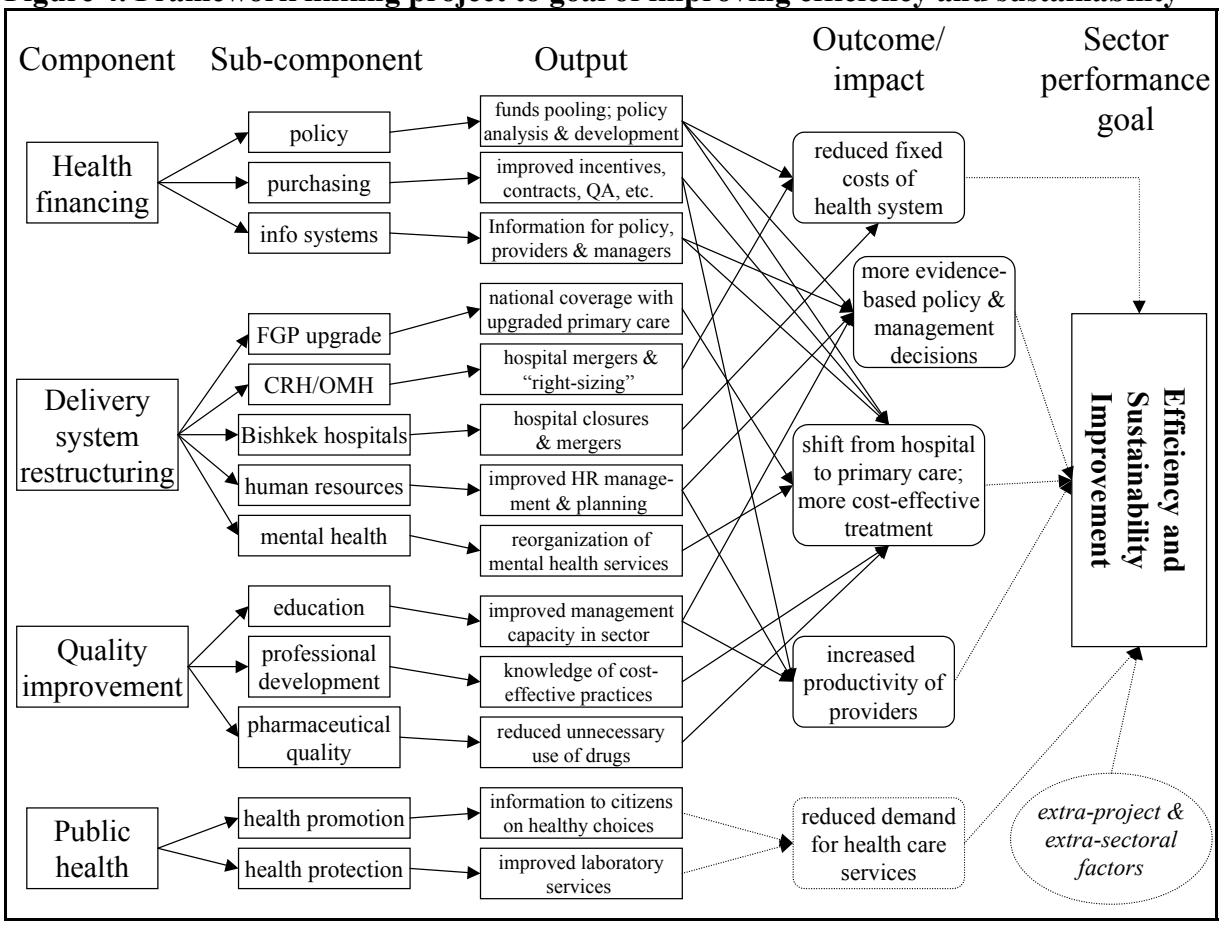
Outcome/Impact 4.1: Reduced fixed costs in the health system. Reducing the fixed costs of the health system is an important objective of the Restructuring Component. It is also an objective of the Financing Component. This should be monitored with data from the annual health sector specific public expenditure review and the more detailed NHAs. From these, it is possible to analyze changes in the share of total health spending absorbed by fixed costs. Actual expenditures on some fixed cost items, such as electricity and other utilities, may be a misleading indicator because of unpaid bills. Therefore, the detailed NHAs should use bills or other information on the consumption of utility services as a basis for a longitudinal comparison. It may also be necessary to analyze these in the context of a few detailed hospital cost accounting studies. In addition to such detailed studies, progress on the rationalisation of hospital capacity should also be documented. This should focus less on numbers of beds and more on numbers of hospitals.

Outcome/Impact 4.2: Improved cost-effectiveness in the health system. Improving the cost-effectiveness of the mix of services is an important objective of the Financing, Restructuring, and Quality components. Taken together, various project inputs and sector reforms are meant to shift resources from specialized to primary care and to broaden the scope of interventions that can be delivered effectively in this less expensive setting. Broad progress on this can be assessed by analyzing changes over time in the share of public and total health funding across levels of care. More specifically, possible improvements in cost-effectiveness should be analyzed by monitoring adherence to new, cost-reducing prescribing and treatment protocols. The primary care database can be used for such an analysis of treatment, prescribing and referral patterns. The hospital utilization review database can also be used for cross-sectional (e.g. by oblast) and longitudinal analyses of changes in the number (and percent of total) of unnecessary admissions. In addition, the effects of the

[13] Murray and Frenk (1999).

provider payment systems (including their utilization management features) on system efficiency should be evaluated periodically through special studies.

Figure 4. Framework linking project to goal of improving efficiency and sustainability



Outcome/Impact 4.3: Improved health system and health worker productivity. Improving and increasing the output of the health system per unit of input is an objective of the Financing Component. The Quality and Restructuring components should also have an effect on this. Increasing productivity at the hospital level is meant to result from the incentives of the case-based payment system. At the primary care level, increased productivity is meant to be achieved by increasing the coverage of FGPs and their ability to manage an expanded range of conditions. Productivity changes could be monitored by monitoring overall health care service throughput (e.g. admissions, ambulatory visits) relative to overall expenditures. More precise analyses of such changes should be produced through special studies of unit costs at primary and hospital levels.

Outcome/Impact 4.4: Greater use of information for policy and management decisions. Increasing the use of health system performance information for decision-making ("evidenced-based policy") is an important objective of the Financing Component. It is also an objective of the Restructuring and Quality components. The ability to make decisions based on performance information generated by the health system implies that health system managers and policy-makers can (1) identify changes in performance, (2) analyze information to assess the likely causes of change, and (3) use such analyses as a basis for policy and management changes. Such capacities are features of an adaptable health policy process and health system. Assessing this aspect of system sustainability

should rely on largely qualitative evidence on the extent to which the Kyrgyz health system managers and policy-makers are using performance information to guide decisions. While the number of such decisions could be quantified, the extent to which they are guided by performance information will need to be an informed judgment.

Outcome/Impact 4.5: Reduced demand for health care services. If the Public Health Component is successful in addressing major risk factors, the demand for personal health care services should be reduced. Given all of the other changes occurring in the organization and delivery of personal health care services as well as changes in living standards and poverty, however, it is not feasible to identify any such changes due to improved health promotion and protection. Moreover, it is unlikely that the effect of this aspect of the project will be felt within the next five years. Therefore, no attempt will be made to measure this impact.

5. Evaluation strategy issues

Evaluation requires more than documenting changes in indicators. While the choice of appropriate indicators is important, these must be embedded within a strategy and methodology to allow for a plausible link to be drawn between observed changes in indicators and likely causes of such changes. There are several reasons why it should be possible to have a good evaluation strategy in the KR:

- routine data collection systems have been strengthened in past years and will be extended during the next five years;
- the quality of information appears to have been greatly improved due to the link between financial and clinical systems and reporting;
- implementation of reforms continues to proceed on a phased, step-by-step basis, which allows for analysis of "natural experiments" (e.g. pooling of funds in 3 oblasts in 2001 will allow for a comparison between the single payer and fragmented payer systems in that year);
- a Demographic and Health Survey (DHS) was implemented in 1997 and may be fielded again in 2002 or 2003, allowing for a useful comparison of maternal and child health status and care seeking behavior between the beginning of the implementation of reforms and several years into the process;
- with support from DFID, a survey of health expenditures and care seeking behavior was fielded in 2001, and the MOH and donor partners are interested to repeat this in 2002 and again in 2003/4 to capture information and identify changes in private payments for health care (formal and informal), financial barriers to access, population knowledge of the changes in the health system, and variations in each of these across people in different geographic areas and socio-economic groups; and
- explicit recognition and interest by the senior staff of the MOH of using evaluation as a basis for further reforms, and support to strengthening evaluation capacity in the health system to be provided in Health II as well as through assistance from WHO, USAID and DfID.

Each of these factors, individually and in combination, points to a great opportunity to strengthen the evaluation function in the Kyrgyz health system and to orient the reform process to performance goals. Nevertheless, taking full advantage of this opportunity will

require a concerted effort to create and strengthen local capacity to define clear policy objectives in measurable terms, to identify priorities for monitoring and evaluation, and to define, commission, or undertake relevant research. One important aspect of the proposed strategy is to rely as much as possible on routine data sources being generated by the Health Information System, especially the primary care and inpatient databases. In addition, the MOH must endeavor to make use of the information provided by both routine and special household surveys in order to shift to a real population-oriented health policy focus. To do this, the Ministry needs to strengthen its political and technical links with the National Statistical Committee.

Annex 1: Project Design Summary

KYRGYZ REPUBLIC: Second Health Sector Reform Project

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
Sector-related CAS Goal: Improve performance and long term financial viability of the health system by: Adjusting the delivery system to available means and focusing on important health risks and diseases. Improving access through better distribution of services and offering financial protection for the population against potentially impoverishing levels of out-of-pocket health spending; Improving the responsiveness of the health system to the expectations of the population.	**Sector Indicators:** a. Health status measures (child and maternal mortality; ARI/DD incidence and mortality); level & distribution	**Sector/ country reports:** a. MOH routine data from HIS; results of 2002/3 DHS data (levels and trends since 1997 DHS), including analysis of data by region and "wealth" level of respondents based on asset index	(from Goal to Bank Mission) Improved health, financial protection, & responsiveness will contribute to overall economic development & poverty alleviation, given the fiscal constraints facing the government & economic prospects for the country.
	b. Cost structure of providers & unit costs of services: decrease in consumption of utilities per treated case independent of price changes; decrease in consumption of utilities as a share of total resource allocation per health facility	b. Analysis of cost and input use at system and provider levels, including NHA work	
	c. A fairer distribution of health expenditures as a percentage of total household non-food expenditures, by socio-economic status (i.e. improved progressivity)	c. Household survey data on care-seeking & health/household expenditure patterns	
	d. Improved access to care by region & socio-economic status: improved access to health facilities in case of perceived health needs, especially for low income persons	d. Household survey data on care-seeking & health expenditure patterns, focus groups, HIC utilization data, DHS data	
	e. Improved satisfaction of patients in getting the care they wanted by the provider they choose.	e. Patient satisfaction questions on surveys, focus groups	

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
Project Development Objective: Improve level & distribution of health & health system responsiveness for the population while decreasing the fixed & unit costs of the health system & the burden of out-of-pocket health care costs on families.	**Outcome / Impact Indicators** a. Increased use of accepted guidelines in clinical practices and improved consistency with outcome indicators as for ARI/DD and others, as well re-admission rates.	**Project reports:** a. HIS data on treatment, prescribing & referral practices in comparison with guidelines; rates of complication and re-admission from hospital CIFs	**(from Objective to Goal)** Stable political & economic environment in country, region and Russia. Introduction of reforms, training, and information provision will alter clinical & managerial practices and health-related behaviors of the population in ways that will lead to improvements in health status. Basis for determining the level of budget allocation to health sector will change to enable reallocation of resources within the health sector from any reductions in fixed costs.
	b. Improved cost/effectiveness of services within and across providers.	b. Public expenditure reviews & NHAs; data on treatment practices for selected diagnoses	
	c. Improved equity in distribution of health resources and services.	c. DHS & health household survey (baseline and follow up) data; analysis of per capita health resource allocation using NHAs and public expenditure reviews	
	d. Reduced financial barriers to access care.	d. Comparison of income-related access barriers identified in baseline and follow up survey of health expenditures and care seeking behavior	
	e. Greater role for consumer choice as reflected by the % of FGP payment steered by consumer choice-based capitation; improved access to services & prompt attention to health needs; improved basic amenities & greater privacy in health facilities	e. NHA combined with detailed study of FGP capitation payment system; data on access, prompt attention, amenities and privacy from patient surveys, postal surveys, and focus groups	
	f. The functioning of larger financial risk pools; reduction in the percent of out-of-pocket spending in total health spending, and increase in the progressivity of the burden of health financing	f. NHAs to measure number and per capita budgets of funding pools; Survey data at baseline & near completion to measure out-of-pocket health spending as % of total non-food household spending, combined with NHA analysis of total health funding sources	
	g. Reduction in demand for fixed inputs (e.g. utilities)	g. NHA, region- & facility-specific analyses of fixed & variable costs;	
	h. Consumption of services on the most cost/effective level of provision (PHC/specialized care)	h. NHA & public expenditure review data on the share of spending across different kinds of providers and services, as well as studies of treatment patterns for selected conditions	
	i. Increased number of discharged patients per bed.	i. HIS data on throughput, especially bed turnover rate for hospitals	

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
Output from each Component: ***1. Health Services Delivery Restructuring*** Overall provision and mix of health facilities and providers will be "right-sized" and fixed costs reduced by a restructuring of the health care delivery system	**Output Indicators:** a. Increased population coverage with equipped FGPs	**Project reports:** a. FGPA and enrollment database	**(from Outputs to Objective)** a. FGPs are well-trained and able to make effective use of their equipment and other inputs
	b. Reduced number of beds and variety of secondary and tertiary type care facilities on all territorial levels.	b. HIS data	b. Any savings of fixed costs from closures and mergers of oblast/rayon hospitals are retained for reallocation within the oblast health system
	c. Increased availability and use of ambulatory diagnostic services in CRHs	c. HIS data, site visit reports	
	d. Reduced number and mix of hospital beds and hospitals in Bishkek (city and Republican)	d. HIS data	d. Administrative changes in Government budget system to enable implementation of service plans for Bishkek that combines city and Republican facilities
	e. Routine updating of human resource database and evidence of its use for work force planning	e. Qualitative assessment of use of HR database	
	f. Reduced hospitalization rate for people suffering schizophrenia.	f. Comparison of baseline and follow-up hospitalisation rates for schizophrenia patients in pilot implementation areas	
	g. Increased number of people with minor mental illnesses e.g. depression, managed in primary care and on CRH level.	g. Throughput data on minor mental illnesses in pilot implementation areas	
2. Health Financing Improved health financing system facilitating broadest possible pooling of financial risk, reallocation of resources to priority services, equity in the distribution if funds, and incentives that promote quality and efficiency, combined with an information system that facilitates policy and managerial decisions	a. Increased size of fund pools	a. Treasury data and NHAs	Pooling of funds will facilitate rationalization, reallocation and creation of more coherent financial incentives, that will in turn contribute to improved quality and equity in access to care; local governments will not reduce level of health funding in response to pooling of budget funds in MHIF; more appropriate pattern of public spending with explicit co-payment requirements will diminish level of informal payments of families
	b. More equitable per capita distribution of public funds across oblasts	b. Treasury data and NHAs	
	c. Increased share devoted to PHC and public health	c. Treasury data and NHAs; studies of HIF purchasing practices	
	d. Information-driven policy process	d. Qualitative assessments of the extent of evidence-based policy	

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
3. Quality Improvement Improved quality of health services made sustainable by improvement in the education of health professionals, introduction of processes for systematic improvements in clinical practice, and improved pharmaceutical management	a. Output of trained and retrained FGP professionals	a. Data from educational facilities, new M&E unit in Center for Continuous Medical Education	Stability in finance of health sector, receptiveness of health professionals to new methods of training and reformed organization of service delivery system
	b. Increased membership of professional organizations	b. Reports of FGPA and HA	
	c. User rate of National Medical Library	c. Library management and M&E center reports	
	d. Extent of evidence-based clinical guideline development	d. M&E center reports	
	e. Use rates of pharmaceutical quality labs	e. Reports of MOH Drug Dept. and Drug Information Center	
4. Public Health Improved ability of the health system to promote and protect public health	a. Output of new national health promotion center in terms of number of people trained and guidelines issued	a. Report of the health promotion center	The efforts for capacity building in health promotion and health protection, in accordance with international best practice, will be accepted and allowed so as to affect changes in the practice of all those engaged in health promotion (national and oblst offices, clinical services, FGPs) and in health protection (SES). Trends, including social, economic and epidemiological, which work against health status improvements will ot be accelerated to undermine the impact of methods shown to be effective in other countries
	b. Number and setting (e.g. FGPs, schools) of local health promotion activities and effect of these on population understanding of healthy behaviors	b. Site visits for qualitative assessment of health promotion activities; KAP surveys	
	c. Trend in the incidence of selected common infections (TB, hepatitis A and B, brucellosis) in pilot oblasts is similar or better than in other oblasts (efficiency and quality improvements); extension of similar gains to all oblasts by end of project	c. Description of changes in staffing and functional responsibilities in SES epidemiological units in pilot oblasts combined with a comparison of trends in infectious disease incidence in pilot and non-pilot regions	
5. Project Administration and Evaluation Satisfactory project management and strengthened institutional and evaluation capacity within MoH	a. Efficient project management	a. Project quarterly and annual reports;	Successful project implementation with project objectives achieved, bsed on careful evaluation of the project's impact
	b. Timely disbursements in accordance with accepted implementation and procurement plan	b. Annual financial audits accepted by the Bank; Supervision missions Updated procurement and implementation plans including training plans	
	c. Continuous project monitoring and evaluation in accordance with the agreed monitoring plan	c. Reports on project impact as a result of monitoring activities	