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PROGRAM REPORT:

Conceptual Foundations for Central Asian Republics Health Reform Model

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Almaty, Kazakhstan**



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Abstract

Following the collapse of the Soviet Union, the Central Asian health care system was typified by imbalance between the primary care and hospital sector, limited population choice or rights, negligible and inefficient finance and resources, and ineffective management. Since 1994, ZdravReform has been working to rid the health system of these inefficiencies and to provide it with new incentives. The resulting Central Asian health reform model has four main elements: 1) health delivery system restructuring and strengthening of primary health care; 2) population involvement 3) health financing and provider payment systems; and 4) management information systems. This document contains a series of seminal papers within each of these four categories. Taken together they provide a complete conceptual foundation for the ongoing development of the Central Asian health reform model.

Central Asia Health Reform Model Summary

This paper introduces a series of conceptual papers that as a set provide a foundation for the development of the Central Asian health reform model. There are four main components of the health reform model: 1) Health delivery system restructuring and strengthening primary health care; 2) Population involvement 3) Health financing and provider payment systems; and 4) Management information systems. Legal and policy framework, and public awareness are elements of each of these components. A legal paper in the ZdravReform series of papers provides background on the legal environment.

Development of a health reform model is a process requiring identification of health sector problems, determination of solutions, and development of a framework or model that allows the solutions to be implemented in a cohesive and integrated manner. The remainder of this paper contains a section for each of the four health reform model components. Each section includes a brief description of the component and a reference list of the papers relevant to that component.

A. Health Delivery System Restructuring and Strengthening Primary Health Care

One of the most profound inefficiencies in the health care system is the imbalance between the hospital and primary care sectors. Hospitals consume more than 70 percent of the health care budget. The health delivery system inherited from the Former Soviet Union can be likened to an inverted pyramid. The hospital sector at the top of the pyramid is overdeveloped and the primary health care sector which should serve as the broad base of the pyramid is underdeveloped, underfinanced, and underutilized. Solving this problem requires complete restructuring and strengthening of the primary health care sector through the creation of new primary care practices.

There are also clinical obstacles to the development of the primary care sector. Primary health care has been inadequately provided in the past through catchment area physicians with incentives to refer quickly to specialists. Training of primary care physicians, by Western standards, is inadequate, and thus conditions that should be effectively treated in the primary care sector are treated in the hospital or by specialists at polyclinics. Solving this problem requires introduction of general or family practice and upgrading of clinical skills. There are also clinical areas such as reproductive health and infectious diseases which should be incorporated into primary health care (see the two papers in this ZdravReform series covering this topic). In addition, the Soviet system maintained extensive vertical health programs for tuberculosis, sexually transmitted diseases, oncology and psychiatry, which also should eventually be integrated into primary care.

There are seven papers in the following series which address various issues related to health delivery system restructuring and strengthening of primary health care. A couple of papers addressing broader clinical issues are also included in this section. The papers are as follows:

1. Background on Health Delivery System Structure
2. The Health Delivery System: Restructuring Primary Health Care
3. Strengthening Clinical Practice in Primary Care
4. Infectious Diseases in the Central Asian Republics
5. Integration of Laboratory Services into Primary Health Care
6. Evaluation and Future Steps for the Pharmaceutical Sector
7. Evidence-Based Medicine in Post-Soviet Health Care Systems

B. Population Involvement

In the Soviet system, the population was not involved in decisions about their health care. They had limited rights as well as limited responsibilities. They were unable to choose their primary care provider and their health care provider did not provide them with information about their condition. Provider payment systems funded the infrastructure of the health sector not the health services received by the population, and as the state provided everything, people did not take responsibility for their own health.

The rationale for increasing population involvement in decisions about their health care consists of four major reasons: 1.) Introduction of consumer choice is closely tied to the reorganization of the primary care system; 2.) Informed consumers are more likely to become active consumers who hold providers accountable and thus play a role in improving the quality and efficiency of health care; 3.) Increased power in decision making about health care can contribute to the desire for more democratic participation in other parts of society; and, 4.) The population needs to take more responsibility for their health status and engage in healthier lifestyles.

Addressing this issue requires redefinition of both population rights and responsibilities. The population should be given the right of free choice of primary care practice through enrollment, as well as rights to obtain information about their health condition and to be covered under various health insurance systems. Population responsibilities must change as well, as consumers being to inform themselves about their health status and to engage in healthier lifestyles.

The discussion of population involvement is combined into one paper in this package – Involving the Population and Community in Health Sector Reform. This paper also describes the role of NGOs in facilitating health reform and the development of civil society. In addition, a health communications paper in the ZdravReform Program series of papers addresses health promotion.

C. Health Financing and Provider Payment Systems

The legacy of the Soviet system and the turbulent transition to a market-based economy has had dramatic consequences for the health sector in Central Asia. Resources available to maintain the health care system have fallen drastically, with health care expenditures as a percentage of GDP declining from approximately 6 percent to 3 percent. In addition, GDP fell around 50 percent resulting in a significant reduction of real per capita health expenditures.

The declining health sector resource base cannot sustain the current service infrastructure. The overly specialized system contains excess capacity, massive amounts of bricks and mortar, and high fixed costs. Because facilities have historically received their funding based on a combination of capacity and utilization rates, the incentives facing providers have been to maintain large, inefficiently utilized physical structures and excess medical staff.

The allocation of health resources in Central Asia has followed the traditional Soviet chapter budgeting process, allocating health funds across facilities by input measures, such as the number of beds, rather than by the quantity and quality of services delivered. Budgets were guaranteed and providers did not have to compete to attract the population by providing lower cost, higher quality health services. The budgets were disbursed by budget chapters according to strict norms. Since budgets were required to be spent according to chapter allocations, facilities could not use their resources in the most cost-effective manner.

Changes in the way health providers are paid is needed to change the underlying incentives to introduce competition, encourage increased efficiency, and allow hospitals greater autonomy to allocate resources.

As reforms in health financing and provider payment require many changes in the institutional structure and funds flow of the health sector there are eight papers in this series which address many related issues:

1. Health Sector Institutional Structure and Functions

2. Health Care Financing
3. Pooling of Health Care Funds
4. Health Insurance
5. Per Capita Payment Systems for Primary Health Care
6. Hospital Structure, Rationalization and Payment
7. Quality Improvement in Post-Soviet Health Care Systems
8. Privatization in Health Reform

D. Management Information Systems

In the former Soviet Union, the MOH collected enormous amounts of information on health sector budgets, service utilization, and health status indicators. The data, however, were not compiled in a way that facilitated analysis, and it was difficult to link costs with utilization or health outcomes.

To survive in the on-going transition to a market economy, the inpatient and outpatient sectors must both function more as businesses. Hospitals must understand the costs of producing their services and develop plans to reduce costs, increase revenues, and produce an optimal mix of services. Primary care providers must be concerned about the health of their practices as well as that of their patients, and they must market themselves to the users and purchasers of health care.

At the health purchaser level, health management information systems are required to support the design, implementation, and evaluation of new provider payment systems and quality assurance systems. At the health provider level, new management information systems are needed to provide health facility managers with tools to adapt to the new environment, and support better decision-making and allocation of resources. New management techniques need to be introduced and new health management careers established, for example, practice managers for primary care entities.

The majority of the issues in the area of health management information systems is operational and is not included in this conceptual series of papers. There are two papers in this series addressing health management information systems issues:

1. Health Management Information Systems
2. Monitoring and Evaluation of Health Reform

I. Background of the Soviet Health Care System

A. Overview of National System

The health care systems in Central Asia Region (CAR) are based on the Soviet Health Care System often known as the **Semashko model**. They were state-funded health systems based on general taxation with state-owned delivery systems similar to the British National Health Service. There was no separation between the purchaser and provider of care and all facilities were owned and managed by the state, and all health care workers were government employees. The introduction of health insurance has led to some changes in the financing system, but the core of the system remains the Semashko model.

There is a national Ministry of Health with affiliates in each oblast (region). The Oblast Ministry reports to both the national ministry and the oblast administration through the Deputy Governor for the Social Sphere. Due to greater decentralization of funding after independence, the oblast government has greater control over the health sector than the Ministry.

The public health function is provided through a vertical structure contained within the Ministry known as **the Sanitary Epidemiological Service (SES)**. The SES still retains more central control than other parts of the ministry and has branches in the oblast, cities, and rayons. The SES is responsible for infectious disease surveillance, logistics for immunizations, bacteriological laboratories, food safety, water safety, and the inspection of food-handling activities. The SES has no function for health promotion, disease prevention, or chronic diseases.

Medical education is provided through the **medical institutes** which report to both the Ministries of Health and Education. The institutes do not have their own hospitals or polyclinics but depend on health facilities in the cities where they are located to provide sites for clinical training.

At the national level, there are a large number of **national research institutes** which both carry out research and provide clinical care through their own hospitals, which serve as national referral centers. The institutes are the best-funded health facilities and receive their funding through the national budget. With the decline in funding, research has decreased and patients can no longer travel from the regions, so the national hospitals generally function as specialized city hospitals.

B. The Structure of the Health Care System in the Oblasts

The following is a typical case of an oblast health care system with an oblast center based in the largest city, several other cities, and numerous rayons. There is a different type of organization for the cities and rayons.

1. Urban Hospital Care

In a large city, there are numerous specialized hospitals. The core of the hospital system is made of three general types: adult hospitals, pediatric hospitals and maternity hospitals. An oblast center will have at least one hospital of each type which supposedly serves as a referral center for the entire oblast, but in reality functions predominately as a city hospital. These structures are then duplicated at the city level. Thus, a city will have a minimum of six basic hospitals and usually many more. There are also several other more specialized hospitals such as special hospitals for emergency care, ophthalmology, and sometimes cardiology and endocrinology.

In addition, there are separate administrative structures for the specific diseases known as **dispensaries** which are part of a national vertical delivery system similar to the SES and report to the national dispensaries. There are dispensaries in the following four areas:

1. Tuberculosis
2. Sexually transmitted diseases (Dermato-venerology)

3. Psychiatry and drug abuse (narcology).
4. Oncology.

The dispensaries have a hospital and outpatient department and patients with these diseases are exclusively treated in the specified hospitals and then followed in their outpatient department. There is at least one dispensary of each type in the oblast center. In larger cities, there are city dispensaries and occasionally there are some dispensaries located in rayons serving several areas.

2. Urban Primary Care

Urban primary care is delivered by separate adult and children **polyclinics**. Polyclinics provide care for a specific geographic area known as a catchment area. Patients living in that area are assigned to a polyclinic and have no choice. The polyclinic includes a group of primary care physicians who are assigned a geographic catchment area. These Catchment area physicians make up only a small percentage of the total number of physicians in the polyclinic because there is also a wide range of out-patient specialists, usually between ten to twenty, in areas such as cardiology, pulmonology, gastroenterology, neurology, otolaryngology, ophthalmology, etc. In addition, there are laboratory services, x-ray, and functional diagnostics (e.g. EKG). Finally, there is a physiotherapy department, which is a unique form of Soviet medicine which includes electric and magnetic therapy which is used to treat a wide variety of conditions. In addition to the two main polyclinics, there are women's consultation centers which are generally the outpatient component of the maternity hospitals. These are essentially separate polyclinics for women which provide gynecology, prenatal and antenatal care.

First contact primary care is delivered through a wide array of health care institutions including adult and children polyclinics, women's consultation centers, and for specific diseases, the outpatient component of dispensaries.

In addition, there are a series of specialized polyclinics for outpatient referrals. In many larger cities are located **diagnostic centers**. These are generally stand-alone facilities which have a full array of specialists and a wide range of diagnostic tests ranging from ultrasound to CAT scans. Also, oblast hospitals often have affiliated polyclinics which serve as referral centers.

3. Rural Health Care

Rural health care is organized around the **Central Rayon Hospitals (CRH)**. These hospitals generally consist of departments including pediatrics, adults, maternity services, infectious diseases, etc. In addition, they have an affiliated polyclinic which has a similar structure to urban polyclinics but combines adult and pediatrics. The polyclinic services the population of the rayon settlement, but also serves as a referral center for lower level facilities.

The next level are small rural hospitals known by the Russian acronym as **SUBs**. These are small hospitals of usually 20-60 beds that have almost no equipment, generally not even X-ray. These also have an affiliated polyclinic that serves the geographic area where it is situated.

The primary care system is provided by rural ambulatories known by the Russian acronym as **SVAs**. This generally covers a population between 1500-6000 people. They are supposed to contain an adult physician, a pediatrician, a midwife, and often a dentist. Because of the low level of financing, these facilities are almost always understaffed and often have only one physician.

The lowest level is the **Feldsher** points or stations known by the Russian acronym **FAPs**. A feldsher is a physician assistant who is living in the community and has minimal equipment and training. They are responsible for health promotion and very simple treatments.

C. General Observations

1. There is an extensive network of hospitals due to overspecialization. An oblast center will often have more than 20 hospitals, each with a separate function. There is no tradition of general hospitals except in rural areas. This makes downsizing the hospital sector difficult because it requires combining specialized facilities into more general hospitals.
2. The urban primary care system is fragmented into specialized facilities and this makes it difficult to rationalize because it requires combining facilities together to create an integrated system of primary care which can provide a full-range of services.
3. The structure of the rural health care system is much less specialized and less in need of structural reform. The principal problem is that the primary care system is underdeveloped with the vast majority of financing going to the hospitals.
4. The Soviet tradition is to create a new specialized facility for any problem. The latest example of this tradition was the establishment of separate AIDS centers separate from the dermato-venerology dispensary (responsible for STDs). This tradition of specialized centers is not economically viable and there is an urgent need to start combining facilities because of the high fixed costs associated with separate facilities.

II. Strengthening Clinical Practice in Primary Care

The scope of clinical practice in primary care plays a critical role in the health reform process. It is the intersection where reform of health care financing and health care delivery systems meet. The goal of reform is to optimize the health care system given the low-level of funding by shifting resources from the inefficient hospital sector to cost-effective primary care. This requires rationalization of the extensive network of hospitals which consumes over 70% of health care resources and shifting these funds into primary care. The financial shift should also mirror the shift in clinical services from the hospital sector to primary care. This means that a critical step in the reform is to expand the scope of clinical services in primary care.

The clinical capability of primary care in post-Soviet health systems is extremely limited. Beyond immunization, almost all clinical care is referred to a specialist and generally to the hospital. For example, any patient with a cardiac complaint, such as angina, congestive heart failure, etc. would be referred to a specialist. This even includes the treatment of hypertension. Children with a potential ear infection are referred to a specialist because the primary care physician does not even have an otoscope to examine the ear and give a proper diagnosis. Essentially, the first-contact primary care physician serves as a dispatcher who refers patients to other specialists.

The explanation for the low level of clinical activity provided in primary care is due to a combination of factors. First, there historically had been very low levels of financing to primary care which is now exacerbated by the decline in funding. This means that primary care has almost no medical equipment and little capacity to diagnose or treat. Second, primary care was the least prestigious aspect of medicine and attracted the least qualified physicians. The continuing medical education system to upgrade the skills of primary care has broken down leading to a diminution of clinical skills. Third, there was no incentive to increase the scope of services in primary care. In the polyclinic system, the whole structure created incentives to refer to specialists. Given the culture of punishment for mistakes, it was always better to refer. Given the combination of under-funding, lack of incentives, and limited clinical competence, it is not surprising that primary care was seen as the weakest part of the Soviet health system.

To reform the primary care system requires an integrated strategy which will address all of the factors leading to an effective system of primary care. Primary care physicians must have improved clinical knowledge and skills to enhance their clinical capacity. They must have the equipment needed to carry out an expanded scope of clinical services; the resources needed to fund this enhanced capacity and the funding must grow as the scope of clinical services expands further; material incentives to increase their workload; and the physician must change their focus outwards toward the community by focusing on disease prevention and health promotion.

The family group practice is the key institutional change needed to accomplish integrated reform of the health financing and delivery system. The FGP unifies the three historical specialties: internists (adult medicine); pediatricians (for children); and obstetrician-gynecologists (for women). This gives an integrated clinical unit which can undergo clinical strengthening to expand the scope of services. From a financing standpoint, the FGP becomes the financial unit of primary care which will receive a capitated payment. Capitation creates transparency in the financing system and allows one to link budgets to the scope of clinical services. The capitation rate can increase as clinical capacity improves and FGPs treat an expanded scope of services.

The question is how to strengthen primary care and begin shifting services from the hospital to primary care. This requires clinical strengthening of primary care by both horizontal and vertical integration of clinical services.

Horizontal integration means integrating across different specialized vertical systems in the delivery system. In the short-run, this means integrating the three core specialties into a single organizational unit.

Further integration means including other vertical systems into the primary care unit, particularly the dispensaries: sexually transmitted infections, oncology, and etc.

Vertical integration means upgrading the clinical capabilities of primary care physicians to cover the clinical areas providing by polyclinic sub-specialists. In the polyclinic there are often a wide range of specialists e.g. cardiologists, neurologists, etc. The vast majority of these conditions should be able to be provided by well-trained primary care physicians. For example, a therapist (adult medicine specialist) should be able to treat common problems in cardiology such as hypertension, and mild congestive heart failure.

A. How to Expand the Scope of Clinical Services

An overall strategy is needed to expand the scope of clinical services in primary care. This requires both a long-term strategy for the overall direction of medical education and health care delivery reform, and a short-term strategy to raise the capability of primary care immediately to keep pace with the financing reforms.

The long-term vision of primary care is the development of family medicine. Almost all of the post-Soviet countries have opted for a strategy of developing a single physician who would treat women, children, and adults. One of the driving forces behind the push to develop family medicine is the problem of rural medicine. Increasingly in rural areas, primary care clinics have only one physician. This means that an internist, by necessity, is forced to become a family physician and see women and children also, even though she was only trained to see adults. This would then seem to create a case for developing a cadre of family physicians. However, to create a sustainable system of family medicine one cannot only train family physicians to work in rural areas. Physicians would not choose this “specialty” if they could only work in rural areas.

The development of family physicians who can see adults, women, and children requires fundamental changes in the medical education system. Currently, there are separate medical institutes¹ (or faculties) for adult medicine, pediatrics, and hygiene. The overall goal is to create a single unified undergraduate/pre-service curriculum, which would create a single profile physician, known as a family physician, also sometimes called a general practitioner². A feasible scheme would be that after completing a general internship, this doctor would then be able to practice medicine. After her internship, she could opt for further training through a *residency program*³ to become a family medicine specialist⁴. These residency

¹ Medical institute is a medical school. Soviet medical schools are divided into separate faculties for adult medicine, pediatrics, and hygiene. Often medical schools only have one or two faculties. For example, there are often separate pediatrics institutes.

² General practitioner in Western terminology is equivalent to a family medicine specialist. A British general practitioner undergoes an equivalent training program to American family physicians. In the Soviet context, general practitioner tends to mean a pediatrician or internist who has had additional training or a medical student who has completed an internship. Family physician (from family medicine) was chosen as a better term because it conveys the ideology of seeing all patients in a family with a greater emphasis on disease prevention and health promotion, but of course not limited to only people with families.

³ Residency programs do not currently exist in the Soviet medical education system. Many countries are considering introducing post-graduate residency programs similar to Western countries for all specialists.

⁴ Family medicine specialist is a physician who is qualified to treat children, adults, and women. They would have enhanced clinical capabilities in all of these areas covering the majority of conditions currently treated by polyclinic specialists. Their training would consist of a general medical education followed by a family medicine residency. Currently practicing physicians would be transformed into family medicine specialists through an intensive re-training program. Family medicine would be an official specialty similar to other specialties like cardiology.

programs would be developed to train hospital-based specialists like surgeons and cardiologists, but there would also be a new residency program for family medicine specialists. This would create a medical education system similar to Western countries like the United States and Great Britain.

The first step in the process is developing a cadre of family medicine trainers based in the medical institutes who will become the agents of change in developing family medicine. The critical point to understand is that since there is no system of family medicine, there are no family medicine trainers. Several projects throughout the region have begun the process of developing family medicine faculties in the medical schools, including the Postgraduate Training Institute through the assistance of USAID/ZdravReform in Kazakhstan and Kyrgyzstan, the USAID/AIHA partnership program in Kyrgyzstan, and the British Know-How Fund in Uzbekistan. The World Bank is supporting the development of family medicine in medical schools in Uzbekistan, Kazakhstan, and Kyrgyzstan.

The development of family medicine through the medical schools is a long-term process. In the best scenario, the first graduating class for newly trained generalists from medical school will not occur for another five years and this does not even include any possible residency programs. Therefore, the changes in the medical school system must be complemented by an extensive re-training program of existing physicians, to complement on-going health reforms.

From the standpoint of the primary health care reform, the critical issue is not whether existing physicians can be retrained as family physicians, but whether one can expand the scope of clinical services of primary care. The FGP is one method for achieving family medicine without having to retrain all physicians into family practice. The FGP contains the three core specialties; therefore, they already have a clinical scope of services, which covers the key elements of primary care. Though it is indeed necessary to retrain the doctors in the FGPs, the major question is how to expand the clinical capacity of FGPs,

One method of expanding the clinical capacity of the FGPs requires the development of a series of modular courses which will enhance the capacity of primary care. The first step is increasing the capacity of the three core specialties. This is followed by enhancing their scope of services to include the range of conditions that were historically treated by polyclinic specialists. For example, this would mean upgrading skills to treat the most common conditions of cardiology.

Many short-term clinical courses have been developed by many of the donors. USAID/BASICS and WHO have developed short-courses for acute respiratory infections and diarrheal diseases in children. AVSC, JHPIEGO, and WHO have developed courses in antenatal care, breast-feeding, and family planning. WHO is currently adapting a new short course in clinical diagnosis and prevention of a broad range of childhood illnesses entitled "Integrated Management of Childhood Illness". These short-courses are well done, but they need to be integrated into the medical education system. Often, the donor agencies sets up vertical training programs where they train national trainers who, in turn, train health personnel in the regions. However, the training courses have no standing in the medical education system, since continuing medical education is controlled by the long-standing Post Graduate Institute. To be accredited, the short-courses must be linked into an overall structure of re-training.

A strategy is emerging which links the overall vision of family medicine with the short-term clinical training needs. USAID and DFID are beginning to create a modular curriculum for a one-year family medicine training program. The modules would be developed and certified through the national medical education institutions. They would build on the work already carried out by WHO, USAID, and others. A series of courses would then be provided in the region allowing existing physicians to upgrade their skills to become family physicians.

B. Next Steps

Many of the elements of the reform process are underway in Kyrgyzstan, Kazakhstan, and Uzbekistan with combination of assistance from the USAID, the World Bank, DFID. FGPs have been formed in many areas. The first generation of trainers has been trained. There are some short-term clinical

programs to increase the skills of FGP physicians. However, more input is needed on the clinical training side. One of the most critical issues is linking the long-term retraining process of existing family physicians to the modular courses which upgrade skills, since many doctors cannot take a year off from work to attend a one year retraining course. Therefore, a system of short-term training is needed which will lead to the path of family physicians, to complement a second path, which might involve a one (or more) year dedicated training program.

The medical institutes also need more assistance in shifting to family medicine. The emphasis has been on creating the new generation of family medicine trainers. However, there has been only limited assistance on reforming the entire medical education system to make it consistent with family medicine. This includes combining separate medical institutes into a single unified school which trains general physicians.

Another area that needs work is to develop a uniform attestation process, in order to provide a licensing and accreditation mechanism. At this time, for instance, there are doctors who are calling themselves family physicians who have inadequate training and did not have to undergo a validation process. A uniform consistent standard is needed nationwide.

III. Infectious Diseases in the Central Asian Republics

There is growing concern by USAID about infectious diseases and vertical disease control programs and how this relates to health reform. The Central Asian Republics are not like other countries with similar incomes because they currently have an extensive health care system with an oversupply of health care personnel. There are already existing vertical systems for infectious disease control which are inefficient and can no longer be afforded in an underfunded health care system. Therefore, the issue of improving the control of infectious disease relates to improving overall performance of the health care system by creating an integrated system of primary care which can effectively treat both infectious and chronic diseases in children and adults.

Before addressing specific infectious diseases, one must understand the overall burden of disease in Central Asian Republics. These countries are completing the process of the epidemiological transition with relatively low fertility rates and relatively low mortality rates, and with a growing elderly population. The major causes of mortality are similar to industrialized countries with the dominant cause of death due to cardiovascular disease followed by cancer, and accidents. The decline in life expectancy which has occurred throughout the former Soviet Union is not due to infectious diseases, but due to increases in cardiovascular mortality, alcohol related deaths, accidents and violence. Infectious diseases account for a relative low percentage of overall mortality, generally less than 20 percent.

Given USAID's global commitment to controlling infectious disease, we must determine the best method for controlling infectious disease which link to the overall goals of decreasing the global burden of disease and creating a sustainable health sector in a transition economies. From a burden of disease perspective, the most critical area is infectious diseases which lead to the death of children. The other concern is that infectious diseases which had formerly been under control could emerge as epidemics and will become a much greater burden of disease in the future consuming a greater percentage of the limited resources available to the health sector, and potentially spread to other countries.

A. Burden of Disease

Acute respiratory infections (ARI) and childhood diarrheal diseases (CDD) are the principal causes of death in children. The failure to effectively treat these two diseases, which are completely curable in a primary care setting with modern treatment protocols, underlines the failure of the health care system. The causes for this failure are due to the following factors. First, the primary care physicians are using outmoded treatment protocols. Second, critical drugs are not available in the primary care setting meaning that patients must be referred to hospitals. Third, the population knows that the primary care treatment is ineffective, therefore, parents often wait until the child becomes extremely sick and then by-pass the primary care system and go directly to the hospital. When the child finally comes to the hospital, it is often too late to initiate effective treatment. Finally, the hospitals are unable to effectively treat very sick children, due to lack of knowledge, equipment and drugs. The result of all of these factors is a high death rate for respiratory infectious and diarrhea.

There has been extensive support for training supported by WHO, USAID, and UNICEF which have implemented modern WHO treatment protocols. The modernization of clinical protocols is an essential task but is not sufficient to improve the outcomes leading to a decline in mortality. The primary care system must have the necessary drugs and equipment needed to effectively treat ARI and CDD. This leads one to the issue of health reform and an underfunded system of primary care. Primary care budgets need to be increased so that primary care has the necessary drugs and equipment. Once primary care is strengthened, it must be communicated to the population that they will receive effective treatment in primary care and they should not by-pass primary care and go directly to hospitals. Furthermore, the population must be educated on the initial treatment that can begin at home such as oral rehydration therapy, recognition of danger signs of serious illness and when care-givers should take the child to the primary care clinic. Educating the population requires changing the orientation of primary care towards health promotion.

The more fundamental issue is that ARI/CDD should be incorporated into a broader system of primary health care reform. The goal of primary health care is to create an integrated system of strengthened primary care which treats children, adults, and women. Respiratory infections and diarrhea do not occur only in children and clinical training should upgrade the treatment for the entire population, not just children. A strong system of primary care requires improvement of clinical protocols across a wide range of diseases. This requires a broad training program for primary care. It requires improved laboratory diagnosis which depends on adequate laboratories, the necessary resources to run those labs, and trained laboratory workers. It requires access to pharmaceuticals which is dependent of health care financing reform. It depends on the populations perception of primary care, therefore, it needs to be tied to overall strengthening of primary care which will convince the population that is worth while coming to primary care facilities. The critical point is that one cannot isolate specific diseases; one must generally strengthen primary care

B. Re-emerging Infectious Diseases

One of the fears is that the break-down of the health care system will lead to the re-emergence of many infectious diseases which were reasonably well-controlled during Soviet times. The most dramatic example was the re-emergence of **diphtheria** in many of the post-Soviet states soon after independence due to a breakdown of the immunization system. Diphtheria is now under control but there are fears that there are insufficient funds available for the procurement of vaccines. UNICEF has been providing assistance for the last five years in procuring vaccines, but a sustainable system is needed particularly if governments are going to expand their vaccination programs to include new vaccines such as hepatitis. B.

Beyond vaccine-preventable diseases, there is an increase in many infectious diseases:

- There is a rising incidence of tuberculosis, particularly improperly treated tuberculosis, which is leading to the development of **multi-drug resistant TB**.
- **Malaria** which had been well controlled is re-emerging. This is a priority condition for WHO.
- There are possible **cholera** outbreaks due to a breakdown of water and sanitation systems. The collapse of infectious disease control is most apparent in Tadjikistan which has had an on-going civil war since independence.
- Due to changes in social mores, there has been a dramatic increase in **sexually transmitted infections**.
- There are currently small pockets of **HIV/AIDS**, which are localized to IV-drug users. There is fear that HIV/AIDS could be spread from this limited population to the general population through prostitution and emerge as an epidemic.
- **Hepatitis** is increasing in incidence but the health systems have limited capability to even diagnose the disease let alone treat it.
- There are concerns about the breakdown of food control systems which could lead to increases in **brucellosis, bovine tuberculosis, and parasites** transmitted through meat.
- There are increases in the **helminthes**, and this may be a cause of chronic disease and children.

Given the increasing problems with infectious diseases, there needs to be a systematic approach to improving the health system's capability for combating infectious disease. In most cases this is closely tied to the overall issue of health reform because all of these activities will require additional funds which must be taken from some other part of the health sector. The linkage between health reform and infectious disease control is best illustrated by tuberculosis and sexually transmitted infections, where disease control is managed by a separate vertical system.

C. Tuberculosis

In the Soviet health care system, tuberculosis was treated through a separate vertical dispensary system with its own health facilities. Treatment protocols were inefficient and required that patients be hospitalized until the treatment was concluded leading to long lengths of stay. In addition, there were many other inefficient clinical practices such as mass x-ray screening, which can lead to incorrect diagnosis of TB. The decline in health care funding has been particularly problematic for the TB dispensary system. The dispensary system can no longer afford its extensive network of health care facilities and large staffs. The decline of funding has meant that the health care system is only paying the fixed cost of health facilities and for personnel, which means there is inadequate funding of drugs. As a result, patients are not being adequately treated and this raises the spectre of multi—drug resistant TB. Furthermore, although the system can no longer afford to hospitalize patients for such a long-time, the primary care system is not currently prepared to ensure adequate supervision of outpatient treatment.

In the short-run, the system can be propped up by additional resources to fund pharmaceuticals and improved laboratories. In the long-run, the system is not sustainable and needs to be incorporated into the mainstream delivery system. There is no reason to have a separate vertical structure for TB. On the outpatient side, family group practices should be able to follow patients once they are no longer infective. This means only short hospitalization is required. Hospitals can be merged to allow for more flexibility and to generate savings due to sharing of such important services as laboratories, laundry, kitchen, operating rooms, accounting, etc.

D. Sexually Transmitted Infections (STIs)

STIs are also treated through a vertical dispensary system known as dermato-venerology. Currently, almost all patients with syphilis and gonorrhoea are hospitalized and treated by specialists. Because of the punitive treatment (long hospitalization and multiple injections of antibiotics), patients often wait until the disease has become more advanced. There is no reason why patients with STIs cannot be treated in primary care. There is no justification for having separate facilities for STIs. Even the issue of contagion, which plays such an important role in Soviet medical thinking about TB, is not relevant for STIs which are spread sexually. There is no reason that a patient with disseminated syphilis or gonorrhoea cannot be treated on a general medical ward.

E. Conclusions

1. Controlling ARI/CDD is a critical task and should be addressed as part of an integrated strategy for strengthening primary care. This means upgrading clinical training, better equipment and better access to pharmaceuticals. This overall strengthening will improve the control of infectious disease across a wide range of diseases and will improve treatments not only for children but for the entire population.
2. It is essential to take into account technical efficiency of the health care system when addressing particular infectious diseases. The use of vertical systems needs to be actively discouraged. The only way to create a sustainable health care system is by integrating services and ensuring that the limited resources available to the health sector are used properly.
3. Training programs for control of specific infectious diseases should be integrated into the existing training system and should not be stand-alone training programs.
4. There is a role for ensuring that epidemics are controlled. This is most likely in Tadjikistan due to civil conflict and humanitarian aid may be needed.

IV. Integration of Laboratory Services into Primary Care

A. Pre-Independence

In the Soviet system, the health service consisted of many hospitals and specialized facilities, usually staffed by specialists and each having its own laboratories. Primary care was largely undeveloped. Patients were often referred from lower to specialized higher levels, or to the specialized facilities at rayon or oblast centers, for diagnosis and treatment. Duplication of laboratory tests was widespread when patients were referred from one facility to another.

As in all countries, there was an extensive regulatory system of *prekaz* covering all aspects of clinical diagnosis including which tests were required, as well as regulations regarding all aspects of the laboratory services. SES was responsible for public health and monitored medical and other facilities, including laboratories. SES had facilities at rayon, oblast and national centers, each with its own laboratories, including culture capability.

Primary care was not highly developed. FAP staff referred patients to specialists or sent specimens to primary care facilities such as SVAs and SVPs. These facilities had small laboratories with staff to carry out basic tests using manual methods appropriate for this level of the health service. There was a regular transport system for sending specimens from one facility to another. Patients were also referred from SVAs and SVPs to central rayon polyclinics where the laboratories had more highly trained staff and offered a wider range of tests including biochemistry. There were also specialized laboratories, for example in the Dermo-veneriology facilities, where specimens could be examined for sexually transmitted diseases and where cultures could be performed.

There was an extensive education system for basic training of laboratory physicians and workers, with regular retraining for all laboratory personnel. Many senior laboratory staff had the opportunity to travel to cities in other parts of the Soviet Union for training or meetings, and there was a network of professional laboratory specialists who were able to maintain contact and exchange technical information. Information about developing laboratory technologies from non-Soviet countries was not available. Supervision after basic training was carried out regularly by oblast and rayon laboratory supervisors.

Health service policy was decided in Moscow, and equipment and supplies originated from a limited number of republics, such as Russia and the Ukraine. Little or no local capacity developed to enable decisions to be made regarding health technology, including appropriateness, reliability, clinical relevance, cost effective and efficient technology, and sustainability. Maintenance and repairs to equipment was provided by Med-Technica technicians who were based in the capital city and in the oblasts.

B. Post Independence

Health care reforms are being implemented in Central Asia in order to improve the efficiency of health services and strengthen primary care. The goal of the reforms is to increase the effectiveness, standard, and range of primary care services through the establishment of a network of primary care facilities in the community, such as Family Group Practices, (also called Ambulatories in some regions).

Access to appropriate, affordable, and sustainable laboratory services is an important component of primary health care together with the reduction of unnecessary referrals. Consequently, the clinical staff of primary care facilities involved in the reforms are striving to provide a variety of services to their clients, including convenient and accessible laboratory services. Physicians need the services of laboratories that are able to provide accurate and reliable test results in a timely fashion.

Many new primary care facilities now have a small, on-site laboratory staffed by a laboratory worker or nurse, while others aim to offer some testing services when funds become available. Equipment and supplies have usually been obtained when a hospital has been closed (the exception being Uzbekistan, where the health ministry has provided a limited amount of new equipment produced within the country).

There has been some international support, including by USAID, for specific laboratory services in the region. There has been ongoing support for the upgrading of national TB institute laboratories and oblast TB dispensary laboratories in those countries implementing TB DOTS (and some integration of service delivery at community level); and the upgrading of national polio and hepatitis surveillance laboratories. There has been limited focus on the laboratory service needs of primary care physicians.

Despite the reforms and limited international assistance, less than optimal services are provided in many laboratories. Due largely to the economic situation since independence, there has been very little allocation of national funds for the investment in laboratory services that is needed, to maintain retraining programs, to fund supervisory visits, to replace broken equipment, or to purchase new supplies. Equipment is old, worn out, unreliable, and obsolete, and replacement parts and supplies are not readily available. Many health facilities have little or no funds to pay for the services of Med-Technica when repairs are needed. Chemicals and reagents saved from Soviet times are still being used despite the doubtful quality due to age. Some of the test methods that are routinely used do not conform to international standards and recommendations.

C. Important Issues for Future Steps

Some of the issues that should be considered in order to set up or expand basic laboratory testing in primary care facilities include:

- Political commitment at all levels
- Rationalization of services and integration of vertical programs into primary care
- Allocation of adequate funds
- Enhanced investment in personnel development, training and retraining
- Rationalization of test requirements (variety of tests) for diagnosis and the evaluation of the clinical relevance of each test
- Selection of appropriate tests for level of primary care
- Upgrading of methods to international standards
- Introduction of quality control
- Support for an appropriate supervisory structure
- Prioritization of staff safety
- Purchase of appropriate new equipment and supplies
- Improved specimen transportation system to referral laboratories.

Many of these issues must be addressed at national level. Political commitment at all levels is vital and is seen in the support for the reforms that are addressing some aspects of the rationalization of health services. Integration of vertical programs has not been accepted as a necessary and cost-effective use of limited funds.

There should be a mechanism for setting priorities and allocating funds for laboratory services in primary care facilities. In terms of financing, each primary care facility should receive a capitated payment (a certain amount of money for each person enrolled). A long-term goal of the health reforms is for payment for laboratory services to be included in the capitated payments to the primary care facilities (Family Group Practices.)

The primary care facility budget, with regard to laboratory services, should include:

- Staff costs including salary and overheads
- Recurrent operating costs (for example: utilities, transport of specimens)
- Purchase of new equipment and supplies
- Capital investment for expansion of tests offered at the primary care facility

National laboratory specialists and trainers at national laboratory training and medical institutions should have access to current information regarding international standards and the recommendations of international organizations for laboratory services. The training and regular retraining of staff needs to be supported and strengthened with adequate fund allocation. USAID/ZdravReform is addressing this through development of a primary care laboratory manual, and planned training program for pilot sites.

Rationalization of tests for usefulness and clinical relevance are critical issues. Careful evaluation the number of tests needed to aid a specific diagnosis and the clinical relevance of some tests (for example, stomach acid test, duodenal content test, rheumatest, full range of “liver function tests”) must be carried out if scarce resources are not to be continually wasted.

The selection of appropriate tests is needed before introduction or expansion of existing laboratory services. It is better to provide a limited and accurate service, rather than a more comprehensive service and unreliable results. Once a reliable basic testing capability has been established and can be maintained, the range of tests may be increased at that level of the primary care service, as appropriate, sustainable, and affordable.

The upgrading of methods to semi-quantitative and quantitative methods that meet international standards should be a long-term priority of all medical laboratories. For example, the introduction of relatively inexpensive and convenient rapid tests such as urine strip tests that can be read directly without the use of a machine could be considered to test for protein and glucose, and perhaps bilirubin.

Quality control needs to be improved through standardization of methods and techniques and the use of controls. There are many inexpensive modifications to existing methods that could be implemented to improve accuracy and reliability.

Regular supervision is necessary, particularly as many primary care facilities have only one laboratory worker. Onsite visits by a supervisor, who assists in solving problems rather than assigning blame, are very important not only for improving service delivery, but also for assessing training needs and building morale through encouragement.

Staff safety is an issue that needs to be addressed in every laboratory, as improvements are urgently needed. Funds must be made available for the purchase of adequate supplies of gloves, gowns, and masks, as well as for new glassware to replace the many broken test tubes and other items that are used daily in many laboratories and put staff at risk of infection.

New equipment and supplies are needed if test results are to be reliable and staff safety is to be enhanced. Evaluation of new technology is required to ensure that any new equipment can be maintained and re-supply of reagents is feasible.

Specimen transport to referral laboratories is problematic. Funds are needed to buy appropriate specimen containers with leak-proof lids and appropriate labels for the safe transport of specimens to other facilities. This option may be too expensive at the present time, and despite the transport cost to clients, they should be encouraged to travel to the referral laboratory. In the future, a mobile specimen collection service should be considered, as this may be the most cost-effective.

Many of these issues need to be addressed by physicians, policy makers, trainers, and economists, if reliable test results are to be obtained to support clinical diagnoses or to monitor conditions and disease. Physicians in the new primary care facilities, together with facility managers, must make realistic decisions regarding the allocation of funds for setting up and maintaining appropriate and affordable laboratory testing services for their clients.

Laboratory workers in each of the republics are motivated and keen to work in a professional manner, but many lack the requirements to do so. Their dedication in the face of great difficulties makes such workers a resource to be valued and encouraged. By providing the resources needed and upgrading laboratory services, these workers have a valuable contribution to make towards improving the health in the community.

V. Pharmaceuticals

A. History and Problems

During the Soviet era, pharmaceuticals were supplied exclusively by the state. The system was strictly controlled, regulated, financed and centralized in Moscow. There was no private sector. Selection, procurement (including manufacturing), distribution and use of drugs were solely a public sector activity, with many drugs being provided to the population free of charge or heavily subsidized.

After perestroika, the pharmaceutical functions were divided among the Newly Independent States, including the Central Asian Republics (CAR). The following agencies in each country now assumed the previous role of Moscow: Farmatsia-Kazakhstan; Dori Darmon-Kyrgyzstan; and Dari Darmon-Uzbekistan. These agencies essentially were state monopolies, yet had little experience in the complete management of a public drug supply since the most critical decisions had always been made in Moscow.

There was also no experience in the development of a private sector for drugs. The governments were and continue to be ambivalent about creating a viable business environment partly due to unfamiliarity with this area, but also because the governments view the financial control of the pharmaceutical supply as a source of revenue- perhaps beyond the government coffers.

Another problem that occurred after the break up of the former Soviet Union is the policy and regulation of the pharmaceutical sector. All policy previously had been made in Moscow, but now was the responsibility of each country and the tendency was to simply duplicate old Soviet policy. It was also hard for the government to define their role as a regulator of quality, safety, and affordable drug supply for the public. There continues to be a tendency for the governments to involve themselves in supply roles, such as governmental manufacturing interests which creates a conflict of interest in its decision-making. These regulatory issues extend into the private sector, especially in the creation of barriers such as excessive taxation and requirements for expensive licenses which infringes on their development.

Perhaps the most significant of the post-perestroika problems is the under-financing of the health sector which also affects the drug sector. The budget does not meet the benefits package that has been traditional under Soviet times, essentially “free health care for all”. This benefits package included free drugs for hospital patients. On the outpatient side, people who belong to certain groups such as war veterans, children from large families or diabetics are entitled to free or subsidized drugs as well.

The benefits package, in addition to being impossible to finance, creates an incentive for the sick to bypass primary care, and self refer themselves to the hospital in order to obtain free medications. In reality however, the hospitals often request the patients to buy their own medicine, so it is unclear how much of an incentive is created by the free drugs in-hospital policy. There has been little change in this system of legal entitlement, although some countries are starting to restrict and limit some of these benefits.

Also as part of the general under-funding of health, there have also been severe cuts in the personnel needed to run ministerial drug agencies. While in general, there was a tendency to overstaff; now it is the opposite situation. For instance, Kazakhstan now has a small department of only four people on the national level, and all oblast departments for drugs have been dissolved. Inadequate staffing prevents the execution of proper procurement, distribution and monitoring of the entire public pharmaceutical system, and there is either an over or under regulation of the private sector.

The public sector demand for drugs is determined by the state agencies with input from the oblast level governmental bodies. The exact size of the demand is unknown, due to the long history of making inflated “wish lists” that are never reconciled to a budget, but simply arbitrarily slashed. This area is a continued problem, with the patients meeting the gap using their own funds. With the population financing drugs in an informal way, it is hard to get a handle on reality.

While in former times, drug selection was simply based on familiar soviet-era pharmaceuticals; now, selection of drugs is very difficult. There are shortages of old familiar drugs, while at the same time there has been an influx of new unfamiliar western pharmaceuticals. These pharmaceuticals in general are expensive, since the companies with the most incentive to break into the Soviet markets are major pharmaceutical companies with drugs that are still under patent.

Once selections have been made, the drugs must then be supplied by either or both a private and/or public supplier. The supplying of drugs including vaccines became critical, in part due to the disruption of the interrelationship in the manufacturing and supply system. For example, in former times, Uzbekistan could rely on other USSR countries for different medications; and the raw ingredients for Uzbekistan's limited pharmaceutical plants might come from Lithuania; now this is no longer the case with each country trying to be self sufficient. Another supply problem is the lack of inexpensive generics that are registered in the countries.

Drug distribution systems for the public sector also began to deteriorate quickly. With the new Farmatsia, Dari Darmon and Dori Darmon assuming the role of "Moscow", distribution of drugs to the remote areas became their responsibility. Finding funding for transportation and staff has become exceedingly difficult in the last few years which has left many areas without the proper supply of drugs.

The last important area for pharmaceuticals is the how the drugs are finally prescribed and used. One problem includes lack of knowledge by medical workers as well as the general public, who are unfamiliar with these new pharmaceuticals. The medical workers also are not familiar with the generic names of many brands on the market. Thus they often inadvertently prescribe the same drug, thinking they are the prescribing two different ones.

B. Intermediate and Future Steps

Considerable work has been done since 1991; but there is much work that remains. All previously mentioned problem areas need to be tackled. One of the goals of the next phase of health reform in Central Asia should include increased efforts to address the issue of availability of affordable drugs for the population, especially within the context of primary care. A medical condition that could be easily treated in primary care can escalate to a disease requiring expensive hospitalization. Also, patients self-referring directly to the hospital level to try and gain free medications needs to be addressed because they are also a threat to the success of reforms.

Particular areas that need continued assistance in order to improve the pharmaceutical situation include:

- Development of private sector
- Public sector
- Policy and regulation, for both private and public sector
- Financing of drugs for the disadvantaged
- Demand
- Education and training
- Supply
- Manufacturing

1. Private Sector

One of the first intermediate steps supported by international donors was privatizing the drug monopolies in each country. The idea was that private enterprises would compete and bring down the price of drugs, and increase availability. The result was that in Kazakhstan essentially all the pharmacies and wholesalers are now working privately. In Uzbekistan, many of the pharmacies are now privatized, while the main state agency in charge of procurement and distribution is a joint-stock association called Dari-Darmon. Kyrgyzstan seems to be somewhere in the middle. Some private sector has emerged in all the countries, and this seems to be a direction that needs to be encouraged since a more competitive market should eventually lower prices. The role of the government should be to encourage to create a well-regulated environment, yet still enticing for business.

2. Public Sector

While the private sector is in the process of developing, the public sector must continue a major role in ensuring an adequate drug supply. While Kyrgyzstan and Uzbekistan seem to have maintained their public drug procurement and distribution system, Kazakhstan's system has deteriorated significantly. This may be due to the budget cuts in the governmental drug departments. All three countries need support in efficient management of a public procurement system.

3. Policy and Regulation

Another problematic area that occurred after the break up of the former Soviet Union is inappropriate or non-existent policy and regulations of the pharmaceutical sector. Countries need to analyze their individual situation and priorities in order to develop a useful drug policy. The most common priorities of a drug policy should include:

- Making essential drugs affordable and available
- Ensuring the safety, efficacy and quality of all medicines, and
- Improving prescribing and dispensing practices, as well as promoting the correct use of medicine by the medical workers and the population.

The different CAR governments are now attempting to regulate quality of the drug products through registration and certification processes, which generates substantial fees. These substantial fees should be directed at supporting efforts at monitoring and regulating the quality of the services and drugs being provided to the public. For instance, while only licensed pharmacies are allowed to sell drugs, anybody with a small suitcase and supply of medicines can set up business on a corner. The storage conditions and expiration dates of drugs are also part of the quality problem. Also, in CAR there is no longer any regulation of prescription drugs, including antibiotics which adds to the problem of drug resistance due to improper use, and ties in with the education issues.

While USAID and WHO among others have given some support in this area, it is clear that a stepped up level of effort is needed in policy and regulation, since this area heavily influences all others.

4. Financing of Drugs

For a government-backed drug policy to be implemented, it is necessary to ensure proper financing of the drugs being supplied in the public sector, and to insure adequate and affordable supplies in the private sector. Some of the funding mechanisms for Essential Drugs include public financing (government), user fees, health insurance (prepaid schemes), voluntary and other local financing, donor financing and development loans.

Financial assessment of government drug budgets needs to be addressed, in order to help the governments' understand the relationship between what is affordable and what is desirable to protect the public's health.

A realistic benefits package for the population is crucial. The reality is that even people covered by the Protected Class Law must purchase their own drugs, which often are unaffordable, and there is no public assistance for the impoverished. The governments need to set priorities and redefine what can be provided and to whom within a budget.

The legacy of entitlement also blocks discussions about user fees. The reality is that patients entitled to free drugs often end up paying 100% out of pocket, instead of being part of an equitable cost sharing arrangement. It may be useful to consider pilots in user fees in the future, in order to help balance some of the public drug budgets. Experiments should be done to test free drugs in the outpatient sector, with paid drugs in the in-patient sector or a prepaid drug experiment in both sectors. The point is to assist the government in trying to develop a realistic program for the essential drugs.

5. Demand

There has been some effect on demand during the transition period. Each of the three countries now has an essential drug list, through assistance from WHO and USAID. Essential drugs are supposed to satisfy the health care needs of the majority of the population, and thus should be available at all times in adequate amounts and in the appropriate dosage forms. The principle is that the limited health care budgets can be more effectively spent on purchasing a small list of important, effective drugs rather than buying a large list of less effective drugs. However, while the essential drug lists do exist, they are not as effective as they could be since the governments do not have the policy and/or will to implement effective essential drug programs. More work needs to be done on refining and implementing essential drug lists in CAR. For instance, in the last year, Uzbekistan has increased its list from 300 to 700, when 300 drugs products are considered optimal by WHO. The principles of WHO's essential drug program need to be reinforced, through assistance of international donors.

6. Education and Training

USAID and WHO are also providing support and training in the development of drug formulary manuals, generic-brand name booklets, and materials on the subject of essential drugs. In addition, some training on rational pharmaceutical management has been done in pilot sites, as part of the on-going clinical re-training program for the family doctors. More training in pharmacy management is necessary for all three countries, both in-service and pre-service. Rational pharmacy educational efforts need to continue, especially within the context of family medicine programs. Development of modern standard treatment guidelines, including suggestions of first-line drugs would assist doctors in bringing their treatment practices in line with international standards.

7. Supply

A big problem with the supply of drugs is that the available drugs are the high priced brand names or unscientifically backed local favorites. It would be ideal if governments would consider temporary measures in solving the supply issues by buying essential generic drugs directly from internationally recognized wholesalers, such as IDA or UNICEF. This has been difficult to encourage due to the registration of drug issue, but perhaps most importantly, the lucrative nature of the drug procurement process itself and opportunities for under-paid officials to increase their salaries. Nonetheless, the idea of buying generic essential drugs for the public sector through international wholesalers, perhaps even using private sector middlemen as procurement agents should continue to be examined.

8. Manufacturing

The governments continue to be very interested in drug manufacturing in all three of the CAR countries, most especially Kazakhstan and Uzbekistan. While drug manufacturing might be done in the private sector, it should not be done through the public sector. Governments also should not subsidize drug manufacturing, despite their stated belief that drug manufacturing will solve the supply problems, and despite repeated advice to the contrary from international experts. It is highly unlikely that a sufficient market can be found for the products of any of these local plants. Each country is suspicious of the other

- and it is unlikely that Uzbekistan for instance, would accept products made in Kazakhstan, and vice versa. Also, the ability to meet Good Manufacturing Practices (GMP) is questionable. Nonetheless, there are some joint ventures that have started in CAR, making some small steps in this direction. In general, government efforts would be better spent on developing adequate policy and regulation towards improving the pharmaceutical market.

VI. Evidence-Based Medicine in Post-Soviet Health Care Systems

One of the fundamental goals of health reform is to improve the quality of health care while at the same time ensuring that health reform does not adversely effect quality. Yet what is the meaning of quality and efficiency if the content of medical practice itself does not make sense? At first glance, Soviet medicine appears to have many similarities to Western medicine; for example, the specialties sound similar. There are cardiologists and gastro-enterologists, pediatricians and gynecologists. A closer look however shows that Soviet medicine is quite dissimilar from Western practice, perhaps as extremely different as Chinese medicine. By looking closely at clinical practice, the differences become more apparent.

For instance, a visitor to a Soviet designed health facility is shown the physiotherapy cabinet with machines that provide electric therapy, magnetic therapy, laser therapy, and ultraviolet light. These treatments which are either unknown or have been disproved in the Western medical literature are used for hundreds of clinical conditions. When one examines any clinical area, one finds a long list of unusual treatments such as the use of ATP and co-carboxylase for the treatment of myocardial infarctions, the use of hepato-protectors for hepatitis, antibiotics for asthma, auto-injection therapy for allergies, etc. The question becomes how and why did these unusual treatments become accepted medical practice in the Soviet health care system.

The answer is best addressed by examining a specific clinical example: the use of hyperbaric oxygen chambers. Hyperbaric oxygen chambers are enclosed chambers which high level of oxygen at increased atmospheric pressure. They increase oxygen levels in the blood, which lead to increase oxygen levels throughout the body. In principle, this could have a positive effect on any disease, which is characterized by lack of oxygen such as cirrhosis of the liver, myocardial infarctions, wounds, etc. In the West, clinical studies, particularly randomized controlled trials, have shown that this therapy is only effective for two main clinical conditions: scuba diving accidents (the bends) and gangrene caused by an anaerobic infection. However, in Soviet medicine hyperbaric oxygen chambers are used for over 100 clinical indications and the treatment is widely used throughout the former Soviet Union.

A Western physician talking with a Soviet physician about clinical topics such as hyperbaric oxygen chambers quickly finds that they cannot find a common language to discuss their differences in clinical practice. The Soviet physician proudly shows the hyperbaric oxygen chamber and explains its use in surgery, delivering high risk infants, treatment of liver cirrhosis, or treatment for myocardial ischemia. The Western physician is surprised by this explanation and explains how these treatments are not used in the West. Often the Soviet physician will then describe a rich literature showing the effectiveness. The Soviet physician may tell of all the great discoveries made in Soviet medicine such as radial keratomy now used in the West. The result of this conversation is only unsatisfactory agreement that clinical practice is certainly different between the West and Soviet systems.

However, if the issue is followed deeper, by examining the Soviet literature in detail by carrying out a systematic review, the source of the problem may be discovered. First, the vast majority of the literature is basic science. There are numerous articles on biophysics and physiology. The literature shows that hyperbaric oxygen chambers do lead to increased oxygenation of tissues. The question is then whether a plausible physiological hypothesis has real clinical effect. This can only be addressed by a properly designed clinical study based on the principles of clinical epidemiology. But Soviet clinical studies are inadequate to fundamentally answer the clinical question posed.

Soviet articles are very short with limited methodology sections, which would make them unpublishable in medical journals in the West such as the New England Journal of Medicine or the Lancet. The studies tend to be single center studies, generally one hospital, using historical case controls. This means they compare how a patient did two years ago, with the effect of the new treatment. There is no random sampling of patients. In fact, the studies are so poorly designed, with inadequate biostatistics, that one

cannot draw a meaningful conclusion from them. This means that there are fundamental problems with Soviet clinical science due to a lack of knowledge about clinical epidemiology.

There is no tradition of randomized controlled trials (RCT) in Soviet medicine, while in the West, emergence of randomized controlled trials occurred in the late 1940s. The first RCT was performed in the United Kingdom on the effectiveness of streptomycin for the treatment of tuberculosis in 1948. This was the period when the cold war began to heat-up and the iron curtain descended, blocking interchange between Western and Soviet medicine. Thus, Soviet medicine was isolated from emerging tradition of clinical epidemiology, which by the 1980s became the movement known as evidence-based medicine. Soviet-trained physicians had no training in clinical epidemiology or biostatistics and limited or no access to the Western medical literature. As a result of this isolation there is no common language to discuss differences in clinical practice by deferring to the evidence because Western and Soviet medicine have different conceptions of what constitutes proof.

This is the most fundamental issue in addressing quality of care in soviet medicine. It is almost impossible to change clinical practice without a profound change in how Soviet physicians understand medical evidence. In Soviet health systems, clinical practice was determined by leading institutes in Moscow, which issued clinical guidelines that all physicians followed. This is what happened in the case of hyperbaric oxygen chambers. A leading Moscow researcher convinced the Ministry of Health of the clinical effectiveness of the therapy and then guidelines were issued recommending its use for over one hundred clinical indications. Because of the breakdown of the Soviet Union, clinical control has broken down and, therefore, clinicians are more open to changing clinical practice. However, they are as likely to adopt unproven therapies as truly effective therapies verified by clinical trials because there is no grounding in clinical epidemiology.

Donor organizations have made attempts to change clinical practice by exposing post-Soviet physicians to Western practices. The take-up of Western practices has been haphazard and has not been strongly supported by the medical leadership which remains closely tied to the Russian language medical literature. Also, almost all of the clinical leaders were trained at the leading research institutes in Moscow and St. Petersburg.

One of the most concerted attempts to change clinical practice has been carried out by donors in conjunction with the World Health Organization. WHO has developed treatment protocols for several clinical conditions such as acute respiratory infections (ARI), childhood diarrheal diseases (CDD), tuberculosis (TB), breast feeding, and family planning. Since Soviet trained physicians tend to defer to authoritative judgements, WHO replaces Moscow as the source of authority. However, the implementation of WHO treatment protocols has not been particularly successful. Soviet trained physicians still believe that their former practices are valid. The best example of this can be seen in the difficulty that WHO has had in implementing the WHO treatment protocol for tuberculosis known as Directly Observed Therapy Short Course (DOTS). Although pilot projects have been able to implement DOTs, the Soviet trained leadership in the TB dispensaries remains resistant. In addition, they continue to use extra treatments such as the use of vitamin C injections, collapsing lungs, etc. In other clinical areas WHO has been even less successful, for example, in changing towards syndromic outpatient treatment for sexually transmitted infections.

The lack of a tradition of evidence-based medicine and clinical epidemiology is the fundamental barrier in changing clinical practice in post-Soviet health care systems. As long as there is no common language to discuss differences in clinical practice, technical assistance in changing clinical care will be slow in coming and will occur in a piecemeal fashion. In conclusion, the introduction of evidence-based medicine requires profound changes in medical education and research, an area where donors have been hesitant to tread. Nevertheless this is a critical area for attention in order to provide long-lasting sustainable change.

VII. Involving the Population and Community in Health Sector Reform

During Soviet times, the population had no voice in the health care system. The system was driven by providers and patients were seen as compliant objects who should be grateful for the limited time that physicians might provide. Patients had no options since they could not choose another provider if they were dissatisfied with care and their complaints would fall on deaf ears. The provider had all of the power in terms of health care decisions and physicians were seen as instruments of the state. A telling example is that Soviet physicians did not take the Hippocratic Oath because the principal role of a physician was not as an agent of the patient but as agent of the state: the physician's role was to ensure a productive workforce. Physicians did not give to their patients even elementary information about their clinical conditions, thus attenuating the already weak doctor-patient relationship.

One of the goals of health reform is to change the social contract in the health care system to empower the population to take a more active role in their health care decision-making. This new social contract would give patients a greater voice in the health care system by linking their choices to new provider-payment systems. If money follows the patient, rather than being based on planning norms, then patients' decisions are linked to financial incentives to providers, because provider income becomes dependent on the demands of patients. This changes the entire power structure within the health care system by empowering patients over providers. This changes the nature of the doctor-patient relationship by restoring the historic rights of patients embodied in the Hippocratic Oath.

The new social contract gives greater rights to the population, but it also is linked to greater responsibilities. Health is no longer something that the population receives from the health care system, but now the population must take a more active role in their own health. This means that patients must become partners with health professionals by taking responsibility for their own health. This is particularly important given the changing burden of disease from infectious to chronic diseases. Managing chronic diseases, such as hypertension and diabetes, requires a close working relationship between physicians and patients, because patients must take an active role in their treatment, by monitoring their condition and altering their medication based on this information. Furthermore, many of the key risk factors linked to chronic diseases can be modified based on making lifestyle changes. For example, cardiovascular disease is the major cause of death in all Central Asian republics. The best method for decreasing cardiovascular mortality is disease prevention by decreasing the major risk factors. This means getting people to quit smoking and to change their diet. If patients are to be empowered financially, they must also be empowered through health information. They must understand much more about how their decisions in terms of lifestyle have important implications for their health. This means the one of the central components of health reform is a strong system of health promotion.

At the heart of the new social contract in health is giving patients effective choice over their physician and health care provider. In the Soviet context, there was no choice because patients were assigned to polyclinics based on where they lived (catchment areas). Creating choice is difficult because the Soviet health system was not planned to make choice possible. Polyclinics function as clinical monopolies in geographic areas. A geographic unit may contain several polyclinics but each has a separate clinical function. In the hospital sector, there are separate facilities for different clinical functions. Furthermore, there is an established referral system which restricts choice. For money to follow the patient, patients must have choices, and this requires restructuring the health care delivery system to create the pre-conditions necessary for competition.

In the primary care system, this is one of the rationales for the development of family group practices (FGPs). The idea is to create a sufficient number of primary care entities to make choice meaningful. If one splits up polyclinics into smaller clinically integrated units, competition in primary care becomes possible. This means one can create a financing mechanism where money does indeed follow the patient and those patient choices can create strong economic incentives to change provider behavior. This is

always a critical issue in health care because physicians often do not fully understand the needs of their patients. For example, polyclinics have very limited hours and it is very difficult for someone who works to come to the facility. However, in the new financing mechanism, FGPs might be able to have a competitive advantage by keeping longer hours. If the FGP does not provide high quality of care from the patients' perspective, the patient will change her FGP.

The first step in the process of empowering patients is re-organizing of the primary care system into FGPs which can then compete for patients. To reach the point where real choice is possible requires a long process of reform. At first, the population will only see re-organization of the delivery system, which will be disorienting for both the population and providers, and the initial effects might not be seen as positive. It is essential to mitigate the effects of the restructuring with limited capital investment to improve facilities. Modest cosmetic changes, such as painting a facility, can send important signals about how the system is improving. There should also be additional medical equipment and clinical training to improve the morale of health professionals and to improve the overall quality of primary care.

The change in the structure is very radical and disorienting and the population must be prepared for the health reform process. This requires an extensive social marketing campaign to present the entire vision of the health reform so that population can see that they will ultimately benefit from the reform process. The social marketing campaign must explain the new structure of FGPs and explain the step-by-step process that will culminate in free choice of providers. The social marketing campaign is also a chance to begin the process of health promotion.

This sets the stage for the most dramatic phase of the reform process: open enrollment. The population is given free choice to enroll in FGPs. Open enrollment requires a long process of preparation. First, a general marketing campaign to complement the restructuring phase explains the vision of the health reform process. This includes using all available media channels such as newspaper, radio, and television. Journalists are educated through training seminars. Once the restructuring is complete, the second phase begins. A date is set for the enrollment process and registration sites are selected. Information is prepared on all of the FGPs including maps of where the FGPs are located and brochures about each practice. The population then turns out to enroll in FGPs in a democratic process similar to voting for political representatives.

The system of open enrollment in primary care has far-reaching consequences for how primary care clinics relate to the community. Rather than expecting patients to come because they live in an assigned region, the health care professionals must encourage patients to choose their practice. As a result they are forced to directly engage in community activities like visiting schools and workplaces.

Once the new financing system is in place, there are many additional steps that can be taken to increase community participation in health facilities. One is to use primary care clinics as community centers for teaching health promotion. For example, the clinics can be used to teach expecting mothers about parenting, breast feeding, or to pass out information about childhood diarrheal diseases.

A second method to strengthen community participation is to use a small grants program to encourage collaborative health activities between the FGP in the community. For example, in Uzbekistan, a small grant program was developed to link FGPs to the Mahallas, a form of Uzbek social organization that predates Soviet rule. The grants program requires significant technical assistance. Physicians and the population need training in public health to understand how the FGP and the community work together to solve a health problem. In the case of Uzbekistan, many of the small grants were for water projects, which will bring clean water to the village, and others were for reproductive health.

There is a broader purpose of health reform beyond creating a sustainable health system which improves the health of the population. Health reform is one of the building blocks in creating a stronger civil society and encouraging democracy. Open enrollment is a democratizing process where patients get to vote for their providers. This should improve the physician-patient relationship and restore the legitimacy of a key social institution.

Health professionals will need strong support during the difficult process of health reform. This requires strong professional organizations particularly in primary care. Historically, primary care was seen as the professionally weakest part of the health system. Primary care physicians were part of larger professional organizations which were dominated by hospital physicians.

New Family Group Practices as entities need a new organization which will enhance their prestige, become a vehicle for articulating and advocating their needs, and provide services to its member FGP's. The creation of non-government organizations (NGO's) not only facilitates the reform process, but also strengthens civil society. Health professionals, particularly physicians, are one of the main pillars of the community, particularly in rural areas where they are one of the few people who have been to university. By enhancing their role in the community and establishing health sector NGO's as advocates, one is creating a stronger civil society which will support the transition to democracy. USAID has been supporting health sector NGO's through small grants, and other activities, but more work is needed.

Next Steps

1. Expand open enrollment
2. Increase work on health promotion in FGPs. Provide more training materials. Provide VCRs and videos. Train nurses in health promotion and disease prevention.
3. Grants program for joint projects between health facilitates and the community. Consider linking micro-credit schemes to health reform by using FGPs as the site of the scheme and linking it to health promotion.
4. Strengthen health sector NGO's such as the Family Group Practice Association and the Hospital Association. They should have links to Western professional associations, as possible.

VIII. Health Sector Institutional Structure and Functions

The role of the Ministry of Health (MOH) in the countries of Central Asia is shaped by the historical institutional structure and relationships between ministries in the former Soviet system. The MOH, and all other sectoral ministries, had little say in resource allocation decisions, which naturally limited its overall role in sectoral planning and policymaking. The result is that the Ministries of Health in Central Asia currently have weak policy functions and capabilities, and health reform efforts are often hindered by the limited ability of the MOH to set priorities and introduce new financing mechanisms. Health reform efforts should continue to address the relationship between the MOH and the government financial sector, and work to strengthen the MOH's policy function and autonomy in resource allocation within the health sector.

Under the Soviet system of budgetary planning, which is still largely in place in the countries of Central Asia, financial resources were allocated according to physical normatives, such as the number of hospital beds. With the physical normatives determined outside of the sector, the major planning decisions of the sectoral ministries were limited to negotiating with the central planning committee to make new investments and build the physical capacity in the sector. The MOH had little capability or incentive to set strategies to achieve the objectives of the sector, such as increasing the health status of the population, with more cost-effective use of resources.

In Soviet times, the Ministry of Economy (MOE) was responsible for most financial policy-making decisions through the development of five-year plans. The Ministry of Finance (MOF) was basically responsible for allocating of and accounting for funds as directed by the MOE. With the collapse of the Soviet Union, the MOE was largely discredited, and in all countries of Central Asia it has either been merged with the MOF, with its role reduced, or it has been abolished. This has created a vacuum within the government financial structure. In the health sector, the MOF has stepped in to fill this vacuum. Therefore, the budget process, the health provider payment systems, and the treasury systems (which exist in Kazakhstan and Kyrgyzstan and not in Uzbekistan) continue to function to not only allocate and account for public resources, but also to set policy and priorities within the health sector.

The CAR countries have begun the process of establishing a policy and priority-setting function within the MOH. However, as there is little connection between whatever policy and priority-setting function exists within the MOH and the budget development process, it is very difficult to establish policy in the health sector. For example, the MOH may establish a policy to strengthen primary health care and shift resources to the primary care sector. Alternatively, it may decide that the major risk factor for the next year is a certain illness. However, the MOF does not take these policies into account when developing budgets, meaning there is a disconnect between health policies and the allocation of health resources.

What is the solution to this problem? Ideally, the MOH should be setting health policy and should have the capability to allocate its resources to high-priority areas, while the MOF retains the accounting functions.

How can this situation be addressed? There are a number of pre-conditions required to increase the ability of the MOH to set and implement health policy. First, is the pooling of health care funds, which is discussed in more detail in another paper, but is important for implementing coherent, integrated health policy. Pooling of health care funds involves creating a unified health care budget across administrative areas, such as cities and rayons, which typically administer separate budgets. The issue of pooling of health care funds not only relates to the relationship between the MOH and the MOF, but is also an issue of national vs. regional roles. Laws on Self-Governance in some countries are decentralizing governance and providing local governments with more authority. While this is obviously a valid objective, it does have some unintended consequences in the health sector. It is not possible to sustain a complete health delivery system at the rayon level; therefore, the provision of health services is not an appropriate function of rayon governments. The oblast level is the appropriate government level for health services. Laws on

Self-Governance need to be clarified by a functional specification – a determination of what services should be provided by what level of government.

Second, the use of normatives to set budgets must be discontinued. It is the responsibility of the MOF to determine the overall amount of resources that can be allocated to the health sector. However, after that decision is made, the funds should be transferred in a lump sum to the health sector, which then makes policy decisions on which health services or health functions are high priorities, and sets pools of funds or program budgets to reflect the policy decisions.

In addition, if the MOF is to transfer funds to the MOH to allocate according to health sector priorities, the MOH must have the capability to function as a purchaser of health services. After the MOH programs are determined, then new provider payment systems can be used to allocate funds to health providers in a more efficient manner. This allows the MOH to move away from daily operational control of health care providers towards setting policy and priorities – being more concerned with outcomes rather than processes. Developing this capability requires restructuring the MOH to perform different functions, establishing a policy development process, and increasing the technical capacity of human resources. The MOH needs to establish policy development as an institutional priority and develop better policy-setting capabilities.

Third, concerning MOH institutional structure, as discussed in other papers, the Soviet system is overspecialized. The structure of the MOH reflects this. It is important to restructure the MOH to address the desired changes in the health delivery system, particularly the emphasis on primary health care.

Finally, changing the roles and responsibilities of the MOH requires the development of a research/analysis function. The MOH needs to be able to collect and analyze data to feed the development of good policies. While it is not completely clear where this function should be located, the current idea is to establish a School of Public Health/Health Management with a division of health policy research.

In summary, it is an objective of health reform to empower the MOH by strengthening its capability to set policy and priorities for the health sector. Accomplishing this objective requires addressing the issue of pooling funds and funds flow, clarification of relationships between different Ministries and the levels of government, restructuring the MOH and increasing its capability to support the new functions, and establishing a research/analysis capability within the health sector.

IX. Health Care Financing

Health financing is a necessary, but not a sufficient component of any health reform program. Health financing cannot be addressed in isolation, but must be integrated with restructuring of the health delivery system, changes in medical practice, increasing the capabilities of medical workers, the development of information systems, and the involvement of the population. It is not effective to address each piece separately; rather all elements of health reform must be integrated into one comprehensive program.

Issues of health care financing are fundamentally related to how a country's resources are allocated between competing uses in the economy as a whole, and between competing uses within the health sector. Health financing reforms are oriented toward creating the institutional conditions and economic incentives to allocate resources to their highest valued uses. "Highest valued use" is in part a political determination, reflecting the collective values of society about the importance of health and health care relative to other outputs of the economy, and in part determined by more objective measures of the value of outputs relative to inputs.

Resource allocation decisions are made at five different levels of the system, from the decision about the overall level of government resources allocated to health care down to the decision of a health care facility about how to allocate its budget. Health care financing policy determines which institutions make the resource allocation decisions at each level, and how these decisions are made. In the Soviet system, health financing policy was inefficient in both how resource allocation functions were distributed among purchasers and providers of health care, and how resource allocation decisions were made. Many health financing reform efforts in Central Asia have therefore focused on establishing an appropriate split between the resource allocation functions of health purchasers and providers, and changing the mechanisms by which resources are allocated at all levels of the system.

Resource allocation decisions related to health care begin with the decision about the overall level of government resources to allocate to the health sector, which is a political decision. In addition, the fixed amount of government health care resources must be allocated geographically across regions, which is also a political decision. In the Soviet system, all of these functions were, and often still are, largely carried out by the national and oblast political leadership together with the Ministry of Finance.

Once the overall pool of resources available for health care is established in each geographic area, the resources must be allocated across levels of the health care system: primary health care, outpatient specialty care and diagnostic tests, inpatient care, public health, education and research, capital, and administration. Resources must also be allocated across health facilities within each of those parts of the system, and then across inputs and outputs within the health facilities. In the Soviet system, all of these decisions were carried out by the Ministry of Health (MOH), but greatly influenced by the Ministry of Finance (MOF) budgeting process based on physical normatives (see "Health Sector Institutional Structure and Functions").

Thus, in the Soviet system, the health purchaser, which was a combination of the political leadership, the MOF and the MOH, made all of the resource allocation decisions. The providers of health care had no control over health care resources, and therefore had no incentive or capability to change the way they delivered services to be more effective and efficient. The following section outlines how resource allocation functions can be split between the purchaser and providers of health care services to create appropriate economic incentives to make the best use of limited health care resources.

A. Purchaser-Provider Split

Purchaser-provider split is the division of authority in the process of distributing and using health resources between the health purchaser (national or regional) and health providers. The purchaser-provider split may be achieved through several different policy options, for example, establishing a health insurance system to serve as an independent health care purchaser (see "Health Insurance"), or increasing

the autonomy and independence of health care providers and reducing MOH control over their internal activities (see “Privatization”).

With an appropriate purchaser-provider split, the purchaser has the authority to determine how much total funding should be allocated to the health care system, how that funding should be allocated geographically, and how the funding should be allocated among types of health services. The allocation of resources across types of health services may be an administrative decision, with the purchaser establishing separate pools of funds for each level of the health care system based on administrative criteria. Or the decision may be driven more by market forces, with resource pools set more broadly, and competition between parts of the health care system determining the final resource allocation.

The health purchaser also has the function of determining the system of health provider payment, which is the mechanism by which the purchaser sets the incentives for providers in making their resource allocation decisions. Provider payment systems are the point at which the authority of the purchaser with respect to the allocation of health care funds ends and the authority of the provider begins, or the point at which authority is transferred from purchaser to provider. (See papers on “Per Capita Payment Systems for Primary Care” and “Hospital Structure Rationalization and Payment”).

First, the health care purchaser determines the level of health care resources in the system and how resources are allocated across each part of the health care system. The next level of decisions involves the allocation of resources across providers within each type of care, for example how to distribute the pool of inpatient funds across hospitals. At this level, the health purchaser is only a passive distributor of funds. The purchaser has already set the payment systems, so now it must simply distribute the funds that providers have earned by delivering services in response to the incentives of the purchaser. By competing with each other for these funds, the health care providers in effect determine the allocation of resources across institutions within one sector of the health care system.

The final level of resource allocation decisions is how health care providers allocate the funds that they have earned across inputs, such as staff, medicines, and equipment, and outputs, which is the mix of services provided. At this level, the provider allocates funds according to the needs of the organization, which are driven by a desire to respond increasingly well to the incentives of the purchaser in order to compete better and qualify for more funding.

Health Care Resource Allocation

Purchaser Decisions
1. Level one is the decision about how much state (national and local) resources to allocate to the health sector.
2. Level two is the decision about how resources, collected at the national level, are distributed geographically, or across the oblasts, rayons and cities.
3. Level three involves the allocation of resources among types of health services – primary health care, outpatient specialty and diagnostic tests, inpatient care, public health, education and research, capital, and administration.
Provider Payment Systems
Provider Decisions
4. Level four is the distribution of funds among providers within each level of the health care system.
5. In level five, the health provider allocates funds across inputs and outputs.

Thus, the purchaser-provider split *divides the authority* with respect to allocation and use of health funds, but *preserves the unity* of the process of allocation and use of health funds through the provider payment systems. The purchaser-provider split is a horizontal split between the 3rd and 4th levels of the health financing functions. It is not a vertical split where two government health purchasers, such as an insurance fund and the Ministry of Health, implement all five health financing functions or levels. The vertical split is inefficient and ineffective, as there is a duplication of functions. The purchaser-provider split is a technical element in the process of allocation and use of resources. However, it is an absolutely crucial prerequisite to the success of the national health care reform.

Why is the purchaser/provider split important? There are a number of reasons, a few of which are outlined as follows:

- It encourages competition among providers by offering incentives to those providers achieving better results;
- It allows providers to control the results of their work, and by delivering the results desired by the purchaser, they can increase the level of their funding;
- It allows the purchaser to control providers and hold them responsible for the delivery of desirable results.

Financing reforms aimed at more appropriately distributing resource allocation functions between the purchaser and provider will improve the efficiency and effectiveness of the system, or allocate scarce health care resources to their highest valued uses, only if the appropriate conditions are in place to allow resources to move more freely throughout the system. In the countries of Central Asia, the ability to move health funds is limited for both health purchasers and health providers.

The health purchaser's flexibility in resource allocation decisions is hindered by fragmented health care budgets that are formed at the level of the rayon, city and oblast. This limits the purchaser's ability to allocate funds geographically and across levels of health care in the most efficient and effective way. Health purchasers should have the ability to pool health care funds at the oblast level to use their resource allocation decisions to improve equity, rationalize the health delivery system and implement effective health provider payment systems. (See "Pooling of Healthcare Funds").

The health providers' flexibility in resource allocation is limited because they receive their financing and must execute their expenditures according to fixed budget line items, or chapters. The health facilities have limited flexibility to reallocate expenditures across these budget chapters, which means they have little capability to respond to the incentives of the payment systems of the health purchaser. New provider payment methods and stronger economic incentives for providers must be accompanied by greater authority to decide how to adapt their operations and spending their resources according to their needs.

B. Next Steps

In summary, there are three important directions that health financing policy reform in the countries of Central Asia have begun and should continue to follow to improve the efficiency and effectiveness of their health care systems.

- First, is establishing a split between the resource allocation functions of the health purchaser and provider, with new payment methods as the point of intersection.
- Second, is the pooling of health care funds at a geographic level not smaller than an oblast. This means that all rayon, city, oblast, and republican funds must be pooled into one unified budget.
- Third, is giving greater financial autonomy to health care providers, and allowing the health purchaser to distribute and health providers to spend funds without budget chapter restrictions.

X. Pooling of Health Care Funds

In the Soviet period, the flow of health care financing in the countries of Central Asia was linked to the Ministry of Finance's budgeting process. Health care budgets were formed at each level of local administration, which financed and owned the health facilities under its jurisdiction. This fragmentation of health care budgets led to duplication in the health care system, and created a barrier to effective and equitable reallocation of health care resources. When the health sector was fully funded during Soviet times, the impact of the duplication and inefficiency caused by the fragmented budgeting process was not fully felt. As health sector resources have sharply contracted in the countries of Central Asia, however, there is an urgent need to consolidate and pool these limited resources, so they can be allocated and managed most effectively.

To pool health care funds, all state or public funds allocated to pay for health services for the entire population of a geographic area are accumulated in a single budget. Health care funds should be pooled horizontally across all parts of the health care system, and vertically across levels of local administration in a geographic area. To be most effective, the geographic area for pooling of health care funds should not be smaller than an oblast. Why do funds need to be pooled horizontally and vertically at the oblast level in the health sector? There are five main reasons, which are discussed below.

First, there is wide variation in the availability of per capita health care resources in the CAR countries, both within and between oblasts. There is a particularly wide gap in per capita resources between urban areas and rural rayons (districts). These variations in per capita health care resources stem from historical budgeting patterns, which are driven by the relative political and economic power of different local administrations, rather than from variations in the health care needs of the population. Oblast level pooling of funds is necessary to implement geographic resource allocation mechanisms that improve equity by allocating resources by health care needs.

Second, the public financing of health care services is an insurance mechanism, or a way of pooling the risk of economic loss associated with health problems across groups of people. Risks are pooled to increase the predictability of the loss and to redistribute the costs of unexpected losses. The size of the risk pool is important for several reasons. First, the larger the risk pool, the more predictable the risks and the greater the probability of correctly assessing the probability of a loss occurring. In addition, a small risk pool, such as a rural rayon, may not be able to generate sufficient resources to cover even their predicted losses. Finally, all health insurance mechanisms improve equity by redistributing the costs of illness from the sick to the healthy, and small, fragmented risk pools are a barrier to redistribution. Therefore, health financing and delivery systems that pool resources at the level of local administration weaken the insurance function of a publicly financed health system, because they create small risk pools that do not adequately predict or redistribute the costs of losses associated with health problems.

The third reason that pooling of health care funds at the oblast level is important is because it allows planning in the health sector. If health care budgets are fragmented, it is difficult for health policymakers to accurately assess the level of resources available, which is essential information to set health sector priorities and plan capital investments.

The fourth reason that pooling health care funds at the oblast level is important is because it allows a seamless health delivery system to be established. Currently, separate health delivery systems exist at each level of administration: republican, oblast, city, rayon, and rural systems (which were historically tied to collective farms). Each system is financed and operated by different government units. Having five parallel health delivery systems creates tremendous duplication within the health sector. For example, in an oblast capital city there will be an oblast pediatric hospital and a city pediatric hospital, with no clear division between the functions and services provided.

There is no incentive to consolidate health delivery systems under the current fragmented budgeting process, however, because any savings generated in one delivery system by reducing hospital capacity

cannot be retained or transferred to another budget, and the funds will leave the health sector. As the level of financing is determined by normatives related to production inputs such as the number of beds, if the overall number of beds decreases, savings are not reinvested but lost to the health sector. This is not the case if the health funds are pooled. The pool of funds remains the same even if facilities or hospital beds are rationalized. While the current budgeting process contains an incentive not to rationalize health providers, creating a pool of funds removes this perverse incentive, and it becomes easier and more advantageous to rationalize the health sector.

The issue of reinvestment of savings from rationalizing the health sector is critical in the current underfinanced system. Currently, only two to three percent of the gross domestic product (GDP) of most CAR countries is allocated to the health sector. The overall level of health financing is much too low, with six to nine percent a more reasonable percentage of GDP allocated to the health sector. Therefore, pooling of funds is critical to allow any health sector savings that are obtained through rationalization to be retained in the health sector.

The fifth main reason to pool the health care funds is to implement new provider payment systems, which have the purpose of increasing health sector efficiency. Vertical and horizontal pooling of health funds allows the allocation of health resources to be disengaged from historical budgeting patterns and to be allocated by new payment systems according to activity and the health needs of the population. A pool of funds at a geographic level not smaller than an oblast is necessary for new provider payment systems in order to establish the conditions for competition, which include stable prices and the free movement of resources across the system.

Because under new payment systems funding to providers is no longer determined by production input measures, such as the number of beds, but is instead based on the provision of health services to the population, the funds in the system must be allowed to follow the patient. In a competitive system, patients move between providers at different levels of the system and different geographic locations across rayons and cities. Patients, together with their primary care physicians, choose providers based on quality, cost and convenience, and health funds “follow” the patients to their providers of choice. The choice-driven competition created by free movement of funds across geography and levels of the system is impossible if health funds are not pooled at the oblast level.

In addition, if providers across levels of the system and geographic area are going to compete for funds under the new provider payment systems, they must receive the same price for providing the same service. If funds are pooled at a level lower than the oblast, the same service may be reimbursed at different prices in different rayons or cities. Fair competition is impossible, because facilities in wealthier geographic areas that get reimbursed at higher rates can provide better quality services and attract more patients from other geographic areas. This is frequently observed as the rural population often bypasses the Central Rayon Hospital to obtain services in the oblast center. Therefore, the stable prices needed for health facilities to compete fairly on quality and efficiency can only be achieved if health funds are pooled at the oblast level.

In summary, one of the main goals of health reform is to improve allocation of scarce health care resources to improve the effectiveness and quality of the system. This requires rationalization of the delivery system and the implementation of new payment systems that reward providers for providing more cost-effective, higher quality services and attracting more patients. The horizontal and vertical pooling of health care funds at the oblast level is a necessary precondition for achieving these goals. The pooling of funds is also necessary to improve the equity of the system because it allows health care resources to be allocated according to the health care needs of the population through geographic allocation mechanisms and new provider payment methods.

XI. Health Insurance

During Soviet times, the health sector was funded by general revenue monies at a level approximating six percent of GDP. While the funding level was generally sufficient, it was subject to the uncertainties of the political process as health was a low priority in the Soviet system.

After the fall of the Former Soviet Union (FSU), funding to the health sector decreased to about two or three percent of GDP with GDP falling by as much as fifty percent. This collapse of budget funding left the health sectors of all countries underfinanced and prompted them to search for other ways to fund health services.

Many countries of the FSU responded to this reduction in funding for health by establishing health insurance systems. Kazakhstan, Kyrgyzstan, Russia, Estonia, Georgia, and Armenia were among them. Ukraine, Uzbekistan, and Tajikistan are currently developing plans to do so as well.

Establishing health insurance was a very reasonable response to the need to increase financing to the health sector as well as diversify sources of financing to increase the stability of the health sector financing. The health insurance systems introduced were funded by a payroll tax, usually two or three percent in addition to the two or three percent of GDP. A new institutional structure, a Health Insurance Fund (HIF), was established to operate the health insurance system. Establishing an additional source of financing to the health sector is a phenomenon which is occurring in many middle-income countries throughout the world. While Central Asian countries are not middle-income countries, their health delivery system structure is very developed (actually overdeveloped) making comparisons appropriate.

Health insurance systems in Central Asia have been successful in initiating efforts to increase the efficiency of the health sector. HIF's have the major technical requirements needed to implement new provider payment systems, the goal of which is to increase health sector efficiency. These technical requirements are pooling funds and distributing funds without chapter budgets (see pooling funds paper). Chapter budgets are line item budgets which don't allow providers to reallocate funds across line item thus reducing the capability of providers to allocate resources efficiently and effectively.

The HIF (at least in the short-term) has been an agent of change, triggering health sector adaptation to the new environment which emerged after the collapse of the FSU. They have injected energy, enthusiasm, and technical expertise into the health sector.

Various donors including USAID, WHO, and GTZ provided technical assistance to Central Asian countries related to health insurance. This support helped Kazakhstan and Kyrgyzstan to initiate health insurance systems. However, continued assistance is required both to address problems which have arisen in countries implementing health insurance and to contribute lessons learned to the policy development process of those countries planning to implement health insurance such as Uzbekistan and Tajikistan.

There are problems which have surfaced and continue to surface in the implementation of health insurance. While the rationale of establishing health insurance to increase financing for the health sector was valid, the mechanism may not be, as the introduction of health insurance created both conceptual and operational problems in the health sector.

Conceptually, health insurance was just a tax providing additional money to the health sector, not an insurance function providing protection against risk. In addition, the new health insurance systems did not establish a clear benefits package, match premiums (taxes) with expenses, or manage the delivery of services. Health insurance was viewed only as a way to get more funding into the existing system and was not seen as having an impact on the delivery of health services. It is important to continue to clarify the goals, principles, policies, and programmatic elements of health insurance systems in Central Asia.

Another very important conceptual or policy issue concerns universal coverage. Health insurance systems segment the population into insured and uninsured. It is likely that over time, the more privileged will be

covered by health insurance and the vulnerable populations by the MOH budget. A gap in coverage and level of services provided will develop. A major advantage of the Soviet system was universal coverage. It is important to retain universal coverage because once lost, it will be difficult to regain. This issue needs to be addressed over the next few years as the health sectors are evolving away from universal coverage.

Operationally, the introduction of health insurance created major problems in the health sector. The problems can be categorized into level of financing; misinterpretation of the purchaser/provider split concept, and institutional structure issues.

The first problem is level of financing. A major objective of the introduction of health insurance was to help increase the level of health sector financing. However, some countries responded to the introduction of a health insurance payroll tax by reducing the health sector budget. The net effect was no increase in the level of financing and an effective reduction due to the addition of the HIF administrative costs. Over the next few years, it is important for Central Asian countries to establish policies concerning both the overall level of financing for health and the most appropriate sources of financing.

A second operational problem in the introduction of health insurance is the misinterpretation of the concept of purchaser/provider split. The economic situation throughout the FSU required a transition to a market-oriented economy. The idea was that introducing health insurance would separate the health purchaser from health providers in order to create competition and increase the efficiency of the health sector. In Soviet times, the MOH together with the Ministry of Finance was a monopoly in the health sector, serving as both purchaser and provider, so this is a difficult conceptual change.

The HIF was a new Government institution established to implement health insurance and separate the health purchaser from health providers. It was intended that the HIF would become the purchaser of health services and the MOH would be the provider of services. Therefore, a separation of purchaser and provider would result.

However, establishing the HIF created the wrong separation of purchaser and provider. The MOH is not a health provider; it is a health purchaser, while hospitals and polyclinics *are* the health providers. The MOH receives budget money from the Ministry of Finance to provide health services to the population. Establishing a new HIF only created *two* government health purchasers which produced confusion and an uncoordinated health policy, but did not result in the separation of purchaser and provider.

In other words, establishing the HIF created a vertical separation and two health purchasers while the intent of separating the purchaser and provider is to create a horizontal separation with more autonomy for health providers. The separation of purchaser and provider should occur through the introduction of new provider payment systems. New provider payment systems solidify the role of the health purchaser and allow health providers more autonomy to manage the allocation of resources in the health sector more efficiently and effectively. This issue is currently being addressed in countries which have already implemented health insurance, but still looms in countries planning the introduction of health insurance.

A final operational problem is institutional structure in the health sector. The new institution, the HIF, consists of a Republican HIF with branches of the HIF in each oblast. In other words, a new institutional structure was established in the health sector completely parallel to the Ministry of Health (MOH).

The problem was (and largely still is) that the role and relationships of the new institutional structure, the HIF and the old institutional structure, the MOH was not clarified. This means that health policy was not coordinated - functions were duplicated, administrative costs increased, and restructuring the health sector was difficult. Two sources of information now existed, which complicated policy development; two provider payment systems created contradictory financial incentives, and two benefit packages created inequity and confusion among the population. Providers were incapable of managing payment from two sources, and fraud and abuse increased.

The HIF was a second government health purchaser whose role and relationship to the first government health purchaser (the MOH) was unclear, creating confusion, conflict, and duplication. Unfortunately, when a problem or opportunity is identified, the first response of the Soviet system was and is to build new institutional structure. It is a lesson learned that institutional structure and its development are an important target of policy interventions.

It is necessary to decide the question of how to adapt in the short-term to the collapse of health sector financing. At the same time it is necessary to initiate the development of sources of health financing and health sector institutional structure, which facilitate universal coverage of the population and operation of an efficient health delivery system in the long-term.

Most likely, the optimal long-term institutional structure for the health sector in Central Asia is a single-payer with the MOH serving as the single-payer or health purchaser. A single-payer would allow coordination of health policy, reduction of administrative costs, and development of a more efficient health delivery system providing high quality, low cost health services to the population. Combined with restructuring of the health delivery system and new provider payment systems to increase the efficiency of the health sector, a single-payer institutional structure should lead to effective provision of health services to the entire population.

In conclusion, issues to be addressed over the next few years include how to maintain universal coverage, what are the appropriate level and sources of health sector financing, what is the role of health insurance, and what is the appropriate health sector institutional structure. How the role of health insurance develops and the nature of the institutional structure in the health sector may do more than any other factor to determine the shape of the health sector in 25 years.

XII. Per Capita Payment Systems for Primary Care

The financing of health care services in the Soviet system favored specialty over primary care, and ultimately created incentives to keep people in the hospital rather than keep them healthy. The way funds flowed through the system, the method of provider payment, and the management of resources all contributed to the bias toward specialty over primary care. In addition, the financial incentives in the system and the lack of accountability to the population discouraged cost-effective health care that was responsive to the needs of patients. The overall result of the health financing system was a primary care sector that was underfinanced, underutilized, and disinterested in providing more and better care to the population. New provider payment methods for primary care in Central Asia aim to mitigate these problems by increasing the share of resources allocated to primary care, giving primary care facilities greater control over their resources, and paying for primary care in a way that creates financial incentives to be responsive to the needs and demands of patients, and increase preventive care and health promotion activities.

The financing of the health sector in the countries of Central Asia followed the Soviet practice of paying health facilities guaranteed budgets based on normatives for inputs, such as the number of hospital beds or staff positions, which were calculated from output targets, such as bed-days or polyclinic visits. Paying health care providers guaranteed budgets based on capacity and output targets created incentives to increase hospitalization rates and lengths of stay, but did not reward preventive care or other primary care services. The budget process created incentives for hospitals and polyclinics to increase capacity, so buildings and personnel were added at all levels of the system. The funds that followed, however, stayed in the specialty care sector, because all health care funds in the system flowed through hospitals and polyclinics. As a result of this financing cycle, the primary care sector typically received less than 15 percent of health care resources.

The resources that were directed to primary care were managed by hospitals and polyclinics, so resource allocation decisions and service delivery priorities were biased toward specialists. In addition, funds were disbursed according to tightly regulated allocations across budget line items (budget chapters), further reducing flexibility and autonomy in resource allocation decisions. Finally, primary care providers were not accountable to the population, as individuals did not have the right to choose their provider and had little recourse for poor service. Each person was assigned to a facility and a catchment physician according to their geographic area of residence. With few supplies and medicines to diagnose and treat patients, little control over internal resource management decisions, and limited accountability to the population, primary care providers evolved into disinterested “dispatchers” in the system, referring even simple cases to specialists and hospitals.

New payment methods are one part of a concerted package of reforms that aim to reverse the position of primary care in the health system. In many places in Central Asia where primary care reforms are being implemented, financing reforms have two components. First, primary care facilities are being registered as independent juridical entities, so they can open their own bank accounts and be financed directly rather than through hospitals and polyclinics. Second, primary care providers are being paid by per capita payment, or the payment of a fixed sum each month to the primary care facility for each enrolled individual. In several urban sites, the implementation of per capita payment is being combined with free choice of primary care provider to create competition, accountability to the population, and incentives for quality. In rural areas where effective free choice is limited by large distances between primary care facilities, administrative quality assurance mechanisms have been implemented together with the per capita payment system. Finally, primary care practice managers are being introduced with the financing reforms to bring modern management techniques to the primary care practices and to help primary care facilities respond to the new economic incentives in the system.

An important goal of per capita payment for primary care is to shift resources from hospital services to the primary care sector. A capitated payment system allows the health purchaser to administratively shift resources to primary care in the process of setting the capitated rate. Ultimately, the health financing

system should encourage the market to play a role in determining the allocation of resources between primary care and higher levels of care. If the payment systems are designed properly with competition and appropriate economic incentives, funds will flow to where they are used most cost-effectively, which is the primary care sector. In the short run, however, given the disadvantaged status of primary care in the health systems of Central Asia, the shift in resources to primary care has started as a deliberate administrative decision.

In several cases, the primary care capitated rate has been set through a combination of “bottom-up” and “top-down” costing. A bottom-up calculation is made to determine the minimum cost per person of providing basic primary care services. The total allocation of resources to primary care is then set as a fixed percentage of the government health care budget in a given geographic area, based on the bottom-up costing. The average capitated rate is then calculated as the primary care budget allocation divided by the total population. Adjustments are made to the per capita rate according to variations in health care needs, such as age or sex, or for people living in remote areas. The combination of bottom-up and top-down costing gives a budget-neutral resource allocation mechanism that is linked to the costs of services provided in the primary care sector. The percentage of the health care budget allocated to primary care is a policy variable that can be adjusted over time as the primary care sector expands its scope of services to include such services as laboratory services, family planning and immunizations. In addition, allocating a fixed percentage of the health budget to primary care ensures that cuts in health care budgets are not borne disproportionately by the primary care sector.

The second goal of per capita payment is to increase incentives for efficiency and the cost-effective use of health care resources. Under a per capita payment system, primary care facilities get paid for keeping people well, not just for treating sick patients. If primary care facilities keep their populations healthy, they may generate savings, which can be used to buy more drugs or equipment or to add other services for their populations. There is therefore an incentive to provide more preventive care and health promotion.

To achieve greater efficiency in resource allocation, it is important that per capita payment is accompanied by greater management autonomy to respond to the new incentives in the system. Where possible, per capita payment in Central Asia has been designed to be disbursed to facilities without budget chapter restrictions. Receiving their per capita budgets in a lump sum gives facilities freedom to allocate their expenditures in the most cost-effective way. Unfortunately, this “chapterless financing” is often met with great resistance from Ministries of Finance and treasuries. When health care budgets flow through the Ministry of Finance and treasury systems, resource allocation autonomy for primary care facilities requires agreement from financing authorities and banks, often in the form of new regulations or waivers. It is therefore important to work with officials from these sectors during the reform process to ensure that they understand the goals of the reforms, and to reach consensus on compromises that allow them to retain some control over government funds while still increasing the autonomy of health care providers.

As the reforms have increased the economic incentive for primary care practices to optimize their utilization of resources, the new position of primary care practice manager has been introduced in many sites in Central Asia. Practice managers provide support to head physicians in managing the practices by completing financial and statistical reports, establishing organizational policies and procedures within the practice, and participating in planning activities. In addition, practice managers provide internal analysis of resource utilization and the performance of individual health care workers in the practice. For example in Zhezkazgan, each month practice managers provide an analysis of how many patients each physician treated, the number of referrals to specialists and hospitals, the number of ambulance calls, expenditures generated by that physician, and other clinical and economic indicators of performance. This information is used by head physicians to evaluate performance, make staffing decisions, and award bonus payments.

Under per capita payment, the incentives for efficiency must be balanced by incentives for quality of care and patient satisfaction. This is most effectively accomplished by free choice and open enrollment. If there is free choice in the system, primary care facilities that can attract more patients will be rewarded with more financing in a per capita payment system. This incentive to keep high quality of care and be

responsive to the population is a counterweight to the incentives inherent in a capitated payment system to reduce expenditures and provide less care. In rural areas where effective choice is limited and open enrollment is not feasible, per capita payment is often accompanied by an administrative quality assurance system, such as a bonus/penalty system. The performance of primary care practices is analyzed against a set of quality criteria and indicators, and the practices are rewarded or penalized financially according to their performance.

Next Steps

Much progress has been made in primary care financing reforms in Central Asia. There is an emerging consensus that per capita payment is the most appropriate payment system for primary care. Much work is yet to be done, however, to refine the development and implementation of per capita payment systems and link per capita payment with the payment methods at other levels of the health care system. In addition, the work in primary care payment reform in Central Asia has focused on changing the way facilities are paid. For new financial incentives to have a significant effect on behavior and outcomes, however, they must be felt by individuals. There is therefore a need for work on differentiated salary systems for health care practitioners that give primary care head doctors greater flexibility to link the salaries of their staff to performance.

Finally, per capita payment for primary care is a way to improve equity in the health care system, because each person in a geographic area has access to the same amount of primary care resources per person. The current per capita payment systems are often implemented with per capita rates varying across rayons and between rayons and cities. A per capita payment system with rayon- and city-specific per capita rates is often more politically feasible because it does not force a transfer of resources between administrative areas with independent health care budgets. The next phase of health care reforms in Central Asia should work to strengthen the equity effect of per capita payment by encouraging the pooling of health care funds at higher administrative levels, such as the oblast level, and paying a single average per capita rate across all primary care practices in an oblast, adjusting the per capita rates only for cost variations associated with the health care needs of different population groups.

XIII. Hospital Structure Rationalization and Payment

A goal of health reform is to restructure the health care system inherited from the Soviet Union to make it consistent with the transition to a market economy. One of the key aspects of the economic transition is the dramatic decline in health sector funding. The percentage of the GDP devoted to health care has declined from approximately 6% to 3%, with a 50% reduction in per-capita funding. Given the decline in funding, the Central Asian republics can no longer afford the extensive and inefficient health care system they inherited from the Soviet Union.

The key area of inefficiency is the hospital sector, which consumes over 70 percent of health care resources. The most striking aspect of the hospital system is the sheer number of specialized hospitals. The core of the system is made up of three general types of hospitals: adult hospitals, pediatric hospitals, and maternity hospitals. An oblast center will have at least one hospital of each type, which supposedly serves as a referral center for the entire oblast, but in reality functions predominately as a city hospital.

This structure is then duplicated at the city level. Thus, a city will have at a minimum six basic hospitals and usually many more. There are also several other more specialized hospitals including emergency care, infectious diseases, ophthalmology, and sometimes cardiology and endocrinology. In addition, there are separate hospitals for: a) Tuberculosis; b) Sexually transmitted diseases (Dermato-venerology) c) Psychiatry and drug abuse (narcology); and d) Oncology. In the capital city, the hospital sector is even more extensive because of a whole range of specialized national hospitals for specific diseases.

The problem with the hospital sector is not only its vast magnitude but its extreme technical inefficiency. Hospitals are characterized by high admission rates, low intensity care, long lengths of stay, and low turnover. Given the underfunding in the health system, the Central Asian republics can no longer afford a cost inefficient hospital sector and they need to shift resources to cost-effective primary care.

The strategy for downsizing the hospital sector is more complicated than just closing inefficient hospitals. In almost all countries throughout the former Soviet Union there have been numerous projects to rationalize the hospital sector and almost all of the projects have failed to significantly decrease the size of the hospital sector. There are many reasons why hospital rationalization is extremely difficult. First, closing hospitals is politically an extremely difficult process. The mayor of a city rarely wants to close a facility because it is seen as a failure of the system. Therefore, rationalization must be accompanied by some improvements in the health sector, particularly in primary care which will receive some of the scope of clinical services currently performed in hospitals. A second reason is that the hospital payment system is based on the number of beds, and the closure of beds leads to a decrease in funding in the health sector. Third, hospital managers have no incentive to merge hospitals since many will lose their power base and hospital personnel will be made redundant. Given the high levels of unemployment, there is serious concern about firing people, which is complicated further by strong regulations that protect workers in the public sector.

Because of the great difficulty encountered with administrative rationalization of the hospital sector, one must approach this delicate issue through a step-by-step process which is linked to overall strategy for reform of the health care sector. This process involves introduction of economic incentives through new provider systems to improve the technical efficiency of hospitals. Before discussing the key elements of the hospital payment system, however, it is important to understand the hospital payment system inherited from the Soviet Union.

Following the traditional Soviet chapter budgeting process, health funds in Central Asia were allocated across providers based on a combination of capacity and utilization rates rather than by the quantity and quality of services delivered. The hospital payment system in Central Asia largely remains a budget system in which the hospital is allocated a fixed amount of funds to operate for a year. As the budget system allocates funds based on production input measures such as number of beds, it contains a direct financial incentive to increase and maintain capacity. The result is a health service delivery system with too many hospitals and too

many beds. The incentives are to maintain large, inefficiently utilized physical structures, excess medical staff, high hospital admission rates, long hospital stays, and excess bed capacity.

This form of hospital payment provides no incentives for efficiency, and in so far as the chapters prevent the flexible use of funds, the payment system actually inhibits the efficient use of resources. The budget is inflexibly partitioned according to budget chapters. Since budgets are required to be spent according to chapter allocations, facilities have very little autonomy and can not use their resources cost-effectively.

Budgets were guaranteed and providers did not have to compete to attract the population by providing lower cost, higher quality health services. Provider payment reform is needed to change the underlying incentives to introduce competition, encourage increased efficiency, and allow hospitals greater autonomy to allocate resources.

In addition to rationalization of the hospital sector through competition, new hospital payment systems also encourage rationalization in another important way. In the Soviet budgeting system the normatives applied to develop budgets not only created the budget of individual providers, but also determined the level of funding to the health sector. The overall allocation of resources to the health sector was determined not by broad policy decisions, but rather by just summing the budgets of individual health providers.

Therefore, when a hospital is closed, merged, or downsized under the Soviet chapter budgeting system, the reduction in the budget of that individual facility is lost to the health sector. New provider payment systems require that funds be pooled and then allocated to health providers based on health decisions of the population – the money follows the patient. In an underfunded health sector, it is absolutely imperative that savings obtained by rationalization or increases in efficiency be retained within the health sector (see Pooling of Health Care Funds paper).

Market oriented hospital payment systems typically provide a payment for the production of a defined unit of hospital output. A per case system provides a set payment for each discharge from the hospital. They strengthen the connection between the type, level and quality of services provided to an individual patient and the amount of financial reimbursement received by the hospital.

Per case systems are intended to provide payment equal to the average cost of producing a unit of output in an efficient hospital. It is intended that an efficient hospital make a profit on some cases and lose money on other cases, not that the payment match the costs of each patient. A payment based on average cost is optimal because the variety of patient requirements is so vast and the technology for the production of health care changes so quickly that any attempt to match payment with the exact treatment provided to each patient would be counterproductive.

New case-based hospital payment systems allow hospitals to compete fairly because stable prices are paid for well-defined units of output. Once these systems are implemented, facilities will be able to plan their services, increasing the capacity of efficient departments and downsizing or closing departments with average costs higher than the payment levels.

A case-based hospital payment system consists of a patient classification system termed clinical groups. Patients are grouped into different categories defined by diagnosis. The cases in each category should be both clinically cohesive and similar in resource use. Each category is given a relative weight based on its cost as compared to the average cost for all cases. Payment to a hospital for a case is proportional to the weight for the category to which the patient is assigned. The hospital payment amount is determined prospectively and consists of a base rate multiplied by the relative weight for the category of the patient classification system containing the treated case.

By separating financing from services provided, the historical budgeting process obscured the costs of health services. In designing and developing the new provider payment systems, it is necessary to determine the true costs of health care services. A cost accounting system is needed to replace the old 18-

category budget and accounting systems with more modern methods of cost calculation and analysis. An important part of the cost accounting process is the separation of inpatient from outpatient costs for calculation of the base rates required for payment of inpatient and outpatient care.

For new hospital payment systems, the cost accounting system is needed to calculate the average cost per case in each clinical department in each hospital. The department level average costs are converted into relative weights or prices for the patient classification system, thus differentiating patients by the type and severity of illness. These relative weights, combined with an estimate of the total pool of funds available for inpatient care, yield payment amounts for each hospital discharge.

In practice, payment reforms can vary in complexity and sophistication, beginning with the payment of a simple facility-specific average cost per treated case, to much more sophisticated diagnosis-related group reimbursement schemes. In addition, case mix global budget systems could also be introduced as an alternative after the patient classification system has been developed and tested.

It is important to implement new case-based hospital payment systems in a step-by-step fashion. Simplified systems are introduced first, partly due to the limited data available to create new payment systems and partly due to the lack of technical and operational human resource capacity. Actual implementation experience leads to development of the information systems and technical skills needed to further refine the payment system. An extremely important by-product of the introduction of new provider payment systems is the development of health information systems required to support the payment systems.

Next Steps

In conclusion, the collapse of funding to the health sector in Central Asia means that the current hospital structure is no longer sustainable. It must be rationalized and efficiency increased. Although some hospital closings, mergers, and down-sizing are necessary, they are not sufficient. The nature of the incentives contained in the old hospital payment system is the source of much of the inefficiency in the hospital sector. These incentives must be changed through the introduction of new hospital payment systems facilitating competition and allowing hospitals greater autonomy to allocate their resources more effectively.

Case-based hospital payment systems have been introduced in Kazakhstan and Kyrgyzstan. The next step is to extend system implementation both geographically and by increasing the proportion of health care funding allocated to hospitals through the new system.

XIV. Quality Improvement in Post-Soviet Health Care Systems

In Western health care systems, one of the driving forces in health reform is a revolution in thinking about quality of health care. This quality revolution has moved health systems away from the traditional tools of quality assurance based on structure and process towards a system that rewards improved outcomes. One of the outstanding questions is what role do these new tools of quality improvement play in the reform of post-Soviet health care systems?

Many projects have attempted to introduce new quality tools such as total quality management (TQM) and continuous quality improvement (CQI) in post-Soviet health systems, with little success. The failure has to do with underlying differences between post-Soviet and Western health systems. The most important factor hindering the use of these new tools is that health care institutions need to have some level of management autonomy to make decisions about quality by changing processes. If financial decisions are controlled not by health facility managers but the Ministry of Finance, and if clinical decisions are controlled not by clinicians but by the Ministry of Health, it is difficult to introduce the innovations necessary to use these new tools. Therefore, one of the fundamental pre-requisites of introducing new quality techniques is the introduction of new provider payment systems with their corresponding management autonomy.

A second factor hindering the use of new quality tools is a lack of individual and population-based data. One of the most important methods of quality improvement is benchmarking; comparing health care performance across health providers. The data system needs to provide information on the numerator and denominator to calculate rates and to create a distribution of outcomes. In the Soviet information system there is no population database and so no denominator. Also, there is insufficient clinical detail on individual patients to calculate meaningful numerators. Finally, there is no financial information to introduce cost-effectiveness as a criteria. Therefore, one of the critical tasks of health reform is to introduce new computerized information systems which will create the data needed to introduce new tools of quality improvement.

A third factor hindering the introduction of new tools of quality improvement is the culture of punishment embedded in the Soviet system of quality assurance. The Soviet method of quality assurance was to carry out excessive reviews of individual cases to identify bad apples. The best example of the punitive method of quality assurance is medical economic standards (MES) which were developed under the New Economic Mechanisms in the late Soviet period and are widely used throughout the Russian Federation. The MES's contain detailed proscriptive guidelines for clinical care, based on expert opinion for each ICD-9 code. If the health provider fails to meet the guideline, they are penalized and payment is reduced based on a decrease in the co-efficient of quality. This is one example of the Soviet quality assurance system which used administrative tools that discouraged innovation. The goal of quality improvement is not to identify outliers, but to shift the entire curve by identifying good practice. This type of quality system works best in a system that has strong economic incentives to improve quality.

One of the critical parameters defining the Soviet quality system is rigid clinical guidelines. Soviet clinical practice was regulated by administrative rules (prekazi) which mandated certain treatment protocols. For example, the dermato-venerology system mandates that gonorrhea and syphilis must be treated in the dispensary system through hospitalization using outmoded treatment protocols such as daily injections of antibiotics. The Sanitary Epidemiological Service (SES) has prekazi which regulate the treatment of infectious diseases such as the unnecessary hospitalization of hepatitis A. Unlike the West, clinicians have little discretion in their choice of treatments and they are unlikely to innovate because the quality assurance system would punish them. Before innovative quality improvement techniques can be introduced, the regulation of clinical practice must be loosened to allow clinicians and health facilities to innovate.

This does not mean that the post-Soviet health care systems should abandon clinical guidelines. One of the critical tasks of health reform is to anchor these guidelines in evidence. One of the lessons from

quality improvement in the West is that clinical guidelines should not be developed using expert clinical opinion alone. Expert opinion often differs widely from guidelines based on a systematic review of the clinical literature and often institutionalizes bad clinical practice. Guidelines should not micro-regulate every decision in clinical practice, they should encourage those activities that have proven to be effective and discourage those activities where there is no evidence. In many cases, the evidence is not clear and this is the space for clinical judgement.

The development of modern clinical guidelines based on evidence is very difficult in post-Soviet health care systems because of different traditions of what constitutes evidence. Before guidelines can be introduced, evidence-based medicine must be introduced. Leading clinicians need to be exposed to the Western medical literature, training in new techniques of critical appraisal, and randomized control trial methodology. Evidence-based medicine is beginning to take hold in the former Soviet Union and a Cochrane Center was recently established in Moscow.

Given all of the barriers to introducing new techniques of quality improvement, this must be seen as a second order activity. After new payment systems are introduced and health facilities face incentives to improve quality, new quality tools can be introduced. What then should be done concerning quality in the short-run before all of these systems are in place? The most important activity is clinical training, particularly in primary care. Strong donor support is needed in this area. WHO has developed many training packages in clinical areas such as integrated management of childhood illness (IMCI) which teach modern clinical practice. However, the established packages only cover a small part of clinical practice and more modules are needed particularly for chronic diseases such as cardiovascular disease, which is responsible for the largest percentage of the burden of disease.

A strong system of licensing is needed to ensure that health care facilities meet minimal standards. Given the low level of funding, it is difficult to expect that licensing can do more than just ensure minimal safety standards such as running water. In most countries, it is too early to introduce accreditation of health facilities. As there is minimal competition in the health sector, it does not matter if a facility is accredited. Accreditation is a second order process which should follow the implementation of new provider payment systems which will create competition and incentives for accreditation.

There are specific activities that should be part of quality improvement in the first stage of reform. There is a strong need to improve the quality of clinical data, particularly mortality data which is a useful aggregate indicator of health system performance. Mortality data, particularly data on cause of death is notoriously unreliable. The death registration system is outside of the health sector and there are no checks on what is written as the cause of death. Furthermore, the cause of death on the death certificate is not checked against autopsy data. The death registration system needs to be updated with more detailed information about death and linked to health care utilization systems.

The information that is most lacking is patient satisfaction. This should be introduced in a more systematic fashion by health facilities, health departments and health insurance funds. Survey methodology is poorly developed in the health sector and significant technical assistance is needed to improve instruments, sampling, and statistical analysis of results. Household surveys are needed to capture those who do not use health services. The introduction of household surveys is one of the most important techniques for quality improvement because it creates data that can be used to evaluate the progress of health reforms.

The new tools of quality improvement will ultimately play an important role in health reform in post-Soviet health systems. However, the introduction of these new tools requires significant changes in the health care system before they can be implemented effectively.

XV. Privatization and Health Reform

In Post-Soviet societies, the issue of privatization is fraught with ideological connotations. To market reformers, privatization of state-owned institutions is seen as method of building a market economy and decreasing the size of the welfare state. To others, privatization is seen as an attempt by the government to withdraw from its essential commitments. The debate about privatization in the health sector needs to move beyond these ideological views and be approached from a broad vision of the goals of health reform and where policymakers want to see the health care system in the next millenium.

To understand where the health care system is going, one must start with the existing institutional and legal structure, which sets the boundaries for what is possible. The Central Asian Republics inherited from the Soviet Union a state-funded National Health Service, where the funds were allocated through general revenues of the budget and then provided to health facilities, which were owned by the state. Since independence, this basic structure has remained intact, but the level of funding in the health sector has declined significantly, decreasing from approximately 6 percent of GDP to 3 percent since independence. Many national policymakers outside of the health sector believe that they can solve the underfunding problem by privatizing health facilities. This, however, is one of the fundamental misconceptions in the region about privatization, as financing is confused with ownership.

Privatization is fundamentally about whether the state or private entities, as defined by the civil code, own economic enterprises. A distinction must be made between public/private ownership and public/private funding. The health care system can be publicly funded, but the health facilities in the system can be privately owned. For example, in the United Kingdom National Health Service, general practitioners receive almost all of their funding from the state, but from a legal standpoint they are private facilities. Because private ownership does not automatically mean private financing, privatization does not necessarily lead to decreased government funding in the health sector.

In Central Asia, the economic transition has meant that a large percentage of the population cannot afford to pay for health care, particularly in rural areas where there is a very limited cash economy. If private health facilities do not receive state funding, they will have to rely on fees charged to the population. The potential for additional private, out-of-pocket financing, however, is extremely limited. There is therefore a very limited role in the current system for health facilities that are privately owned and privately financed, as the state will need to continue to provide funding for the vast majority of the population. In the current context, therefore, privatization can only play a significant role in the health sector if state funds can be used to pay private facilities. Privatization, therefore, must be discussed within a broader vision of health reform.

The overall vision of health reform is to use the limited public resources available in the most cost-effective manner to improve the health of the population and create a sustainable health care system. Given the low level of funding, the state should first ensure that the population has access to a guaranteed basic minimum package of health care services. Taking into account the burden of disease and the most cost-effective interventions, the conclusion is that the limited resources available for health should be devoted to primary care. In addition, the state should also guarantee a basic package of essential hospital services, including maternity care and treatment for acute life-threatening conditions.

To shift to an essential package of services requires profound changes in health care financing and in the organization of the delivery system. The primary care system needs to be reorganized from specialized polyclinics into family group practices (FGPs), which are clinically integrated units. The highly specialized hospital sector needs to be consolidated by merging facilities and moving toward general hospitals. It is extremely difficult to reorganize the delivery system after privatization, since the government no longer controls the facilities. Therefore, restructuring of the system should occur prior to any privatization process.

The reorganization of the delivery system is closely tied to changes in the financing system. The first step is to consolidate health budgets into a single fiscal intermediary that can implement new provider payment methods. Generally, the Ministry of Health would serve as the fiscal intermediary and become the purchaser of health services. The purchaser of services would set the incentives in the system through provider payment methods, and the health facilities would be given greater autonomy to respond to the incentives. This creates a purchaser/provider split. The Ministry of Health retains control over the system by setting the regulatory framework based on the new provider payment systems.

The purpose of the new payment systems is to improve the technical efficiency of the health facilities, and to create a mechanism for shifting resources from the hospital to the primary care sector as the scope of services in primary care increases. The new payment systems create a greater scope for privatization, because they create a stable system of prices under which health facilities can plan expected revenues and carry out business planning to determine whether a venture can be profitable.

The new payment systems should not depend on the form of ownership of health facilities. As a purchaser, the fiscal intermediary can purchase services from both private and public facilities based on quality, which blurs the distinction between public and private ownership. Under the new payment system, private and public facilities can compete for public funds.

The new provider payment systems require that health facilities be given greater management autonomy to respond to new economic incentives in the system. To improve technical efficiency in the system, health managers must be given the opportunity to manage their facilities and not have all of their internal decisions regulated. What is striking about post-Soviet hospitals is that they have a vast array of health personnel and beds, but few patients. Under a case-based hospital payment system, hospitals will have less income if they have few patients. This means they would have to be able to reorganize their facilities, in particular, reducing excess personnel. It is critical that health care managers are freed from the dense web of regulations that prevent them from responding to the new economic incentives in order to improve efficiency.

Privatization may play an important role in creating management autonomy. There are many ways to increase management autonomy, ranging from contracting for management of facilities to privatization. However, because of the highly regulated nature of all government organizations, and the historical tradition of the Ministry of Health micro-management of health facilities, privatization may be the simplest method for achieving management autonomy. Otherwise, autonomy must be approached in a piece-meal fashion, changing each individual regulation that presents an obstacle to autonomy. There is a vast underbrush of regulation that must be cleared, and many of these regulations are outside of the health sector. One of the areas of particular difficulty is the Ministry of Labor's regulations regarding the dismissal of personnel in government organizations. Therefore, one of the roles of privatization is to bypass this long-term process of regulatory change to achieve management autonomy.

In conclusion, privatization is not an end in itself, but one of the tools that can be used in health reform to increase management autonomy and create competition. Before commencing on privatization, however, it is critical to first restructure the delivery system and put in place transparent financing mechanisms that will allow health care facilities to plan. The government must clearly define its role as a regulator of health care and as a purchaser of essential services, and must give health care managers the opportunity to improve the technical efficiency and quality of their facilities. If these conditions are met, the form of ownership of health care facilities is not a critical issue, and new provider payment systems should blur the distinction between public and private providers. Once the government develops a clear vision of the health sector reform, there is greater scope for private activity in the health sector.

XVI. Health Management Information Systems

A legacy of the former Soviet system is the collection of massive amounts of information. Countless individuals spent their lives filling out pieces of paper and sending them up to the next level. Unfortunately, the information collection process was just that, collection. The analysis and use of data for informed decision-making was politicized or non-existent.

This was certainly the case in the health sector. The Ministry of Health's (MOH) Medical Statistics Department employed thousands of people to fill out forms and reports. Each facility had statisticians completing tens or even hundreds of forms on everything from facility profiles to diagnoses to laboratory results to authorizations for sick leave, to all interventions for protected classes of patients. The facility level statisticians would complete forms and then send them on to the rayon or city health statistics departments. There, other statisticians would complete some other reports and send those onto the oblast health statistics departments who would again consolidate them before sending the reports to the national level.

Despite all this collection effort, a data analysis function providing tools to evaluate and inform policy development did not exist. The basis for decision-making was political⁵. Information only had value related to its ability to support political decisions or necessities. As a result, data was often changed to be consistent with political decisions. For example, the methodology used to calculate infant mortality underestimated actual infant mortality.

In addition to the problems of inaccurate data and no data analysis function, the information collection process and systems were vertical and not integrated to create one set of data providing a picture of the health sector. The MOH operated the statistical system containing all clinical information. The Minister of Finance (MOF) operated the financial system containing detailed information about facility chapter budget⁶ expenditures.

These two systems (clinical and financial) were not integrated to enable an analysis of the cost of different health services, or the linkage between costs and utilization or health outcomes. The MOH was unable to weigh different priorities and develop health policy because they could not compare the costs of different health programs. For example, information was available showing the number of heart attacks and the salaries paid to cardiologists, but it was impossible to determine the full cost of treatment for a heart attack.

The entire information system and process needs to be reformed. Two levels of health information systems are needed. The first to support health purchaser functions and the second to support health providers.

First, the health purchaser needs to operate national health information systems which provide standardized information for many purposes, including operating new provider payment systems, providing data for quality assurance programs, providing data for published health statistics, and providing data for research and evaluation. Providers should submit standardized yearly cost reports and facility profiles providing the cost information required to develop and refine provider payment systems.

Second, comprehensive information systems are required to support the design, operation, and evaluation of provider payment reforms. As the new provider payment systems are based on the premise of paying for health services to the population rather than maintenance of physical infrastructure (per case vs. per bed), the concept of billing systems needs to be introduced into the health sector.

5 Interestingly, in the Russian language, the word for policy and politics is the same

6 Chapter budgets are line items expenditures such as salaries, social taxes, drugs, equipment, supplies, and utilities.

In case-based hospital payment a clinical information form or bill is submitted from the health purchaser to the health provider. The bill is entered into the computerized information system which groups the case into a clinical group, determines the payment amount, and produces a payment report or invoice. This hospital database also serves other functions as well, including providing information for quality assurance, health statistical reporting, research and evaluation, and refining the hospital payment system.

The hospital payment information system can be flexible and vary in the level of technology incorporated into the system design and structure. For example, bills can be submitted to the health purchaser information center manually, on diskette, or by electronic linkage. Finally, it can also be linked to other information systems such as the accounting system or population database, allowing analysis of clinical practice and referrals across the entire health delivery system.

A population database is required to operate capitated rate payment systems for primary health care providers such as Family Group Practices. The population database is created as a result of an enrollment process. Payment to each Family Group Practice is then determined by multiplying the capitated rate times the number of enrollees contained in the population database for each provider. Finally, information systems are also needed to implement fee schedules providing payment for outpatient specialty and diagnostic tests.

Health providers also require new management information systems to adapt to a more market-oriented environment and the incentives of the new provider payment systems. Providers in both the inpatient and outpatient sectors must begin to function more as businesses. Hospitals must understand the costs of producing their services and develop plans to reduce costs, increase revenues, and produce the optimal mix of services. Primary care providers must be concerned about the health of their practices as well as that of their patients, and they must market themselves to the users and purchasers of health care.

The types of systems which need to be introduced at the provider level include clinical information systems; financial management systems including budgeting, cost accounting, financial accounting, and internal controls; human resource management systems; and quality management systems. The capacity of health professionals to use these management information systems as tools to improve decision-making must be increased.

In addition to new management information systems, new management techniques must be introduced to develop more effective managers able to function in an environment where providers have more autonomy to allocate resources. New health management careers are being established to provide the technical skills required. For example, the new position of Family Group Practice Manager gives new primary care entities the capabilities needed to manage resources in a changing environment.

The reorganization of primary care into Family Group Practices (FGP's) supported by capitated rate payment is an example of health reforms producing dramatic changes requiring new health information systems. In order to function as independent business entities, FGP's need clinical information systems to allow them to evaluate their clinical practice. FGP physicians need to collect and analyze clinical data about the number and type of office visits they have, the diagnoses of the patients they see, the number of office procedures they perform, and the number of referrals for specialty visits, diagnostic tests, and hospital admissions.

FGP's also need financial information systems. As payment systems are phased in, FGP's need to develop budgets, establish purchasing and inventory systems, manage finances, prepare financial reports for internal management, and submit financial reports to external regulating bodies. As with any business, the financial information system allows FGP's to adjust their operation to changes in the environment in order to remain a viable entity.

New management information systems have been introduced in the health sector in Kazakhstan, Kyrgyzstan and Uzbekistan. These systems have supported the introduction of new provider payment systems and allowed health providers to begin to adapt to a more market-oriented environment.

Next steps

The next steps would be to expand the management information systems both horizontally and vertically. Most of the new systems have been introduced in demonstration areas and need to be extended throughout all the countries in Central Asia. In addition, the scope of the systems needs to be deepened in order to address all management functions.

XVII. Monitoring and Evaluation of Health Reforms

Health reform efforts in the countries of Central Asia are well into implementation and are generating lessons to guide future reform strategies in the region and beyond. The experience gained from implementing health reforms should be analyzed and evaluated in a systematic way to determine whether the goals of reform are being met, and how implementation should be modified to improve the effectiveness of the reform programs. The function of health policy evaluation, however, has not historically been part of the Ministries of Health (MOH) of the countries of Central Asia, and there is very limited research and analysis capability in the MOH structure. The elaborate reporting systems in the government health sector generate large amounts of data, but this data is mainly used for compiling aggregate statistics and is not fed back to the system to be used to improve performance. There is limited capacity to carry out effective evaluation of health reform initiatives in the countries of Central Asia, and therefore evaluations of the reforms are often highly subjective and politicized. Future donor-assisted health reform efforts should build the capacity for health policy evaluation within the MOH, and establish a process for formative health policy evaluation, which provides feedback to the implementation process.

A health reform evaluation strategy should stem from the stated goals and objectives of the reform program and a conceptual framework that demonstrates how the new policies are expected to lead to the desired outcomes. A set of indicators should be identified that can track progress toward achieving the objectives, which can be used by both national and local level policymakers. The process that is put in place for analyzing and interpreting the indicators is extremely important and should be transparent, so it is protected from subjectivity. For example, the change in an indicator, such as a decrease in the number of hospital referrals, can be interpreted as a positive or negative change depending on the objectives of the reforms, other changes in the environment beside new health policy initiatives, and the initial value of the indicator. Therefore, the process for analyzing and interpreting the indicator and determining whether the change was caused by health reform should follow a transparent, structured approach that leads to objective conclusions.

Ideally, at the beginning of a health reform initiative, after the goals, objectives, conceptual framework and indicators are established, baseline information should be collected. Baseline information is needed to provide contextual information and data on the initial levels of key indicators that will be tracked throughout implementation.

The process of evaluation is critical to providing timely and useful information back to policymakers and managers. Most evaluation should therefore rely mainly on existing data sources, so information is accessible to policymakers and managers, and evaluation and analysis can be repeated at relatively short intervals. The new information systems that accompany the implementation of new provider payment systems are an excellent source of routine information for evaluation that is accessible to both policymakers and health managers.

There is also a role, however, for periodic, large-scale surveys that provide information across points in time, over a period during which some effect of the reforms is expected to be observable. These surveys are necessary to fill in information that routine administrative information sources do not supply. For example, household surveys are an important source of information to evaluate the impact of health reforms on many of the dimensions of the health and well-being of the population, such as the level of underlying chronic illness, which are not captured by administrative data. In addition, household survey data can be disaggregated by different population groups, so the impact of reforms can be evaluated by population characteristics, such as income. Household surveys are also important because they provide information on both users and non-users of the formal health care system. It is possible to determine which segment of the population does not use the formal health care system when faced with a health problem, and why they do not use the system. This information is necessary to better understand and address barriers to access to care.

Household surveys are also necessary to provide information into the development of national health accounts. National health accounts, which map all sources and uses of funds in the health sector, are necessary for general health policy development, including the development of benefits packages, co-payments and user fees, and privatization. To develop national health accounts, an estimate of out-of-pocket expenditures on health care is needed. Because most private payments for health care in Central Asia are made informally, a reasonable estimate of the level of out-of-pocket expenditures can only be obtained from household survey data.

Health facility surveys may also be implemented periodically to supplement administrative data and get more complete information about changes in how services are delivered, new management processes in health facilities, and the perceptions of health care providers about reforms. In addition, health policymakers or health facilities themselves may conduct routine or periodic patient satisfaction surveys to track the change in the population's perception of and satisfaction with the quality, cost and convenience of the health care they receive.

To incorporate surveys into the health policy evaluation process, there is a need to build stronger capacity in the countries of Central Asia to design and implement survey research that is used to feed into the policy process. It is also necessary to educate health policymakers on the role of survey research in health policy evaluation, and how routine administrative data and survey data can be combined to both evaluate and to inform the process of implementation of health reforms.

In conclusion, the health reform process in Central Asia is redefining how information is collected and used in the health sector. New health management information systems are generating better quality information that can be assembled and analyzed in a way that is useful to health managers and policymakers for improving clinical practices, the management of resources, and other aspects of health facility performance. Linking this information into a system of health policy evaluation extends the generation and feedback of information for continuous quality improvement of the health system as a whole as an inherent part of the process of health reform.