

**KARAGANDA OBLAST, KAZAKHSTAN,
PHARMACEUTICAL SECTOR ASSESSMENT**

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Rational Pharmaceutical Management Project
C.A. No. HRN-A-00-92-00059-13

Prepared: February–March 2000
Reviewed: April 2000
Published: May 2000

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This publication was made possible through support provided by the U.S. Agency for International Development, under the terms of cooperative agreement number HRN-A-00-92-00059-13. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the U.S. Agency for International Development.

Recommended Citation

Zagorski, Andrei, and Marina Semenchko. 2000. *Karaganda Oblast, Kazakhstan, Pharmaceutical Sector Assessment*. Published for the U.S. Agency for International Development by the Rational Pharmaceutical Management Project. Arlington, VA: Management Sciences for Health.

PREFACE

The Rational Pharmaceutical Management (RPM) Project was developed by the U.S. Agency for International Development (USAID) and implemented in more than 20 countries worldwide. The project provided technical assistance and training to public health specialists in improving the pharmaceutical sector. In the Newly Independent States (NIS), RPM has worked, respectively, in Russia, Ukraine, Moldova, and Kazakhstan. The technical areas included rational prescribing and use of drugs, development of regional formulary systems, implementation of competitive drug procurement for the public sector (tendering), and development of drug information services.

The RPM workplan in Kazakhstan for 1999–2000 included an indicator-based pharmaceutical sector assessment in the USAID pilot Karaganda Oblast. This report presents assessment findings, identifies gaps in the Karaganda Oblast pharmaceutical system, and suggests possible courses of action to correct problems in each area. The suggested activities are intended to serve as a point of departure for discussion at a RPM-organized policy options workshop, rather than as concrete recommendations.

ACKNOWLEDGMENTS

The authors wish to express their appreciation to all those individuals who helped plan and conduct the assessment, allowed themselves to be interviewed, and supplied the required data. A list of persons who participated in the assessment and provided data appears in Annex 1. In particular, the authors want to thank Kathryn Stratos and Indira Aitmagambetova of USAID and Dr. Kanat Ermekbaev and Dr. Nadezhda Khe from Karaganda Oblast and Professor Alexander Gulyaev from Karaganda State Medical Academy for their considerable support and involvement in planning and conducting the assessment.

Special thanks are also extended to the USAID ZdravReform Project staff for providing assistance and, in particular, to Dr. Talgat Nurgozhin for valuable contributions and dedication to pharmaceutical sector reforms in Kazakhstan and the Central Asian Republics.

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EXECUTIVE SUMMARY

Background

Pharmaceutical supply systems in many countries have inefficient or ineffective drug management procedures that negatively affect the availability of drugs and cause irrational use of those drugs that are available. Oftentimes neglect of pharmaceutical sector problems results in failure of health sector reforms. No matter how well trained the medical staff, if drugs are not available or not affordable to patients, the health system suffers.

In Kazakhstan where the country is transitioning into a market economy, there are many gaps in supplying drugs for public health, and the government needs possible options for ameliorating these problems. This pharmaceutical sector assessment measures the extent of the supply gaps, provides information for identifying possible solutions, and serves as a baseline against which to measure any subsequent interventions.

Assessment Objectives

The objectives of this assessment were to—

1. Identify problematic areas of drug management in the pharmaceutical supply system with respect to selection, procurement, distribution and use of drugs, including aspects of policy, law, finance, and management information systems, as they affect drug management.
2. Provide data that will give the USAID Mission an understanding of pharmaceutical sector problems encountered in Karaganda Oblast, and what can be done to correct them.
3. Provide Karaganda Oblast officials with a report on the status of the local pharmaceutical sector, and offer options to address problems identified in the assessment.
4. Describe the public/private sector relationship, and identify opportunities for increasing the role of the private sector.

Key Assessment Findings

Key assessment findings are discussed in detail in Chapter 3 of the report. What follows is a summary of findings.

- Karaganda Oblast does not have a clearly defined oblast-specific drug policy that would address all aspects of the drug supply system, including selection, procurement, distribution, and use of pharmaceuticals.

- Existing oblast financial mechanisms do not ensure availability and affordability of essential drugs for patients in the public health sector.
- Lack of a specific drug formulary for exempt patients prevents ensuring the availability of vital drugs, in the environment of a diminishing health budget.
- Reimbursement to hospitals based on diagnosis-related groups (DRGs) is seriously undermined by lack of accepted and approved standard treatment guidelines.
- The oblast competitive drug procurement procedures are not transparent and lack mechanisms to ensure drug quality and supplier compliance with contract prices.
- The latest version of the Kazakhstan Essential Drug List (EDL) and accompanying *Manual*, developed by the U.S. Agency for International Development (USAID) ZdravReform Project, are not available at oblast facilities, and they are not followed by physicians in their prescribing practices.
- The national EDL and family group practice (FGP) formulary do not perform their function of ensuring that cost-effective, efficacious, and safe drugs are procured and used for treatment.
- Drug prices and treatment costs are not controlled and are very high at all levels of the oblast health system. The decrease in the number of patient visits in primary health care (PHC) and the increase in hospitalization rates along with that in overall morbidity in 1999, as compared with 1998, may be attributed to the high costs of drug therapy.
- Lack of drug price-control policies make pharmaceuticals very expensive in the private retail sector.
- Serious gaps were identified in stock management and pharmaceutical services in hospitals.
- There are no mechanisms in the oblast to control drug use at all levels of care. As a result, polypharmacy is a general trend, which results in irrational treatment, expensive for both patients and the oblast health system.
- The oblast Health Management Information System (HMIS), which is currently being developed by local experts, may serve as a basis for the development of a Drug Management Information System (DMIS) that would assist the oblast in establishing its drug policy and control.
- Evidence-based unbiased drug information is not available to either prescribers or patients.

Policy Options and Possible Interventions

Based on the assessment findings, RPM can suggest a number of interventions and activities to address the identified gaps. These proposed suggestions are grouped as short-, medium-, and long-term activities.

Short-term activities are those that the Oblast Health Administration (OHA) could conduct without external technical assistance, relying only on local capacity. Such interventions could be developed and implemented in one to six months.

Medium-term activities and interventions may require some technical assistance from international experts, but, if properly managed by the oblast, they may also build upon existing local expertise. It will take more time to implement these interventions, up to approximately two years.

Long-term interventions include systemic changes to the pharmaceutical system, and these will require changes in oblast legislation and extensive technical assistance and international expertise.

It should be noted that the suggested activities are intended to serve as a point of departure for discussion at the policy options workshop, rather than as concrete recommendations.

Short-Term Activities and Possible Outcomes

Activities

- At the Oblast Administration level, revise tender documents and include pharmaceutical specialists as permanent members of the Oblast Tender Board.
- Establish a Formulary Committee (FC) at the Oblast Health Administration and facility levels (hospitals and FGP associations), and develop the FC policies and procedures as outlined in the Management Sciences for Health (MSH)/Rational Pharmaceutical Management (RPM) Project *Manual for the Development and Maintenance of Hospital Drug Formularies*. The Russian language edition of the *Manual* is available in the oblast.
- Initiate pilot formulary drug selection at health facilities that have Karaganda State Medical Academy departments (for example, Oblast Clinical Hospital, Oblast Children's Hospital), and two FGP associations (one in Karaganda, with Medical Academy departments, and the other a private FGP in Jezkazgan).
- Using the technical expertise of the oblast Center for Health Purchasing (CHP) *Densaulyk* staff and RPM assessment tools, develop a set of pharmaceutical outcome and performance indicators. Incorporate the pharmaceutical indicator data-collection process into the existing CHP MIS network.

- Use pharmaceutical indicators to initiate outcome and performance monitoring of drug procurement, prescribing, and use to ensure compliance with the essential drug list, and later with pilot formulary lists.
- At the PHC level, working with two existing FGP associations, initiate prescribing by international nonproprietary name (INN).
- Disseminate the latest versions of the National EDL and accompanying *Manual*, developed by the USAID ZdravReform Project, and drug information and management materials provided by the RPM Project.
- Develop a formulary list of drugs for exempt patients.

Possible Outcomes

- It is expected that controlled selection, procurement, prescribing, and use will increase technical and operational efficiency and improve health outcomes at health facilities in pilot sites.
- Pharmaceutical indicator data will allow the oblast Health Administration to analyze performance, trends, and changes in the sector and have a basis for deciding on corrective measures. Data collected from pilot sites may help to gain the support of other facilities in the oblast.

Medium-Term Activities and Possible Outcomes

Activities

- Disseminate results of short-term interventions in pilot sites.
- Develop a schedule and initiate implementation of a formulary system¹ at the oblast and facility levels.
- Establish an oblast Drug Information Center (DIC).

¹ A formulary system is a process whereby the medical staff of an institution, working through a Formulary and Therapeutics Committee, evaluates and selects from the numerous available drug products those that are considered most efficacious, safe, and cost-effective. A formulary system is a mechanism to streamline procurement activities, minimize institutional costs, and optimize patient care. Essential elements of a formulary system include a functional formulary committee, drug policies and legislation, a constantly revised and updated formulary drug list, drug information services, ongoing drug utilization review programs, reporting mechanisms for adverse drug reactions and drug quality problems, feedback mechanisms, and ongoing training and education of prescribers and medical staff.

- Implement drug utilization reviews (DURs) in pilot sites.
- Develop and implement standard treatment guidelines that include specific drug treatment, based on the oblast drug formulary, for use in DRG-based reimbursement mechanisms.
- Establish mechanisms for reporting adverse drug reactions (ADR) and drug product quality problems.
- Establish a drug management information system (DMIS).

Possible Outcomes

The proposed activities are expected to improve the performance of the health system within its existing legal boundaries. With implementation of the proposed interventions, pharmaceuticals should become more affordable to patients, and they will be safer and more efficacious. Implementation of the proposed interventions does not require systemic changes in drug legislation and finance. Other necessary reforms of the pharmaceutical sector may require systemic changes in legislation, finance, and organization.

Long-Term Activities

- Oblast drug policy that addresses all aspects of drug selection, procurement, distribution, and use should take shape in an enforceable law.
- The formulary system should become the core of pharmaceutical sector management.
- New mechanisms for health financing should be developed to guarantee access to health services, including pharmaceuticals, for the majority of the population. Financing mechanisms should be performance-based, create incentives to providers to perform adequately, and develop competition between health facilities.

ACRONYMS AND GLOSSARY

ADR	adverse drug reaction
AIDS	acquired immune deficiency syndrome
<i>Akim</i>	head of Oblast Administration
<i>Akimat</i>	Oblast Administration
ARDIN	All-Russia Drug Information Network
CAR	Central Asian Republics
CHP	Center for Health Purchasing
<i>Dari-Darmek</i>	Kazakhstan agency charged with controlling pharmaceutical activities
<i>Densaulyk</i>	[Center for Health Purchasing]
DIC	Drug Information Center
DMIS	drug management information system
DOTS	Directly Observed Treatment, Short-Course
DRG	diagnosis-related groups
DUR	drug utilization review
EDL	essential drug list
EEG	electroencephalogram
<i>feldsher</i>	medical practitioner without full professional status who prescribes drugs
FGE	federal government enterprise
FGP	family group practice
FTC	Formulary and Therapeutics Committee
GMP	good manufacturing practice
<i>Goszakaz</i>	state purchase order
IHD	ischemic heart disease
ILO	International Labour Organization
INN	international nonproprietary name(s)
SLE	systemic lupus erythematosus
LOS	length of stay
MIS	management information system
MMIF	Mandatory Medical Insurance Fund
MSH	Management Sciences for Health
NGO	nongovernmental organization
NIS	Newly Independent States
OHA	Oblast Health Administration
PE	private enterprise
<i>Pharmacia</i>	private drug wholesaler
PHC	primary health care
PMPM	per member per month
<i>rayon</i>	county
RBVS	resource-based relative value scale
RK	Republic of Kazakhstan
RPM	Rational Pharmaceutical Management [Project]
SBD	standard bidding document
STGs	standard treatment guidelines
STIs	sexually transmitted infections

TB	tuberculosis
<i>tenge</i>	Kazakhstani unit of currency
U	unit
USAID	U.S. Agency for International Development
USD	U.S. dollars
USP	U.S. Pharmacopeia
VAT	value-added tax
VEN	vital, essential, or nonessential [method of classifying drugs into categories]
WHO	World Health Organization

CHAPTER 1. RPM ASSESSMENT METHODOLOGY

Objectives and Study Team

The Karaganda assessment had the following objectives:

- Identify areas of irrational drug management in the pharmaceutical supply system with respect to selection, procurement, distribution and use of drugs, including aspects of finance, policy, and law, as they affect drug management.
- Provide data that will give the U.S. Agency for International Development (USAID) Mission an understanding of pharmaceutical sector problems encountered in Karaganda Oblast. An *oblast* is comparable to a U.S. state.
- Provide Karaganda Oblast officials with a report on the status of the local pharmaceutical sector, and identify options to address problems identified in the assessment.
- Describe the public/private sector relationship, and identify opportunities for increasing the role of the private sector.

The study team included the following members:

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Marina Semenchenko, Senior Program Associate, MSH/RPM

Data collectors consisted of physicians, pharmacists, and interns provided by the Center for Health Purchasing (CHP) *Densaulyk* and by Karaganda State Medical Academy. Their role was to collect data at selected oblast and *rayon* (country) health facilities and pharmacies. The names and backgrounds of data collectors can be found in Annex 2.

The assessment report was written by the RPM staff, and reviewed internally by RPM and externally by the Oblast Health Administration and CHP *Densaulyk*.

Methodology

Assessment objectives were achieved through collection of background information, document review, structured interviews with key informants, structured collection of indicator data, and ABC/VEN analysis of procurement drug lists.

Tools

The assessment tools used in Karaganda Oblast were developed by modifying the structured questionnaires used in earlier RPM assessments in Russia. The indicators and sample forms contained in MSH's *Rapid Pharmaceutical Management Assessment: An Indicator- Based Approach* were used for collection of indicator data. The tracer drug lists were established in collaboration with Karaganda Oblast pharmaceutical experts during the data collectors training workshop, conducted in Karaganda in January 2000, prior to the assessment. The assessment tool contained the following components:

- Questionnaires used to interview key informants at Oblast Administration, Oblast Health Administration, and health facilities
- Data collection forms, including—
 - Drug Use Data Form
 - Inventory Data Form
 - Stock-out Data Form
 - Price Comparison Data Form
 - Tracer drug lists

Tracer Drugs

A number of indicators used in the study were measured on the basis of tracer drug lists. The indicators related to procurement, stock management, drug availability, and drug prices. Although it would be ideal to collect data on all drugs flowing through the system, so thorough an investigation would have required greater time and effort. Therefore, prior to the assessment, two standard tracer drug lists were developed—one for the hospital survey and the other for the survey of primary health care (PHC) facilities and private pharmacies.

The lists were developed by local and RPM experts. The selected drugs represented major therapeutic categories. The drugs were not necessarily the most safe and efficacious from the point of view of international evidence-based practice, but rather those commonly used in the oblast. Drugs were identified by generic names. All selected drugs were also on the Kazakhstan Essential Drug List (EDL). To facilitate data collection based on the tracer drug lists, RPM provided data collectors with the latest edition of the reference *Synonyms of Pharmaceuticals*.² The tracer drug lists can be found in Annex 3.

Selection of Assessment Sites

Sites for the survey were selected in collaboration with the Oblast Health Administration (OHA). OHA suggested focusing on those facilities that were its priority of interest. These facilities included the seven largest public hospitals at the oblast and rayon level, and five PHC facilities,

² *Synonyms of Pharmaceuticals* by G. Shashkova, V. Lepakhin, G. Kolesnikova. Russian Center "Pharmedinfo," Moscow, 1999.

including state and private family group practices (FGPs), and an independent private polyclinic (see Annex 4). All those facilities served an urban population (83% of the total oblast population). Some data were collected at a small private hospital and are used for illustrative purposes in the report. Note, however, that these figures are not included in the indicator data. In addition, the assessment results do not reflect the situation in the pharmaceutical sector in rural areas.

Data on drug prices and availability were also collected at 25 randomly selected retail pharmacies in Karaganda and Jezkazgan cities and at the private drug wholesaler Pharmacia. A complete list of persons met and interviewed and a list of facilities and pharmacies visited can be found in annexes 1 and 4.

Data Collection and Processing

The assessment data collection was performed February 1–15, 2000, by 20 data collectors trained by RPM. Data collectors gathered quantitative data and interviewed key informants at the facility level. Computer specialists from CHP Densaulyk then entered the data into Excel spreadsheets, calculated the indicators, and generated summary tables and graphs. Interviews with key informants at the oblast administrative level and collection of background information were performed by the RPM staff.

CHAPTER 2. SUMMARY OF INDICATOR FINDINGS

Pharmaceutical Indicators Data

The indicators used in the assessment are standardized measurements of a local pharmaceutical system. RPM has field-tested these indicators in several countries and regions, and used them to conduct three oblast assessments in Russia. Indicators can be used to compare the effectiveness and performance of health systems between countries or oblasts, or they can serve as baseline data against which the results and impacts of reforms and interventions can be measured within one health system. The latter is the purpose of the present assessment.

This assessment is the first systematic indicator-based survey conducted in Kazakhstan. It is expected that the indicator data will be used as a reference to measure future performance of the national pharmaceutical sector and of the health sector reforms implemented by Kazakhstan within the framework of USAID-funded projects.

This section of the report on the Karaganda assessment presents a summary of the 46 indicator results, grouped by indicator number under eight lettered topics, according to the methodology of the RPM manual *Rapid Pharmaceutical Management Assessment: An Indicator-Based Approach*. Indicator results appear in Chapter 3, which identifies and discusses the problematic areas of the Karaganda Oblast pharmaceutical sector.

A. Policy, Legislation, and Regulation

1. Existence of a national drug policy approved by the government

Kazakhstan does not have an officially adopted National Drug Policy backed by legislation. There are, however, a number of separate decrees, laws, and regulations, written at the national and oblast levels, pertaining to various aspects of drugs.

2. Existence of comprehensive drug control legislation, regulations, and enforcement agencies

Comprehensive national legislation and regulations exist to govern drug control in Kazakhstan, including the Decree of the President of the Republic of Kazakhstan (RK) “On Drugs” (1995), Resolution of the Collegium of the Ministry of Health of RK “On the Basis of the National Drug Policy of the Republic of Kazakhstan” (1995), and the Decree of the President of the Republic of Kazakhstan on a State Program “Health of the Nation” (1998).

3. Percentage of unregistered drug products in a sample of private sector drug retail outlets

Drug registration data were not readily available at the Oblast Health Administration (OHA) or the Republican State Enterprise *Dari-Darmek* that is supposed to control pharmaceutical activities. It was thus not possible to collect data for the indicator.

4. Type of drug registration information system

At the national level there is a computerized drug registration database both at the National Agency for Health and at the National Pharmacological Committee. A manual information system exists in the book *The State Register of Pharmaceuticals, Immunobiological Substances, Medical Equipment and Supplies, and Products for Medical Nutrition*, the latest full edition of which was published in 1997, while a supplemental volume was published in 1998.

5. Number of drugs registered

Currently there are approximately 4,000 drugs registered in Kazakhstan, a substantial increase over the number of drug products available in Soviet times.

6. Law permitting generic substitution by pharmacist

There is no RK law that addresses generic substitution at this time. At their own discretion and without consulting the prescribing physician, pharmacists do offer generic substitutes. Therapeutic substitution can be made only through consultation with a prescriber.

7. Practice of generic substitution

Generic substitution is not specifically permitted in the country, but neither is it forbidden. The practice of generic substitution is conditioned by doctors' and pharmacists' knowledge. According to local specialists' opinions, prescribers and pharmacists are not always aware of generically equivalent drugs and therefore do not offer substitutes.

B. Formulary/Essential Drugs List and Drug Information

1. Number of unique drug products on Drug Formulary List

Specialists on the USAID ZdravReform Project developed the national Essential Drug List for Kazakhstan in 1996. The list, which has been revised twice (in 1997 and 1999), contains approximately 270 drugs, including vaccines, or approximately 600 drug products.

2. Existence of an official manual, based on the Drug Formulary List, providing basic drug information to prescribers, revised and published within the last five years

The *Drug Manual* in accordance with the first national Essential Drug List was published in Kazakhstan in 1996.

3. Percentage of public health facilities visited with the most current edition of an official manual based on the Drug Formulary List

Only one out of seven surveyed hospitals (14%) had the most current edition (1999) of the National Essential Drug List. Only one hospital had the 1996 *Manual*.

4. Existence of drug information centers that provide unbiased and current information to public health decision makers, health care providers, and consumers

An Information Center, run by a private drug wholesaler, *Pharmacia*, provides information on the availability and prices of drugs for the population. About 30 percent of Karaganda pharmacies joined this network. There are, however, no drug information centers providing comprehensive, objective drug information in the oblast. Health providers at all levels mostly rely on package inserts, information received from drug company representatives, and the Russian translation of the French reference book *Vidal* (similar to the *Physicians' Desk Reference* in the United States).

C. Budget and Finance for the Public Health Sector

The financial data obtained during the assessment covers fiscal year 1999 (January through December). Tenge to dollar conversions were made using the following rates:

132 tenge = \$1 was used to make calculations using the oblast health and hospital budgets; 138 tenge = \$1, for calculating indicator data on drug prices.

1. Karaganda Oblast budget or expenditures on pharmaceuticals, US\$ per capita

The oblast health budget is itemized, but there is no separate protected line item for drug purchases. It was thus impossible to collect reliable data on overall per capita expenditures on pharmaceuticals. However, according to the Karaganda Oblast Center for Health Purchasing Densauyk, in 1999 per capita expenditure on pharmaceuticals was \$0.60 in the public sector.

2. Existence of a system for recovering the cost of drugs dispensed in oblast public health facilities

There is no official system for recovering the costs of drugs dispensed in the oblast facilities. According to law, drugs are free only for emergency admission inpatients. Patients buy drugs either from hospital pharmacies (if they exist in the facility), or from retail private pharmacies outside hospitals. The revenue generated by hospital pharmacies goes mainly to cover hospital staff salaries. Hospitals refused to provide data on exactly how these revenues are used.

3. Percentage of patients who pay a charge for drugs they receive in public health facilities

It was not always possible to tell from patients' case records whether prescribed drugs were dispensed free of charge or inpatients had to pay for them. According to the Karaganda OHA, inpatients have to cover up to 94 percent of costs of drug treatment out-of-pocket.

Outpatients have to pay for all prescribed drugs out-of-pocket, except in nine private FGPs in Jezkazgan (united in Family Physicians Association), where some drugs are available to patients for free. Those drugs were all donated by the USAID ZdravReform project, and include TB drugs for patients in the continuation phase of the Directly Observed Treatment, Short-Course (DOTS) of the World Health Organization (WHO); antimicrobials for some sexually transmitted infections (STIs); and contraceptives donated within the framework of ZdravReform family planning activities.

4. Percentage of total oblast budget used for public health

According to the Ministry of Finance Statistical Bulletin, the percentage of the actual budget devoted to public health in Karaganda Oblast was 12.75 percent in 1998 and 17.98 percent in 1999.

5. Percentage of total oblast health budget allocated to pharmaceuticals

There is no separate protected line item for pharmaceuticals in the oblast health budget. However, actual expenditures show that oblast hospitals spent approximately 6.1 percent of their budgets on pharmaceuticals.

D. Pharmaceutical Procurement in the Public Health Sector

1. Existence of a policy limiting pharmaceutical procurement to drugs on the national Essential Drug List

A policy exists that limits procurement of pharmaceuticals with government funds to the national Essential Drug List.

2. Percentage by value of drugs purchased through a central procurement system

A centralized drug procurement system, as such, does not exist in Karaganda Oblast. However, when the value of needed drugs exceeds \$27,000, Oblast Administration *Akimat* conducts tenders for drug prices for state facilities (11 facilities that are 100 percent financed from the oblast budget). All other hospitals (called medical enterprises and whose expenditures are covered according to diagnosis-related groups [DRG] tariffs by the CHP Densaulyk) are supposed to buy drugs from tender winners at tender prices. However, hospitals also conduct individual purchases, including those done through their own tenders or directly from suppliers. The information on the value of purchases performed through centralized tenders conducted by the oblast was not available at *Akimat*.

3. Percentage of median international price paid for last regular procurement of a set of indicator drugs

Akimat did not provide information on tender prices, claiming that the information was confidential. However, price data for indicator drugs collected at private drug wholesaler Pharmacia, one of the oblast tender winners, suggest that the percentage of median international price paid for the set of indicator drugs is 310 percent, ranging from 32 percent to 987 percent.

According to data collected from the seven individual hospitals, the average percentage of median international price that these hospitals pay is 243 percent, with a range of 25 percent to 780 percent.

4. Percentage by value of public health drugs purchased through competitive tender

As has been stated, information on tenders was not available at the oblast level. Of the seven surveyed hospitals, four reported the percentage. The average percentage by value of public health drugs procured through competitive tender for these facilities is 97 percent.

E. Public Sector Pharmaceutical Logistics

1. Weighted average percentage of inventory variation for a set of indicator drugs in public health facilities

According to data collected in the seven facilities, the weighted average percentage of inventory variation for a set of indicator drugs in public health facilities was 13.22 percent, ranging from 7.02 percent to 54 percent.

2. Average percentage of individual variation for a set of indicator drugs in public sector health facilities

The indicator data were collected at seven public sector hospitals. The average percentage of individual variation for a set of indicator drugs in public sector health facilities was 17.21 percent, ranging from 0.16 percent to 65 percent.

3. Average percentage of stock records that correspond with physical counts for a set of indicator drugs in public health facilities

The average percentage of stock records that correspond with physical counts for a set of indicator drugs in seven public health facilities was 58.42 percent, ranging from 20 percent to 100 percent.

Indicators 1, 2, and 3 reveal the magnitude of discrepancy between records and actual stock levels.

4. Average percentage of a set of unexpired indicator drugs available in public health facilities

All seven hospitals reported this indicator. The average percentage of a set of unexpired indicator drugs available was 44.28 percent, ranging from 34 percent to 58 percent. At the Pharmacia warehouse, the biggest private wholesaler in the oblast, 58.5 percent of tracer drugs were available at the time of the survey.

5. Average percentage of time out of stock for a set of indicator drugs in public health facilities

During the surveyed period, tracer drugs were not available in public health facilities an average 55.5 percent of the time, ranging by facility from 40 percent to 72 percent.

F. Patient Access and Drug Utilization

1. Population per functional health facility that dispenses drugs

With 582 health facilities and a population of 1,411,700 in Karaganda Oblast, the population per health facility is 2,430 persons.

2. Population per licensed pharmacist or pharmacy technician in the public sector

With a total of 48 pharmacists and pharmacy technicians in the public sector, the population is 29,452 per licensed pharmacist or pharmacy technician.

3. Population per authorized prescriber in the public sector

With a total of 3,295 prescribers in the oblast, the population per prescriber is 429 persons. Prescribers include physicians and feldshers.

4. Average number of drugs prescribed per curative outpatient encounter in oblast PHC facilities

Of the five health facilities surveyed, the average number of drugs prescribed per patient encounter was 2.89, with a range of 2.18 (public FGP) to 3.99 (private FGP) drugs per patient encounter.

5. Percentage of drugs prescribed to outpatients by generic name in Oblast PHC facilities

Of the five health facilities surveyed, the percentage prescribed by generic name was 42.1 percent with a range of 22.8 percent to 60.4 percent.

6. Percentage of drugs prescribed from the National Formulary List in the Oblast PHC facilities

In Kazakhstan, the essential drug list functions as a formulary list. The percentage of drugs prescribed from the national Essential Drug List was 45.3 percent, with a range of 28.8 percent to 54.2 percent.

7. Percentage of outpatients prescribed injections at oblast PHC facilities

With a range of 7 percent to 40 percent, the average percentage of outpatients prescribed injections was 21.8 percent.

8. Percentage of outpatients prescribed antibiotics at oblast PHC facilities

With a range of 6 percent to 40 percent, the average percentage of outpatients prescribed antibiotics was 18.6 percent.

G. Product Quality Assurance

1. Public health drug product quality laboratory tests during the past year: (a) number of drug products tested and (b) total number of drug product quality tests performed

Quality control tests were performed for substances manufactured and compounded drugs. Of 1,230 products tested in 1999, 58 did not meet standards. Of 7,642 products subjected to microbiological tests, 13.15 percent did not meet quality standards. In addition, 10,500 certification tests were conducted in 1999, and 9,270 certificates were awarded.

2. Use of WHO Certification Scheme

The WHO Certification Scheme is not used in Karaganda Oblast.

3. Existence of formal systems for reporting: (a) product quality complaints and (b) adverse drug reactions (ADRs)

No formal policies and procedures exist for these problems. Adverse drug reactions and drug quality complaints are sometimes reported informally at physicians conferences, but they are not reported to authorities.

H. Private Sector Pharmaceutical Activity

1. Population per licensed private drug retail outlet

The population per licensed drug retail outlet in the private sector is 2,202. There was a total of 642 pharmacies and retail outlets in business at the time of the survey.

2. Number of licensed drug retail outlets per government pharmaceutical inspector

The number of licensed drug retail outlets per government inspector is 107.

3. Percentage of drug distributors and retail outlets inspected during a one-year period

During 1999, Dari-Darmek, the Republican State Enterprise, inspected all six drug wholesalers registered in Karaganda Oblast. However, due to changes in national regulations, the agency was deprived of control functions from September through December 1999, and it was unable to perform its control functions. Normally, every pharmacy is inspected every three months.

4. Total value of private sector retail pharmaceutical sales, per capita

Data for this indicator were not available at any level in the oblast. The private sector reports financial data only to tax inspectors, and the information is considered confidential.

5. Percentage of products on the national Essential Drug List currently manufactured in the oblast

There are no manufacturers in Karaganda Oblast whose products are included in the national Essential Drug List. Countrywide, 11 drugs that are manufactured in Kazakhstan are included on the list (4%).

6. Percentage of average median international price for a set of indicator drugs in private drug retail outlets

The price data for a set of indicator drugs were collected in 20 pharmacies. The drug retail prices averaged 419 percent of the median international price, ranging from 43 percent to 2,163 percent.

7. Average min/max ratio of retail prices for a set of tracer drugs in private drug retail outlets

The average min/max ratio of retail prices for a set of tracer drugs is 11.60, ranging from 1.64 to 102.63.

8. Average percentage of a set of unexpired indicator drugs available in private sector drug retail outlets

The data were provided by 20 pharmacies. Average availability of a set of unexpired tracer drugs at the time of the survey was 73.33 percent, ranging from 44 percent to 92 percent.

9. Existence of price controls for drugs in the private sector

Drug pricing policy does not exist in Karaganda Oblast. Drug prices are regulated only by a market mechanism.

10. Percentage of licensed drug retail outlets where an antibiotic was available without a prescription

Although a regulation on sales of prescription medicines exists, it is not controlled. Antibiotics are available without prescription at 100 percent of retail pharmacies.

CHAPTER 3. FINDINGS OF THE KARAGANDA ASSESSMENT

Public Sector Drug Supply System

Structure and Organization of the Karaganda Drug Supply System

Karaganda Oblast includes the capital city of Karaganda, eight other cities, and nine rural rayons. The public health system, including the pharmaceutical sector, is organized within these administrative units. A few factors that characterize this oblast include—

- The length of the territory exceeds 1,000 km (650 miles).
- There is a high level of urbanization—82.4 percent and, consequently, a low density of population in rural areas.

Public sector departments and organizations most involved in the administration and delivery of pharmaceutical services are as follows:

- Oblast Administration (Akimat)
- Oblast Health Administration
- Center for Health Purchasing Densaulyk
- State Enterprise Dari-Darmek
- City Health Administration Departments
- Karaganda State Medical Academy
- Hospitals and primary health care facilities (family group practices)
- Community pharmacies

Oblast Administration (Akimat)

The primary role of the oblast Akimat in the pharmaceutical sector is to approve budgets and allocate funds for the oblast health system and to supervise the Oblast Health Administration. The head of Oblast Administration, *Akim* (analogous to a U.S. governor), has the authority, as determined by national law, to issue regulations affecting the pharmaceutical sector. The Main Department of Economy of oblast Akimat, according to the national law “On State Procurement,” is responsible for conducting drug tenders for budgeted health facilities.

Oblast Health Administration

The main goal of the Oblast Health Administration is to coordinate public health activities through the work of its five divisions:

1. The Licensing, Accreditation, and Expertise Division is responsible for licensing and supervising health facilities and for implementing national and oblast programs, such as immunization, tuberculosis (TB), acquired immune deficiency syndrome (AIDS), and Mother and Child Health.

2. The Planning and Finance Division is responsible for preparing the oblast health budget and for distributing funds to health facilities.
3. The Operations and Organization Division is responsible for areas such as personnel, record keeping, building maintenance, handling emergencies, and managing emergency drug stock.
4. The Budget Funds Control Division is responsible for the control of budget funds for health facilities.
5. The Drug Procurement Division is responsible for quantification of drug needs for the oblast and for procurement.

Center for Health Purchasing Densaulyk

With the termination of the Mandatory Medical Insurance Fund in 1998, CHP was made responsible for the distribution of health budget funds to facilities through the use of contracted medical services. For hospitals, this distribution occurs through the system of “state purchase order” or *Goszakaz*, whereby an agreement is signed with qualifying hospitals to provide certain medical services for a projected number of patients. Payment is then executed in accordance with tariffs for each curative encounter by disease category (diagnosis-related groups, or DRGs). Primary health care (PHC) facilities are paid on a capitation basis.

State Enterprise Dari-Darmek

The role of State Enterprise Dari-Darmek is to perform drug quality tests at its laboratories, issue drug sales certificates, conduct pharmaceutical inspections of retail pharmacies and warehouses, and to provide pharmaceutical consulting services to Akimat during drug tenders.

City Health Administration Departments

All large cities in the oblast have City Health Administration Departments, including Balkhash, Jezkazgan, Karaganda, Saran, Shakhtinsk, and Temirtau. The departments are responsible for general supervision of health care delivery in their regions.

Karaganda State Medical Academy

The Karaganda State Medical Academy is located in Karaganda City. The Academy has six schools: Medicine, Stomatology, Preventive Medicine, Pediatrics, Medical Biology, and Education for Physicians. Education of physicians is discussed in detail in the section on Role of Karaganda Medical Academy in the Oblast Public Health System. The Academy is an important

component of the Karaganda health care system as it is the only available source of scientific drug information in the oblast.

Hospitals/Health Facilities

The network of medical and prophylactic establishments and organizations in Karaganda Oblast exists at various levels and is based on the location of the population (urban or rural). Three tertiary care hospitals in Karaganda City serve the entire oblast: Oblast Clinical Hospital, Oblast Multi-Ward Hospital, and Oblast Clinical Children's Hospital. The Karaganda Medical Academy clinical departments are based in these facilities. Most rayons have one general hospital in the large cities like Temirtau and Jezkazgan and have one or more district hospitals. Several specialty hospitals are in Karaganda City and in some rayons. Six serve the entire oblast (Oncology Center, Oblast STI Clinic, Narcological Center, and others).

Ten polyclinics (all urban specialized care) and 199 FGP clinics (76 urban and 123 rural) located throughout the oblast provide outpatient services. Dispensaries, which offer inpatient and outpatient specialty services, are usually found in the larger towns. The most prevalent type of health facility is the feldsher/nurse station (first aid stations), which are found mostly in rural areas; there are 269 of these stations.

Seven sanatoria, which serve to rehabilitate patients through physiotherapy, water treatment, and special diets, are located in the more pleasant areas of the oblast.

A summary of the number and type of health facilities in Karaganda Oblast is presented in Table 1.

Table 1. Types and Numbers of Health Facilities

Type of Facility	Total Number
<i>Medical Organizations¹</i>	
Medical organizations	51
<i>Medical Enterprises</i>	
Hospitals (including 6 private)	43
Polyclinics (including 4 private)	23
Urban FGP (including 18 private)	75
Rural FGP (including 6 private)	121
District hospitals	7
Feldsher/Nurse stations	269
Central rayon hospitals	9
Dispensaries (specialized in-/outpatient clinics)	15
Total number of health facilities (including 585 facilities capable of dispensing drugs)	613

¹ Medical organizations include blood transfusion stations, emergency/ambulance stations, several specialized hospitals (e.g., infectious, oncological), deactivation stations, orphanages, and sanatoria.

Legal Framework

Manufacturing, registration and licensing, imports and exports, procurement and distribution, quality control, promotion and sale of drugs, and protection of patient rights are addressed by the national regulations for specific areas of the pharmaceutical sector shown in Table 2.

Table 2. National Regulations Relating to the Pharmaceutical Sector, by Subject and by Enforcement Agency

Subject	Listing of Regulations	Enforcement Agency
General Laws	<ul style="list-style-type: none"> - Decree of the President of the Republic of Kazakhstan with the force of Law "On Drugs," Almaty, November 23, 1995, # 2655 - Resolution of the Collegium of the Ministry of Health of RK "On the Basis of the National Drug Policy of the Republic of Kazakhstan," Almaty, July 24, 1995, # 24/2 - Decree of the President of the Republic of Kazakhstan on a State Program "Health of the Nation," Astana, November 16, 1998 - Resolution of the Government of RK "On the Benefits Package Approval," January 27, 2000, No. 135 - Resolution of the Cabinet of Ministers "On Approval of Kazakhstan Essential Drug List," December 1998 - Ministry of Education, Culture, and Health of the Republic of Kazakhstan, "On the Development of General/Family Practice in Kazakhstan," Order # 500 of September 24, 1998 	Agency for Health Care, Department of Drug Policy
	<ul style="list-style-type: none"> - Resolution of the Government of RK "On Creation of the Republican State Formal Enterprise the Drug Center Dari-Darmek of the Ministry of Health, Education, and Culture of the Republic of Kazakhstan," Almaty, November 17, 1997, No. 1591 - Decree of the Health Committee of the Republic of Kazakhstan "On Clinical Pharmacology Service Development," Almaty, May 22, 1998, No. 286 	Agency for Health Care
Drug Manufacturing	<ul style="list-style-type: none"> - Resolution of the Government of the Republic of Kazakhstan "On the State Support of the Pharmaceutical Industry Development in the Republic of Kazakhstan," Almaty, July 18, 1997, # 1137 - Order of Ministry of Health of RK "On Technology Regulations of the Drug Industry Produced by the Pharmaceutical Factories of the Republic of Kazakhstan," Almaty, July 30, 1997, # 371 - Decree of the Committee of Health "On Measures of Supporting Domestic Commodity Producers of the Pharmaceutical and Medical Industry," Almaty, May 31, 1999, No. 04-195. 	Ministry of Economics and Trade, Agency for Health Care Agency for Health Care, Department of Drug Policy
Drug Registration	<ul style="list-style-type: none"> - Order of the Ministry of Health, Education, and Sport "On Regulations of the State Registration of Drugs, Medical-Diagnosis and Cosmetic Production, Medical Equipment, and Products of Medical Nutrition," # 226, April 30, 1999; enacted on May 17, 1999, Ministry of Justice, #759 	Agency for Health Care, Republican State Enterprise Dari-Darmek, Pharmacological Committee
Licensing of Pharmaceutical Activities	<ul style="list-style-type: none"> - Decree of the President of RK "On Licensing," Almaty, April 17, 1995, # 2200 - Resolution of the Government of RK "On Realization of the Decree of the President of RK "On Licensing" April 17, 1995, # 2201," December 29, 1995, #1894 - Resolution of the Government of RK "On Licensing of the Export and Import of Goods in the Republic of Kazakhstan," Almaty, June 30, 1997, # 1037 	Agency for Health Care, Republican State Enterprise Dari-Darmek

Table 2. National Regulations Relating to the Pharmaceutical Sector, by Subject and by Enforcement Agency (cont'd.)

Subject	Listing of Regulations	Enforcement Agency
Drug Procurement and Distribution	<ul style="list-style-type: none"> - Law of the Republic of Kazakhstan "On the State Procurement" and "Instruction on the Order of the Realization of State Procurement of Goods, Works, and Services," Almaty, December 10, 1998, #1268 - Decree of Ministry of Health of the Republic of Kazakhstan "On the Realization of the Resolution of the Government of the Republic of Kazakhstan by 04.29.96," No. 527 and "On Approval of the Order of Benefits Provision for Individual Categories of Population and Compensation of Expenses for Ministries, State Committees, Central and Local Executive Bodies, and Juridical Persons, Connected with Those Bodies," Almaty, July 26, 1996, No. 343 - Decree #58 of the Karaganda Oblast Health Department on July 9, 1999, "On Preferential Drug Delivery of Some Categories of Population by Types of Disease, and Provision, with Specialized Products of Children and Diet Food of Some Categories of Population" - Resolution of the Government of RK "On Approval of Guaranteed Level of Free Medical Services," January 27, 2000, # 135 	<p>Agency for Health Care, Department of Drug Policy</p> <p>Agency for Health Care, Department of Drug Policy</p> <p>Oblast Health Care Department, Drug Procurement Specialist</p>
Drug Quality Control	<ul style="list-style-type: none"> - Resolution of the Cabinet of Ministries of RK "On the State Quality Control of Drugs, Medical Supplies and Products of Medical Nutrition," Almaty, April 18, 1993, # 1090 - Resolution of the Cabinet of Ministries of RK "On the Unified State System of Quality Control, Certification and Standardization of the Pharmaceutical Production, Medical Supplies and Products of Medical Nutrition," Almaty, April 18, 1994, #398 - Law of the Republic of Kazakhstan "On Standardization and Certification," Almaty, January 18, 1993, # 1886 - Decree of the President of RK with the force of Law on the introduction of the changing amendments to the Law of the Republic of Kazakhstan "On Standardization and Certification," Almaty, May 22, 1995, # 2297 - Resolution of the Government of the Republic of Kazakhstan "On Approval of the List of Production Subject to the Mandatory Certification of Compliance with Standard Requirements and Regulations That Provide Safety of Life, Health, Property and Environment," Almaty, July 15, 1997, # 1112 - Decree of the Ministry of Health of RK "On the Further Improvement of the Drug Quality Control System, Drug Quality Appraisal Improvement, and Decline of Terms of Documents Review," Almaty, December 3, 1997, # 589 	<p>Republican State Enterprise Dari-Darmek, Pharmacological Committee. Republican-Based-Laboratory on Standardization and Drug Control</p>

Table 2. National Regulations Relating to the Pharmaceutical Sector, by Subject and by Enforcement Agency (cont'd.)

Subject	Listing of Regulations	Enforcement Agency
Drug Quality Control (cont'd.)	<ul style="list-style-type: none"> - Decree of the Ministry of Health of RK "On Improvement Measures of Procurement, Storage, Use and Registration of Poisonous Substances, Narcotic and Drastic Drugs," Almaty, November 1, 1996, # 481 - Decree of the Agency of Health Care "On Measures of Implementing the State Control for the Pharmaceutical Industry/Activity," Astana, February 11, 2000, No. 69 - Instructions of the Ministry of Health of RK "On Quality Control of Injection Solutions on Mechanical Impurities," Almaty, 1997 - Instructions of the Ministry of Health of RK "On Production of Fluid Drug Forms in Pharmacies," Almaty, 1997 	Republican State Enterprise Dari-Darmek, Pharmacological Committee. Republican-Based-Laboratory on Standardization and Drug Control
Sales Practices	<ul style="list-style-type: none"> - Decree of the Ministry of Health of RK "On Regulating of Drug Prescription and Drug Sale and Delivery to Population," Almaty, October 30, 1995, # 455 - Decree of the Ministry of Health of RK "On the Order of Drug Provision of Population and Health Care Facilities," Almaty, April 29, 1996, # 190 	Agency for Health Care, Department of Drug Policy, Republican State Enterprise Dari-Darmek
Drug Promotion	<ul style="list-style-type: none"> - Decree of the Ministry of Health, Education, and Sport of RK "Regulations of License Distribution of Drug Advertisement in the Republic of Kazakhstan," Astana, September 9, 1999, # 388 	Agency for Health Care, Department of Drug Policy, Republican State Enterprise Dari-Darmek

Discussion of Legal Framework

Despite the significant number of laws and regulations that govern public health and the pharmaceutical sector, Kazakhstan does not have one document that addresses all issues of drug policy. Moreover, the existing national laws and regulations are vague, often contradictory, change too often, and lack enforcement mechanisms. Some aspects of the legal framework are discussed below.

General Laws

General laws are vague and do not identify guidelines for action to ensure that essential drugs are available to the population. The most recent resolution of the government, “On the benefits package approval,” does not clearly define what categories of the population are eligible for free drugs and medical services. According to the resolution, the number of exempt patient categories is significantly expanded as compared with the number in the regulation of 1999. However, financial and enforcement mechanisms are not identified. Moreover, according to the Law “On Budget 2000,” allocations for public health are reduced compared with 1999, when the oblast was capable of disbursing only 21.3 percent of funds required for free pharmaceutical services to a very limited group of exempt patients.

One of the most important public health regulations in Kazakhstan in recent years is the Ministry of Education, Culture and Health Order #500 “On the Development of General/Family Practice in Kazakhstan.” The order identifies all aspects of family group practice, including the use of pharmaceuticals. One of the FGP goals as stated in the Order is “*rational prescription practices and utilization of drugs according to drug formularies and advanced treatment protocols.*” The order provides two drug formularies: one is a list of the drugs that should be prescribed, and the other is a list of drugs that FGPs should have in stock for emergency cases. No mechanisms, however, are identified for monitoring prescription and stock level of emergency drugs. As a result, physicians consider the FGP formulary as recommended only and seldom comply with prescription requirements.

Drug Manufacturing

Kazakhstan currently manufactures only a small number of pharmaceuticals. Only eight locally manufactured drugs are on the national EDL. It is understandable that a country as large as Kazakhstan plans to develop its drug industry. However, two major concerns should be mentioned. First, legal documents do not place enough emphasis on compliance of domestic manufacturers with internationally accepted drug quality standards (i.e., good manufacturing practice (GMP) certification scheme, pharmacopeial standards). Second, because local drug manufacturing is not clearly defined, companies that repackage imported drugs have an advantage due to the domestic preference margin stated in national procurement regulations.

Drug Registration

The Ministry of Health, Education, and Sport Order #226 “On Drug Registration” does not identify responsibilities of registering authorities regarding transparency of procedures and means of drug registration information dissemination. As a result, the most recent registration data were not available in the oblast even at Dari-Darmek, an agency responsible for pharmaceutical inspections that includes verification of registration of drugs sold by pharmacies.

Licensing of Pharmaceutical Activities

Licensing of pharmaceutical activities, including sales and pharmacy operation, is the responsibility of State Enterprise Dari-Darmek that has branches in every oblast. Legislation, however, does not provide Dari-Darmek with the power to enforce compliance of pharmacies with the government regulations after their licensure has been granted.

Drug Procurement

Drug procurement, according to law, is conducted on a competitive basis through oblast tenders. National public procurement requirements and standard bidding documents that oblasts use were developed in accordance with international standards and contain all necessary elements. However, neither the Ministry of Health, Education, and Sport, nor its successor the National Agency for Health, developed procurement standards specifically for pharmaceuticals. At the oblast level, slight modifications to national documents were made, but not enough to ensure the quality of procured pharmaceuticals and compliance of drug suppliers with contract terms.

Drug Quality Control

Drug quality control is regulated by a number of national and oblast level regulations. No regulation, however, identifies reporting mechanisms for drug quality problems or for use of drug quality data. This results in the lack of a database on drug quality problems; such a database is needed to make selection and procurement decisions.

Sales Practices

Sales practices are well defined in government decrees, but they are not enforced. According to national sales regulations, for example, antibiotics are prescription drugs only. However, they are available without prescription at 100 percent of retail pharmacies.

Drug Promotion

The study team did not have a chance to study legal documents pertaining to drug promotion and advertising.

Areas of Concern Related to the Legal Framework

The main concerns related to the legal framework include the following:

- Drug and health policies are developed at the national level, but responsibilities for their financing and implementation lie at the regional level. Although local resources are used, the financial limits of oblast health financing are set at the national level, leaving oblasts little room for adjusting finances in accordance with their health needs.
- Laws and regulations pertaining to pharmaceuticals do not have inherent mechanisms for enforcing and controlling the use of drugs in accordance with the national Essential Drug List, and, at the FGP level, in accordance with the FGP formulary.
- The national Essential Drug List was approved at the Kazakhstan government level. However, there are no laws that require existence of a national formulary committee or other body responsible for the regular update of the list and transparent inclusion or deletion of pharmaceuticals.
- Some laws and regulations important for the pharmaceutical sector do not exist, including pricing regulations, and the use of international nonproprietary names (INN) for drugs, or generic drug names, without which it is difficult to control prescribing and procurement in the public sector.

Options to Improve the Legal/Regulatory Framework

According to the Kazakhstan Law “On Self-Governing,” oblasts bear full responsibility for implementation and enforcement of national legislation. At the same time, oblasts have the right to develop their health policies provided that they do not contradict national legislation. This situation shapes possible approaches and interventions pertaining to the public health legal framework.

Short-Term Interventions

Short-term interventions may include establishing mechanisms for enforcing the existing oblast and national health laws and regulations. The first step could be collection of data on compliance

with existing regulations. This could be done through available means at the CHP Densaulyk and State Enterprise Dari-Darmek.

The CHP already has data on prescription patterns in hospitals, and it does not seem difficult to collect prescription data from FGPs. This data will give an understanding of the levels of compliance with national and FGP formularies and with the STGs already developed by the Karaganda Medical Academy.

In addition, Dari-Darmek should use its pharmacy inspection mechanisms to ensure that prescription drugs are sold in retail networks in accordance with national sales regulations.

Another short-term intervention should include revision of oblast standard bidding documents (SBDs) and development of a template for drug specifications, including drug quality standards. Much has already been done at the national level for centralized procurement of TB drugs. One way to improve oblast SBDs would be to emulate that particular national experience.

Mid- and Long-Term Interventions

The next step for the oblast will be developing its drug policy. A drug policy is a guide to action. It is a document specifying the goals set by the government for the pharmaceutical sector, their relative importance, and the main strategies for attaining them. Such a policy provides a framework to coordinate activities of the pharmaceutical sector: the public and private sectors, drug supply at different levels of health care, nongovernmental organizations (NGOs), donors, and other interested parties.

Drug policies may differ from country to country depending on priorities set by the governments, the most common of which are to —

- Make essential drugs available and affordable to those who need them.
- Ensure the safety, efficacy, and quality of all medicines provided to the public.
- Improve prescribing and dispensing practices and to promote the correct use of medicines by health workers and the public.

The main components of a drug policy are legislation and regulation, selection of drugs, procurement, supply and financing policies, and rational drug use.

Legislative and Regulatory Framework

A drug policy is usually not a law, so the strategies proposed in the policy may need to be legally supported. For instance, one way to improve affordability of pharmaceuticals in PHC may be the extended use of generic drugs, which may require an oblast law on use of generic drugs in family group practice. Because constant vigilance is needed if the policy is to protect the public, a drug law needs to have teeth. There is no use concluding that drug quality is poor, physicians over-prescribe and do not adhere to STGs, or that advertisements are misleading, unless something

can be done about it. The regulatory agency—for example, the Oblast Health Administration or State Enterprise Dari-Darmek—must be able to impose penalties when necessary. Sanctions can be penal—for example, fines to pharmacies selling prescription drugs without prescriptions, or simply corrective—like banning the drug or canceling the Goszakaz agreement with a facility.

Selection of Drugs

The selection of safe, high-quality, and effective essential drugs to meet the health needs of the population is an important feature of a drug policy. Kazakhstan has an EDL and an officially approved formulary for FGP. It may be reasonable for an oblast to revise both lists through an open dialogue with local health professionals. A consensus of oblast specialists can make enforcement of the lists easier. This is especially important at the primary health care level where erratic prescriptions coupled with high prices in pharmacy outlets, may render some drugs unaffordable to patients and thus lead to deterioration of their health status.

Drug Procurement

Pharmaceutical products are universally recognized as being different from ordinary items of commerce and as requiring procurement by specially trained pharmaceutical professionals. To make the existing regulations on competitive drug procurement effective, a policy should exist allowing only trained professionals to develop drug specifications and conduct oblast tenders.

Financing Policies

Ensuring stable and adequate financing for drugs is a major challenge, and major improvements in drug finance in Kazakhstan may require legislative changes at the national level. There seems to be, however, possibilities for changes within the existing legal framework. These may include, for example, a more aggressive control over Goszakaz funds used for drug expenditures by FGPs, especially administrative control of procurement and use of the pharmaceuticals that FGPs are supposed to have in stock in accordance with Order #500. Another option may be a requirement to allocate for drug procurement a certain portion of funds collected by FGPs and hospitals through patient fees. Possible mechanisms to increase economic access to essential drugs in all sectors may also include insurance coverage, price information, price competition through generic substitution, regulation of supplier prices, and regulation of retail margins.

Rational Drug Use

Drugs should be used appropriately, safely, and only when needed. Irrational drug use includes overuse, underuse, and inappropriate use because of such factors as lack of adequate regulatory systems, shortages of essential drugs and availability of nonessential drugs, lack of unbiased drug information, and the considerable influence of drug promotion on both prescribers and consumers. A drug policy should address all these issues.

A wide variety of approaches has been developed in the world in an effort to promote rational prescribing and use of pharmaceuticals. Within the existing national legal framework, oblast policy makers can take steps toward establishing a legal basis for the oblast formulary system. The basis for this work is establishing an authoritative body, such as an oblast Formulary Committee, and enabling it with the legal power to develop and implement oblast drug policies and strategies.

It should be noted that development and implementation of a formulary system does not require big financial investments, but rather political will, proper management of existing human resources, and sources of unbiased drug information. The elements of such a policy, along with the steps required for its development and implementation, are described in detail in the MSH/RPM publication *Manual for the Development and Maintenance of Hospital Drug Formularies*. A hundred copies of this *Manual* were disseminated in Karaganda Oblast prior to the assessment.

Finance

Funding Public Sector Drug Purchases

In Kazakhstan, budgets, including health, for 14 oblasts and for two separate cities, Almaty and Astana, are formed at the national level. Based on the oblasts' projections for tax revenues, the central government makes decision of proportions on oblasts' budget line items. Economically, oblasts differ dramatically, so the central government subsidizes economically weak oblasts by taking money from better-off oblasts.

Economically, Karaganda Oblast belongs in the better-off oblast category. According to the "Law on State Budget for 1999," it was supposed to give 4,384,315,000 tenge (approximately \$35 million) to the central government to subsidize other oblasts.

It should be noted that with the termination of medical insurance mechanisms, Kazakhstan oblasts do not now have a separate "health tax" that would guarantee a health budget. The amount to spend on public health is decided by the Oblast Akimat based on projected needs and the capacity of an overall oblast budget. According to Ministry of Finance official data, in 1999 Karaganda Oblast disbursed in actual expenditures 17.98 percent of its overall budget to public health.

Table 3 illustrates trends in budget allocations for health in Karaganda Oblast during 1995–1999 (in tenge and U.S. dollars; for exchange rates see Annex 9).

Table 3. Karaganda Oblast Health Budget, 1995–1999

Year	Planned Tenge	Planned US\$	Actually Disbursed Tenge	Actually Disbursed US\$	%	Per Capita Actual US\$
1995	3,539,100,000	54,615,741	3,057,800,000	47,188,272	86	27.76
1996	5,452,500,000	79,598,540	3,942,200,000	57,550,365	72	33.93
1997	5,888,300,000	79,037,584	3,982,700,000	53,459,060	68	34.72
1998	5,350,700,000	67,051,378	2,970,400,000	37,223,058	56	24.42
1999	4,520,000,000	34,242,424	3,178,431,000	24,079,023	70	17.03
2000	3,700,000,000 ¹	26,241,135	N/A	N/A	N/A	18.56

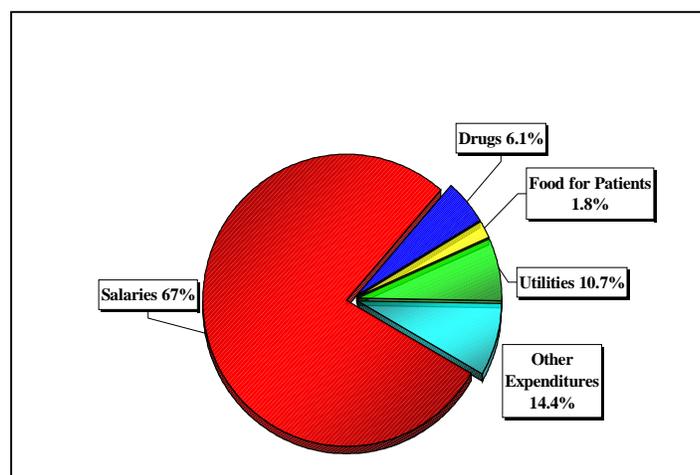
¹Planned in "Law on State Budget 2000"

N/A = not applicable

Two trends are immediately noticeable: failure of the oblast government to disburse planned funds, and decline in public health finance that started in 1998 going down from \$34.72 in 1997 to \$17.03 per capita in 1999.

It is difficult to analyze the impact of declining budgets on the health status of the population both because of the overall decline in the oblast population and insufficient and contradictory data. However, the comparison of the overall morbidity data and census data for 1997–1999 shows the increase in morbidity rate, from 50,645.9 per 100,000 in 1997 to 50,746.2 along with the decrease in overall population, from 1,539.5 million to 1,413.7 million people.

Even those scarce funds available in the oblast in 1999 were not allocated completely to public health needs. Over 12 percent of actually available public health funds went to cover oblast health debts that accumulated in the period 1996–1998, when the Mandatory Medical Insurance Fund (MMIF) was in charge of health financing (and funds “disappeared”). After MMIF was terminated, its debts owed in salaries to medical personnel and to private utility companies were split among the oblast health facilities. In 1999, over 90 percent of funds allocated to cover the 1998 debts went to salaries owed to medical personnel.

Figure 1. Karaganda Oblast Health Expenditures in 1999 (actual)

The oblast health budget is itemized, but unlike in Russia and some other NIS where funds for drug purchases are a priority, the only “protected” line items are salary—and salary benefits—and utilities. Procurement of pharmaceuticals is done with whatever funds are left after salaries and utilities have been paid.

Figure 1 illustrates the proportion of expenditures within each line of the oblast health budget in 1999.

Financial Mechanisms

Mechanisms of financing health facilities in the oblast depend on the level of the health system and the legal status of facilities. All health facilities in the oblast fall under the following categories:

State Medical Organizations

State medical organizations include specialized facilities such as TB hospitals (dispensaries), psychiatric clinics, STI clinics (dispensaries), an infectious disease hospital, orphanages, ambulance/emergency clinics, blood transfusion stations, sanitary-epidemiological stations, and the like. These facilities receive all funds from the state, and they are supposed to provide medical services to the population, including pharmaceuticals, free of charge. In most cases, however, due to underfinancing, their patients have to buy drugs and food out-of-pocket.

Medical Enterprises

Medical enterprises include the majority (85%) of in- and outpatient medical facilities of primary, secondary, and tertiary care. Their budget is formed from two sources: (1) state “purchase order” money (Goszakaz), and (2) fees the facilities charge patients for specific medical services. The disbursement mechanisms differ depending on the level of a facility. In accordance with the RK “Law on Health Care” (May 1999), each facility signs an agreement (purchase order) with the CMP Densauyk and the facility is reimbursed on a monthly basis for the volume of provided services.

Reimbursements to Facilities

Hospitals. Hospitals are paid for every patient on the basis of diagnostic-related groups (DRGs) tariffs. A total of 152 tariffs were developed by the oblast CHP Densauyk. A special coefficient is applied depending on the severity of the case and on the category of the facility (oblast level, rayon level, etc).

Specialized Polyclinics. Specialized Polyclinics (specialized outpatient care) are paid for each patient encounter according to “ambulatory tariffication.” There are different tariffs for provided services including labor, lab tests, ECG, X-raying, and so forth.

Primary Health Care Units. Primary health care units (now mostly represented by FGPs and a number of nonspecialized polyclinics) receive a monthly flat per capita of service population (catchment) fee of an average of 23 tenge (approximately \$0.17 per person/month at the December 1999 exchange rate), ranging from 22 tenge per person/month paid to Karaganda

Polyclinic #2, to 24 tenge paid in rural areas. No distinction is made between private and state PHC facilities.

Trends in the Health Sector

Figure 2. Karaganda Oblast Health Budget Allocations in 1997–1999

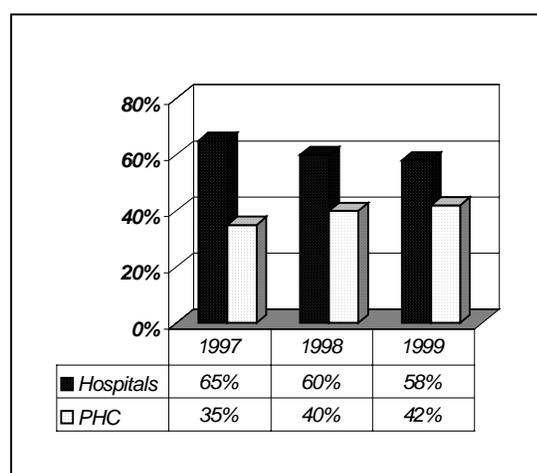


Figure 2 illustrates the proportions between budget allocations for hospitals and outpatient care in the period 1997–1999. Karaganda Oblast government places more emphasis on the development of PHC as opposed to expensive hospital care treatment, hence the growing proportion of funds allocated to PHC during the period of 1997–1999.

Not only is the proportion of fund allocation changing in favor of PHC, but also the percentage of actual disbursements as compared with planned. In 1999, the state medical organizations received only 60.2 percent of planned funds whereas PHC was 96

percent funded. This, however, may be speculatively attributed to the simpler disbursement mechanisms for PHC (capitation) as opposed to the disbursement mechanisms for hospitals (DRG-based reimbursement, which requires more effort to execute).

Despite the increasing budget for PHC, it does not seem that, at this point of health reform in Karaganda, PHC is beginning to play the major role. Table 4 provides several indicators that show actual trends in the health sector.

Table 4. Health Sector Trends, Karaganda Oblast, 1996–1999

Indicators	1996	1997	1998	1999
Population in oblast (in millions)	1,696.2	1,539.5	1,524.1	1,411.7
Overall morbidity rate per 100,000	56,458.6	50,645.9	51,070.3	50,746.2
Hospital beds per 10,000	111.8	73.8	69.3	70.8
Annual bed occupancy (days a year)	304	339	343	345
Average length of stay (days)	19.3	16.6	15.7	15.9
Hospitalization (# of patient stays)	306,614	266,015	246,495	228,567
Outpatient visits per person	8.6	6.5	7.0	6.1

In 1998, when the majority of the present FGPs in the oblast were established, the role of hospitals seemed to start to decline (e.g., number of beds went down), and the role of FGPs was on the rise (the number of outpatient visits is an indicator). The situation, however, changed in 1999. As was reported to the RPM team by CHP Densaulyk specialists, the decline in PHC

services could be attributed to dramatically growing prices in private retail pharmacies, where outpatients fill their prescriptions. In hospitals, patients also pay for drugs, but prices at hospital pharmacies are lower, and if a patient cannot pay he/she will get at least some free medications for emergency cases. Other reasons mentioned by CHP Densauyk included dissatisfaction of patients with some FGPs' performance (especially in rural areas, where there is no alternative care) and lack of incentives, under present financing mechanisms, for FGP staff to seek ways for better performance.

Budget Expenditures of Family Group Practices

There are 197 FGPs in Karaganda Oblast with a catchment population of 1,235,163, or 86 percent of the oblast population. Of those, 76 FGPs are located in urban areas, serving 71 percent of the total oblast catchment population, and 121 FGPs in rural areas. There is a small number of private FGPs (24), mostly located in Jezkazgan and Satpaev, the USAID ZdravReform pilot sites.

The structure of health budget expenditures is typical for the oblast, where most of the funds are spent on salaries, and very little goes for procurement of equipment and pharmaceuticals.

In Table 5, drug expenditures fall under the "Other" category. Order #500, which regulates FGP activities, provides lists of equipment and pharmaceuticals that FGPs are supposed to procure. However, the drug lists are not enforced, and they are considered by FGPs as recommended only. FGPs have a limited number of pharmaceuticals (an average of 15 drugs) in only limited quantities—and those are used for emergencies.

Table 5. Percentage FGP Budget Expenditures, by Category

FGP Area	Salary	Equipment	Utilities	Other
Urban	77.7%	0.3%	7.8%	11.5%
Rural	67.8%	.9%	13.4%	17.9%

Budgets and Expenditures of Medical Enterprises

Medical enterprises (the majority of hospitals that are independent legal entities) are financed through the state purchase order Goszakaz. Per-curative-case payment is based on DRG tariffs that were developed for 152 diagnoses. The following formula is used to calculate the amount payable per curative case:

$$S = BR \times W_{DRG} \times F_{SC}$$

where,

S = sum total reimbursement per curative case,

BR = base rate for the condition,

W_{DRG} = weight of the case,

F_{SC} = facility coefficient.

State medical enterprises are allowed to charge patients for services outside those specified by the state purchase order, and they thus enjoy better financing than state medical organizations, which can rely only on the budget provided by the oblast.

Seven hospitals were surveyed during the RPM pharmaceutical sector assessment in February 2000. The selection included the major oblast state enterprises including oblast adult, children, and specialized hospitals, the three biggest rayon hospitals, and one major state medical organization. Numbers are substituted for the names of hospitals in the following data tables. Table 6 provides basic information on the budgets of seven hospitals in Karaganda Oblast.

Table 6. Budgets and Expenditures of Seven Hospitals in Karaganda Oblast, in Tenge and U.S. Dollars (USD)

Budget and Expenditures	Hospital Number (Number of Beds)						
	#1 (585)	#2 (375)	#3 (405)	#4 (406)	#5 (100)	#6 ¹ (250)	#7 (230)
Budget:							
Requested:							
Tenge	738,114,700	108,595,860	114,843,500	101,000,000	39,441,900	133,325,000	84,300,000
USD	5,591,778	822,696	870,027	765,152	298,802	1,010,038	638,636
Approved:							
Tenge	111,644,100	108,595,860	96,872,800	54,000,000	44,611,600	133,325,000	54,700,200
USD	845,789	822,696	733,885	409,091	337,967	1,010,038	414,395
Disbursed:							
Tenge	91,682,756	105,876,809	97,025,100	47,837,600	44,611,600	50,696,126	63,453,800
USD	694,566	802,097	735,039	362,406	337,967	384,062	480,711
Percentage	82%	97%	100%	89%	100%	38%	116%
Expenditures:							
Salaries:							
Tenge	62,338,203	76,628,215	44,673,500	33,137,000	34,825,300	24,310,000	29,922,100
USD	472,259	580,517	338,436	251,038	263,828	184,167	226,683
Percentage	68%	72%	46%	69%	78%	48%	47%
Food:							
Tenge	2,552,400	1,177,585	5,461,000	N/A	403,000	5,176,200	967,200
USD	19,336	8,921	41,371	N/A	3,053	39,214	7,327
Percentage	2.8%	1.1%	5.6%	N/A	0.9%	10.2%	1.5%
Drugs:							
Tenge	26,792,153	2,816,431	12,981,700	2,709,000	1,623,100	4,633,000	3,392,600
USD	202,971	21,337	98,346	20,523	12,296	35,098	25,702
Percentage	29%	3%	13%	6%	4%	9%	5%

Table 6. Budgets and Expenditures of Seven Hospitals in Karaganda Oblast, in Tenge and U.S. Dollars (USD) (cont'd.)

Budget and Expenditures	Hospital Number (Number of Beds)						
	#1 (585)	#2 (375)	#3 (405)	#4 (406)	#5 (100)	#6 ¹ (250)	#7 (230)
Hospital debt:							
Tenge	25,165,800	36,116,000	19,705,500	47,000,000	7,522,600	1,909,600	12,604,500
USD	190,650	273,606	149,284	356,061	56,989	14,467	95,489
(Incl. to drug suppliers)							
(Tenge)	(2,530,400)	(1,860,980)	(6,335,400)	(2,400,000)	(342,200)	(124,600)	N/A
(USD)	(19,170)	(14,098)	(47,995)	(18,182)	(2,592)	(944)	N/A

¹ Medical organization
N/A = data not available

In general, as was discussed above, medical state enterprises are financed better than medical organizations. The actual disbursement varies from 82 percent to 116 percent, as compared with hospital #6 (a medical organization), which received only 38 percent of requested budget. Hospitals are disbursed funds monthly, and there were practically no delays in 1999.

Salaries constitute the first largest expenditure for all surveyed hospitals. It should be noted that Table 6 presents only monies disbursed to hospitals by Oblast Administration through the CHP Densauylk—an estimated 70 percent of the hospital budgets. It is, however, impossible to calculate the proportion of patient fees (official and unofficial) included in the hospital budgets. It was anecdotally reported that those fees constitute more than half of the hospital budgets, especially charges for drugs by hospital pharmacies. The distribution of collected fees in the hospital is the responsibility of its chief physician. It was reported that most of the patients' fees go to salaries.

Medical enterprises have to pay all taxes and duties like other legal entities in the oblast. The fees hospitals charge patients should not exceed 5 percent of their profitability margin. Hospitals pay a 30 percent profit tax from those sums. However, there are no set tariffs for all hospital services. Those differ dramatically and vary from hospital to hospital (see User Fees for Pharmaceuticals in this section).

Those hospitals that are state enterprises have to pay higher fees for utilities—anecdotally, twice as much as medical organizations have to pay. This favored stature applies also to banking. Medical organizations do not have to pay for bank transactions, whereas medical enterprises have to pay a certain percentage for every transaction. One oblast hospital, for example, loses approximately 30,000 tenge (\$250) a month in bank transactions. According to the same hospital, it was impossible to use a bank credit for drug purchases because the bank charged a 20 percent monthly interest rate for its credit.

Exempt Patients

The guaranteed free medical services, including drugs, are determined by the federal law “On Health Care in the Kazakhstan Republic,” by the government order #1334 “On Realization of the Law of the Kazakhstan Republic,” “On Republican Budget for 1999,” and by Order #70 of the Kazakhstan Ministry of Health “On Guaranteed Free Medical Services.”

According to the legislation, patients admitted to hospitals on an emergency basis are eligible for free medical services, including free pharmaceuticals. For this category in 1999, hospitals’ drug expenses oblastwide were 113,521,125 tenge (\$60,000), or approximately \$0.61 per person per year. Although emergency patients are eligible for free drugs, anecdotally many of them have to pay out-of-pocket.

Another group of patients eligible for free medication is identified in the MOH Orders 29 and 209 and in the Karaganda Oblast Health Administration Order #58 of July 1999, “On Categories of Patients by Specific Diseases Eligible for Free Medication and Nutrition Products.” The specific diseases include cancer, tuberculosis, diabetes, psychiatric disorders, and some other conditions. (See Annex 5. List of Diseases and Number of Registered Patients in Karaganda Oblast Entitled to Free Medication.) At the time of the assessment, there were 66,087 registered patients who had the right to free medication, or 4.6 percent of the total population.

Distribution of pharmaceuticals for these categories of patients is done via hospital pharmacies and several designated state-owned retail pharmacies in the oblast cities. The Oblast Health Administration allocates special funds to these facilities. The designated hospitals and pharmacies are responsible for purchasing pharmaceuticals and distributing them across the oblast. For example, Oblast Clinical Hospital is responsible for antidiabetic medicines, drugs for treatment of bronchial asthma, autoimmune diseases, and the like. The Oblast Oncological Center is responsible for antitumor medicines, immunosuppressors, and narcotic analgesics.

The national requirement to provide drugs free to certain categories of patients is only partly met. According to the OHA estimates, the oblast needs 30,500,900 tenge (\$231,100) annually to cover free medication. In 1999, however, only 6,500,000 tenge (\$49,242) were actually disbursed, or 21.3 percent of funds needed, which deprives the most needy patients of life-saving pharmaceuticals.

User Fees for Pharmaceuticals

Goszakaz funds and capitation fees are not adequate to cover medical facilities’ expenses. Because of their legal status (as enterprises), medical facilities (both in-and outpatient facilities) that sign Goszakaz purchase orders are allowed to charge patients for services not included in Goszakaz. Anecdotally, these charges constitute a considerable portion of facilities’ budgets. It was not possible to collect data to estimate this portion, as it is considered confidential and is reported only to tax authorities. However, the information on the drug portion of user fees was collected, and it is discussed below.

Costs of drug treatment theoretically are included in DRG tariffs for hospitals, but since the line item for pharmaceuticals is not protected, it is up to the chief physician to decide how to spend the money. The idea of DRG tariffs is also seriously undermined by the absence of common treatment standards. The Karaganda CHP Densauyk survey showed a significant difference between hospitals in the treatment of the same diagnosis, both by length of stay and drug costs (the latter sometimes a threefold variance).

Patients admitted to hospitals on a planned basis (as opposed to emergency cases) have to pay for the majority of hospital services out-of-pocket, including meals, pharmaceuticals, and even drugs and supplies for surgery. Table 7 illustrates the hospital : patient proportion of drug treatment costs in Hospital #1.

Table 7. Costs of Drug Therapy for Patients, Hospital #1

Drug Treatment Costs	Tenge	USD
Total drug expenses (hospital & patients' out-of-pocket costs)	21,378,900	162,000
Drug expenses covered by the hospital	1,296,500	9,800
Drug expenses covered by patients	20,082,400	151,139
Paid by patients, as % of total drug costs	94%	94%

Note: Dollar figures do not add due to conversion factors.

The data suggest that the main burden of treatment costs lies with patients (94% of drug expenses).

There is no consistency in costs of treatment between hospitals, although DRG tariffs supposedly set the cost. This inconsistency may be attributed to the absence of standard treatment guidelines with defined drug treatment regimens for each disease. As CHP Densauyk reported, quite often the selection and number of drugs prescribed in hospitals for the same diseases is defined not by treatment requirements but by the ability of patients to cover drug costs. Table 8 illustrates the differences in pharmacotherapy costs for a number of diseases in four surveyed hospitals.

Table 8. Pharmacotherapy Costs in Four Surveyed Hospitals, in Tenge and U.S. Dollars (USD)

Disease	Hospital							
	#1		#2		#5		#7	
	Tenge	USD	Tenge	USD	Tenge	USD	Tenge	USD
Acute myocardial infarction	1,998	15.13	2,983	22.59	1,151	8.72	733	5.55
Angina pectoris, unstable	1,630	12.35	1,226	9.29	1,158	8.78	558	4.23
Angina pectoris, stable	1,534	11.62	3,401	25.77	1,964	14.88	643	4.87
Hypertension	658	4.98	784	5.94	522	3.95	314	2.38
Rheumatism	1,787	13.54	0	.00	1,374	10.41	204	1.55
Cerebrovascular stroke	1,806	13.68	6,308	47.79	1,117	8.46	1,015	7.69
Pneumonia	2,970	22.50	N/A	N/A	1,414	10.71	1,563	11.84

Table 8. Pharmacotherapy Costs in Four Surveyed Hospitals, in Tenge and U.S. Dollars (USD) (cont'd.)

Disease	Hospital							
	#1		#2		#5		#7	
	Tenge	USD	Tenge	USD	Tenge	USD	Tenge	USD
Gastric and duodenal ulcer	1,893	14.34	1,495	11.33	1,003	7.60	1,104	8.36
Appendicitis	1,656	12.55	2,545	19.28	1,723	13.06	725	5.49
Osteochondrosis	972	7.36	1,890	14.32	1,379	10.45	657	4.98
Brain concussion	478	3.62	271	2.05	526	3.98	368	2.79

Note: N/A = data not available

In Table 8, hospitals 1 and 2 are big and are located in the oblast capital, Karaganda, whereas hospitals 5 and 7 are located in small towns. The population of the capital Karaganda is more affluent and can afford greater expenditures on drugs.

To evaluate the affordability of treatment, costs of drug treatment in the hospitals may be compared with the average monthly income of Karaganda population categories in 1999, (see Table 9).

Table 9. Average Monthly Income, Karaganda Oblast, 1999

Income Category	Tenge	USD
Average salary	11,123	84.3
Average pension	4,445	33.7
Average student stipend	2,151	16.3

The comparison shows that treatment, for example, of cerebrovascular stroke or angina pectoris, which are typical for an older population, may far exceed the capacity to pay for the treatment.

In the PHC setting, outpatients purchase all prescribed drugs in private pharmacies. FGPs spend annually only 20 tenge (\$0.15) per person of catchment population to procure emergency drugs, which are required to be in stock by Order #500.

Pricing Policy

There are no laws or regulations in Kazakhstan that control prices for pharmaceuticals. Drug prices are formed on a supply/demand basis and differ dramatically between pharmacies and wholesalers for the same products. In the survey, the average min/max ratio of retail prices for a set of tracer drugs was 11.19, ranging from 1.40 to 102.63.

There is no problem in Kazakhstan accessing foreign exchange for use in purchasing pharmaceuticals when tenge funds are available, and no limits are set, unlike in neighboring Uzbekistan for example, for volumes of currency exchange. This is a very important

achievement of the Kazakhstan economy because almost 95 percent of all pharmaceuticals are imported for hard currency.

Lack of pricing control, however, makes drug prices high compared with other countries. The indicator here is the percentage of median international price paid for a set of indicator drugs (see Annex 6 for Prices for Indicator Drugs, in Private Retail Pharmacies). In Russia where pricing is rigidly controlled by the government, this percentage on average equals 100; in Ukraine, where pricing policies exist but are not strictly enforced, the percentage is about 200. In Kazakhstan, the percentage is very different and depends on the sector of the pharmaceutical system.

Hospitals pay an average 230 percent of median international price for a set of tracer drugs (see Annex 3), with the most expensive drugs from this list being glyceril trinitrate, diazepam, heparin, metronidazole, and lidocaine (over 600% for some of them).

Wholesale prices for a set of indicator drugs at private enterprise Pharmacia are on average 310 percent of median international, with some essential drugs like metronidazole, heparin, and aminophylline exceeding 600 percent.

The highest are prices in private retail drug outlets and pharmacies. Patients have to pay an average of 419 percent of median international price (ranging from 43% to 2,163%). The average min/max ratio of retail prices for a set of tracer drugs at the time of the survey was 11.60, ranging from 1.64 to 102.6. The most expensive drugs in the pharmacies were co-trimoxazole, penicillin, cimetidine, and paracetamol.

Areas of Concern Related to Finance

Financing of pharmaceuticals is critical for any health system. Under current financial mechanisms in Kazakhstan, however, the health system is not able to provide access to drugs to the majority of its population.

- The health budget is going down steadily, whereas drug prices grow or remain at a very high level—with the result of a growth in overall morbidity.
- The drug budget is extremely low. The oblast health system allocates only 2.5–3 percent of its budget to procurement of pharmaceuticals, as compared with 15–20 percent in Russia, for example.
- Drugs are not provided by the state. Treatment is very expensive for both in- and outpatients in relation to average income, and the treatment is not affordable to the majority of the population. This situation may result in treatment failures and the development of antimicrobial resistance.
- Of great concern is the inability of the oblast to finance vital pharmaceuticals for exempt patients.

- Under present financial mechanisms, there is a strong incentive for—
 - Fraud—
 - Admitting more patients
 - Overestimating the severity of cases
 - Collecting extra revenues through—
 - Imposing more services on patients than needed for treatment
 - Prescribing more drugs than needed
- With the high rate of overprescribing in oblast health facilities, both in- and outpatient (see the Drug Utilization section in this chapter), high prices for pharmaceuticals may render many of them inaccessible for patients.
- Irrational polypharmacy diverts patients' own funds from essential drugs.

Options to Improve Finance

Financial sustainability is achieved only when resources are in balance with costs and are sufficient to support a basic quality of care for a given level of health care demand. If demand for drugs exceeds available resources, as is the case with Karaganda Oblast, the health system is left with only six options:

1. Improving efficiency
2. Controlling demand
3. Increasing financial resources
4. Implementing new financial mechanisms
5. Developing and implementing drug pricing control mechanisms
6. Accepting a decline in quality of care

For all health sectors—public and private—drug financing should not be approached simply as a question of where to get more money. It must be approached in terms of methods to improve efficiency and to ensure that demand is appropriate.

Improving Efficiency

There are two categories of efficiency, allocative and technical. *Allocative efficiency* applies to the distribution of services within the population. Spending more of the oblast drug budget on essential drugs for PHC rather than on specialized drugs for hospitals may save more lives and thus result in allocative efficiency. Through its financing structure, however, Kazakhstan strongly emphasizes secondary and tertiary care, and these fail to provide patients with pharmaceuticals. The other problem is the traditional lack of a system of distribution of essential drugs through PHC. These mechanisms simply do not exist.

Technical efficiency is achieved through therapeutic efficiency (cost-effective drug selection and rational use) and operational efficiency (improved management of procurement and distribution).

Both can be achieved in the oblast through implementation of elements of a formulary system, including formulary drug selection, rational prescribing, implementation of STGs, DUR, and drug information development.

Controlling Demand

Although the demand for health care services may be virtually unlimited, especially when drugs are aggressively promoted through the media but patient education is nonexistent, some mechanisms can always control demand. In Karaganda, there is a noticeable clash of interests between patients on the one side and prescribers and private pharmacies on the other. Directly or indirectly, physicians benefit from prescribing as many drugs as possible because their salaries depend on pharmacy revenues, which thus artificially creates high demand for drugs, which is only limited by patients' ability to pay.

In this situation it seems that the best option for Karaganda Oblast is to control the demand of physicians through implementation of standard treatment guidelines with defined drug therapy and implementation of a generic prescription policy.

An important element in controlling demand could be introduced through targeted patient and population education. One aspect of such education should be in decreasing self-medication, especially with antibiotics, which are freely marketed and are available without prescription.

Increasing Financial Resources

Drug financing should be viewed in the overall context of health financing. As was shown by studies,³ less than \$5 per capita a year is unlikely to provide a regular drug supply for an entire population, \$10 should supply a large part of a population, but with \$50 the needs of the entire population could be covered. In 1999, Karaganda spent \$0.61 per capita per year on pharmaceuticals, with \$17 per capita spent in the entire oblast on public health. Because an increase in the health budget is not presently an option in the oblast (it is a state prerogative and requires changes in national health policy), the oblast may consider reallocation of funds within existing budget limits, for example, by restructuring debts in the system or by reductions in finance of some of its elements (e.g., expensive hospital care).

Implementing New Financial Mechanisms

One option to ensure drug supply in PHC may be the introduction of user fees that are specifically collected to build revolving funds for drug procurement. This step may help establish a drug procurement system on a nonprofit basis.

³ *Managing Drug Supply*, 2nd ed., by MSH in collaboration with the WHO, Kumarian Press, West Hartford, CT 1997.

One mechanism of health financing is implementation of medical insurance. The Medical Insurance section of this chapter addresses this option.

Developing and Implementing Drug Pricing Control Mechanisms

In the situation where health care is mostly public and pharmaceutical services are private, certain mechanisms should be developed to ensure that prescribed drugs are affordable to patients. In Kazakhstan, drug prices are determined by at least five factors:

1. Offering price of a manufacturer
2. Contract price of a foreign distributor
3. Dollar–tenge exchange rate
4. Contract price of a wholesaler
5. Markup at the retail level

Currently, these factors are beyond the oblast's legal power to control. It may be interesting for the oblast to refer to Russia's experience, where pricing control mechanisms were implemented with no visible success. Many oblasts in Russia set limits on markups at all levels, which, paradoxically, resulted in higher prices. However, those Russian oblasts that improved their procurement practices have significantly better patient access to pharmaceuticals.

It may not be easy to rapidly improve the financial situation in oblast health by any means since too much depends on the situation in the whole country. However, certain interventions may be suggested.

Short-Term Interventions

An immediate measure to improve drug financing may be to increase *technical efficiency*. This may be achieved through establishment of an oblast Formulary Committee that would immediately start addressing therapeutic efficiency of prescribed drugs (cost-effective drug selection and rational use, formularies, STGs, and DUR). For example, development and immediate implementation of a vital (life-saving) drug formulary for exempt categories of patients (those listed in the OHA Order #58) will help to ensure that very limited funds for this program are used rationally and for the benefit of these patients.

Because pharmaceuticals are procured by health facilities on a monthly basis as funds are made available, *operational efficiency* (improved management of prescribing, procurement, and distribution) may be rapidly addressed. A simple requirement to eliminate duplicative brand-name pharmaceuticals from procurement lists and prescribing and procurement by INN may have a fast and positive effect on availability of drug funds.

Mid-Term Interventions

Mid-term interventions may include enhancing the role of the private PHC sector in drug procurement and distribution. During the assessment, the chair of the Jezkazgan private FGP Association expressed interest in establishing a nonprofit drug supply system for the association. The association has experience in handling pharmaceuticals, namely the stock of TB drugs, STI antibiotics, insulins, and family planning products donated by the USAID ZdravReform Project. An option could be the introduction of minimal user fees that would build up a revolving fund specifically for pharmaceuticals.

Long-Term Interventions

Any drastic changes in the health finance system, like the implementation of insurance mechanisms, are long term, and will require at least a year to start. Those will include improvements in the drug registration system, development of drug pricing legislation, and other elements of drug policies at the national level.

The Kazakhstan experience with medical insurance and insurance options are discussed in the following section and in Annex 11.

Medical Insurance in Kazakhstan and Karaganda Oblast

A Mandatory Medical Insurance Fund (MMIF) was established in Kazakhstan by Presidential Decree #2329 of June 15, 1995, "On Medical Insurance for the Population." MMIF was a nonprofit state organization that was supposed to accumulate health funds and then distribute these funds among health facilities, thus guaranteeing basic free medical services for the population.

MMIF funds were comprised of a specific "health tax" imposed on employers for the working population and of contributions from local budgets for the nonworking (for example, children and the elderly) and unemployed population. It was also expected that any of the population not falling into the above categories would make individual voluntary contributions.

From the very beginning, however, MMIF failed to collect the expected monies. Contributions to MMIF from employers seldom exceeded 70 percent of the expected amounts, and contributions from local governments (25%) was the major failure because 69 percent of all treated patients fell under the category of nonworking or unemployed. This led to a build-up of debts in the health system and the consequent bankruptcy of MMIF.

In 1998 the MMIF was terminated by the Republic of Kazakhstan Government Decree #1387 "On Reorganization of the Mandatory Medical Insurance Fund." The MMIF was then transformed into State Organization Center for Health Purchasing (CHP). During 1999, CHP

Densaulyk was responsible for the administration of health programs and disbursements to health facilities within the limits of local health budgets. In September 1999, CHP was merged with the Republican Scientific Center for Medical and Economic Problems of Public Health. It is now officially called Republican State Enterprise Densaulyk. Because in oblast documents this organization is still called the Center for Health Purchasing Densaulyk, this name is retained in the present report.

At the time of the assessment, the Kazakhstan government had returned to the idea of establishing a medical insurance system in the country. A working group was created that initiated a series of meetings and discussions at the national level. At the oblast level, a special interest was expressed in establishing a voluntary pharmaceutical insurance system that would supposedly ensure the population accessibility to an adequate drug therapy. No practical steps have been made by the oblast so far. A special investigation of economic viability of pharmaceutical insurance mechanisms may be required.

Areas of Concern Related to Establishing Insurance Mechanisms

Establishment of medical insurance is a very difficult process that requires thorough investigation not only of the economic situation in the oblast but also of the population's health and financial status and its cultural traditions. It may also require changes in the legal system that are possible only at the national level. At the same time, it is necessary to conduct this investigation if the objective is to ensure the availability and affordability of drugs to patients without basic changes to the existing financial system.

Although there is a structure in the oblast capable of monitoring health providers (CHP Densaulyk), several issues have surfaced in the oblast that may undermine any efforts to establish pharmaceutical insurance mechanisms. Those issues discussed in the present report are that—

- The oblast does not have restrictive drug formularies for all levels of health care.
- The oblast does not have approved standard treatment guidelines with clearly defined volumes of drug therapy to monitor provider prescribing practices.
- Mechanisms for drug utilization review (DUR) do not exist.
- The country does not have a generic drug policy.
- Under the present system, physicians' salaries depend on the number of drugs they prescribe so there are no incentives for a transition to insurance mechanisms.
- There are no safeguards against fraud.

Options

The comprehensive investigation of the viability of pharmaceutical insurance was outside the scope of the present assessment. However, because Oblast Administration places special importance on the prospectives of reestablishing a medical insurance system, Annex 11 contains a paper, written for this report, by Daniel Kraushaar, the MSH health finance expert,

“Pharmaceutical Financing through Insurance: An Overview of Health Insurance Implementation Issues.”

Management Information System

In past years, much has been accomplished in Karaganda Oblast to establish a functional health management information system (MIS). This is partly due to the oblast’s being the USAID ZdravReform pilot site and partly due to the professional approach and understanding of health problems by the staff of CHP Densaulyk, headed by Dr. N.S. Khe.

In 1998–1999, the CHP provided 77 computers with software to 48 urban and 20 rural health facilities to enable data collection required for Oblast Health Administration, making managerial and financial decisions for primary, secondary, and tertiary care.

The following MIS subsystems monitor primary health care:

- Subsystem “Monitoring” collects and processes data required for developing state purchase orders with FGPs. The indicators include catchment population figures, number of patient and physician visits, percentage of preventive visits, number of encounters per physician, morbidity rates, and percentage of referrals to specialized outpatient facilities and hospitals.
- Subsystem “Finance” is used to track disbursement to FGPs, and it includes data on catchment population, capitation fees, and overall financing figures.
- Subsystem “Debts” controls disbursement levels through data on the volume of state purchase orders (Goszakaz), actual disbursements, and debts figures.
- Subsystem “Population” contains a database of catchment population of all FGPs with the following fields: name, gender, date and place of birth, medical registration number, residence, employment status, and name and code of FGP.
- Subsystem “Quality” processes qualitative and quantitative characteristics of FGP activities directly and indirectly through information received from other levels of health care (e.g., emergency services, polyclinic, hospitals):
 - At the FGP level, the following information is developed—
 - Population mix by gender
 - Data on obstetric-gynecologic services
 - Data on pediatric services
 - Total number of patient visits, including diagnosis
 - Data on expenditures by line items
 - At the emergency service level, the information collected includes—
 - Reason of patient call

- Outcomes
- Time of call
- Age of patient
- Services provided by the staff

- At the specialized outpatient facility level, the information includes—
 - Reason for referral by FGP
 - Services provided

- At the hospital level, the data collected includes —
 - Numer of hospitalizations
 - Percentage of patients hospitalized via emergency services (ambulance)
 - Number of patients referred to hospitals by FGPs
 - Number of deceased patients

The data collected through this computerized MIS is verified through inspections and surveys that the CHP staff conducts together with the chief oblast medical experts. There are six types of such studies:

1. Comprehensive inspection, when all data are verified at the facility by inspectors
2. Targeted inspection, which looks at compliance with state purchase order terms, or quality of provided services, or at specific disease treatment pattern, or other health problems (mortality in surgery, nosocomial infection, etc.)
3. Thematic inspection, which surveys implementation of state vertical programs, like diabetes or tuberculosis
4. Patient satisfaction surveys performed through polls and interviews with patients
5. Special data collection required for licensing and accreditation
6. Investigation of individual patient's complaints

With computers and data collection mechanisms in place, the Karaganda CHP Densauyk is able to provide the Oblast Health Administration or international projects with fairly comprehensive information on public health trends in the oblast. Much of the data was also used in the present report, the most valuable for the study being that on costs of treatment of specific diseases and prescription patterns.

Areas of Concern Related to MIS

Much has already been accomplished by the CHP to establish a functional MIS in a short time. The staff, however, already seems to be overwhelmed by the amount of collected data. The way data is presented to the Oblast Health Administration sometimes impedes the analytical process.

It is advisable that the CHP develop a manageable number of key outcome and performance indicators that would make the collected data easier to comprehend and use by the Oblast Health Administration.

With trained specialists on staff, including highly professional physicians, pharmacists, and programmers, the Karaganda CHP, nevertheless lacks financial and human resources to establish a much-needed drug management information system (DMIS) that could be integrated into the existing MIS. In the environment of a practically uncontrolled pharmaceutical market and skyrocketing drug prices, there should be a body within the Oblast Health Administration that would control drug selection and use by, at the least, those facilities that are budgeted by the oblast. At present, information on stock levels at public health facilities, costs of treatment for outpatients, and actual drug consumption data are not available.

One impediment to establishing a functional DMIS at CHP is lack of reliable drug information. The situation was slightly improved by RPM's providing CHP (along with the Oblast Health Administration, Medical Academy, and the biggest hospitals) with a Russian translation of the *U.S. Pharmacopeia Dispensing Information*, Volume 1, *Drug Information for the Health Professional* compendium. Theoretically, the Karaganda CHP, with its functional system of communication with health facilities, may be the best site to establish an Oblast Drug Information Center for health professionals.

Options

It may be safe to assume that the basis for a functional MIS has already been developed in Karaganda Oblast at the CHP. DMIS may be integrated within the existing MIS at CHP or delegated to State Enterprise Dari-Darmek. The latter, however, may not have adequate legal power to demand drug data from health facilities. Its interests may also not exactly coincide with that of the Oblast Health Administration, as there is a strong desire within the enterprise to develop its own drug information system on a commercial basis.

The following interventions may be recommended.

Short-Term Interventions

The CHP Densauyk has the professional capacity to develop a set of outcome and performance pharmaceutical indicators. This report may be used as a reference for such indicators. Indicators and data forms can be rapidly developed and integrated into the existing system of data collection and management information development. Information on the practical use of data may be derived from the MSH/RPM Manual *Rapid Pharmaceutical Sector Assessment: An Indicator-Based Approach*, now available at CHP Densauyk in Russian.

Mid- and Long-Term Interventions

The most challenging task in establishing a functional DMIS is not data collection and processing, but development of demand for information among top decision makers at the oblast level. This may take more time than the short-term intercession, and a lot will depend on the accuracy and lucidity of the data and the presentation of the indicators.

Another long-term task is development of feedback mechanisms, that is, means of disseminating collected and processed data to health facilities, along with an explanation of each indicator's implications.

Drug Selection

The rationale for selecting a limited number of essential drugs is that it may lead to better supply, more rational use, and lower costs. Essential drugs are those that are deemed to satisfy the health care needs of the majority of the population and those that should be available in the appropriate dosage forms and strengths at all times. Because it has a considerable impact on the quality of care and the cost of treatment, the selection of drugs is one of the most cost-effective areas for intervention when undertaking health reform.

Kazakhstan has an approved national Essential Drug List (EDL) accompanied by a *Manual* that was developed within the framework of the USAID ZdravReform Project in 1996. The list and the *Manual* were revised in 1998, and at present contain approximately 270 drugs selected by international nonproprietary names (INN), or approximately 600 drug products. The 1998 edition has a glossary of drug synonyms attached. The *Manual* provides basic drug information, including pharmacology, indications, contraindications, precautions, drug interactions, and side effects.

It is very important for all health care professionals, including physicians, pharmacists, and nurses to have both the list and the *Manual*. The USAID ZdravReform Project sponsored production of the EDL and the *Manual*, and sent printed copies to the then-Committee of Health (now National Agency for Health) for distribution in the oblasts. All surveyed hospitals had copies of the 1996 Essential Drug List, but only one hospital had both a copy of the latest edition (1998) and the accompanying *Manual*. Other hospitals reported that they did not receive the list and accompanying *Manual* from the Agency for Health.

Although by law hospitals are supposed to prescribe and procure pharmaceuticals according to the EDL, they regard it more as recommended than mandatory. Physicians reported they did not know how or why the list was developed, and the copy most hospitals have is outdated.

In accordance with international practice, the EDL is compiled by INN. However, physicians and pharmacists were never trained to use INN, and laws on generic substitution that could encourage self-education do not exist. The 1996 edition of the EDL, the most commonly available in health facilities, does not have a glossary of synonyms, and physicians treat every

new brand name they come across as a separate drug product. This causes confusion and undermines the value of the national EDL.

One of the indicators used in the RPM survey looked at adherence of prescribers to the national Essential Drug List. In each of the seven surveyed hospitals, 100 patient case records were analyzed (700 total). Of all prescribed drugs, only 40 percent were found on the national EDL.

A similar situation was observed at the PHC level. Order #500, which regulates primary health care, provides a formulary of drugs that are supposed to be prescribed to outpatients. Although the Order and the formulary list were available at all surveyed PHC facilities (both polyclinics and FGPs), only 45.25 percent of all drugs prescribed in 500 analyzed encounters were on the formulary. Like hospital physicians, prescribers at the PHC level regard the list as recommended only, and many do not agree with the selection.

It was not possible during the assessment to evaluate the national EDL and FGP formulary. Such an evaluation will require a thorough study of the countrywide morbidity and drug use patterns, which was beyond the scope of the oblast pharmaceutical sector assessment. At this point, it is not reasonable to speculate whether the national list of 270 drugs (600 drug products) or the FGP formulary covers the country's clinical needs. It is clear, though, that two drawbacks are immediately noticeable regarding the lists: (1) both lists were developed without wide discussion with health professionals, who thus do not consider those lists their own, and (2) there are no mechanisms to enforce the use of the lists.

Areas of Concern Related to Drug Selection

- Neither the national EDL nor the FGP formulary are enforced in Kazakhstan.
- Uncontrolled selection of drugs by hospitals and PHC for procurement and use may result in significant waste of scarce resources and irrational prescribing.
- Prescription decisions are not made in accordance with the existing national Essential Drug List or FGP formulary.

Options

Short-Term Interventions

An immediate intervention should be dissemination of the latest edition of the national EDL and accompanying *Manual* among oblast health facilities. According to the USAID ZdravReform Project, enough copies were printed with the project funds and sent to the RK National Agency for Health for dissemination. Apparently, the dissemination did not take place, as copies were not available at oblast health facilities at the time of the survey.

Once copies are made available, the list should be enforced by an Oblast Formulary Committee (see Options to Improve the Legal/Regulatory Framework in this chapter). Because the national EDL and FGP formulary may not cover all clinical needs, as a first step in the formulary system

implementation, the Oblast Formulary Committee should carefully study nonformulary drug selection and use by facilities. The collected information may then serve as a starting point for the analysis of therapeutic drug classes and drug selection for the oblast and facility formulary. Mechanisms for studying drug use patterns are discussed in the Drug Utilization section of this chapter.

It is also advisable to initiate the implementation of drug utilization review (DUR) programs at several pilot sites, at both hospitals and FGPs, preferably those where the Karaganda Medical Academy departments are located. The DUR analysis will help to identify the reasons for physicians' noncompliance with the EDL and FGP formulary and to design interventions. The step-wise approach to DUR program implementation is described in detail in the MSH/RPM publication *Guidelines for Implementing Drug Utilization Review Programs*, which was made available by RPM in Russian to Karaganda health professionals.

The above-described activities may be initiated even prior to establishment of an oblast Formulary Committee through the existing data collection mechanisms at the CHP Densauyk.

Mid- and Long-Term Interventions

During the survey and in discussions at the “Cost-Effective Drug Selection” workshop that preceded the survey, both Oblast Health Administration staff and prescribers at all levels expressed interest in developing facility- or disease-specific drug formularies. The understanding that drug formularies are effective tools for cost-savings and rational prescribing already exists. The first step should be the establishment of formulary committees at the oblast and facility levels. Wide participation of local experts and academics from Karaganda Medical Academy in the development of local formularies will help to make them “their own,” and thus ensure compliance.

Development and implementation of an oblast formulary system may take up to a year and requires the following steps:

- Gain support of the Oblast Administration (Akimat), medical professionals, and the population. In Novgorod Oblast in Russia where RPM worked in 1995–1997, this was done by the Oblast Health Administration through a series of discussions and meetings with health professionals and through open discussions on radio and television with the population. It should be made clear that establishment of a formulary system in the oblast will help to ensure the population's access to efficacious, safe drugs at affordable prices, or free of charge for baseline treatment in hospitals.
- Develop and approve an Oblast Law (Order of Oblast Administration, which is appropriate) on establishment of an Oblast Formulary Committee with the right to regulate drug selection and use in oblast health facilities.
- Develop policies and procedures for formulary committees at all levels of the health system—hospitals, specialized outpatient, and PHC—and use as a reference the MSH/RPM

Manual for the Development and Maintenance of Hospital Drug Formularies. It should be noted that, despite the title of the *Manual*, the principles of formulary system implementation discussed in it are applicable to all levels of public health systems.

- Establish a regulation that stipulates the requirement for each health facility applying to work with state funds through a state purchase order (Goszakaz) to have in place a formulary committee with written and approved policies and procedures, staff, and a workplan for the year.
- Establish an Oblast Formulary Committee. The committee should be comprised of chief oblast medical specialists, chief physicians of major oblast hospitals, heads of FGP associations (both private and public), pharmacists, and academics from Karaganda Medical Academy. The Oblast Formulary Committee will develop oblast drug policy and supervise formulary committees at the facility level.
- Establish formulary committees at the facility level. As was proved by the RPM experience in a number of countries over the last eight years, it does not take long to establish hospital level committees. In PHC facilities, it does not seem reasonable, if at all possible, to have a formulary committee at each FPG. At the time of the assessment, some FPGs were already united in two associations, one in Karaganda and the other in Jezkazkan. It thus seems appropriate to establish formulary committees at the association level. The oblast may consider forming more associations, for example, an association of rural PHC facilities. The benefit for the Oblast Health Administration in dealing with an association is that it then does not have to reach every facility, but work with the association's formulary committee. This, however, may be a long-term goal and activity.
- Develop a schedule for formulary lists development. Initiate the development of facility/association formulary lists. At the initial stage, the existing national Essential Drug List or the FGP formulary provided by Order #500, may be considered as the basis for future formulary activities. The Oblast Formulary Committee should closely supervise this activity. It is advisable that conferences be held to discuss drug selection for specific large therapeutic categories of drugs and to reach consensus.
- At this point, the Oblast Formulary Committee should begin enforcing use of formulary lists for prescription and procurement. There should be a legal requirement and an enforcement mechanism to ensure that formulary drugs are prescribed and procured not only when using state funds, but also when patients are paying for them out-of-pocket.
- Conclude by developing, implementing, and enforcing a regulation that the existence of facility formulary lists is a prerequisite for accreditation to work with state funds.

Drug Procurement

Procurement Decisions and Responsibility

This section of the report details drug procurement procedures at various stages of the drug distribution cycle. Data were obtained through interviews at the Oblast Akimat, Oblast Health Administration, hospitals, and at private wholesalers and pharmacies.

The indicators that reflect efficiency of procurement mechanisms used in this study were—

- Percentage of median international prices paid for a set of tracer drugs:
 - Hospitals 254.85 percent
 - Private wholesaler (Pharmacia) 310.00 percent
 - Retail pharmacies 419.00 percent

- Availability of a set of unexpired tracer drugs:
 - Hospitals 44.28 percent
 - Private wholesaler (Pharmacia) 58.00 percent
 - Retail pharmacies 73.33 percent

- Percentage of time out of stock:
 - Hospitals 55.50 percent

Drug Procurement by the Oblast Administration Akimat

Drug procurement by the Oblast Administration is done in accordance with the Government Decree “On Public Procurement with State Funds” (December 1998, amended in September 1999), which provides general regulations for procurement, and the Health Committee Resolution #30 of December 1998 “On Approval of the Kazakhstan Essential Drug List,” which stipulates drug purchases with state funds in accordance with the RK EDL.

All drug purchases over 3.6 million tenge (approximately \$27,500) for 11 state health medical organizations are done through tender by the Oblast Administration Akimat. Purchases for state medical organizations below that amount are conducted by the Oblast Health Administration. State medical enterprises procure drugs independently, but they are supposed to purchase from tender winners at tender prices.

Quantification for oblast tenders is done once a year by the Oblast Health Administration, based on previous consumption data from state medical enterprises. There is only one person in the Procurement Department at OHA who is responsible for quantification. The department does not have the capacity to verify hospital requirements for quantities, nor is it able to analyze the rationale behind drug selection (perform a morbidity-based quantification).

Akimat established a Tender Board of 11 people for oblast tenders, but none of the board members has a medical or pharmaceutical background. Pharmacists from the parastatal

organization Dari-Darmek, which is in charge of drug quality control and pharmaceutical inspection, are invited to tenders as consultants, but only during the adjudication process to help with entering bids into spreadsheets. Tenders are conducted monthly, as funds are made available.

The Akimat Tender Board is using a set of general standard bidding documents, developed at the national level and slightly adjusted for the purposes of drug tenders. Specifications for pharmaceuticals do not require a pharmacopeial standard or a WHO GMP certification scheme, and the specifications list pharmaceuticals by their brand names. Domestic manufacturers and suppliers are preferred, and the bid price for companies that can prove that 50 percent of the cost of their products is comprised of domestic labor and materials is conditionally considered to be 5 percent to 10 percent lower than competitors’.

Oblast Akimat tenders require from potential suppliers both a bid bond (2% of proposed contract value) and a performance bond (3% of contract value up to 10 million tenge—approximately \$76,000, 2.5% of contract value up to 50 million tenge—\$380,000, and 2% if contract value is above that sum). During the interviews with big suppliers that regularly participate in oblast tenders, it was mentioned that the performance bond requirement drives smaller suppliers away from tenders because they cannot afford to have their funds “frozen” for the whole year. Anecdotally, that was the reason why the number of potential suppliers at oblast tenders is steadily going down, from 10–15 in 1998 to 3–5 in 1999. There was a case when a tender did not take place just because the number of bidders was below the required minimum of three.

It was impossible to obtain tender drug prices from the Oblast Administration as they were considered confidential. However, during interviews, hospitals physicians complained that the prices were too high and that there were suppliers in the oblast that offered a lot lower prices.

Because tender documents were not made available to the study team, it was also impossible to verify the Oblast Administration claim that all drugs are put on tender under generic names. At the time of the survey, the OHA Department of Procurement, which is responsible for compiling tender drug lists for Akimat, did not have any sources of drug information, including a glossary of drug synonyms. Drug information sources, including the Russian translation of the U.S. Pharmacopeia’s (USP) *Dispensing Information*, Volume 1, *Drug Information for the Health Care Professional*, and the Pharmedinfo (Moscow) publication *Synonyms of Pharmaceuticals* were provided by RPM to OHA for future reference.

Drug Procurement by the Oblast Health Administration

Drug purchases for state medical organizations with volumes below 3.6 million tenge (approximately \$27,500) are done through tenders conducted by the Oblast Health Administration. In 1999, only one tender was conducted in August for some antibiotics, antiseizure drugs, disinfectants, and medical supplies.

Unlike at the Akimat level, the OHA Tender Commission has physicians and pharmacists on board. The same standard bidding documents are used as the ones by Akimat, except that both bid and performance bonds are higher (both 5% of contract price).

It was not possible to compare prices of all drugs procured through the OHA tender with international or local wholesale prices because most drugs were not listed in the MSH *International Drug Price Indicator Guide* or in price lists of local suppliers. However, for five drugs the tender price was an average of 77 percent of Pharmacia wholesale prices.

It should be mentioned that the list of drugs procured through the OHA tender was very limited. It contained only 16 drugs, including antiseizure drugs and common antibiotics (ampicillin, penicillin), and nine medical supply products (gauze, cotton, bandages). All pharmaceuticals were listed by generic names, and only one drug, ampiox, being a combination product, could be considered unsafe and obsolete in international practice.

Drug Procurement by Hospitals

As stated above, state medical enterprises are supposed to procure drugs at the prices and from the suppliers who win the Oblast Administration tenders for state medical organizations. This does not always happen because most hospitals believe they can find better prices on the market. In case a better price for a drug exists, hospitals have to obtain permission from authorities for direct procurement. Normally, hospitals submit three price quotes, and in most cases permission is granted.

Hospitals also reported that winners of Oblast tenders quite often do not comply with contract terms and raise prices after tenders to compensate for inflation. It seems that contract terms have a gap that allows wholesalers to amend prices. Tender documents that were obtained during the survey contain only a one-page sample contract that specifies neither delivery and payment terms nor possible fines for noncompliance.

Hospitals did not provide information to the survey team on drug procurement with their own funds. These funds are used by hospital pharmacies that often play the role of retail outlets for patients who pay out-of-pocket. It was reported anecdotally that such procurement is done directly from oblast suppliers by brand name. This is in accord with the observation that all suppliers' price lists are only by brand name, without even the mention of INN.

Drug Procurement by Primary Health Care

Primary health care facilities do not dispense drugs to patients. However, small volume procurement is taking place because polyclinics and FGPs are supposed to have in stock drugs that may be required for emergency help for patients (seizures, anaphylactic shock, etc.). The drugs are procured directly from retail pharmacies at retail prices, which are known to be high, and there are no regulations or rules regarding this procurement.

Drug Procurement in the Private Sector

Wholesalers (Pharmacia)

Of the six big drug wholesalers registered in Karaganda Oblast, private enterprise Pharmacia plays a special role. It has a traditional monopoly on sales of restricted substances, such as narcotics, psychotropic and poisonous drugs, and anesthetics. Pharmacia also has a compounding production (tinctures, ointments, etc.) facility. According to the Pharmacia director, most drugs are bought directly from manufacturers in Russia and Ukraine. NIS wholesalers also serve as a source of drugs manufactured in the West. They are often cheaper from suppliers than from official distributors in Kazakhstan (parallel import). Pharmacia also buys drugs from western suppliers, but it has to pay Russia for air transit of narcotics even if the plane does not land but only passes through Russian air, which adds to the end price.

Pharmacia is a regular bidder in oblast tenders. The oblast requirement to comply with tender prices along with high performance bonds and the inability of hospitals to pay on time for supplied drugs often leads to losses. Hospitals are supposed to pay on delivery, but in reality they make delayed payment. At the end of 1999, the total debt of hospitals to Pharmacia for supplied drugs was 3.5 million tenge, or approximately \$27,000.

Pharmacia has its own retail pharmacy network consisting of eight pharmacies, each of which also has several smaller drug outlets, or “kiosks,” located in economically strategic points around the city.

In 1998, Pharmacia established in one of its own retail pharmacies an information center that provides information to patients on availability and drug prices. The resource center works on a commercial basis. About 30 percent of Karaganda private pharmacies joined the information network for a monthly fee of 1,200 tenge (\$9), and they supply information on their available stock. However, as independent pharmacies reported, when providing information to patients, the information center tends to refer them to pharmacies owned by Pharmacia.

Retail Pharmacies

Of all surveyed facilities, the availability of tracer drugs was highest in retail pharmacies, the vast majority of which are privatized. Some pharmacies belong to big wholesalers, like Pharmacia, and form pharmacy networks. Independent private pharmacies mostly buy drugs from wholesalers located in Almaty because they are cheaper. Because the private sector does not have to comply with the national EDL, the number of drugs in stock is high—up to 1,500 drugs, but with fast turnover (about 30 days) independent pharmacies do not have to maintain large storage space.

Drug prices are formed on the supply/demand principle and differ greatly between pharmacies located in different parts of the oblast or city, with an average min/max ratio of retail prices for a set of tracer drugs being 11.60 (with a range from 1.64 to 102.63). Pharmacies were reluctant to

provide data on markups. Most said they seldom go above 20–30 percent, but price comparison between facilities does not support this statement: the percentage of median international price of wholesale and retail prices for the set of indicator drugs differs by over 100 percent.

In mid-1999, the Kazakhstan government tried to lower drug prices in retail pharmacies by relieving them of the value-added tax (20%). This measure, however, did not work, and prices continued to rise.

Inventory Management in Hospitals

The total number of drugs kept in hospital pharmacies and storage rooms at the time of the assessment varied from 40 to 176. The number of drugs in stock did not correlate with the size of the hospitals (number of beds or number of patients). Both computerized and manual inventory management systems are used in hospitals. Ledgers are used to manually record inventory level and drugs moved to floor stocks. Computers are mainly used for financial issues (payments to suppliers, drug costs).

Table 10 presents data for logistics indicators collected in the seven surveyed hospitals. Data were collected using the tracer drug list for hospitals (all figures in the table are percentages).

Table 10. Logistics Indicators at Seven Hospitals, by Percentages

Indicator	Hospitals							Avg.
	1	2	3	4	5	6	7	
Weighted average % of inventory variation	10.32	7.02	7.98	54.00	0.00	0.00	13.22	13.22
Avg. % of individual variation	10.26	65.16	14.32	20.11	7.56	.00	.16	17.00
Avg. % of stock records that correspond with physical count	33.00	20.00	46.00	42.00	85.00	100.00	83.00	58.00
Avg. % of drugs available	41.00	34.00	58.00	44.00	58.00	38.00	37.00	44.00
% time out of stock	59.00	72.00	40.00	45.00	45.00	61.00	66.00	56.00
% median international price	119.00	303.00	276.00	393.00	274.00	339.00	80.00	255.00

The data in Table 10 suggest that serious problems exist in inventory management skills at hospitals.

Drug Quality Control in Karaganda Oblast

Drug products in Karaganda Oblast are tested for quality at the oblast drug center Dari-Darmek and at individual pharmacies where drugs are compounded. Dari-Darmek is a branch of republican federal government enterprise (FGE). The oblast center activities are regulated by the republican Agency of Health Order #126 and the following laws of the Kazakhstan Republic “On Medicines,” “On Certification,” “On Standardization,” “On Health Care of the Kazakhstan Population,” “On Licensing,” and “On Consumer Rights Protection.” The functions of the center

include drug quality testing and monitoring of pharmaceutical practices of pharmacies and pharmaceutical services in health facilities.

The center conducts—

- Certification testing of drugs (full test, including qualitative and quantitative identity, purity, disintegration, dissolution, pyrogenicity, etc.)
- Quality control of compounded drugs
- Microbiological testing

The federal law “On Drugs” dictates that all pharmaceutical products on the Kazakhstan market must have a Kazakhstan Certificate of Identity. Every batch of medicines procured for the public health system is tested, and the certificate is awarded on the basis of the test results. Sometimes certificates of other countries are recognized. For example, if the quality tests are too complicated (and therefore too expensive) and the oblast is unable to perform them, then the originals of all necessary documents from the manufacturer are submitted. Of 10,500 tests conducted in 1999, 9,270 certificates were awarded.

Quality control tests are performed for substances and manufactured and compounded drugs. Of 1,230 finished products tested in 1999, 58 did not meet the standards, and 13.15 percent of 7,643 microbiological tests showed the compounded products did not meet standards.

When problems are detected, the manufacturer is notified. The list of failed drugs is published in the *Kazakhstan Pharmaceutical Bulletin*. The most common problems are with the uniformity of distribution in a tablet and with the inconsistency of dosage, even within the same batch of drugs. These problems occur mostly with drugs manufactured in the NIS and procured by oblast suppliers. Imported drugs enter the oblast via Almaty, and they are tested and certified by the national laboratory. At the oblast level, imported drugs are not tested.

The Dari-Darmek Center includes two quality control laboratories, one of which has a bacteriological department. The number of staff members of the center is 29 persons, 14 of whom work in the laboratories.

Quality tests include identity and strength (the colorimetric method is often used), stability, and dissolution. Distilled water is tested daily at each pharmacy where the water is distilled.

Laboratory equipment used for testing includes spectrophotometer (manufactured in 1975, and needing replacement), photocolormeters, polarimeter, pH-meter, analytic balances, centrifuge, and microscopes. No gas or high-pressure liquid chromatographs are available for testing.

The average cost of a comprehensive analytical drug quality test was 1,200–1,300 tenge (\$9.10–\$9.80) in 1999. The average cost of the product purity test was 257 tenge (\$1.95), and the microbiological test of a contaminated product was 700 tenge (\$5.30).

The laboratory personnel reported that prescribers’ and patients’ drug quality complaints are sometimes explained by the lack of drug information. There are two recent examples.

- A physician requested a test of benzylpenicillin sodium, because the cloudy appearance of the drug after dissolution in procaine seemed suspicious to him. The product was tested and met the test. It turned out that the physician did the dissolution incorrectly. The physician was counseled on benzylpenicillin sodium use and dissolution technique.
- A patient requested a test of a suppository, as it did not dissolve in 12 hours after application. The product was tested and met the test. In conversation with the patient, it was learned that he had not taken off the suppository wrapper and neither his doctor nor the pharmacist had instructed him on proper application.

The main problems of drug quality control as reported by Dari-Darmek included the outdated laboratory equipment, the unavailability of some standards and reagents, and lack of personnel.

One of the functions of the Dari-Darmek Center is to monitor pharmaceutical services through inspections. During these inspections, depending on the purpose of each, inspectors check pharmacists' and technicians' qualifications and licenses; facility accreditation documents; and compliance with compounding, storage, and sales requirements. Dari-Darmek is supposed to enforce all national drug regulations through inspections. Although the national requirement stipulates selling specific drugs only by prescription, inspectors only check for narcotics and psychotropics. Antibiotics also fall under the prescription category, but prescription sales of antibiotics are not checked. As was reported by Dari-Darmek, this violation is so common that the agency does not know what to do about it. Sales of antibiotics constitute a significant part of pharmacies' revenues, and too many "financial interests" are involved.

The center carried out the following inspections in 1999:

- 122 complex pharmaceutical surveys of nongovernment pharmacies
- 58 special-purpose inspections in accordance with Akimat orders
- Inspections of 408 public and private pharmacies to ensure that all pharmaceuticals are certified

Infringements, such as a lack of license for pharmaceutical practice and a lack of drug certificates, were revealed in 33 facilities. The results were reported to Akimat and respective city or rayon administrations. Licenses of six enterprises were revoked.

There is no formal mechanism for reporting and registering pharmaceutical product problems. Although the information about drugs that did not meet test standards is published in the *Kazakhstan Pharmaceutical Bulletin*, the data on past performance of different manufacturers is not analyzed or used in competitive procurement.

Areas of Concern Related to Drug Procurement

- Prices continue to be high in Karaganda Oblast; they are much higher than median international prices and have a tendency to grow.
- Conducting oblast tenders on a monthly basis may result in financial losses and higher prices.

- Oblast Administration drug tenders lack transparency.
- There are no drug specialists on the Oblast Tender Board.
- Drug specifications do not include drug quality standards.
- Quantification is based on previous consumption and may not reflect the actual morbidity requirements.
- There are no mechanisms in place to ensure supplier compliance with contract terms as regards timely delivery and drug prices.
- Use of performance bonds may have a negative impact on drug prices.
- Unbiased drug information necessary to make rational procurement decisions does not exist.
- Serious problems were identified in inventory management skills at hospitals.
- Data on drug quality problems by supplier are not used in supplier prequalification.
- Hospitals procure and prescribe drugs by brand names.

Options

The pharmaceutical procurement system is a major determinant of drug availability and total health costs. Given the limited health budget in Karaganda Oblast and the expensive and hectic market, drug procurement must be a major concern to oblast policy makers.

The following interventions may be recommended to improve procurement mechanisms in the oblast.

Short-Term Interventions

- Oblast Administration should seriously consider the inclusion of drug specialists on the Tender Board. These people should not just be consultants, but rather full-time members with the right to vote and come up with initiatives on drug tender improvements.
- Both OA's and OHA's existing tender documents need revision, especially drug specifications that should include requirements of quality standards (WHO GMP certification scheme, pharmacopeial standards). It is advisable to include a clause on supplier prequalification, based on previous performance.
- Oblast Health Administration should consider either eliminating or reducing performance bonds, in order to lower drug prices. Instead, rigid supplier performance monitoring and

subsequent performance-based supplier prequalification may be used as the means to ensure supplier compliance with contract terms.

- During the survey, drug suppliers identified untimely payment by facilities as the main reason for charging high prices. Drug prices oftentimes do depend more on terms of payment than procured volumes. It may be recommended for the oblast to establish a system where drug suppliers are paid through letters of credit guaranteed by Oblast Administration.
- Changes in tender requirements should be made public as soon as they are approved by the oblast, and not when the tender is announced. Likewise, the tender process and tender results should be transparent and available to the public.
- It is advisable to perform a morbidity- or an adjusted morbidity-based drug quantification for the tenders to verify the exact needs of oblast facilities in pharmaceuticals.
- A facility drug procurement should be in accordance with the national EDL. At this point, it should be a facility task to at least eliminate duplicative drugs and compile procurement lists by INN (generic name).
- It is advisable for the Oblast Health Administration to investigate utilization of user fees in facilities, especially fees charged for pharmaceuticals. The objective of such a survey may be identifying the ways these fees are spent by facilities. Charges for pharmaceuticals should be allocated for procurement of pharmaceuticals and not spent on other purposes.
- A training in drug procurement and inventory management may be necessary for all levels of the oblast health system.

Mid-Term Interventions

- As oblast and facility formularies are developed, the Oblast Formulary Committee or Tender Board should make sure that drug procurement is limited to the formulary list.
- A regular reporting system on procurement performance should be established. This is commonly done through standard performance monitoring indicators. Standard indicators allow comparison of actual performance with targets, over time, and among countries, or oblasts, if such information is available. For some indicators, as in the present survey, a list of 10–20 indicator drugs (tracer drugs) was used. The oblast board responsible for procurement should be required to report on key procurement indicators at least annually.
- Oblast PHC facilities, especially private FGPs united in an association, may need assistance in development and implementation of group-purchasing mechanisms (pooled procurement). Group purchasing is done by one procurement body on behalf of a group of facilities. This will be a logical step if private FGPs decide to launch their own drug supply system and if an FGP formulary is in place (see the Drug Selection section in this chapter). This type of

procurement, if properly organized, may be very cost-effective, may ensure affordability of drugs to patients, and may consequently shift the focus of health care to the primary level.

- State enterprise hospitals may also consider this option of pooled procurement. However, due to their dubious legal status where on the one hand they are treated as private entities when it comes to paying taxes and utilities and on the other hand as state entities when it comes to decision making, the option of pooled procurement would likely be a long-term goal.

Long-Term Interventions

In the longer perspective, a Quality Assurance for Drug Procurement Program should be established. The procedures to establish a comprehensive quality assurance program can be divided into the following three categories:

1. Procedures to ensure that only drug products that meet current standards of quality are bought. These include—
 - Careful product selection, based on a formulary
 - Careful supplier selection through a prequalification process, based on performance monitoring data
 - Certification of good manufacturing practices (Since 95% of the drugs in Kazakhstan market are imported, this is a drug registration issue.)
 - Batch certification (WHO-type certification of pharmaceutical product)
 - Inclusion of detailed specifications in the contract
2. Procedures to verify that shipped goods meet the specifications. These include—
 - Pre- and postshipment inspection
 - Analytical drug testing
3. Procedures to monitor and maintain the quality of drug products from the moment they are received until the drug is finally consumed by the patient. These involve—
 - Proper storage and distribution procedures
 - Appropriate dispensing
 - Instructions to patients on proper use of medication.

- Product defect reporting programs
- Adverse reactions reporting programs

The above procedures will take time to be developed and implemented. One of the main requirements here is that all procedures should be written, transparent, openly discussed among professionals, approved by an authoritative body, and rigorously enforced.

Drug Utilization

This section presents an analysis of the prescribing patterns in Karaganda health facilities. The data were collected by analyzing 100 case records in each of the seven surveyed hospitals and five surveyed PHC facilities (FGPs and a polyclinic).

Drug Use Indicators

The core prescribing indicators in outpatients are presented in Table 11 and discussed below.

Table 11. Drug Use Indicators in Outpatient Populations in Five PHC Facilities

PHC Facility	Average # of Drugs Prescribed per Encounter	Percentage of Prescribed Drugs on EDL	Percentage of Drugs Prescribed by INN	Percentage of Injection Forms Prescribed	Percentage of Antibiotics Prescribed
FGP # 1	2.18	53.7	34.9	15.0	14.0
FGP #2	2.27	54.2	37.9	17.0	12.0
Polyclinic	2.81	45.6	22.8	7.0	6.0
FGP #3 (Jezkazgan, private)	3.99	28.8	54.6	30.0	21.0
FGP #4 (Jezkazgan, private)	3.18	44.0	60.4	40.0	40.0
Average	2.89	45.3	42.1	21.8	18.6

The average number of drugs prescribed per curative encounter is 2.89 in the Karaganda sample. The average numbers from Ryazan and Novgorod oblasts in Russia⁴ were lower than in Karaganda, 1.96 and 2.4 respectively. The rate among Karaganda Oblast facilities varies from 2.18 to 3.99. These results suggest that overprescribing may be the problem in many outpatients clinics in Karaganda. Absence of treatment standards with clearly defined drug therapy may contribute to the situation.

⁴ Russia Rational Pharmaceutical Management Project. *Ryazan Oblast Pharmaceutical Sector Assessment*, November 1994. Russia Rational Pharmaceutical Management Project. *Novgorod Oblast Pharmaceutical Sector Assessment*, December 1995.

It was not possible during the survey to collect data on whether patients actually bought all the prescribed drugs. With drug prices being extremely high in private pharmacies, patients may not be able to afford all prescribed drugs for the full course of treatment.

Prescribing by INN is recommended to ensure that the lowest cost generic product available can be dispensed. In the Karaganda sample, 42.1 percent of drugs were prescribed generically, with the range 22.8 percent to 60.4 percent among facilities, which seems to be a very low number. The Russia study average was 42.8 percent generic prescribing in Ryazan and 74 percent in Novgorod. It should be noted that neither of the Russian oblasts had a PHC formulary at the time of the assessment, unlike Karaganda where the FGP formulary exists and is compiled by generic name. There is much room for improvement here in Karaganda Oblast as well as in the Russian oblasts.

The percentage of drugs prescribed from the FGP formulary allows evaluation of the degree to which practices conform to a national drug policy. In the survey, an average of 45.3 percent of drugs prescribed appeared on the FGP formulary of Kazakhstan, which is a low percentage. It indicates that the national FGP formulary does not perform its function.

In most outpatient populations, relatively few patients really need injections, and the cost and the potential risk of an adverse drug reaction is much higher with injections than with other routes of drug administration. In Karaganda Oblast 21.8 percent of the outpatients were prescribed injections, with a range of 7 percent to 40 percent among facilities. In the studies in two Russian oblasts, the indicator was 22 percent in Novgorod and 34.9 percent in Ryazan. The figures illustrate a prescription pattern typical for the NIS. Changing prescribers' habits may result in significant savings for patients and increased safety in drug treatment.

Antibiotics must be indicated only to treat established bacterial infections or for prophylaxis of such infections. The overuse of antibiotics leads to wasted resources, higher risk of adverse reactions, and, in many cases, to bacterial antibiotic resistance. (The discussion of antimicrobial resistance patterns in the oblast appears later in this section.) In Karaganda Oblast, an average of 18.6 percent of all drugs prescribed to outpatients are antibiotics. The range is from 6 percent to 40 percent. The Russia study showed a higher percentage, 28 percent in Novgorod and 26.6 percent in Ryazan.

Compared with results from other studies in developing countries, these results are quite low. However, according to the morbidity report in Annex 10, infectious diseases are much less of a burden in Karaganda Oblast than in developing countries. Infectious diseases are only 4.34 percent (adults) and 4.71 percent (children) of cases, but other conditions such as respiratory diseases (18.11 percent adult encounters and 48.84 percent children outpatient encounters) may also need treatment with antibiotics. The indicator thus may be used only as a reference point against which interventions are measured after drug utilization review programs have been conducted.

It should be noted that of the surveyed PHC facilities, private FGPs on average prescribe more drugs per patient encounter, and considerably more often prescribe injections and antibiotics (see Table 11). It was not possible during the short survey to identify the reasons for those findings.

In the future, further investigation may be required to be specifically targeted to clinical issues of prescribing preferences and to the economic links of FGPs with private pharmacies. Table 12 presents the core prescribing indicators in inpatients in Karaganda Oblast.

Table 12. Drug Use Indicators of Inpatients in Seven Hospitals

Facility	Average # of Drugs Prescribed per Patient	Percentage of Prescribed Drugs on EDL	Percentage of Drugs Prescribed by INN	Percentage of Injection Forms Prescribed	Percentage of Antibiotics Prescribed
Hospital #1	8.13	33.3	23.7	89.0	45.0
Hospital #2	8.28	40.3	33.7	97.0	43.0
Hospital #3	5.42	41.0	63.7	58.0	48.0
Hospital #4	6.36	11.9	86.2	98.0	52.0
Hospital #5	4.28	56.8	40.0	90.0	46.0
Hospital #6	9.20	53.8	39.7	95.0	70.0
Hospital #7	6.88	48.3	31.0	90.0	34.0
Average	6.94	40.8	45.4	88.1	48.3

The average number of drugs prescribed per inpatient is 6.94. The range among facilities varied from 4.28 to 9.20. The same indicator in the RPM Pskov Oblast study⁵ (Russia) was five drugs per patient. Karaganda hospitals prescribe 45.4 percent of drugs by generic names, with the range being from 23.7 percent to 86.2 percent (44% in Pskov), and 40.8 percent of prescribed drugs are from the national EDL (the range is from 11.9% to 56.8%).

The average percentage of inpatients receiving injections in the hospital survey is 88.1 percent (38% in Pskov). The principal difference between Karaganda and Pskov hospitals is that Pskov hospitals had to provide all drugs to patients free of charge. In the situation of economic collapse in Russia,⁶ hospital physicians were forced to think rationally and prescribe expensive injectables only when absolutely necessary. In Karaganda Oblast, where most patients pay out-of-pocket not only for drugs but also for medical supplies including syringes and alcohol for injections, the high prescription rate of expensive injectables does not seem justified.

The average percentage of inpatients receiving antibiotics is 48.3 percent (22% in Pskov, and 28% in Novgorod). As has been mentioned, there is no standard or correct ratio for these indicators. It is the task of DUR programs to verify if correct drugs are prescribed in correct quantities. However, even at this point, it is safe to assume that overprescribing of certain drugs and dosage forms is a problem in many Karaganda Oblast hospitals.

The percentage of drugs prescribed from the national EDL is rather low in some facilities. The opposition to the EDL may indicate at least three problems: (1) simple lack of enforcement

⁵ International Network for Rational Use of Drugs (INRUD). "Field Testing of PASS Software in Russia," *INRUD News*, September 1996, Arlington, VA: Management Sciences for Health.

⁶ At the time of the Pskov survey, the oblast health budget was \$8.60 per capita of population (\$17 in Karaganda), with \$3.70 per capita spent on pharmaceuticals in the public sector.

failure of authorities to explain why the EDL is necessary. In any case, the EDL does not seem to perform its function.

Another reason for rejection of the EDL by physicians may be buried in financial mechanisms because salaries in hospitals depend, directly and indirectly, on the number and cost of prescribed pharmaceuticals, or, in PHC settings, where physicians refer outpatients to certain pharmacies and receive “bonuses” from those pharmacies.

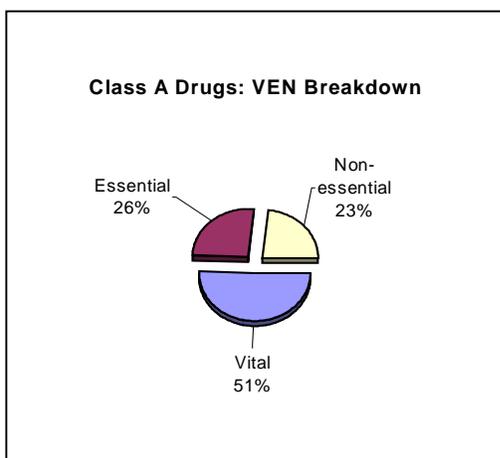
ABC/VEN Analysis

ABC analysis is a method by which drugs are divided according to their annual usage (unit cost times annual consumption) into Class A items (10–20% of the items, which account for 70–80% of the funds spent), Class B items (20–30% of products which account for up to 15% of expenditures), and Class C items (the vast majority of items with low individual usage, the total of which accounts for about 5% of the funds spent). ABC analysis can be used to give priority to Class A items in making drug selection and procurement decisions.

VEN analysis is a system of setting priorities for drug selection and purchasing in which drugs are classified according to their health impact: Vital, Essential, and Nonessential drugs.

- Vital drugs: Drugs that are potentially life-saving (such as vaccines) or that have significant withdrawal side effects (such as propranolol, steroids), or drugs for which a regular supply is mandatory (insulin, TB drugs)
- Essential drugs: Drugs that are effective against less severe, but nevertheless significant, forms of illness
- Nonessential drugs: Drugs for minor or self-limited illnesses, drugs that are of questionable efficacy, and drugs that have a high cost for a marginal therapeutic advantage

Figure 3. Class A Drugs: VEN Breakdown



ABC/VEN analysis of drugs procured by hospitals with state funds during 1999 was conducted during the RPM assessment in eight hospitals in Karaganda Oblast in February 2000. It was the first time that such an analysis has been performed in Karaganda Oblast.

The number of procured drugs was not large, and ranged from 35 to 176 drug products, with the average being 95. Of those drugs, 23 percent by value were classified as nonessential products by oblast experts who participated in the assessment.

The breakdown of drugs within Class A (80% of all drug expenditures) and averaged for the surveyed hospitals is illustrated in Figure 3.

It is, however, necessary to look at individual procurement by hospitals. The data from individual hospitals are presented in Table 13.

Table 13. Percentage, by Value, of Class A Drugs

Facility	# Drugs	Class A Drugs		
		V	E	N
		%	%	%
Hospital #1	40	93.2	3.8	3.0
Hospital #2	176	45.5	49.3	5.1
Hospital #3	100	34.6	17.4	48.1
Hospital #4	76	56.4	29.6	14.0
Hospital #5	120	51.0	29.3	19.8
Hospital #6	147	55.7	32.8	11.5
Hospital #7	68	31.7	27.1	41.2
Private hospital	35	46.4	45.5	8.0
Average		50.6	26.3	23.1

A significant variation by facility should be noted. The percentage of nonessential drug products did not depend on the size of a facility, location (oblast capital or remote rayon), or the overall number of procured drugs. The number of nonessential drugs is significantly lower in hospitals 1 and 2. This may be attributed to the fact that the Karaganda Medical Academy departments are based in those two hospitals, which may give physicians better access to up-to-date clinical and drug information.

The nonessential drugs included those drugs of doubtful efficacy, for example, drotaverine, vinpocetin, bendazole, papaverine, inosine, piracetam, cerebrolizin, validol, herbal preparations (Holisept, Allohol, Phionivin), and some obsolete drugs, like chlorophormium and perhydrolum.

Another problem that was immediately noticeable during the ABC/VEN analysis was procurement by brand names, which resulted in duplicative purchases and financial waste due to price differences. Different brand names of the same product were used even by physicians in the same facility. For example, Hospital 1 procured four different cefazolin products (Kefzol, Ifizol, Reflin, and Cezolin) and Hospital 2, three cefazolin products (Totacef, Kefzol, and Reflin). The price difference for cefazolin products by brand names on the Karaganda market is up to 50 percent according to suppliers' price lists.

Analysis of Drug Treatment of Hypertension

The study team further analyzed drug use patterns in Karaganda Oblast using data provided by the CHP Densauyk to look at treatment of specific diseases. Case records and lists of prescriptions of patients with hypertension in four surveyed hospitals were analyzed (see Table

14). The hospitals represented both central specialized facilities and rayon general therapy hospitals. Treatment patterns for hypertension in the surveyed facilities are presented in Table 15.

Table 14. Treatment Patterns for Hypertension

Category	Hospital #2	Hospital #4	Hospital #5	Hospital #7
Average duration of stay	14	9	12	13
Number of prescribed drugs (including those on national EDL)	23 (4)	6 (2)	9 (3)	7 (3)

In the survey, records of patients with the same diagnosis and conditions were used to eliminate possible prescribing for additional diseases. Each of the surveyed hospitals demonstrated strong preference among physicians for certain drugs, which probably permits the description of “hospital prescription habits” rather than prescription habits of individual physicians.

The typical feature for all hospitals was poor compliance with the national EDL, which lists ten drugs to treat hypertension, all of which are common in international practice and should be sufficient to cover clinical needs for hypertension (see Table 15).

Table 15. Drugs Typically Prescribed for Hypertension

Brand Name	INN	Hospital #2	Hospital #4	Hospital #5	Hospital #7
Atenolol	Atenolol*	+	+	-	+
Klofelin	Clonidin*	+	+	+	+
Aspirin	Acetylsalicylic acid	+	+	+	+
Ednit	Enalapril	+	+	-	-
Enam	Enalapril	+	-	-	-
Kapoten	Captopril*	+	-	-	-
Piracetam	Piracetam	+	+	+	+
Cavinton	Vinpocetine	+	-	-	-
Furosemide	Furosemide	+	+	+	+
Cinnarizine	Cinnarizine	+	-	-	-
Riboxin	Inosine	+	-	-	+
Trental	Pentoxifylline	+	-	-	+
ATP	Adenozin-triphosphate acid	+	-	-	-
Sustac-forte	Nitroglycerin	+	-	-	-
Panangin	Potassium/Sodium asparaginat	+	+	-	+
Lidocain	Lidocaine	+	-	-	-
Isoket	Isosorbide dinitrate	+	-	-	-
Corinfar	Nifedepine*	+	-	-	-
Cordipin	Nifedepine*	+	-	+	-
Nootropil	Piracetam	+	+	-	-
No-spa	Drotaverine	-	-	+	-
Kushelevsky mixture	Papaverine/ metamizole/ diphhydramine	+	+	-	-

* Drugs included in national EDL

Note: + = Drug was commonly prescribed by the hospital.

- = Drug was not commonly prescribed by the hospital.

The surveyed hospitals use from 6 to 23 brand name drugs in the treatment of hypertension. Only four of them are on the Kazakhstan Essential Drug List. The analysis of the prescription patterns revealed the following:

- Drugs are prescribed by different names even in the same hospital: Nootropil and Piracetam (piracetam), Ednit and Enam (enalapril), Corinfar and Cordipin (nifedipine).
- Drugs of unproven efficacy are widely used: Riboxin (inosine), ATP (adenozintriphosphate acid), Nootropil (piracetam), Sustac (long-acting nitroglycerin), Cavinton (vinpocetine), and some others, many of which are costly.
- Several of the prescribed drugs are not indicated to treat hypertension, such as No-spa (drotaverine) or aspirin.
- Unjustified wide use of the usage drug Klofelin (clonidin) and of the so-called Kushelevsky mixture injections (combination of papaverine, metamizole, and diphenhydramine) takes place.
- Polypharmacy is widespread.

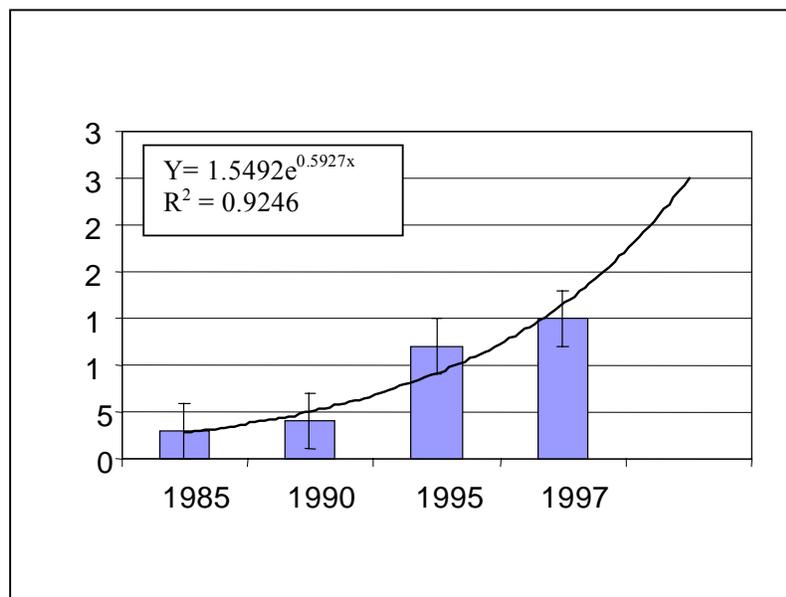
Antimicrobial Resistance Patterns in the Oblast

Irrational prescribing, including uncontrolled use of antibiotics at both the PHC and hospital levels, is thought to lead to the development of antimicrobial resistance. Although analysis of drug resistance in the oblast was beyond the scope of the present assessment, it seems important to mention this problem as it may be related to drug use patterns and should be of concern to the Oblast Health Administration.

The problem of antimicrobial resistance is illustrated the following discussion by statements made by Dr. I.S. Azizov⁷ of the Karaganda Medical Academy in a presentation at the RPM Cost-Effective Drug Selection Workshop in January 2000. The Academy had conducted a study of hospital infection and antimicrobial resistance in the Karaganda Oblast Clinical Hospital. The study covered 445 patients with different localizations of infection for the period 1985–1997; 728 aerobic and anaerobic strains were identified. Current patterns of bacterial resistance to 24 widely used antibiotics of all the main groups were investigated in the hospital.

From 1985 to 1997, the frequency of identification of multidrug-resistant strains has increased significantly—the so-called Indicator of Absolute Resistance had grown five times by the end of the '90s as illustrated in Figure 4.

⁷ “Antimicrobial Resistance in Surgery,” by Dr. I.S. Azizov, Department of Microbiology, Karaganda Medical Academy.

Figure 4. Antimicrobial Resistance of Hospital Strains, 1985–1997

The data of the Medical Academy was reported at several physicians conferences and to the administration of the Oblast Hospital, but physicians widely continue to prescribe antibiotics to which high bacterial resistance already exists.

This situation is a clear indication of a lack of drug use policies at health facilities. In an environment where a functional formulary committee exists, interventions could be designed and implemented to put the use

of antibiotics under control. It is necessary for the hospitals to develop their own antibiotic policies on the basis of the revealed trends in susceptibility of current strains.

Treatment Guidelines

The first attempts to develop treatment guidelines were made as far back as 1989 by experts of the Oblast Health Administration in collaboration with health facilities and Medical Academy specialists. Currently treatment guidelines, or recommendations, for ulcer, hypertension, bronchial asthma, angina pectoris, chronic hepatitis, acute pneumonia, and some other conditions are available at clinical hospitals. Each facility is supposed to adapt standards in accordance with its level of care and get approval from the Oblast Health Administration. The guidelines include a disease code, average duration of treatment, diagnostic procedures, treatment, therapeutic classes of drugs that should be used for treatment, and outcome criteria.

Treatment guidelines are not mandatory, but are only recommended. In their present form, STGs are not enforceable because they do not identify specific drugs and dosage forms, and they can be widely interpreted by physicians. Treatment guidelines, dated 1996–1997, were found in all hospitals visited during the assessment (see Annex 7 for STGs for hypertension).

Self-Medication

The study of self-medication by patients was beyond the scope of the present survey. Such study would require extensive interviews with patients and a household study. However, physicians anecdotally reported that self-medication is a growing problem, due to aggressive marketing strategies of drug companies, especially in the uncontrolled use of antibiotics by patients.

Areas of Concern Related to Drug Utilization

- Health facilities are not able to provide the minimum variety of medicines necessary for rational selection of treatment. Selection of drugs is often determined by patients' ability to pay rather than their clinical needs.
- Limited lists of drugs for procurement and use (formularies) in health facilities do not exist.
- The existing treatment guidelines are very general; they do not provide specific instructions on drugs of choice, dosage forms, and the like. Guidelines are not mandatory and are seldom used in practice.
- Unsafe drugs and those of unproven efficacy and low safety are widely used; polypharmacy is typical.
- Physicians do not comply with the national EDL or the FGP formulary.
- Prescription is done by brand name.
- Irrational prescription of antibiotics is resulting in growing antimicrobial resistance in the Karaganda hospitals.
- Health professionals note the increasing level of uncontrolled and irrational self-medication.

Options

Rational drug use implies an individual approach to patient treatment. The success of treatment largely depends on the ability of a physician to diagnose the major health problem(s) of a patient; select the correct drug, dosage form, and route of administration; foresee probable adverse reactions and drug interactions, and prevent unnecessary or dangerous duplication therapy. This does not mean, however, that every physician should prescribe whatever he/she wants or is used to prescribing. Every prescription decision should be based on clinical evidence.

Irrational drug use occurs with polypharmacy, with the use of wrong or ineffective drugs, or with underuse or incorrect use of effective drugs. These actions have an adverse impact on the quality of drug therapy and cost and may cause adverse reactions.

Strategies to address irrational drug use can be characterized as educational, managerial, or regulatory. Whichever method is selected, the intervention to change drug use is likely to contain the elements of focusing on key factors, targeting the facilities with the worst practices, and using credible sources and communication channels.

When implementing a strategy, the logical steps are to—

- Identify the problem
- Understand the underlying causes

- List possible interventions
- Assess available resources
- Choose and implement the interventions
- Monitor and restructure the activity as necessary

Short-Term Interventions

Short-term interventions may include activities aimed at identifying drug use problems and understanding the underlying causes. Although OHA is already aware of the main drug use problems (polypharmacy, overprescription, use of inappropriate drugs), detailed data from each facility may be required to initiate a dialogue among prescribers.

Two approaches can be used to collect evidence of irrational prescribing and drug use:

1. Conduct ABC/VEN analysis. During the survey process, RPM trained the staff of CHP Densauyk to conduct the analysis. The ABC/VEN analysis does not take much time to perform. The VEN analysis alone will not improve drug prescribing and use habits, but it will provide data on the extent and costs of irrational drug use.
2. Conduct pilot DUR studies at selected facilities. The CHP Densauyk has already collected a considerable amount of retrospective data on prescribing patterns for hypertension, angina pectoris, pneumonia, and some other diseases. The data were used to look at treatment costs, but, because information on individual prescriptions for a great number of cases was collected, it is possible to conduct a pilot DUR study for selected drug use criteria. Methods of selecting drug use criteria are described in the MSH/RPM publication *Guidelines for Implementing Drug Utilization Review Programs in Hospitals*.

Collection of prescription data (by case) for DUR and ABC/VEN analysis may become routine activities for the CHP Densauyk because the data collection mechanisms are already in place. It is necessary that those mechanisms also be extended to primary health care.

Short-term activities should be concluded with the dissemination and wide discussion of the pilot DUR study and ABC/VEN analysis results among health professionals. Such discussion will help OHA at the next stage (mid-term interventions) to identify drug use problems and their underlying causes and to develop interventions.

Mid-Term Interventions

The underlying causes for irrational drug prescribing and use in Karaganda Oblast may include any combination of the following factors:

- Lack of regulatory mechanisms to enforce the use of the national EDL and FGP formulary

- Lack of physician education in the use of drug formularies
- Unavailability of the national EDL and FGP formulary at the facility level
- Inadequacy of the national EDL and FGP formulary for the oblast's therapeutic needs
- Lack or inadequacy of existing STGs
- Lack of evidence-based modern information on drug use
- Gaps in existing financial mechanisms that do not provide physicians with incentives to improve prescribing habits
- Pressure from drug companies

The results of the present survey identified, for example, reluctance of the oblast prescribers to follow the national EDL and FGP formulary as one of the reasons for irrational drug use. Treatment of hypertension, as discussed, where physicians neglected the ten drugs recommended by the national EDL is a good illustration. The reason could be either that drugs recommended by the national EDL are not the best to treat hypertension or that physicians are not aware of the reasons for inclusion of those drugs on the EDL. The reason for irrational drug use might also be a psychological rejection of recommendations imposed by higher authorities. In any case, open and transparent revision of the EDL and FGP formulary is required.

One way to ensure adherence to any limited drug list is to initiate development and establishment of an oblast formulary system. The necessary steps for that were discussed in the Drug Selection section of this chapter.

Long-Term Interventions

There are a number of interventions to ensure the proper use of drugs. These interventions may require more time for implementation—up to several years—but without which the goal is hardly achievable. Those interventions include development and implementation of—

- Standard treatment guidelines (STGs) with detailed options for drug therapy based on an approved drug formulary
- Sources and databases of evidence-based drug and clinical information available to clinicians and patients
- Drug formulary manuals with basic prescribing information
- Standard prescribing manuals for PHC
- Ongoing drug utilization review (DUR) programs

- Reporting mechanisms for adverse drug reactions (ADR) and drug quality problems
- Ongoing patient education programs

In some countries, for example in the United States, the programs listed above are a prerequisite for facility accreditation and to work with government or medical insurance funds. In Karaganda Oblast, once such programs are developed, legislation should be passed that would make them mandatory for health facilities working within the state purchase order framework (Goszakaz) or the medical insurance system, should such an insurance system be developed in the oblast or nationwide.

The processes to develop and implement a formulary system and DUR program are described in detail in the MSH/RPM publications *Manual for the Development and Maintenance of Hospital Drug Formularies* and *Guidelines for Implementing Drug Utilization Review Programs in Hospitals*. One hundred copies of both publications were made available to Karaganda health professionals at the “Cost-Effective Drug Selection Workshop” in January 2000 prior to the present survey.

Drug Information

Several health facilities and institutions were visited to assess drug information availability and services. The survey showed that drug information services are very limited in the oblast. There are no drug information centers and pharmacists and physicians in hospitals are neither trained in nor do they understand the concept of unbiased evidence-based drug information. Moreover, no separate line item exists in the oblast health budget for obtaining even traditional NIS drug information references. Nor do facilities have funds of their own for this purpose.

The most popular reference books among physicians are the following:

- Drugs: *Manual on Pharmacotherapy for Physicians* (Mashkovsky, M.D., 1993, 1995, 1998)
- Drugs: *Vidal Manual* (1995, 1997, 1998)
- National EDL (1996)
- *Essential Drugs of Kazakhstan* (Nurgozin, T., 1998)

All of the health facilities indicated that these references, along with drug distributors’ leaflets and package inserts, are their main drug information sources.

According to interviews, the available periodicals for medical professionals in the oblast are two journals: *Health Care in Kazakhstan* and *Physician*. Drug information is published in *Kazakhstan Pharmaceuticheski Vestnik* and *Pharmaceutical Bulletin*, both of which are sponsored by Kazakhstan drug distributors. Foreign medical journals are not available in the oblast.

Currently, pharmaceutical manufacturers are the most active information providers. Their representatives make presentations at different medical conferences, professional society meetings, hospitals, and pharmacies. The manufacturers disseminate their drug reference books free of charge, and they run a lot of commercials on radio, TV, and in the local press. Faced with a huge number of new, unknown drugs on the market, prescribers willingly use any available information. It should be noted that the community has not traditionally been accustomed to intensive commercial pressures. Neither the medical profession nor the public have yet been able to develop a critical sense as regards publicity.

Sources of Information

Karaganda Medical Academy Library

The library funds cover the Academy curriculum, and the scientific research of professors and scholars. The library contains 349,119 volumes of scientific works and textbooks.

Currently the library has the capacity to serve 200–250 readers daily. Academics, students, and physicians in postgraduate training are able to access the services free.

The academy allocates funds for purchasing books and subscribing to periodicals. During the last three years, the library has been receiving about 150 periodicals. These include—

- *Clinical and Experimental Pharmacology*
- *Antibiotics and Chemotherapy*
- *Therapeutics Archive*
- *Pharmacia*
- *Chemical-Pharmaceutical Journal*
- *Physician*
- *Health Care in Kazakhstan*

The library has not received any funds for foreign journal subscriptions since 1993. Before that time, about 50 foreign journals were available.

The library maintains five types of card catalogues: subject, author, title, catalogue of periodicals, and a catalogue of synopses of doctoral dissertations. In 1998, a computer catalogue was installed. The book registration system is manual but also partly computerized.

There is a special consultant in the library to help readers find necessary information. There is no drug information specialist on the staff. The interlibrary exchange program from other oblasts was discontinued recently. Internet access is available for a fee.

The main drug reference books available in the library are the following:

- *Clinical Pharmacology and Pharmacotherapy* (Belousov, Yu. B., V.S. Moiseev, V.K. Lepakhin, 1997)—10 copies
- *Basic and Clinical Pharmacology* (Ed. by Bertram G. Katsung, 1998)—2 copies
- *Clinical Pharmacology in Pediatrics* (Markova, I.V., and V.A. Gusel, 1989)—30 copies
- *Drugs: Manual on Pharmacotherapy for Physicians* (Mashkovsky, M.D.), 1993—5 copies, 1998—2 copies
- *Drugs: Vidal Manual*, 1997—1 copy

Karaganda Medical Academy also issues its own scientific journal *Medicine and Ecology*, four times a year. The journal publishes general drug information and some results of clinical studies of new drugs.

Pharmacia

Karaganda Pharmacia has an information department with three pharmacists on the staff. The department is located in one of Pharmacia's own pharmacies, and it provides information only on drug availability and prices in the participating city pharmacies. About 30 percent of city pharmacies participate in the network, for a fee of 1,200 tenge (\$8.70) per month. The services are free for consumers. It is of concern that the information on availability and prices is provided for only one-third of the city pharmacies and that it may be biased.

Oblast Clinical Hospital

Oblast Clinical Hospital has a library which includes a medical section. Due to financial problems, the hospital library did not obtain any books or periodicals for the last two years. Physicians receive new medical information mainly through different industry-sponsored conferences, meetings and congresses (including international ones). *Vidal* manuals and reference books of different drug companies are available for physicians to use in the Deputy Chief Physician's office and in the hospital pharmacy.

Patient Education

The following formal patient education programs are used to train patients in Karaganda Oblast:

- "How to Live with Diabetes," for diabetic patients (Karaganda Oblast Clinical Hospital and Polyclinic)
- "Coronary Club," for heart disease patients (Jezkazgan)
- "Equal to Equal," for AIDS patients (Karaganda, Temirtau)

- “Asthma-School,” for bronchial asthma patients (Karaganda)

Patients may receive information on an individual basis from a physician or nurse. They may also review information about diseases, special diets, treatment methods, and medicines in the form of “mute references,” which consist of reading material, written by hospital staff and posted on the wall in the ward.

Areas of Concern Related to Drug Information

- There are no sources of unbiased evidence-based drug information readily available to health professionals in the oblast.
- Most information on drug prescription and use is provided by drug manufacturers and distributors, and it is oriented toward aggressive promotion of specific brand drugs that may not serve the clinical needs of the population.
- Lack of evidence-based drug information leads to improper treatment (polypharmacy, negligence in drug interactions, etc.).
- Current public health budgets do not contain a line item for purchase of medical reference materials; no funds for information sources are available.
- Low salaries and lack of resources prevent health professionals from buying medical books and drug references out-of-pocket.

Options

Short-Term Interventions

As mentioned, RPM provided a limited number of copies (10 sets) of the Russian translation of the *USP Drug Information for the Health Care Professional*, a reputable source of modern evidence-based drug information. These books may lay the foundation for future drug information centers.

Good preconditions exist for establishing a drug information center at the CHP Densaulyk: trained staff, computers, and established connections with health facilities. As a first step toward establishing such a center, the CHP could inform all health facilities of the drug information resources already available.

During its work in Russia, the United States Pharmacopeial Convention component of the RPM Project established 12 drug information centers, which are now united into the All-Russia Drug Information Network (ARDIN). It may be advisable for the CHP or other organizations interested in drug information development to contact Russian drug information centers via e-mail for assistance. Annex 8 provides addresses and contact numbers of the ARDIN.

Mid- and Long-Term Interventions

As with any information, evidence-based drug information has real value for health only if demand for it is created. This may require either painstaking education of prescribers by a drug information center or drastic administrative measures, such as an accreditation requirement for facilities to have a functional formulary system in place that requires drug information to be developed. In any case, sooner or later the demand will be there, and the only option to satisfy it will be creation of a drug information center.

Role of Karaganda Medical Academy in the Oblast Public Health System

There are seven medical schools in Kazakhstan: five medical academies (in Aktyubinsk, Astana, Chimkent, Karaganda, and Semipalatinsk), one medical university (in Almaty), and a School of Medicine at Kazakh-Turkish University (in Turkestan). The differences in curricula are minimal; all schools train students to achieve the same level of competence.

There are two pharmacy schools in Kazakhstan: one at Almaty Medical University and the other at Chimkent Medical Academy.

Karaganda Medical Academy ranks among the most prestigious medical training institutions in the country. There are six schools within the Academy:

- Medicine
- Pediatrics
- Stomatology
- Preventive Medicine
- Medical Biology
- Continuing Education for Physicians

The schools have a total of 50 departments.

Karaganda Medical Academy provides training to students mainly from Karaganda Oblast, Pavlodar Oblast, from northern and central Kazakhstan, as well as to foreign students. Teaching is provided in two languages: Kazakh and Russian.

Tuition in the Academy may be partly free through personal national education grants. Otherwise students have to pay for their education. The total enrollment in 1999 was 400 and was made up of the following—

- National educational grants – 200 students
- Federal no-interest credits – 20 students
- Full tuition payment (\$1,000 per year) – 100 students
- Foreign students – 80

The number of students decreased from 600 in 1995 to 400 in 1999, which reflects a drop in demand for physicians in Kazakhstan. The faculty also decreased, proportionally, in relation to the student body.

Curriculum for Medical Students

The six-year curriculum for medical students is structured as follows:

- Years One and Two: Basic sciences (Physics, Mathematics, Chemistry, Biology, etc.),
Anatomy, Histology, Biochemistry
- Year Three: Basics of Therapy, Surgery, Pharmacology, Pathology
- Years Four and Five: Clinical disciplines: Therapy, Surgery, Obstetrics and Gynecology,
Clinical Pharmacology, Pediatrics, etc.
- Year Six: Specialization (advanced studies) in Therapy, Surgery, Obstetrics and
Gynecology

Following graduation, students are qualified as physicians. The next year (year seven) the graduates work as interns (residents) and undertake specialization in the field they choose. After the internship, they are qualified as surgeons, FGP doctors, gynecologists, and the like. Most graduates find employment in the health facilities of Kazakhstan (mostly central and northern Kazakhstan) and in Russia.

Pharmacology is taught in the third and fifth years of education as follows:

- Year Three: 160 hours (70 hours of lectures and 90 hours of practicals), provided by the
Pharmacology Department
- Year Five: 90 hours (6 hours of lectures and 84 hours of practicals), provided by the Clinical
Pharmacology Department

Prior to year six, students do not prescribe without supervision. During years four and five, students have practical rotations in hospitals, polyclinics, and FGP clinics, including supervised prescribing.

Medical students are taught the individual approach to treatment, based on a patient's unique condition, including main and coexisting disease, complications, age, weight, and the like. Polypharmacy is discouraged, and students are instructed to prescribe only according to indications and to consider possible adverse drug reactions and drug interactions.

Postgraduate Training of Physicians

The postgraduate training of physicians and nurses is provided at the Department of Continuing Education of Karaganda Medical Academy. One- to six-month courses are arranged for all medical specializations. Physicians must attend courses every five years to maintain their

certification. Physicians from central and northern Kazakhstan are taught in the Academy, with tuition fees ranging from \$30 to \$70. One hundred postgraduate students are trained every year.

Practical Role of Karaganda Medical Academy in the Oblast Health System

The Karaganda Medical Academy departments base their practical activities in the biggest oblast hospitals, including the oblast clinical hospital and the children's hospital. Hospital departments are used for training senior-year students, research work, and the clinical work of professors. However, the role of the Academy in promotion of rational drug use is limited because a gap exists between the hospital practitioners and the academics. Hospitals do not feel obliged to utilize treatment standards that are being developed by the Academy, and the Academy does not have the legal rights to enforce them. Moreover, some hospitals, being independent legal entities, have begun charging the Academy rent for its space in the hospitals. The Academy is unable to pay rent due to its inadequate financing by the government.

Two departments of the Academy could play a significant role in promotion of rational drug use in the oblast health system.

Primary Health Care Department

The Primary Health Care Department trains students and physicians for FGP, and it runs FGP *Modelnaya*, which should serve as a model pilot facility to test primary health care reform in the oblast. The head of the department is also the chair of the FGP Association of Karaganda City. The department is supposed to develop standard treatment guidelines for other PHC facilities.

The FGP Modelnaya, however, is unable to perform this function due to economic difficulties. There is no funding from the state to work on PHC treatment guidelines. The capitation fees are going down steadily as the catchment population decreases in the outskirts of Karaganda where the FGP is located.

Clinical Pharmacology Department

The Department of Clinical Pharmacology provides training in clinical pharmacology and pharmacotherapy for all schools of the Academy except Preventive Medicine. The department teaches students the basics of clinical pharmacology, clinical pharmacokinetics, pharmacotherapy, and some issues of pharmacoconomics. The main functions and activities of the department follow:

- Train students in rational pharmacotherapy methods.
- Consult with physicians on pharmacotherapy issues.
- Provide drug information to physicians and students through conferences on selected topics in clinical pharmacology and make presentations at different medical professional associations.

- Provide consultancy in complicated clinical situations.
- Conduct clinical studies of new drugs.

In 1999, the department was demoted from a department to a “course,” which resulted in funding and staffing cuts and reductions in the clinical pharmacology curriculum. Clinical pharmacology staff were relocated from the main Academy building in downtown Karaganda to the outskirts, and they are now located on the premises of FGP Modelnaya.

Areas of Concern Related to Karaganda Medical Academy

- The Academy’s potential for promoting rational drug use is not utilized by the oblast.
- Physicians in Kazakhstan are apparently trained to prescribe idiosyncratically. As discussed in other sections of the report, the concept of limiting prescribing to a list of formulary drugs is not welcomed by physicians, and the use of standard treatment protocols is in its infancy. As funds for pharmaceuticals in the oblast become tighter, it will be necessary to focus on these issues in medical training and in retaining practicing providers.
- As was discussed in the section on Drug Information, the access to modern evidence-based medical information is limited. The Academy lacks foreign scientific literature and up-to-date periodicals.

Options

RPM experience in Russia showed that involvement of medical schools in establishing systems of rational drug use is invaluable. Schools like Ryazan Medical University and Saint Petersburg Medical University and several medical schools in Moscow introduced rational pharmaceutical management into their curricula.

Short-Term Interventions

Short-term activities could be aimed at establishing the role of the Academy as an authoritative body for rational drug use. The activities may involve—

- Lectures on rational drug selection use and dissemination of materials on this subject, which are already available in the oblast
- Participation of Academy staff in pilot DUR programs
- Dissemination of the pilot DUR results through the Academy’s continuing education courses
- In collaboration with the OHA, organization of physicians’ meetings and conferences devoted to the issues of rational drug prescribing and use

- In collaboration with the OHA, development of educational interventions to promote the formulary system

Mid-Term Interventions

The Medical Academy may assist the OHA in establishing the Oblast Formulary Committee and developing its drug selection and use policies and criteria. It should be noted that, according to the RPM experience in Russia, a formulary committee should be comprised mostly of practitioners rather than academics, because otherwise facilities will treat a formulary list as “imposed” and not their own. A DUR subcommittee, on the other hand, could be mostly comprised of the Academy staff, provided that it acts as an analytical and consulting body rather than as a punitive and authoritative entity.

Long-Term Interventions

Because of government regulations, changing curricula may not be a simple process. However, at this point, none of the medical schools in Kazakhstan train managers for the pharmaceutical sector, a much-needed profession as has been shown by the assessment. In Russia, for example, the gap is being filled by a number of medical schools, like Ryazan Medical University, where a School of Pharmaceutical Management was established in 1998, as a result of collaborative work with RPM. There is every possibility for Karaganda Medical Academy, with its trained clinical pharmacologists and specialists in PHC, to introduce this training to medical students.

ANNEX 1. PERSONS MET

Persons Met

Institution/Facility	Name	Position
Oblast Health Administration (OHA)	Ermekbaev Kanat Kartaevich	Head of Oblast Health Administration
OHA Procurement Department	Nizametdinova Alisa Nasredinovna	Head of Drug Procurement Department
Oblast Administration (Akimat), Department of Economics	Utova Guldzan Sadikovna	Head of Procurement Department
Oblast Maslikhat (Parliament)	Agibaev Serik Karibaevich	Representative
	Azarova Galina Andreevna	Representative
USAID ZdravReform Project	Talgat Nurgozhin Alexander Katsaga Ascar Edilbaev	Pharmaceutical Specialist Representative in Astana Clinical Expert
Center for Health Purchasing Densaulyk	Khe Nadezhda Sergeevna Eremin Denis Viktorovich Vasiliev Sergey Sergeevich Brevnov Denis Gennadievich Friss Sergey Pavlovich Lomakin Andrey Vladimirovich Krasnyuk Alexandr Ivanovich Vins Viktor Rudolfovich Makazanova Lyudmila Khafizovna Meiramova Raushan Manapovna Osipova Valentina Vasilievna Murtazin Rashid Farvazovich Kanafina Alma Kanafievna Simurzina Elena Mikhailovna Ospanova Zanna Karasaevna	Director Deputy Director Head of Computer Department Senior computer expert Senior computer expert Computer expert Computer expert Computer expert Head of Quality Control Department Senior Associate Senior Associate Senior Associate Senior Associate Head of Statistics Department Senior Associate
National Agency for Health, General Directorate for Health Purchases	Sadykov Aitzhan Aitmukhanovich	Head of Department of Medical Statistics and Marketing
Oblast Center for Drug Quality and Pharmaceutical Inspection Dari-Darmek	Batralieva Aizhamal Kazigalievna Yarkova Raisa Dmitrievna Koishigarina Gulgamal Bekhtenovna Alexeeva Tamara Maximovna	Acting Director Head of Methodology Department Head of Bacteriological Laboratory Head of Drug Quality Chemical Laboratory
Pharmacia, private wholesaler	Mabiev Kaiirzan Nurgalievich	Director
Oblast Clinical Hospital	Naurizbaev Kanat Kadirovich Karastashova Vera Fedorovna	Director Deputy Director

Persons Met (cont'd.)

Institution/Facility	Name	Position
Karaganda State Medical Academy	Guliaev Alexander Evgenyevich Lokhvickiy Sergey Viktorovich Umbitalina Nelia Safierna Dosmabambetova Raushan Sultanovna	Professor, Head of Clinical Pharmacology Professor, Dean of Surgery Professor, Head of Hospital Therapy Department Professor, Hospital Therapy Department
Family Group Practice	Alikhanova Kargalysh Avgelbaevna Zhamal Tazhikenova	Chair of Karaganda FGP Association Chair of Jezkazgan FGP Association
Private Polyclinic #2	Esenbaeva Gulzhavar Bashirova Tatiana	Director Chief Physician
Private Pharmacy Enterprise Gorbacheva	Shvechihin Yuri	Deputy Director

ANNEX 2. DATA COLLECTORS

Data Collectors

No.	Name	Facility	Position
1	Kanafina Alma Kanafievna	Densaulyk	Senior Associate
2	Makazhanova Ljudmila Hafizovna		Senior Associate
3	Mejramova Raushan Manapovna		Senior Associate
4	Murtazin Rashid Farvazovich		Senior Associate
5	Nju Margarita Grigor'evna		Senior Associate
6	Osipova Valentina Vasil'evna		Senior Associate
7	Sherstov Andrej Jur'evich	Karaganda Medical Academy	Assistant
8	Sherstova Natal'ja Viktorovna		Physician
9	Sherstova Elena Ahatovna		Physician
10	Alimbaev Erzhan Askarovich		Resident
11	Duanbekova Gul'naz Biljalovna		Assistant
12	Sulejmenova Sholpan Bolatovna		Assistant
13	Inagamov Sergej Fajzulaevich		Assistant
14	Ajtubaev Bulat Kalybaevich		Assistant
15	Voronkova Ol'ga Ivanovna		Assistant
16	Abugaliev Tleuzhan Urazalievna		Assistant
17	Kozhahmetova Ajnur Muhtarovna		Resident
18	Iskakov Ernar Bokenbaevich		Resident
19	Omarkulov Baurzhan Kadenovich		Resident
20	Shajmagambetova Dana Mubarakovna		Resident

ANNEX 3. TRACER DRUGS LISTS FOR RETAIL PHARMACIES AND FOR HOSPITALS

Tracer Drugs for Retail Pharmacies

No.	Product Name	Dosage	Form
1	Amiodarone	200 mg	tab
2	Ampicillin	250 mg	tab
3	Ascorbic acid (Vitamin C)	100 mg	tab
4	Acetylsalicylic acid	500 mg	tab
5	Co-trimoxazole	480 mg	tab
6	Penicillin	2.4 million U	inj
7	Bromhexine	8 mg	tab
8	Gentamicin	40 mg	inj
9	Heparin	5000 U 5 ml	inj
10	Digoxin	0.25 mg	tab
11	Indomethacin	25 mg	tab
13	Clonidine	0.15 mg	tab
14	Glibenclamide	5 mg	tab
15	Metronidazole	250 mg	tab
16	Glyceryl trinitrate	0.5 mg	tab
17	Nifedipine	10 mg	drage
18	Papaverine	2% 2 ml	inj
19	Paracetamol	500 mg	tab
20	Prednisolone	5mg	tab
21	Propranolol	10 mg	tab
22	Salbutamol	200 doses	inhaler
23	Senna		tab
24	Sulfadimidine	500 mg	tab
25	Furosemide	40 mg	tab
26	Cimetidine	200 mg	tab

Tracer Drugs List for Hospitals

No.	Product Name	Dosage	Form
1	Epinephrine	1 mg	inj
2	Amiodarone	200 mg	tab
3	Ampicillin	250 mg	tab
4	Acetylsalicylic acid	500 mg	tab
5	Verapamil	40 mg	tab
6	Gentamicin	40 mg	inj
7	Heparin	5000 U 5 ml	inj
8	Dextrose	5% 500 ml	inj
9	Diazepam	5 mg	inj
10	Digoxin	0.25 mg	tab
11	Diclofenac	50 mg	caps
12	Hydrochlorothiazide	50 mg	tab
13	Isosorbide dinitrate	10 mg	tab
14	Captopril	25 mg	tab
15	Lidocaine	2% ml	inj
16	Metronidazole	0.25 mg	tab
17	Morphine sulfate	1% 1 ml	inj
18	Glyceril trinitrate	0.5 mg	tab
19	Nifedipine	10 mg	tab
20	Papaverine	2% 2 ml	inj
21	Prednisolone	30 mg	inj
22	Propranolol	40 mg	tab
23	Salbutamol	200 doses	spay
24	Strofantine	0.05% 1 ml	inj
25	Furosemide	2 ml	inj
26	Cephazolin	1 g	inj
27	Cimetidine	200 mg	tab
28	Ciprofloxacin	250 mg	tab
29	Aminophylline	25 mg/ml	inj

ANNEX 4. FACILITIES SURVEYED

Hospitals

- Oblast Clinical Hospital
- Oblast Hospital KOMLDO
- Oblast Clinical Children's Hospital
- Karaganda City Multiward Clinical Hospital #1
- Infectious Disease Hospital
- Lohvicki Hospital (private)
- Saran Regional Multiward Hospital
- Jezkazgan Regional Multiward Hospital

Primary Health Care Facilities

- FGP Clinic "NUR"
- FGP Clinic "Modelnaya"
- FGP Clinic "Almanbekov" (Jezkazgan)
- FGP Clinic "Zurek" (Jezkazgan)
- Polyclinic NLU #2

Private Retail Pharmacies

- Private Enterprise (PE) Shtybina
- Lek, Ltd.
- Tabigat, Ltd.
- PharmInvest, Ltd.
- PE Kabylov
- Rodnik, Ltd.
- Pharmacy #20
- Pharmacy #66
- Pharmacy #9
- Pharmacy #70
- Pharmacy #130
- Pharmacy #1 Lek
- PE Sergeeva
- Dery, Ltd.
- PE Pertseva
- Shipager, Ltd.
- PE Smatulov
- PE Ospanov
- PE Tursynova
- PE Mukanova

The following data were collected from the seven hospitals visited during the interview portion of the assessment.

Category	Oblast Clinical Hospital	KOMLDO	Oblast Children's Hospital	Multi-ward Clinical Hospital	Infectious Disease Hospital	Saran Hospital	Jezkazgan Hospital
Annual admissions	17,682	13,530	11,967	6,648	8,894	3,445	12,700
Number of beds	585	375	405	230	250	100	406
Number of physicians	148	209	82	113	45	20	87
Number of nurses	301	308	245	189	118	41	198
Has Departments of the Medical Academy	Yes	Yes	Yes	Yes	Yes	No	No
Has pharmacy	Yes	Yes	Yes	Yes	No	No	Yes
Number of pharmacists	4	3	1	4	0	0	3.5
Has drug information pharmacists	No	No	No	No	No	No	No
Does compounding	Yes	Yes	Yes	Yes	No	No	Yes

The data on Karaganda Oblast FGP activities in 1999 are presented in the following table.

FGP	Population Covered	Number of Patient Visits	Number of Physicians	Visits per Physician	Visits per Inhabitant
Urban	876,466	2,920,105	546	5,341.3	3.3
Rural	358,697	1,366,151	205	6,638.2	3.8

The following data were collected from the four surveyed FGP clinics.

Facility	Population per Physician	Patient Visits per Physician per Day	Home Visits per Physician per Day	Average Consultation Time (in Minutes)
FGP "Modelnaya," Karaganda	1,244.0	11.0	8.0	12.00
FGP "NUR," Karaganda	1,811.0	11.0	9.0	12.00
FGP "Zurek," Jezkazgan	2,720.0	18.0	5.0	15.00
FGP "Almanbekov," Jezkazgan	1,612.0	13.5	8.0	12.00
Average	1,846.8	13.4	7.5	12.75

Community Pharmacies

Drug needs for the majority of the outpatients and inpatients are met through a system of private community pharmacies. The following pharmacy facilities had pharmacy practice licenses in 1999:

Facility	Number
Pharmacy warehouses	86
Pharmacies	210
Pharmacy kiosks	380
Pharmacy outlets	52

ANNEX 5. LIST OF DISEASES AND NUMBERS OF REGISTERED PATIENTS ENTITLED TO FREE MEDICATION IN KARAGANDA OBLAST

List of Disease and Number of Registered Patients Entitled to Free Medication in Karaganda Oblast, 1999

Category of Diseases	Drugs Needed	Number of Patients
Oncological	Specific medicines	11,195
Oncohematological	Specific medicines	969
Diabetes mellitus:		
Insulin-dependent		1,039
Noninsulin-dependent		7,702
Total		8,741
Diabetes insipidus		189
Addison's disease		57
Pituitary deficiency		30
Rheumatism	Bicillin	3,604
Rheumatoid arthritis		455
Condition after cardiac valve replacement	Anticoagulants	
Acute intermittent porphyria	Adenil, Phosphaden	0
Brucellosis (severe)	Antibiotics	164
Psychiatric diseases (invalids of Groups 1 and 2, and also work therapy patients of psychiatric and psychoneurologic institutions)		2,037
Systemic (acute) lupus erythematosus		1,077
Systemic, chronic, severe forms of cutaneous disease		689
Syphilis		6,693
Leprosy		0
Tuberculosis		7,957
Schizophrenia		4,421
Epilepsy		1,952
Hepatocerebral dystrophy		80
Phenylketonuria		16
Mucoviscidosis (children)		11
Bronchial asthma		2,954
Dysentery		840
Condition after kidney transplantation	Sandimmun	4
Condition after heart transplantation		0
Condition after liver transplantation		0
Bekhterev disease		27
Parkinson disease		1,426
Myasthenia		47
Myopathy		28
Marie's cerebellar ataxia		1
Infantile cerebral paralysis		792
Premature sexual development		42
AIDS, HIV-infected		578
Myocardial infarction (first six months)		270
Total		66,087

Source: Appendix 1 of the Karaganda Oblast Health Administration Order, 9/7/199

**ANNEX 6. TRACER DRUG PRICES IN PRIVATE RETAIL PHARMACIES IN
KARAGANDA OBLAST**

No.	Drug Product INN	Dosage	Form	Median Local Price per Unit	Median Intl. Price per Unit	% of Median Intl. Price	Min. Price	Max. Price
1	Ampicillin	250 mg	tab	0.039493	0.025000	158	2.75	15.00
2	Ascorbic acid (Vitamin C)	100mg	tab	.007246	.008900	81	.35	2.00
3	Acetylsalicylic acid	500 mg	tab	.014493	.011100	131	.90	14.00
4	Co-trimoxazole	480 mg	tab	.064674	.013600	476	7.45	29.75
5	Penicillin	2.4 ml U	inj	2.681159	.199000	1347	80.00	514.00
6	Gentamicin	80 mg	inj	.123188	.066300	186	1.90	195.00
7	Heparin	5000 U	inj	1.413043	.246800	573	41.00	240.00
8	Digoxin	0.25 mg	tab	.030435	.071400	43	2.17	5.00
9	Indomethacin	25 mg	tab	.015821	.003400	465	1.23	5.67
10	Glibenclamide	5 mg	tab	.017210	.004800	359	2.00	4.00
11	Metronidazole	250 mg	tab	.055254	.005900	937	3.00	10.00
12	Glyceryl trinitrate	6.4 mg	tab	.086377	.016100	537	7.80	12.80
13	Nifedipine	10 mg	drag	.026812	.015900	169	2.80	46.00
14	Papaverine	2% 2 ml	inj	.052536	.076600	69	5.50	10.00
15	Paracetamol	500 mg	tab	.082201	.003800	2,163	1.10	40.00
16	Prednisolone	5mg	tab	.021377	.009500	225	1.80	3.80
17	Propranolol	40 mg	tab	.013043	.019500	67	1.20	7.00
18	Salbutamol	200 doses	spr	2.536232	1.700000	149	36.00	475.00
19	Senna		tab	.017754	.010000	178	1.50	4.05
20	Sulfadimidine	500 mg	tab	.027174	.010900	249	2.50	7.00
21	Furosemide	40 mg	tab	.015000	.006555	229	1.20	9.17
22	Cimetidine	200 mg	tab	.050725	.011600	437	5.20	35.00

ANNEX 7. SELECTED STANDARD TREATMENT GUIDELINES

Standard Treatment Guidelines for Hypertension (KOMLDO Hospital)

Disease	Diagnostic Tests	Therapeutic Classes of Drugs and Treatment	Average Length of Stay	Outcome Criteria
Hypertension, Stage 1 Symptomatic Hypertension, Stage 1	Examination	Beta-blockers	7 days	Stable blood pressure at normal level
	ECG – 1	Calcium antagonists		Feeling better
	Blood test - 1	Diuretics		
	Urine test - 1	Sedative drugs		
	Blood glucose test – 1	Antihypertensive drugs		
	Urine Nechiporenko test – when needed	Lazerotherapy		
	Kreatinin test – when needed	Physical exercises		
	Beta lipoproteins –when needed	Admission to the hospital:		
	Liver tests – when needed	1. Crisis for the first time		
	Eye bottom - 1 time	2.Crisis with complications		
	X-rays of the chest – when needed	3.No effect at ambulance care		
	Isotopic renal tests –when needed	4.More investigation in the hospital		
	Ultrasound, kidney – when needed			
	Coagulogram – when needed			
	Echocardiogram – when needed			
	REG – when needed			
	EEG – when needed			
	Consultations – when needed:			
	Cardiologist – 1			
	Neuropathologist - 1			
	Psychotherapist – when needed			
Hypertension, Stage 2 Symptomatic Hypertension, Stage 2	The same as hypertension + consultation of angiosurgeon – when needed	Beta-blockers		Normalization or 15–20% decrease in blood pressure
		Calcium antagonists		Feeling better
		Diuretics		
		Vasodilators		
		Sedative		
		Lazerotherapy		

Standard Treatment Guidelines for Hypertension (KOMLDO Hospital) (cont'd.)

Disease	Diagnostic Tests	Therapeutic Classes of Drugs and Treatment	Average Length of Stay	Outcome Criteria
		Physical exercises		
		Admission to the hospital (see Hypertension, Stage 1)		
Hypertension, Stage 3 Symptomatic Hypertension, Stage 3	The same as Hypertension, Stage 2 The number of analyses is 1 to 2 times more, depending on symptoms	The same + haemosorbition and plasmaferes in the hospital		Blood pressure stabilization
	Consultation of specialists when needed (cardiologist, neurologist, angiosurgeon, urologist, nephrologist, endocrinologist)			Feeling better
Malignant Hypertension (according to Arabidze's criteria)	Examination	The same as Hypertension, Stage 3	14	Normalization of blood pressure
Hypertension in pregnancy	ECG –1			
	Blood test - 1			
	Urine test - 1			
	Urine Zimnicki test – when needed			
	Urine Nechiporenko test - when needed			
	Kreatinin- when needed			
	Eye bottom - 1 time			
	Echocardiogram – when needed			
	Ultrasound – kidney – when needed			
	Consultations - when needed:			
	Cardiologist – 1			
	Neurologist – 1			
	Gynecologist - 1			

ANNEX 8. ALL-RUSSIA DRUG INFORMATION NETWORK

An important component of the USAID-funded Rational Pharmaceutical Management Project, the All-Russia Drug Information Network (ARDIN), is comprised of 12 drug information centers.

1. The Drug Information Center at PHARMEDINFO, Moscow

Located within the PHARMEDINFO State Enterprise, the DIC serves as the coordinating center for ARDIN, and it is staffed by trained professionals who provide a variety of drug and health-care related services to the community, including those shown in the following table.

Activities	Contact Information
<ol style="list-style-type: none"> 1. Publishing the monthly pharmaceutical journal <i>Farmatsia</i>. 2. Maintaining a drug registration database for all drugs registered in Russia. 3. Planning and conducting seminars on new drugs and therapies, and drug utilization review. 4. Planning and organizing the annual "Man and Drugs" conference, which attracts more than 5,000 participants from Russia and other countries. 5. Developing formulary manuals. 6. Translating technical information from English to Russian. 7. Providing coordination and support to network sites. 	PHARMEDINFO Attn: Galina Shashkova Ul. Vucheticha, 12 Moscow, Russia 125206 Phone/Fax: (095) 2115356 E-mail: frmdin@dol.ru

2. The Drug Information Center at Moscow State Medical Academy

Located within the Pharmacy Faculty of the Moscow State Medical Academy, the DIC is staffed by trained academicians who provide a variety of drug and health-care-related services within the institution, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Teaching students in the Pharmacy school. 2. Preparing new manuals on current drug information. 3. Updating Pharmacy School curriculum. 4. Updating pharmacy textbooks and other educational material used within the Pharmacy School. 5. Providing drug information for Academy staff. 6. Providing postgraduate training for health care professionals. 	Moscow State Medical Academy Attn: Alexander Arzamastcev Nikitsky Boulevard, 13 Moscow, Russia 121019 Phone/Fax: (095) 2906926 E-mail: aap@dialup.ptt.ru

3. The Drug Information Center at Vladivostok Central Krai Hospital

Located within the Vladivostok Central Krai Hospital, the DIC is staffed by trained professionals who provide a variety of drug and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals and consumers. 2. Publishing bulletins on new drugs and therapies, drug utilization review, formulary development, and other drug-related topics. 3. Conducting seminars on drug utilization review and other drug-related topics. 4. Actively participating in the hospital formulary committee. 5. Collecting adverse drug reaction data, including follow-up information. 6. Providing data management and drug control for clinical trials. 7. Providing health care professionals with access to Russian and foreign medical databases. 8. Training interns. 	Vladivostok Central Krai Hospital Attn: Oksana Dmitrenok Ul. Aleutskaya, 57 Vladivostok, Russia 690000 Phone: (4232) 257725 Fax: (4232) 251288 E-mail: craevaya@online.vladivostok.ru

4. The Drug Information Center at Tomsk Cardiology Institute

Located within the Tomsk Cardiology Institute, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals. 2. Conducting seminars on new drugs and therapies and other drug-related topics. 3. Developing the hospital formulary. 4. Coordinating live, interactive e-mail conferences on new drugs and therapies. 5. Teaching rational drug use and rational pharmaceutical management to medical and pharmacy students. 	Tomsk Cardiology Institute Attn: Elena Karakulova Ul. Kievskaya, 111 Tomsk, Russia 634012 Phone: (3822) 558263 Fax: (3822) 558410 E-mail: druginf@cardio.tsu.ru

5. The Drug Information Center at Ural State Academy in Yekaterinburg

Located within the Scientific Library of the Ural State Academy in Yekaterinburg, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Publishing bulletins on new drugs and therapies and other drug-related topics. 2. Actively participating on the city and oblast formulary committees. 3. Organizing seminars on new drugs and therapies and other drug-related topics. 4. Providing drug information for health care professionals. 	Scientific Library of the Ural State Academy Attn: Sergey Kolotvinov Kluchevskaya Street 5A Yekaterinburg, Russia 620109 Phone/Fax: (3432) 425288 E-mail: svk@abacus.ru

6. The Drug Information Center at the St. Petersburg Pavlov State Medical University

Located within the St. Petersburg Pavlov State Medical University, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals, hospitals, and polyclinics in the greater St. Petersburg area. 2. Publishing bulletins on new drugs, new information on current drugs, drug utilization review, and other drug-related topics. 3. Conducting seminars on new drugs and therapies. 4. Actively participating on the hospital formulary committee. 5. Maintaining a Web site on current drug information. 6. Providing drug formulary development support for hospitals in other oblasts. 7. Providing postgraduate training for health care professionals. 8. Providing training to medical school students on rational drug use and on new drugs and therapies. 	St. Petersburg Pavlov State Medical University Attn: Oleg Karpov Ul. L. Tolstogo, 6/8 St. Petersburg, Russia 197019 Phone/Fax: (812) 2387102 E-mail: Phcentre@spmu.rssi.ru

7. The Drug Information Center at Ryazan Central Oblast Hospital

Located within the Ryazan Central Oblast Hospital, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals and consumers. 2. Developing and maintaining hospital and oblast formularies. 3. Producing television programs on drug-related topics. 4. Providing oblast health care professionals with guidance on formulary development. 5. Maintaining a drug overdose and poison-control database. 6. Maintaining a database of the drugs registered in Russia. 7. Maintaining an adverse drug reaction database. 	Ryazan Central Oblast Hospital Attn: Tatiana Dobrovolskaya Ul. Internatsionalnaya, 3A Ryazan, Russia 390039 Phone/Fax: (0912) 360332 E-mail: info@primula.ryazan.ru

8. The Drug Information Center at Ryazan State Medical University

Located within the Pharmacology Faculty of the Ryazan State Medical University, the DIC is staffed by clinical pharmacologists who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Publishing bulletins on new drugs and therapies, formulary development, and other drug-related topics. 2. Conducting postgraduate seminars for health care professionals. 3. Actively participating on the oblast formulary committee. 4. Revising Medical University curriculum to include courses on rational pharmaceutical management, e.g., tenders, formulary development, drug utilization review, and rational drug use. 5. Consulting in other oblasts on rational pharmaceutical management. 6. Providing drug information for oblast health care professionals. 7. Providing undergraduate training to medical and pharmacy school students. 	Ryazan State Medical University Attn: Valentina Makarova Ul. Visokovoltnaya, 9 Ryazan, Russia 391000 Phone: (0912) 767175 Fax: (0912) 760466 E-mail: makarova@pharm.ryazan.ru

9. The Drug Information Center at Novgorod Central Oblast Hospital

Located within the Novgorod Central Oblast Hospital, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals and consumers. 2. Publishing bulletins on new drugs and therapies, other drug-related topics, oblast regulations, and public health initiatives. 3. Conducting seminars on procurement and rational drug use and other drug-related topics. 4. Actively participating on the oblast formulary committee. 5. Preparing and maintaining the oblast formulary manual. 6. Conducting drug utilization review within the hospital. 	Novgorod Central Oblast Hospital Attn: Svetlana Egorova Kolmovo, d. 6 Novgorod, Russia Phone/Fax: (81622) 28407 E-mail: root@infmed.nov.su

10. The Drug Information Center at ASCO Insurance Company, Novgorod

Located within the ASCO Insurance Company, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals and consumers. 2. Publishing bulletins on new drugs and therapies, and other drug-related topics. 3. Conducting seminars on drug-related issues. 	ASCO Drug Information Center Attn: Maya Sviridenko Ul. Novoluchanskaya 28/1 Novgorod 173003, Russia Phone: (81622) 72530 Fax: (81622) 71562 E-mail: mfic@telecom.nov.ru

11. The Drug Information Center at Pskov Central Oblast Hospital

Located within the Pskov Central Oblast Hospital, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals. 2. Implementing and maintaining the oblast formulary and corresponding manual. 3. Publishing bulletins on new drugs and therapies and other drug-related topics. 4. Conducting drug utilization review for the hospital. 	Pskov Oblast Hospital Attn: Irina Demchenko or Andrei Nikolaev Ul. Maliasova, 2 Pskov, Russia 180640 Phone: (8112) 466489 Fax: (8112) 466423 E-mail: inpharm@opennet.pskov.ru

12. The Drug Information Center at Velikie Luki Central City Hospital

Located within the Velikie Luki Central City Hospital, the DIC is staffed by trained professionals who provide a variety of drugs and health-care-related services to the community, including—

Activities	Contact Information
<ol style="list-style-type: none"> 1. Providing drug information for health care professionals and patients. 2. Publishing bulletins on new drugs and therapies and other drug-related topics. 3. Actively participating on the hospital and city formulary committees. 	Velikie Luke Central City Hospital Attn: Igor Potapov Bolnichnaya, 10 Velikie Luki, Pskov Oblast, Russia 182100 Phone/Fax: (81153) 74484 E-mail: velmed@ellink.ru

ANNEX 9. EXCHANGE RATES

Kazakhstan Tenge = \$1

Month/1999	1995	1996	1997	1998	1999
	Average Rate				
	64.8	68.5	74.5	79.8	120.90
January					84.90
February					85.40
March					85.90
April					114.50
May					128.00
June					131.00
July					132.20
August					132.00
September					140.00
October					140.60
November					138.00
December					138.30

Notes: The median rate was used to calculate oblast budget figures and hospital drug purchases for 1999: **132**.

To calculate prices at retail pharmacies, the rate of \$1= tenge **138** was used because most drugs on sale in retail outlets in January 2000 were procured during November–December of 1999.

ANNEX 10. KARAGANDA OBLAST MORBIDITY PATTERNS

Karaganda Oblast Demographic Indicators

Karaganda Oblast Demographic Indicators, 1996–1999, and Kazakhstan Indicators, 1998

Indicator	Year				Kazakhstan 1998
	1996	1997	1998	1999	
Population, thousands	1,696.2	1,539.5	1,524.1	1,411.7	15,671.8
Birth rate	10.5	12.2	12.0	10.92	14.2
Mortality rate	12.1	12.3	11.8	10.71	9.8
Population growth	- 1.6	- 0.1	+0.2	+0.21	+4.4

Morbidity and Mortality

The most frequent causes of illness for outpatients (adults and children 0–14 years of age) in 1999 are shown in the following table.

Causes of Outpatient Illnesses in Adults, by Number and Percentage, 1999

Disease	Number	%
Respiratory	154,607	18.11
Gastrointestinal	112,837	13.22
Urinary tract	89,236	10.46
Cardiovascular	87,848	10.29
Mental disorders	57,599	6.75
Dermatological	54,444	6.38
Traumas and poisoning	53,239	6.24
Eye disease	51,671	6.05
Muscular and bone	39,880	4.67
Endocrine system	37,370	4.38
Infectious and parasitic	37,067	4.34
Nervous system	24,059	2.82
Ear disease	19,289	2.26
Tumors	15,037	1.76
Complications in pregnancy and delivery	10,018	1.17
Blood diseases	6,781	.79
Total	853,491	

Causes of Outpatient Illnesses in Children 0–14 Years of Age, by Number and Percentage, 1999

Disease	Number	%
Respiratory	16,8230	48.84
Eye disease	24,867	7.22
Dermatological	22,724	6.60
Nervous system	22,482	6.53
Gastrointestinal	16,274	4.72
Infectious and parasitic	16,228	4.71
Traumas and poisoning	13,763	4.00
Ear disease	11,400	3.31
Urinary tract	10,011	2.91
Blood	7,018	2.04
Mental disorders	6,771	1.97
Endocrine system	6,456	1.87
Cardiovascular	5,517	1.60
Congenital anomalies	4,687	1.36
Muscular and bone	4,640	1.35
Tumors	389	.11
Total	344,447	

Source: Annual Oblast Health Administration Report on diseases registered in outpatients (Form # 12), 1999

The following data were reported relative to most frequent causes of inpatient illness in 1999:

Causes of Inpatient Adults' Illnesses and Deaths, 1999

Disease	Discharged	Died	Total	%
Traumas and poisoning	18,374	484	18,858	10.84
Urinary tract	17,653	62	17,715	10.18
Cardiovascular	16,663	889	17,552	10.09
Gastrointestinal	15,761	271	16,032	9.21
Respiratory	12,482	113	12,595	7.24
Infectious and parasitic	10,630	312	10,942	6.29
Tumors	8,588	351	8,939	5.14
Mental disorders	8,783	0	8,783	5.05
Muscular and bone	8,773	8	8,781	5.05
Dermatological	6,606	10	6,616	3.80
Nervous system	4,704	35	4,739	2.72
Eye disease	2,979	0	2,979	1.71
Endocrine system	2,625	61	2,686	1.54
Blood	1,551	322	1,873	1.08
Ear disease	1,379	0	1,379	.79
Congenital anomalies	463	3	466	.27
Total	171,400	2625	174,025	

Causes of Inpatient Children's Illnesses and Deaths, 1999

Disease	Discharged	Died	Total	%
Respiratory	14,622	81	14,703	28.17
Infectious and parasitic	8,443	73	8,516	16.32
Gastrointestinal	5,067	2	5,069	9.71
Traumas and poisoning	3,473	28	3,501	6.71
Mental disorders	2,664	0	2,664	5.10
Urinary tract	2,420	1	2,421	4.64
Dermatological	2,420	0	2,420	4.64
Ear disease	1,506	0	1,506	2.89
Nervous system	1,405	4	1,409	2.70
Congenital anomalies	1,280	45	1,325	2.54
Endocrine system	891	3	894	1.71
Muscular and bone	766	1	767	1.47
Blood	743	1	744	1.43
Cardiovascular	622	2	624	1.20
Tumors	346	16	362	.69
Eye Disease	207	0	207	.40
Total	51,809	384	52,193	

Source: Annual Oblast Health Administration Report on hospitals' activity (Form # 14), 1999

NOTE: CHILDREN = 0-14 YEARS OF AGE

ANNEX 11. PHARMACEUTICAL FINANCING THROUGH INSURANCE: AN OVERVIEW OF HEALTH INSURANCE IMPLEMENTATION ISSUES

Daniel Kraushaar

Health Reform and Financing Program
Management Sciences for Health

This paper was written for the Rational Pharmaceutical Management (RPM) Project of Management Sciences for Health as input into its work on pharmaceutical insurance in Kazakhstan. The RPM Project, as part of a pharmaceutical sector assessment in a Kazakhstan oblast, is investigating the possibility of establishing a drug insurance system. This paper provides an overview of health insurance concepts and issues as input into the Kazakhstan assessment.

Understanding Health Insurance

Insurance is a social arrangement to reduce the risk of financial loss through the cooperation of many people or organizations. An individual can lose a great deal of money if an illness strikes, and illnesses are not easy to predict. An insurance carrier pools many people, calculates the value of each type of loss, calculates the proportion of members likely to suffer from that loss each year, and converts that proportion into a probability of loss for each individual. All subscribers pay into a common fund to cover the cost of their collective losses each year. In this way each individual will pay a fraction of the cost of serving everyone who gets sick each year.

From a community standpoint, health insurance is a social device for pooling people's money to meet certain losses resulting from sickness and accidents. Health insurance is implemented by transferring the risks of paying for health care from a sick individual to a group of enrolled members.

From an individual standpoint, health insurance is a "contract" or "statutory right" whereby, for a stipulated amount of money (premium contribution), the insurer agrees to pay for care provided to a member. The care must be part of a defined benefits package, in a prespecified amount, upon the occurrence of an illness.

The key features of insurance are prepayment, risk pooling and risk transference, and indemnification. Health insurance is frequently misunderstood in countries outside Western Europe and the United States. Health insurance is not a savings account, not a pension fund, not life insurance, not a "rebate" system, not public assistance, and not unemployment insurance.

Any health insurance scheme has four actors: the member/subscriber, the provider, the insurer, and the government. In some instances, there are combined functions. For example, the insurer can also be the government.

There are three basic types of insurance schemes: indemnity schemes, preferred provider schemes, and managed care plans.

Indemnity schemes are plans that pay any licensed provider for any covered services provided to program subscribers usually on the basis of the provider's standard fee schedule.

Preferred provider schemes are plans that pay for covered services provided to subscribers by a defined network of health care providers who contract with the insurance program to provide services for a defined fee schedule.

Managed care plans are plans that provide services within a defined network of providers who are given the responsibility to manage and provide quality and cost-effective health care to an enrolled population on a prepaid basis.

In summary, insurance is built on a number of basic concepts:

- Insurance is supposed to cover the risk of large and uncertain losses, not for small and infrequent ones.
- The risk of financial loss must be insurable according to several criteria:
 - A large number of people must face the same risk, and actuarial methods can be used to calculate the probability of getting sick for each class of person insured and the cost of an event of illness and the resulting premium.
 - The loss can be priced exactly and the underwriter can calculate a premium accurately. The subscriber accepts payment as final and the insurer can determine that the loss actually occurred and can be held liable for a claim.
 - The occurrence of the loss is basically random, it is not certain to occur to everyone, a person cannot collect cash from the insurance pool for other purposes (fraud), and if the loss occurs to too many members, the insurance pool can be depleted and bankrupted.
 - Any loss must be reasonable. If losses are expensive or beyond expected costs, the loss must be an infrequent event and the risk pool must be large. Trivial losses are not covered because claims administration would be prohibitive.
- There is a pool of money contributed to by subscribers who prepay regular contributions.
- The contributor is entitled to full benefits whenever he or she needs care.
- The contributor's benefits are generally not related to the size of premium paid (individual contributions).
- The many small contributions must cover the large cost of services for the few who need care.

- The payment of premiums is a flat rate amount determined by the cost of everyone's utilization of services (community rating) or the expected cost of each individual's utilization of services. Expected costs are generally actuarially determined.
- Membership in "private" insurance schemes is voluntary and public regulations are few.
- Membership in "social" or national insurance schemes is compulsory and government regulations are many.
- Government will generally regulate insurance schemes. Regulations can govern subscription rates, benefits, accounts, and organizational management of the scheme.

The role of government in obligatory (often national) schemes is important. Governments may require certain occupations to join funds and may dictate how employees and employers are to pay into an insurance fund. For example, they may dictate that premium payments should be done by payroll deduction. Governments may also provide subsidies to insurance schemes to cover the cost of insuring those who cannot afford to pay the required premiums.

Government most always regulates insurance schemes. The role of regulation is to protect the consumer from fraud, profiteering, and scheme bankruptcy, and to ensure fair competition between insurers if more than one scheme is competing for members. Regulations can be proactive, attempting to influence future developments. Or, regulations can be retroactive, attempting to correct existing problems. In general, the major areas of regulation may include organization and licensing, solvency of schemes, policy reform review, premium rate review, provider contracting and payment, and medical management.

Ownership of insurers can vary from country to country. Some country programs are owned by cooperatives or mutual assistance funds, trade unions, commercial insurance companies, governments, or in the case of for-profit schemes, by the scheme's stockholders.

The financial resources that are pooled and used to pay providers for services can come from a variety of sources including the following:

- Premiums paid by members
- Payroll taxes
- Subsidies
- Transfers among funds
- Special taxes

When members are in need of services, the cost of services is covered in three ways:

1. *Cash benefits.* The insurance program pays a fixed amount to the member/subscriber, perhaps varying the amount by risk. Payment may not be explicitly reserved for paying for a specific loss (cost of illness).
2. *Direct services, such as drugs.* The insurance fund owns and operates the clinics and employs staff, and members are provided services (drugs) from the clinics.

3. *Scheduled benefits: service benefits or reimbursement.* The insurance fund pays the medical bills of providers when the subscriber obtains services. There are two kinds of scheduled benefits.
- First is a “service benefit” in which the provider bills the insurance company and the insurance company pays the provider. No money goes from the member to the provider. This is called an “indemnity” payment system.
 - The second type is “cash benefit” where the provider bills the member, the member pays, and the member requests reimbursement in whole or part from the insurer. Cash benefits almost always involve patient cost sharing.

Different insurance schemes call for different relationships between the member and the health provider. There are two basic relationships:

1. *Reimbursement of the patient.* If a cash benefit system is implemented, the insurer has no direct relationship to the provider. The patient submits receipts for services to the insurer and the insurer reimburses the patient. The insurer pays the member according to an indemnity schedule, while the doctor may charge whatever he or she likes according to each doctor’s fee schedule and each patient’s ability to pay. This method survives in the private health insurance market, but infrequently exists in social insurance programs.
2. *Direct payment.* In most countries with mandatory insurance schemes, the insurance schemes pay the providers directly according to a fixed fee schedule and at predetermined rates. Providers send their claims to the insurers and obtain their payments directly. There is little or no cash transaction between the member and the provider.

Risk Management in Insurance Schemes

Risk management includes all the strategies a government or insurer will implement to ensure that utilization under the scheme is appropriate, costs are contained, and quality is high. Risk management has many dimensions including underwriting, marketing, administration, program design, protocols, provider selection and contracting, provider payment systems, utilization management, and quality assurance.

Underwriting includes the rules that determine who is eligible to enroll in an insurance scheme. The goal of underwriting is to have an enrolled population that is broadly representative of the community and one that represents an insurable risk. Underwriting requires that the scheme identify valid groups and know the size of the group, the percentage of the group that will join the scheme, and how soon it will join. Underwriting techniques include defining the groups to be insured, their size, the minimum percentage that must join a scheme, the minimum employer contribution, the stability of the group, and its geographic location. Techniques employed include questionnaires, medical testing, use of exclusions of preexisting conditions, waiting periods, and so on.

Marketing includes advertising, communication, sales, and other activities geared to reach and enroll members. Issues include which market segments will be targeted, who will handle sales, and how to target the scheme to potential members.

Administration is the application and enforcement of product terms and conditions with the goal to ensure that covered benefits are provided to eligible subscribers. Issues include verifying eligibility and verifying coverage.

Program design is aimed at determining the type of services to be offered and level of coverage with the goal of fashioning a design that encourages delivery of the most appropriate care at the lowest cost. Key issues include the objectives of the scheme, the population to be covered, access and expected use of services, organization of services, payment mechanisms, cost estimating and financing, administration, and management.

Protocols are the program rules that must be followed by members and providers in order for services to be covered under the scheme. The goal is to ensure that all proposed services to members are reviewed and found necessary. Issues include how to ensure that care is really necessary and that it is provided in the most appropriate setting.

Provider selection involves the process and criteria used to select providers who would be appropriate and willing to participate in an insurance scheme. The goal is to select an adequate number of high-quality, cost-effective providers with market appeal.

Provider contracts are the agreements between the insurance scheme and the selected providers that define the terms and conditions of the providers' participation. Issues include defining provider responsibilities, plan responsibilities, payment method and level, how to handle amendments and disputes, and termination.

Provider payment methods include payment terms, unit of service, level of payment, method, and adjustment of incentives. The goal is to establish a payment system that has fixed and predictable fees and incentives to contain costs. Issues include how to define the unit of service, how to set the level of payment, how to adjust levels, and what type of incentives to include and how.

Utilization management includes the analytical and review activities that ensure that use of services is necessary and appropriate with the goal of ensuring that care is medically necessary and provided in the least costly setting. Issues include what to review, what method to be used, and who should do the reviewing.

Quality assurance includes the activities used to ensure that plan providers are qualified and that care and services delivered to subscribers are of good quality. The goal is to make sure that care meets standards and that patient satisfaction is high.

Differences among Various Insurance Schemes

Insurance schemes can vary in basic ways. Some of the differences among the schemes are described here.

Social Solidarity vs. Individual Responsibility

Private indemnity health insurance has a focus on the individual. A subscriber determines his or her own probability of becoming sick and buys a policy to cover the cost of that potential illness. The premium is actuarially determined and based on the probability of that person needing health services. Persons with like risks are given similar premiums and benefit packages.

Compulsory health insurance aims at improving social solidarity and has a redistributive effect. It requires that people join insurance schemes; premiums are determined and then collected as a fixed percent of salary. Since payroll taxes vary with income, higher paid individuals pay more than do the poor. Compulsory insurance has the following characteristics:

- Law determines who must be covered and allows others to join voluntarily. All insurers must accept any and all eligible subscribers.
- Premiums are determined regardless of risk and usually are based on a percentage of income.
- All subscribers are equally entitled to all benefits.
- Insurers cannot ask for additional payments from subscribers.
- Government regulates and occasionally subsidizes the schemes.

In traditional insurance, the premiums for high-risk subscribers are generally higher, while those who are healthier enjoy lower premiums. This adverse selection often results in a spiral of higher costs and higher premiums for higher risk subscribers. These private or traditional insurers often leave a substantial portion of the population without insurance. Social insurance is compared with private insurance in Table 1.

Table 1. Social Insurance vs. Private Insurance

Social Insurance	Private Insurance
Compulsory	Voluntary
Benefits prescribed by law (statutory right)	Benefits established by legal contract (contractual right)
Minimum floor of income protection	Depends on individual desires and ability to pay
Emphasis on social adequacy (solidarity element)	Emphasis on individual equity (insurance element)
No or little underwriting. Premiums specified as a percentage of wage or income	Premium based on individual underwriting (experience rating) or group underwriting (community rating)
Usually a government monopoly	Competition
Cost difficult to predict	Costs more predictable
Full funding not needed because of compulsory contributions and frequent government subsidy	Must be fully funded and financially independent and solvent
Investments in national government obligations	Mainly private investments
Taxing power available to combat inflationary erosion	Greater vulnerability to inflation
Widespread differences of opinion regarding	More uniform opinions regarding objectives and results

Different Interests

Members, insurers, and providers all have different interests. Members want the greatest coverage (benefit package) at the lowest premium. The insurer wants to maximize premium revenue and reduce losses and claims. The provider wants maximum income. These three self-interests can be in conflict with each other and so each scheme must acknowledge these interests and be prepared to deal with potential conflicts as they occur.

Financing Health Insurance

Private health insurance is generally paid for by subscribers who individually pay his or her premium directly to the insurer. Compulsory insurance premiums are generally paid through payroll deductions and payroll taxes. There are five general forms of payment that can be considered:

1. *Capitation payments from each subscriber.* The same amount would be collected from each subscriber regardless of income, risk, or other traits.
2. *Flat-rate contributions to cover the individual subscriber's risk.* Individual premiums would be calculated for each subscriber based on individual risk assessment. Another option is that entire groups are formed to join a scheme and everyone in that group would be levied the same premium. The group's past claiming history could be used to determine an "experience" rated premium amount.
3. *Proportion of income.* Everyone would be charged an equal proportion of income.
4. *Special taxes.* Some countries use special taxes levied for the purpose of generating revenue to finance insurance schemes: taxes on automobiles, tobacco, and alcohol.
5. *Premiums paid by employers.* Some schemes are financed by a combination of employee and employer contributions. An insurance "tax" on employers is criticized because it may have an adverse effect on the economy. Employers may not hire staff or hire only lower paid staff to reduce their insurance contributions. Payroll taxes also tend to penalize labor-intensive industries.

Flat-Rate Contribution Systems

There are three types of premium systems that could be considered for individuals:

1. *Average-risk premiums.* The same premium is charged to everyone based on an average risk. Average-risk premiums are often called "community-rated" premiums.
2. *Graduated premiums.* Premiums would be based on a number of variables that could include age, sex, level of benefits, occupation, health status, or the amount of cost sharing.

3. *Level premium.* The premium depends on age with everyone of the same age paying the same premium. The premium may stay the same for life once the person joins. Rate increases apply to all subscribers.

Community-rated and graduated premium-based insurance schemes are often called pay-as-you-go schemes since they are self-financing. Current revenue pays for the cost of current benefits plus overhead costs. Small reserves may be necessary and are often called “contingency reserves.”

Government Subsidies

Compulsory social insurance schemes are often subsidized by government in order to guarantee equal access and equal benefits regardless of ability to pay. Subsidies can flow in at least three ways:

1. *Grants to insurance schemes.* Block grants are used to cover the cost of those subscribers who pay little or no premiums, to make up for the absence of income from other sources, to cover certain administrative costs of the scheme, or to cover the cost of public and preventive health services.
2. *Grants to providers.* Some grants could be used to cover the capital costs of service delivery, allowing schemes to reduce premiums since premiums would not have to cover the full cost of care.
3. *Payments for the poor.* Some government grants are used to provide funds to cover the premium costs for the poor.

Reinsurance

Reinsurance is the practice of having an insurance company insuring its own risk of catastrophically expensive claims. In this manner, multiple insurers pool their risks and purchase separate insurance to cover unexpected losses caused by epidemics or other factors.

Drug Benefits Under Insurance

Most countries regulate the drug market either by setting prices, maintaining a drug formulary, protecting the public from dangerous drugs, or protecting the public from excessive earnings of providers. Many schemes adopt a limited list of drugs that are thought to be most cost-effective and appropriate. Drugs outside this list may be purchased separately by subscribers, but are not covered under insurance schemes.

Cost sharing is also common in insurance schemes. Cost sharing can take the form of copayments, coinsurance, or user fees at time of service delivery.

Governments generally regulate pharmaceutical benefits under insurance in the following ways:

- Licensing of providers (pharmacists, prescribing physicians, drug stores)
- Approvals for the number and type of drugs that can be covered
- Development of “negative lists” of drugs that cannot be covered
- Development of national formularies, essential drug lists, and generic drug policies
- General price controls

Paying the Provider (Pharmacist, Druggist, Physician, Hospital)

Provider payment systems are either retrospective or prospective. In retrospective systems, providers seldom have any financial risk for the services they provide. Prospective systems, however, frequently place providers at some financial risk.

Below are outlined a number of ways that providers can be paid under insurance schemes. Each method has its strengths and weaknesses as well as its underlying provider and subscriber incentives. The different payment options include the following:

1. Fixed salary
2. Charges
3. Discounted charges
4. Cost
5. Fee schedules
6. Fee schedules with incentives
7. Capitation

Fixed Salary

Providers are paid a salary that does not depend on the number of patients seen or the volume of services provided.

Strengths and Weaknesses

- The plan is easy to administer.
- Salary levels may be politically sensitive.
- Providers may play off each other.
- Little reason exists for the provider to control cost.
- Weak incentives exist for the provider to maintain quality. More patients imply more work for no more income.
- The plan provides no incentives for overtreatment.
- The plan provides incentive to undertreat. The provider earns the same salary regardless of work done.

Administrative Requirements

- Administrators must determine appropriately salary levels.

Related Cost-Control Mechanisms

- None

Variations

- None

Charges

An insurer pays the provider for each unit of service at a rate determined entirely by the provider. There is no limit on the amount the provider may charge, nor on the units of service that may be delivered, nor on the rates of increase in charges. The charge must be the same charge made to the general public.

Strengths and Weaknesses

- The plan is easy to administer
- No control is placed on demand for services.
- A strong incentive exists for unnecessary care.
- The plan is inflationary.
- The total cost is unpredictable.

Administrative Requirements

- Multiple claims are costly and increase overhead.

Related Cost-Control Mechanisms

- None exist beyond eligibility controls.

Variations

- The insurer can obtain a profile of usual and customary fees received by physicians.
- Case payment varies.
- A single flat rate may be paid regardless of diagnosis.
- Payment may be based on a schedule of diagnoses.

Discounted Charges

An insurer pays the provider for each unit of service at a negotiated discount from usual charges negotiated between the provider and the insurer. There is no limit on the base charge, nor on the units of service that may be delivered, except that the base charge must be the same charge made to the general public.

Strengths and Weaknesses

- The plan is easy to administer.
- The plan lowers unit cost.
- No control is placed on demand.
- A strong incentive exists for unnecessary care.
- The plan is inflationary.
- The cost is unpredictable.

Administrative Requirements

- None

Related Cost-Control Mechanisms

- The plan is sometimes used with prospective and retrospective utilization review.

Variations

- The rates of increase in charges are sometimes controlled.
- Case payment varies.
- A single flat rate may be paid regardless of diagnosis.
- Payment may be based on a schedule of diagnoses.

Cost

An insurer pays the provider the cost of providing covered services to enrolled members. This plan is most often used with hospital services. The most common approach is to make interim payments based on an estimated cost and then to make a final settlement after actual costs are determined.

Strengths and Weaknesses

- The plan guarantees the hospital does not lose money.
- The plan ensures that only the costs of providing service and other negotiated amounts are paid.

Administrative Requirements

- A standard chart of accounts and cost-finding rules is needed.
- Auditing capacity is needed.

Related Cost-Control Mechanisms

- The plan is sometimes used with prospective and retrospective utilization review.

Variations

- When the maximum allowable cost is provided, the plan does the following:
 - Creates incentive for efficiency
 - Locks the facility into historical position
 - Limits recapture of savings by the insurer
- When a negotiated prospective budget is used, the plan does the following:
 - Requires accurate forecasting of demand
 - Gives the facility control of resource allocation within the budget
- A global budget must be written.
- Case payment varies.
- A single flat rate may be paid regardless of diagnosis.
- Payment may be based on a schedule of diagnoses.

Fee Schedules

An insurer pays a negotiated fee for each unit of service. Fees may be the same for all providers or may vary by provider. Fees may be global (for a defined set of services).

Strengths and Weaknesses

- The plan is relatively easy to administer.
- The plan makes it easy to control price increases.
- Global fees create incentives for efficiency.
- Incentives exist to increase utilization.

Administrative Requirements

- Fee schedules and per diems are easy to administer.
- Resource-based relative value scale (RBRVS) and diagnosis-related groups (DRG) weights require significant data and analysis to establish, but are commercially available.

Related Cost-Control Mechanisms

- Admission and length-of-stay review are usually performed in per diem payment systems.
- Admission review is only performed in per case payments.

Variations

- The RBRVS may be the basis for the fee schedule for physicians.
- The system of per diem payments for hospitals has the following characteristics:
 - Easy to administer
 - No incentive to shorten length of stay (LOS)
 - Not easy to adjust the case mix
- The system of per case (DRG) payments for hospitals has the following characteristics:
 - Limits incentives to increase services
 - Strong incentive to shorten LOS
 - Allows accurate comparisons of costs between hospitals
 - Strong incentive to increase admissions
 - The fee schedule may be capped.
- The fee schedule may be capped with withholds or incentives.
- Case payment varies.
- A single flat rate may be paid regardless of diagnosis.
- Payment may be based on schedule of diagnoses.

Fee Schedules with Incentives

Physicians are paid using fee schedules, but are eligible for bonus payments or penalties based on how well they manage their patients' care against a medical budget. The medical budget reflects the total cost (price times utilization) of medical care. Bonuses or penalties can also be applied against salaries.

The medical budget is the amount that, on average, it will take to provide customary medical care for a certain population. The average medical budget for a particular physician is adjusted to reflect the unique risk level associated with his or her patients (measured by age and sex) and events beyond his or her control.

Strengths and Weaknesses

- Incentives exist to stay within the budget.
- Incentives exist to retain the patient and maintain the patient's health.
- The medical budget must be accurate to be effective.
- The insurer still has the majority of the financial risk.
- The plan can provide an incentive to underserve patients.

Administrative Requirements

- The plan requires that the patient enroll with a particular physician.
- The plan requires that doctors be given data on costs and use rates.

Related Cost-Control Mechanisms

- The physician has the primary responsibility for managing care; the insurer may review high-cost care (hospital admissions, costly drugs).

Variations

- The doctor is paid on a fee schedule with no withhold provisions and is eligible for additional payments above the fee schedule if under budget.
- Doctors are salaried and compensation is withheld or bonuses are paid as adjustments to salary.
- The fee schedule may be capped.

Capitation

Direct payment of a fixed budget each month to a physician or group of physicians to pay for some or all of the medical care of a specified enrolled population. The physicians are responsible for either providing the care themselves or purchasing it on behalf of their patients.

Strengths and Weaknesses

- The plan makes the doctor very sensitive to the total cost.
- Strong incentives exist for cost-effective referral.
- Appropriate risk adjustment is difficult to do.
- The plan requires new focus and skills by physicians.
- The level of risk may be inappropriate for small groups of physicians.
- The plan creates a strong incentive to underserve.

Administrative Requirements

- The plan requires that patients enroll with physicians.
- The plan requires that doctors be given data on costs and use rates.
- The plan requires good data to set medical budgets.

Related Cost-Control Mechanisms

- The physician has the primary responsibility for managing care; the insurer is responsible for reporting on physician performance.

Variations

- The medical budget may apply only to services provided directly by the physician.
- The medical budget may apply to all medical services.
- Reinsurance may be purchased to insure the providers against uncontrollable risk and limit their financial exposure.
- A fixed rate may be set per member per month (PMPM).
- The PMPM rate may be based on age and sex of member.
- The payer may offer a percentage of the insurance premium it charges members.
- A capitation system with risk withholds may be used.

Cost Issues

Various methods can be employed to attempt to keep the cost of a drug program as low as possible.

Member/Patient Cost-Sharing Arrangements

Cost sharing can be used to divide the cost between the insurer and the users, to discourage unnecessary demand for drugs, to remind doctors to be economical, to motivate patients to ask for lower cost alternatives, and to discourage patients from wasting drugs.

Patient cost-sharing payment methods may include the following:

- *Prescription charge.* This method requires the patient to pay a fixed amount for an entire prescription written by a doctor and dispensed by a pharmacist, regardless of the number and type of drug received. The difference between the prescription charge and the full cost is paid by the insurer.
- *Copayment.* Here the patient pays a fixed amount for each medication regardless of its cost.
- *Coinsurance.* This method requires that the patient pay a percentage of the full cost of the drugs.

A variation to those methods could be the exemption of the poor or pensioners from some or all of the costs. Some illnesses might be made exempt from some copayments, and certain disease conditions could be exempt. If exemptions were put into place, government subsidies would generally be needed to cover the costs.

Utilization Review

Utilization review is often carried out to profile heavy prescribers and heavy drug users under insurance schemes. While statistical profiles of providers are common, profiling patients is less frequently done.

Cost Containment

Cost escalation is one of the key issues under any insurance program and can be addressed through a number of mechanisms. The primary causes of cost escalation are: (1) the general level of inflation in prices and wages; (2) extra price increases charged by health providers; (3) larger demand because of the growth and aging of the population; (4) increased utilization per capita; and (5) greater intensity of services per contact.

Government rate regulation has been attempted to control provider costs, but this method alone does not deal with all causes of cost increase. Other attempts have been tried to limit the annual increases in provider fees and hospital charges. Other attempts, such as the use of diagnosis-related groups, utilization review, managed care, market incentives, differential fee setting to encourage use of certain providers, capitation payment, and global budgets have been made. The general trend is to place providers at some financial risk.

In insurance schemes for drugs and pharmaceuticals, the factor likely to affect costs will be the method under which providers are paid. If providers are paid by the number and type of drugs prescribed, then providers will tend to prescribe more drugs at higher prices in order to obtain higher incomes. In this case, review of prescribing patterns (utilization review) and implementation of essential drug lists may be necessary to control costs. If providers are paid on the basis of a global budget, then the tendency will be to have providers reduce the level of prescribing since their income is based on the difference between cost of drugs prescribed and the global budget. In this case, costs may be lower, but a review of appropriateness of prescribing may be necessary to make sure that enough drugs are being prescribed.

In general terms, there are a number of different methods of cost containment that could be used:

1. Limiting the total volume of resources by one of the following:
 - Government regulation of providers
 - Collective contract between all providers and all payers
2. Limiting prices by one of the following:
 - Regulation of rates by government or by independent commission
 - Collective contract between all payers and each (all) provider(s)
3. Limiting the utilization of services by the following:
 - Prior authorization from payers or regulators
 - Statistical monitoring of utilization and management by exception
 - Patient incentives to minimize provider visits and consumption of materials
 - Requirement that patients share in the cost of care
4. Limiting the total amount of money available by one of the following:
 - Paying providers by capitation
 - Uniting all payers under a budget ceiling
 - Paying providers by global budget

There are many examples in the United States of attempts to control costs in health maintenance organizations and other managed care arrangements through the use of provider incentives and alternative provider payment methods.

Problems Associated with Insurance Schemes

Implementation of insurance schemes is difficult. Many of the implementation problems are common across countries and bear outlining here.

Adverse selection. If membership in an insurance scheme is voluntary, those people who are in greatest need of care are more likely to join the scheme.

Moral hazard. Once people join a scheme, they tend to use more services than do people who are not part of a scheme. Overutilization is one of the biggest threats to any insurance scheme and one of the single greatest contributors to cost escalation.

Cost escalation. As mentioned earlier, many factors on both the supply and the demand sides tend to increase costs. Lack of understanding of those causes and the means of controlling costs is a threat to implementing any health insurance scheme.

Reverse government subsidies and inequities. Many countries have attempted to implement health insurance schemes. To entice people to join, governments tend to provide more inputs into insurance schemes. Those who join are often those who can already afford to pay for health services and, in the end, they tend to consume more government-financed health resources. In some instances, this situation takes away resources from those who are less fortunate. In effect, there is an increased government subsidy to the well-off population, and a decreased subsidy to the poor.

Dual standard of care. Many insurance schemes operate alongside standard services to the general population. In some countries, the services to the insured are far better than services to the general population, resulting in a dual standard of care in the same health institution.

Inappropriate incentives for health workers. Some insurance schemes provide incentives to providers that are counterproductive. For example, a fee-for-service provider payment method encourages providers to provide more services and to provide services that are of higher cost. It also encourages providers to see patients more often since greater volume means higher incomes.

Small risk pools. Insurance only works when an adequately large number of people join the scheme (large risk pool). Many schemes start out with a small number of members. The result is that there is a small group paying premiums and therefore a small financial pool with which to pay for services rendered. The result is that any large loss can bankrupt the program. Mandatory schemes are not generally threatened by small risk pools.

Unlimited benefits. In order to entice people to join schemes, many new schemes promise a large and diverse (and expensive) benefit package. The scheme's organizers often do not understand the cost of services and expected utilization by members. The result is a scheme that is not financially viable from the outset.

"Bank account" mentality. Many subscribers, once they join the scheme and pay their premium, feel that they are entitled to the maximum benefit that the scheme allows. They do not understand the concept of risk pooling. If they do not use any services at the end of the year, they ask for their premium back. Or, if they have not used services toward the end of the year, they will increase their use in order to consume services up to the value of their benefit package. This lack of knowledge of insurance concepts on the part of subscribers is a threat to any scheme.

Political interference. Government-mandated schemes are often pressured by governments to include more benefits and reduce premiums in order to obtain short-term political favor.

Lapsed membership. In some schemes, people will join a scheme and then, when the level of benefits is not satisfactory, or when it is time to pay the premium, they drop out of the scheme. Member turnover is expensive and makes the pooling of risk difficult to monitor.

Inadequate monitoring and controls. One of the biggest problems facing insurance schemes is their inability to monitor implementation. Governments are often unable to monitor the costs and effects of large-scale insurance schemes, and the schemes themselves often are unable to monitor provider and member behavior as well as insurance scheme costs over time. When problems become obvious, it is often too late to affect change.

Questions That Should Be Asked before Embarking on an Insurance Scheme

Governments or individuals interested in implementing insurance schemes of any type should ask themselves a number of questions.

Questions to Be Asked of Government

1. What are the country's health policy objectives?
2. Could the objectives be achieved by changes in the financing system?
3. Could these objectives be achieved by targeting additional resources for health services?
4. If yes, how many more resources?
5. Is government prepared to allocate this amount of resources?
6. Is government convinced that health insurance will bring more resources to health?
7. Are policy makers and legislators oriented to health insurance concepts and issues?
8. What types of insurance (health and other) already exist? What have been the positive and negative experiences in implementing these existing schemes?
9. Do historical or cultural conditions allow for the introduction of health insurance?
10. What is the current level of payroll deductions from payroll and is it sensible to impose further charges?
11. How can insurance coverage be expanded without subsidizing its purchase to the extent that government does not end up concentrating even more of its limited resources on a relatively well-off segment of the population?
12. Is the formal sector large and is it feasible and economical to collect health insurance contributions from this group?
13. Has the potential net increase in resources for health through the introduction of health insurance financing been assessed? Does the potential gain in resources justify the effort?
14. Is there a core of well-educated administrators who could be trained to operate a health insurance scheme?
15. Is there a legal framework that would support the development and implementation of health insurance?
16. Do existing administrative structures and procedures offer mechanisms for collecting contributions?
17. Is there an adequate health services infrastructure to ensure that fund members will have access to providers and benefits to which they are entitled?
18. Will the scheme be able to recruit and support the cost of services to all population groups? Who should be covered by insurance and have equity considerations been taken into account?

Questions Concerning the Design of Schemes

1. Have the benefit entitlements been publicly accepted?
2. Have the organization and financing of staff to implement the program been considered?
3. Have target populations been mapped, numbered, and documented?
4. Is it feasible to register and collect contributions from these target groups?
5. Have patterns of risk and disease in the target groups been analyzed?
6. Has an assessment of target groups' ability to pay contributions been assessed?
7. Has it been decided which groups in the population will be covered first?
8. Have checks been made for possible overlap with the services available from other funders and providers?
9. Do providers of services have an appropriate legal status to allow them to enter into contracts with health funds?
10. Are structures in place to monitor and regulate health care providers?
11. Is there a strategy for generating health care information and financial information?
12. Have alternative provider payment options been reviewed? Will the chosen provider payment methods limit cost escalation and other inappropriate provider and member incentives?
13. How will the health funds be governed? What will their relationship be to government?
14. Has the experience from other countries been considered in the design of this scheme?
15. Have these experiences been discussed with interest groups?
16. Is there consensus among all interested and appropriate parties on the planning, design, and implementation of the proposed scheme?

Questions Related to Pharmaceutical Financing and Insurance

1. What is the total per capita drug consumption from all sources?
2. What is the percentage breakdown of drug spending by source?
3. What percentage of total spending do imports represent?
4. Are user charges already being implemented in government facilities?
5. Is revenue being used as a revolving fund?
6. Is there a reliable and continuous source of pharmaceuticals?
7. What has been the experience in implementing revolving drug funds?
8. What percentage of government drug expenditures is recovered from user fees?
9. What types of health insurance already exist?
10. What percentage of those already covered by insurance have a drug benefit?
11. What methods exist for supply and payment for drug benefits?
12. What are the plans for covering unanticipated increases in procurement costs caused by inflation and changes in exchange rates?
13. How will the scheme deal with unanticipated losses of drugs through theft, deterioration, or expiry?
14. Is there an essential drug list that will be used by the insurance scheme? Does it include generics?
15. Is there a generic drug policy?

16. Do provider treatment protocols exist that could be used to monitor prescribing practices by providers?
17. Is there a source for capitalizing a pharmaceutical insurance scheme?
18. Do mechanisms for drug utilization review exist?

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