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ENSURING ACCESS TO QUALITY
HEALTH CARE IN CENTRAL ASIA

Access to Health Care in Rural Ferghana Oblast, Uzbekistan

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Tashkent, Uzbekistan

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I. Acknowledgements

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II. Abstract

Since independence in Uzbekistan, inefficiency, lack or resources and reduced budgetary commitments, have led to increased out-of-pocket payments for healthcare. One of the goals of the Government's health care reform is to increase access to high quality primary health care facilities, especially among the poor.

In this study, ZdravPlus takes a sample of families and individuals in three rayons of Ferghana Oblast, in which health reforms have been implemented, and three where reforms have not been implemented (used as a control). The study finds that there are significant barriers to access for the poorest quartile of households, related to a tendency to report and refer illness less frequently and subsequently to pay lower out-of-pocket amounts, which translates into poorer quality of care.

At present no significant differences are observable between rayons where reforms are taking place and those where they are not, although it is anticipated that as reforms continue, poor households will be able to meet more of their health care needs in the lower cost primary care sector and overall access will be improved.

III. Executive Summary

The Government of Uzbekistan has been implementing a health reform demonstration in three rayons of Ferghana Oblast since 1998, with technical assistance provided by USAID/ZdravPlus. One of the goals of the reform program is to increase access to high quality primary health care services, particularly among the rural poor. Access to high quality, affordable primary health care in Uzbekistan has been undermined by the combination of the inefficient structure of the inherited health care system and the decline in resources during the transition period. In particular, reduced government budgetary commitments to health care during the transition have led to increased out-of-pocket payments for health care services.

This study provides a cross-sectional picture of access to rural primary health care (PHC) based on a household survey one year into implementation of primary health care reforms. This study is intended to serve as a baseline for future evaluation of the impact of reforms on the utilization of PHC and improvements in health status of the rural population. The data come from a household survey of 1,204 households and 7,148 individuals, from six rayons in Ferghana Oblast: three where primary care reforms are being implemented; and three that have not yet implemented the full package of reforms and therefore serve as "control" rayons.

The results of the study raise concerns about the impact of out-of-pocket payments for health care on access to care for the poor in rural Uzbekistan. Although the vast majority of households in the sample can be considered poor, and the variability in income in the sample is low, there do appear to be significant differences in access to health care, particularly among the poorest 25 percent of the sample whose cash income is extremely limited.

The poor in this sample appear to have significant barriers to obtaining necessary, high-quality health care based on four main observations. First, poor individuals are less likely than individuals from wealthier households to report illness. This pattern is particularly significant among poor males. Second, the poor are also less likely to seek care once an illness is reported, and when they do seek care they pay less out-of-pocket on average than wealthier individuals. To the extent that higher out-of-pocket payments make higher quality of care available, the poor also may be receiving lower quality of care. This is supported by the third observation that poor individuals seeking health care are less likely to have drugs prescribed, less likely to buy drugs that are prescribed, less likely to be referred to a specialist, and less likely to be hospitalized. The poor also perceive that they received less attentive treatment. Finally, the fourth observation from the study is that it is highly probable that out-of-pocket payments for health care put poor households at high risk of falling deeper into poverty, as an episode of illness consumes nearly all of reported cash income.

The results also show, however, that the poor rely most on the PHC facilities for first-contact care, and that out-of-pocket payments for fees and direct payments to physicians are not widespread in the PHC sector. Therefore, the primary health care reforms in Ferghana Oblast are particularly important for increasing access to high-quality health care among the rural poor. Although significant differences are not yet observable in access to health care between rayons where reforms are being implemented and the control rayons, this survey was carried out as a source of baseline information to monitor improvements. As the quality of primary health care improves in the reform rayons, it is anticipated that poor households will be able to meet more of their health care needs in the lower cost primary care sector, and their overall access to adequate services will be improved.

IV. Introduction

In the countries of former Soviet Central Asia, policies are being implemented to improve the cost-effectiveness, quality and sustainability of the health care system by strengthening primary health care (PHC), and changing the incentives in the system to favor primary care over specialty care and hospitalization. One of the implicit goals of the reform program is to increase access to high quality primary health care services, particularly among the rural poor. Since the break-up of the Soviet Union, utilization of primary health care has declined notably in the Central Asian republics, and the decline in utilization of services is particularly dramatic in rural areas. Poor quality of care and increasing physical and financial barriers to PHC services underlie the decline in utilization.

Under the Soviet health care system, which was a national health service fully financed, owned and operated by the government, access to primary health care was considered to be a high priority. As a result there is an extensive network of primary health care facilities in the countries of Central Asia, covering the entire population, even in the most remote rural areas. Universal physical access to PHC was considered to be a major achievement of the Soviet health care system. The clinical capabilities and the overall role of PHC in the health care system deteriorated over time, however, because in reality primary care providers were subordinate in every way to specialty care providers and hospitals. In addition, the reduced government budgetary commitments to health care during the transition have led to increased out-of-pocket payments for health care services throughout the region. Therefore, access to high quality, affordable primary health care has been threatened by the combination of the inefficient structure of the inherited system and the decline in resources during the transition period.

In response to these challenges, the Government of Uzbekistan has been implementing a health reform demonstration in three rayons of Ferghana Oblast (Besharik, Yazyavan, and Kuva) since 1998. The principal goal of the health reform program is to improve the health of the rural population through a strengthened system of primary health care. Primary health care is being strengthened by: a) creating new independent primary care structures (SVPs—*sel'skiye vrachebnyye punkti*) staffed by general practitioners who can provide comprehensive primary care to the population; b) providing clinical training and equipment to SVPs; c) introducing new methods of financing and management to give primary health care facilities greater control over their resources; and d) increasing community involvement in health care activities. The health reform program in Ferghana Oblast is being implemented jointly by the Uzbekistan Ministry of Health, the Ferghana Oblast Hokimyat and Health Department, and the World Bank Central and Ferghana Oblast Project Implementation Bureaus, with technical assistance provided through an in-kind grant by USAID/ZdravPlus.

This study provides a cross-sectional picture of access to rural primary health care based on a household survey one year into implementation of the complete package of primary health care reforms. Because the first year of implementation of the reform package focused on putting the building blocks in place for new finance and management systems, procuring equipment, and training primary health care providers, it is not expected that changes in access would be observed, and therefore this survey is meant to serve as a baseline for future evaluation of the impact of reforms on the utilization of PHC and improvements in health status of the rural population.

V. Description of the Data

The data for this study come from a household survey conducted in May of 2000 of 1,204 households and 7,148 individuals from six rayons in Ferghana Oblast: Kuva, Besharyk, Yazyavan, where primary care reforms are being implemented; and Tashlak, Furkat, and Akhunbabaev, which have not yet implemented the full package of reforms and therefore serve as "control" rayons. ZdravPlus designed the survey, and the Uzbek sociological research firm "Sharkh" carried out the fieldwork. A two-stage cluster random sampling method was used to draw the sample. Sixty villages were randomly sampled from the six rayons, including fifteen from each of the reform rayons and the remaining fifteen from villages in the control

rayons. In the second stage, twenty households were randomly selected from each of the selected villages. The main stratification of the sample is between households in reform rayons and those in the control rayons. Within the reform rayons, a large enough sample (300 households) was drawn to be representative at the rayon level. Due to budgetary limitations, the samples are not large enough in the control rayons to be representative at the rayon level. A total sample of 300 was drawn from the control rayons proportional to the population in each rayon. The distribution of the final sample by rayon is presented in Table 1.

Table 1: Distribution of the Sample

Rayon	# of Households	% of Sample	# of Individuals	% of Sample
Reform Rayons				
Besharyk	316	26.5	1,981	27.7
Kuva	298	25.0	1,775	24.8
Yazyavan	298	25.0	1,770	24.8
Control Rayons				
Akhunbabaev	103	8.6	598	8.4
Furkat	79	6.6	402	5.6
Tashlak	100	8.4	622	8.7
Total	1,194	100.0	7,148	100.0

A two-part questionnaire translated into Uzbek language was administered by ten trained interviewers and one supervisor. The first part included a general questionnaire administered to all household members to obtain information on health status, overall health services utilization, and socioeconomic status of the household. The second part of the questionnaire, eliciting detailed information on health care utilization, was administered to individuals reporting an illness, based on a filter question in the first part asking whether the individual had experienced a health problem in the previous thirty days.

VI. Socioeconomic Status of the Households

The main indicator of socioeconomic status in this study is self-reported monthly cash income.[1] Total cash income received in the previous 30 days was recorded by source for each household member for twelve possible sources of income. Income distribution by quartile is presented in Table 2. Average monthly cash income in the sample is 17,445 *sum* for the entire household and 3,098 per capita within the household. At the time of the survey, the official exchange rate was about 300 *sum*/ $1, so the average monthly income is less than $60 per month according to the official exchange rate. The actual purchasing power according to the market exchange rate, however, is much lower.

Table 2: Household Monthly Cash Income

Income Quartile	# of Observations	Average Monthly Income in Sum (range)	Average Per Capita Monthly Income (range)
First (lowest 25%)	298	3,839 (0-6,200)	750 (0-1,167)
Second	300	8,501 (6,300-10,975)	1,583 (1,170-2,025)
Third	298	14,119 (11,000-18,480)	2,540 (2,033-3,250)
Fourth (highest 25%)	298	43,306 (18,575-402,160)	7,529 (3,260-139,325)
Total	1,194	17,445 (0-402,160)	3,098 (0-139,325)

Household monthly income ranges from about $13 per month for the lowest income households to about $144 per month for the highest income households according to the official exchange rate. Per capita household income ranges from $2.50 to $25. Analyzing income by quartiles, however, masks low variability and highly unequal distribution of income in the sample. Although the top income quartile accounts for 62 percent of all cash income in the sample, the top income decile (fewer than 200 households) accounts for more than 40 percent of all income in the sample. To maintain an adequate sample size, however, the analysis in this study is completed by per capita income quartile.

Table 3 presents household cash income by source of income. Formal employment and pensions are the most important sources of income in the sample, together accounting for nearly 55 percent of cash income on average. Poor households also rely heavily on maternity and child allowances, which account for 22 percent of their cash income. These benefits account for less than three percent of cash income in the wealthiest households. Owning cattle appears to be an important factor distinguishing wealthy households in the sample. Cattle-breeding accounts for more than 20 percent of cash income in the highest income quartile, but this source of income accounts for less than five percent in the remaining three quartiles. The poorest households also appear to have less access to income from self-employment or employment in the informal sector, and less agricultural surplus available for sale in the market.

Table 3: Sources of Household Income

Income Source	Percentage of Total Household Monthly Cash Income				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Formal Employment	33.1	31.3	35.2	20.6	30.6
Informal Employment	3.1	8.0	8.8	9.6	7.4
Self-Employment	1.4	3.5	2.9	6.9	3.7
Seasonal Employment	3.3	4.8	11.2	5.3	6.2
In-kind Payment of Wages	2.7	1.6	1.1	0.8	1.5
Rent from Property	0.1	0.1	0.7	0.7	0.4
Cattle-breeding	0.9	1.9	4.2	21.1	7.0
Sale of agricultural products	3.5	4.0	4.1	9.8	5.3
Sale of property or personal items	0.0	0.0	0.2	0.8	0.2
Pension	23.2	30.6	22.6	20.0	24.1
Student Stipend	1.3	1.8	2.0	1.7	1.7
Maternity or children's allowances	22.0	11.3	6.5	2.4	10.6
Other social benefits	1.4	1.2	0.6	0.5	0.9
Total	100.0	100.0	100.0	100.0	100.0

VII. Illness Reporting

A. Chronic Conditions

Tables 4 and 5 present information on reporting of chronic illness and treatment. Individuals were asked whether they have ever been diagnosed with a chronic condition, defined as a health problem that has lasted at least six months. Twelve percent of individuals in the sample reported that they had been diagnosed with a chronic condition. Illness that was not specifically defined but perceived as being related to poor nutrition and environmental conditions was the most frequently cited chronic health problem, making up about 30 percent of all reported chronic illnesses and nearly 44 percent of chronic illnesses in

the lowest income quartile. Cardiovascular diseases were the next most frequently cited chronic health problem, making up nearly 20 percent of all reported chronic illnesses, with no particular pattern by income quartile. About 80 percent of all individuals reporting that they had been diagnosed with a chronic illness, reported that they received or are receiving treatment for that condition, with no difference across income group.

Table 4: Reporting of Chronic Illness and Treatment

	% of Sample (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Reported Chronic Illness	11.6 (211)	12.5 (230)	12.1 (213)	12.0 (195)	12.0 (849)
Undergoing Treatment for Chronic Illness	80.1 (169)	80.0 (184)	82.6 (176)	79.5 (155)	80.6 (684)

Although reporting of chronic illness does not appear to be related to income, large differences are found by gender. Chronic illness was reported by 14.3 percent of females in the sample and 9.8 percent of males. Of those reporting cardiovascular disease, more than 60 percent are female. These patterns do not appear to be consistent with morbidity and mortality burdens in Uzbekistan, which show significant excess morbidity and mortality among adult males related to cardiovascular disease. It is possible that women are more likely to seek care for chronic conditions, and therefore more likely to have received a diagnosis for their condition. Therefore, self-reported chronic illness is not an adequate measure of prevalence for this population.

Table 5: Reporting of Chronic Illness by Gender and Income

Gender	% of Sample Reporting Chronic Illness (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Females	16.0 (146)	14.0 (131)	14.0 (122)	13.2 (109)	14.3 (508)
Males	7.2 (65)	11.0 (99)	10.2 (91)	10.7 (86)	9.8 (341)

B. Recent Health Problems

Table 6 presents reporting of recent health problems, those occurring in the previous 30 days. Three different questions were used as measures of reported illness: whether the individual had any health problem in the previous 30 days; whether the individual was ill enough to miss school or work; and whether pain or emotional problems interfered with work or social activities. In order to be consistent with other studies of reported illness and health care utilization, however, whether the individual had any health problem in the previous 30 days was used as the filter question to administer the health care utilization questionnaire.

Table 6: Health Problems in the Past 30 Days

Reported Problem in Last 30 Days	% of Sample (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Any health problem	11.2 (203)	12.0 (221)	12.5 (221)	13.8 (224)	12.3 (869)
Sick enough to miss school or work	4.8 (87)	5.2 (96)	6.2 (109)	5.3 (87)	5.4 (379)
Pain or emotional anxiety interfered with daily activities	14.5 (263)	16.7 (308)	16.3 (287)	18.3 (298)	16.4 (1156)

12.3 percent of the sample, or 869 individuals reported a health problem in the previous 30 days. About 44 percent of those with a health problem in the past 30 days, or 5.4 percent of the sample, reported that they were sick enough to miss school or work. Pain or emotional anxiety is reported by 16.4 percent of the sample to have interfered with daily activities, including work or socializing. Therefore, the standard filter question of "did you have any health problems in the last 30 days" may be inadequate and possibly under-represents the burden of illness in the sample.

The percentage reporting a problem increases with income, with 11.2 percent of the lowest income quartile and 13.8 percent of the highest income quartile reporting illness. The counterintuitive result of higher rates of morbidity among the wealthy is found consistently in international surveys of self-reported illness. It is not known whether the poor under-report illness or the rich over-report illness, or whether the poor have a higher threshold for considering themselves to be ill. Furthermore, Table 7 shows that illness reporting follows clear patterns according to gender and income combined. Women are more likely than men to report any health problems and to report that pain or emotional anxiety interfered with their daily activities, and wealthy women are the most likely and poor men the least likely to report an illness or that pain or anxiety interfered with daily activities.

Table 7: Reporting of Health Problems by Gender and Income

Income Quartile	% Reporting Health Problem in Past 30 Days (#)		% Reporting Pain or Anxiety Interfered with Daily Activities (#)	
	Females	Males	Females	Males
First (lowest)	14.1 (128)	8.3 (75)	19.0 (173)	10.0 (90)
Second	13.8 (130)	10.1 (91)	19.0 (178)	14.5 (131)
Third	15.7 (137)	9.4 (84)	19.5 (170)	13.4 (119)
Fourth (highest)	15.7 (137)	11.2 (90)	21.5 (178)	15.0 (120)
Total Sample	14.9 (529)	9.7 (340)	19.7 (699)	13.2 (460)

Significant differences in illness reporting are also found between the reform and control rayons. In the reform rayons 11.6 percent of individuals report experiencing a health problem in the last 30 days, and 16.1 percent report that pain or anxiety has interfered with their daily activities. In the control rayons, 14.8 percent report a health problem and 18.1 percent report that pain or anxiety interfered with their

daily activities. No differences are found between reform and control rayons on missing work or school because of illness.

VIII. Access to Health Care

A. General Utilization

All individuals in the survey were asked to report all of their utilization of health services in the past 30 days, including preventive and other services unrelated to illness. Table 8 shows that health care utilization is high, as nearly 30 percent of the individuals in the sample reported using a formal health care service at least once in the past 30 days. Utilization of services does not show a pattern according to income group.

Table 8: Utilization of Health Care Services

% of Sample Reporting Use of Any Health Care Services in Past 30 Days (#)				
Income Quartile				
First (lowest)	Second	Third	Fourth (highest)	Total Sample
27.2 (494)	25.5 (469)	30.9 (545)	27.2 (443)	27.7 (1951)

Utilization of preventive services is presented in Table 9. About twelve percent of the sample, report that they or their child received immunization in the past 30 days, with a significantly lower proportion, 9.8 percent, among the wealthiest individuals, and twelve percent of the sample reported use of other preventive services. Only 48 individuals, or less than one percent of the sample reported using prenatal care during the previous 30 days, but the data do not include the number of pregnant women in the sample. More than 90 percent of all preventive services were obtained from primary health care facilities. No significant differences in patterns of preventive service utilization were found between the reform and control rayons.

Table 9: Utilization of Preventive Health Care Services

Preventive Service Used in Last 30 Days	% of Sample (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Immunization	12.2 (222)	12.0 (221)	13.0 (229)	9.8 (159)	11.8 (831)
Prenatal Care	0.4 (7)	0.7 (13)	0.6 (10)	1.1 (18)	0.7 (48)
Other Preventive Services	12.2 (221)	9.6 (176)	14.0 (247)	12.3 (200)	12.0 (844)

Table 10 shows hospitalization rates by income in the past year. On average, 7.5 percent of the individuals in the sample had at least one overnight stay in a hospital. Among the lowest income households, 5.5 percent of individuals report at least one hospital stay, and among individuals in the highest income households the hospitalization rate is 9.1 percent. A significant difference in hospitalization rates was also found between the reform and control rayons, with 9.1 percent of

individuals in the control rayons and only 7.1 percent of individuals in the reform rayons reporting that they were hospitalized in the previous year.

Table 10: Hospitalization

Hospitalization in the Past 12 Months	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
% Reporting overnight hospital stay (#)	5.5 (100)	8.0 (148)	7.7 (135)	9.1 (149)	7.5 (532)

B. Health Care Seeking, Conditional on Reported Illness

Table 11 presents the treatment patterns of individuals who reported an illness in the previous 30 days. About 45 percent of individuals self-treated their illness with drugs before subsequent decisions about care seeking were made, with no clear pattern across income level. About 50 percent of individuals went on to seek care, including visits to traditional providers. Low-income individuals are significantly less likely to seek care than higher income individuals. Whereas nearly 55 percent of individuals in the highest income quartile sought care, only 44 percent in the lowest income quartile did so.

Table 11: Health Care Seeking

Health Care-Seeking	% of Those Reporting Health a Problem in the Past 30 Days (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Self-treatment with drugs (with or without subsequent treatment)	41.5 (83)	52.3 (114)	44.0 (96)	43.9 (98)	45.5 (391)
Sought treatment	44.0 (88)	44.0 (96)	56.4 (123)	54.7 (122)	49.9 (429)
-- at a health facility	37.5 (75)	38.1 (83)	46.3 (101)	48.0 (107)	42.6 (366)
--home visit	6.5 (13)	6.0 (13)	10.1 (22)	6.7 (15)	7.3 (63)

Low-income individuals, however, seek care on average more quickly after the onset of an illness than higher income individuals. Individuals from the lowest income quartile reported seeking care on average 2.3 days after recognizing the onset of illness, whereas individuals from the highest quartile waited on average 4.4 days before seeking care. This supports the hypothesis that low-income individuals have a higher threshold for considering themselves ill, and when they do recognize an illness it is at a more severe stage and requires more rapid attention.

Significant differences are also found between reform and control rayons. Whereas 52 percent of individuals reporting illness in the reform rayons sought care, only 45 percent in the control rayons sought care. The gap between the poorest and the wealthiest individuals is the same as for the sample as a whole, about ten percentage points in both the reform and control rayons.

Table 12 shows the type of health facility that individuals who sought care visited first after the onset of illness. More than 50 percent of individuals seeking care first went to a PHC facility; either an FAP, SVA, or SVP. Individuals from the lowest income quartile rely most heavily on PHC facilities for first contact,

with 59.1 percent of individuals in that group visiting a PHC facility first after the onset of illness. If home visits by physicians, nurses and feldshers are added to the PHC category, the percentage increases to 67.6 for the entire sample, and 72.7 for the lowest income individuals. Central Rayon Hospitals and their attached polyclinics were visited first by 20.3 percent of individuals seeking care. Rural catchment hospitals, city hospitals, polyclinics other than those of the central rayon hospital, and traditional healers were all visited by only a small number of individuals.

Some differences are also observed between the reform and control rayons. In the reform rayons, PHC facilities are used first by 66.1 percent of individuals seeking care for the entire sample, and 70.3 percent of individuals from the poorest income quartile. In the control rayons, the percentages are 71.7 and 79.2 percent, respectively.

Table 12: Type of Health Facilities Visited First

Type of Health Facility Visited First after Onset of Illness	% of Those Seeking Health Care Outside the Home (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
PHC Facility (FAP, SVA, SVP)	59.1 (52)	46.9 (45)	55.3 (68)	54.1 (66)	53.8 (231)
Rural Catchment Hospital (SUB) or Attached Polyclinic	6.8 (6)	5.2 (5)	4.1 (5)	2.5 (3)	4.4 (19)
Central Rayon Hospital or Attached Polyclinic	15.9 (14)	25.0 (24)	16.3 (20)	23.8 (29)	20.3 (87)
City Hospital or Attached Polyclinic	3.4 (3)	8.3 (8)	4.9 (6)	6.6 (8)	5.8 (25)
Home Visit by a Physician, Nurse of Feldsher	13.6 (12)	11.5 (11)	17.1 (21)	12.3 (15)	13.8 (59)
Traditional Healer	0.0 (0)	3.1 (3)	1.6 (2)	0.0 (0)	1.2 (5)
Total	100.0 (87)	100.0 (96)	100.0 (122)	100.0 (121)	100.0 (426)

About 35 percent of people seeking care reported that more than one visit was necessary to solve their health problem. Table 13 shows that 29.3 percent of individuals seeking care received a referral from the first provider consulted, 32.8 percent of high-income individuals and 29.9 percent of low-income individuals. Low-income individuals were also less likely to be referred to a hospital. Whereas 21.3 percent of individuals from the highest income quartile were referred to a hospital by the first provider consulted, only 10.3 percent of individuals from the lowest income quartile were referred to a hospital. Individuals in the reform rayons were slightly more likely to be referred to a hospital than individuals from control rayons, 19.9 versus 18.3 percent, but this difference is not statistically significant.

Table 13: Referrals

Referrals	% of Those Seeking Health Care in the Past 30 Days (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Referred by provider to another doctor or specialist	29.9 (26)	23.7 (22)	29.8 (36)	32.8 (40)	29.3 (124)

Referred to a hospital	10.3 (9)	21.5 (20)	23.1 (28)	21.3 (26)	19.6 (83)

C. Physical Access to Health Care

Table 14 shows the time it took individuals to travel to health care facilities, and Table 15 shows the travel costs incurred. Distance to health facilities does not appear to be an important barrier to seeking health care treatment. Only two respondents reported that the reason for not seeking health care was distance to the facility or lack of transportation. About 70 percent of those seeking care outside the home reached the facility in thirty minutes or less. Individuals in the lowest income quartile, however, are more likely than others to travel more than one hour for health care.

Table 14: Travel Time to Health Facilities

Time to Travel to Health Facility (one way)	% of Those Seeking Health Care Outside the Home (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Less than 15 minutes	29.3 (22)	23.8 (19)	30.3 (30)	36.4 (39)	30.5 (110)
15 – 30 minutes	37.3 (28)	42.5 (34)	51.5 (51)	35.5 (38)	41.8 (151)
30 minutes – 1 hour	24.0 (18)	25.0 (20)	14.1 (14)	21.5 (23)	20.8 (75)
More than 1 hour	9.3 (7)	8.8 (7)	4.0 (4)	6.5 (7)	6.9 (25)

Most individuals (56.6 percent) reached the health care facility on foot, but the highest income individuals also frequently used cars and taxis (29 percent). Buses were used by only 11.6 percent of individuals. Individuals from the poorest households were least likely to report using buses or taxis to reach the health care provider. Table 15 shows that individuals spent an average of about 300 *sum*, or the equivalent of about $1, to reach the health care facilities, with no clear patterns across income groups.

Table 15: Travel Costs to Reach Health Facilities

Income Quartile	# of Observations	Mean Total Cost of Transportation (in sum)	Standard Deviation
First (lowest)	14	328	389
Second	29*	198	175
Third	23	227	204
Fourth (highest)	34	420	924
Total	101	298	576

***** One observation was dropped as an outlier (15,000 *sum*), changing the average for the second quartile from 691 and for the entire sample from 444.

D. Financial Access to Health Care

Financial barriers to obtaining necessary health care are clearly a problem in this rural sample, particularly among the poorest households, as low levels of cash income make it difficult to meet the necessary out-of-pocket payments. Table 16 shows that 21.2 percent of all individuals reporting a health problem and 31.5 percent of the lowest income individuals did not seek health care because they did not have enough money. Of those who did seek care, 85.8 percent paid at least some money out of pocket. Among individuals in the lowest income group, 71.6 percent paid out-of-pocket for care. Finding the money to

pay for health care was reported to be difficult for nearly 80 percent of those seeking care in the lowest two income quartiles, and about 24 percent needed to borrow money to pay for health care.

Table 16: Financial Barriers to Health Care

Indicator of Financial Barrier	% of Those Seeking Health Care in the Past 30 Days (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Did not seek health care because not enough money (% of those reporting a health problem)	31.5 (63)	26.1 (57)	15.6 (34)	13.5 (30)	21.2 (184)
Paid out-of-pocket for health care treatment	71.6 (63)	95.8 (92)	83.7 (103)	90.2 (110)	85.8 (368)
Finding the money to pay for health care was difficult	77.0 (57)	79.2 (76)	63.8 (74)	57.5 (69)	68.0 (276)
Needed to borrow money to pay for health care	25.0 (22)	22.9 (22)	15.4 (19)	9.8 (12)	17.5 (75)

Table 17 shows mean out-of-pocket expenditures across income quartile. Mean out-of-pocket expenditures were calculated for individuals who made a positive expenditure, excluding expenditure on drugs before seeking care. Individuals in the lowest quartile spent the least per episode, with a mean of 3,282 *sum*, or nearly $11 at the official exchange rate. Individuals from the highest income quartile spent 2.5 times that amount on average, with mean out-of-pocket expenditures of 8,210 *sum*, or about $27 at the official exchange rate. Individuals from reform rayons spent on average 280 *sum* less per episode than individuals from the control rayons, but this difference is not statistically significant.

Table 17: Total Out-of-Pocket Health Expenditures in Last 30 Days, (given exp > 0)

Income Quartile	# of Observations	Mean Total Expenditure (sum)	Standard Deviation
First (lowest)	65	3282	8314
Second	92	5970	12443
Third	103	5306	8311
Fourth (highest)	110	8210	17772
Total Sample	370	5979	12863

Table 18 presents out-of-pocket expenditures as a percentage of household monthly income and monthly per capita income. On average, out-of-pocket expenditures for one episode of illness during the past 30 days was equivalent to nearly half of household reported monthly cash income. In the poorest income quartile, out-of-pocket expenditures for an illness episode averaged more than 87 percent of monthly cash income. The proportion of income consumed by out-of-pocket health expenditures declines with income, but even the highest income quartile spent nearly 30 percent of cash income for out-of-pocket expenditures for health care. It is likely that cash income is under-reported, and the households also have access to other sources of non-cash wealth or income. Therefore, these percentages are likely to be overstated. Nonetheless, there is evidence that the poor are at significant risk of falling into poverty when a household member becomes ill.

Table 18: Out-of-Pocket Expenditures as a Percentage of Monthly Cash Income

Income Quartile	# of Observations	Mean % of Total Monthly Household Income
First (lowest)	63	87.3
Second	92	61.5
Third	103	32.5
Fourth (highest)	110	28.7
Total Sample	368	48.0

Table 19 shows mean out-of-pocket payments according to category of expenditure. The highest mean expenditure was for medication prescribed by a physician (3,548 *sum*), followed by direct payments to physicians (3,062 *sum*) and formal fees (2,982 *sum*), although only a small number of individuals report direct payments and fees (33 and 32 individuals, respectively). Of individuals who received care from a primary care provider, only three reported making direct payments to physicians, and those payments ranged between 500 and 1,000 *sum*.

Significant expenditures were also made for medications not prescribed by a physician (1,968 *sum*) and for in-kind contributions of supplies, such as bandages and syringes (1,100 *sum*). Relatively large payments were also made for gifts for physicians and other health workers (1,333 *sum*), although the number of individuals who made these payments is small. One individual, however, reported making a gift to the physician of 10,000 *sum*. Only fifteen individuals reported giving in-kind payments to the doctor or other health care worker, and no value for these gifts was reported.

Table 19: Out-of-Pocket Payments by Category of Expenditure

Category of Expenditure	Mean Expenditure in Sum (# of observations)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total
Medications purchased before seeking treatment	285 (80)	370 (112)	498 (93)	558 (98)	432 (383)
Transportation	863 (19)	1,562 (40)	551 (47)	891 (58)	954 (164)
Supplies (e.g. bandages, syringes)	823 (34)	1,135 (59)	899 (68)	1,381 (75)	1,100 (236)
Medications purchased from the health facility	310 (15)	326 (14)	407 (19)	331 (19)	347 (67)
Medications prescribed by doctor purchased at a pharmacy	2,118 (52)	3,117 (75)	3,319 (89)	4,977 (89)	3,548 (305)
Other medications (not prescribed by doctor)	1,550 (2)	3,168 (12)	666 (15)	2,252 (21)	1,968 (50)
Gifts for doctor and other health workers	--	420 (5)	3,050* (4)	567 (3)	1,333 (12)
Fees and other costs	983 (3)	2,783 (9)	3,244 (9)	3,475 (11)	2,982 (32)
Direct payments to doctor and other health workers	3,320 (5)	1,100 (4)	1,229 (10)	4,841 (14)	3,062 (33)

* Includes one outlier (10,000 *sum*)

Some patterns are found in the relationship between the type of symptom and out-of-pocket expenditures, but in general the relationship is weak. The largest overall expenditure was made by an individual experiencing a rat bite, with a total expenditure of nearly 135,000 *sum*. The next largest

individual expenditures were for more than 30,000 *sum* to seek treatment for "jaundice," and more than 21,000 *sum* for treatment for poisoning.

Table 20 presents out-of-pocket payments by category of symptom. The list of 61 different symptoms was categorized into six groups with guidance from a physician from the region: respiratory illness (including cold and flu), intestinal illness, cardiovascular illness, symptoms related to other chronic conditions, emergency, pregnancy (including delivery, but excluding emergencies and complications), and other. The largest mean expenditure is for the pregnancy and delivery category, even excluding emergencies and complications. The next largest mean expenditure is in the "other" category. Although the categories adequately classify 81 percent of cases (19 percent fall into the "other" category), they classify only 63.2 percent of total out-of-pocket expenditures. The lowest mean expenditure is for respiratory illnesses, but these expenditures account for nearly 15 percent of the total out-of-pocket expenditures in the sample.

Table 20: Out-of-Pocket Payments by Category of Symptom

Income Quartile	# of Observations	Mean Total Expenditure (sum)	Standard Deviation	% of Total Sum of Out-of-Pocket Expenditures
Respiratory Illness	284	1,163	3,076	14.6
Intestinal Illness	63	3,516	14,395	9.8
Cardiovascular Illness	129	2,060	9,779	11.8
Other Chronic Condition	157	2,502	6,572	17.4
Emergency	54	2,526	5,585	6.0
Pregnancy and delivery (non-emergency)	13	6,268	5,427	3.6
Other	166	5,011	13,899	36.8

Table 21 summarizes variables related to the prescription and purchasing of drugs. Only 10 percent of patients were given drugs for free during their health care visit, and another 15.8 percent paid for drugs that they received during the visit. The sample indicates a high prescribing rate, with about 82 percent of individuals who sought care reporting that the physician prescribed medication. The prescribing rate is lower among low-income individuals, with only 54.5 percent of them reporting that they were prescribed drugs.

About 62 percent of those who received a prescription purchased all of the drugs, and of those who did not purchase all of the drugs, cost was the reason for nearly more than 50 percent, with 19.3 percent of all those receiving a prescription unable to buy at least some of the drugs because of cost. In the poorest income quartile, 30.3 percent of those who received a prescription did not purchase all of the drugs because of the cost. Twelve percent of those receiving a prescription purchased none of the drugs, and 21.2 percent of the lowest income individuals purchased none of the drugs prescribed. Table 19 above shows that the mean expenditure on prescribed drugs is 3,548 *sum*, but the mean expenditure is more than twice as high in the wealthiest income quartile than in the poorest.

Table 21: Access to Drugs

Drug Prescribing and Purchasing	% of Those Seeking Health Care in the Past 30 Days (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Was given medicine for free by the provider	12.5 (11)	11.8 (11)	7.4 (9)	9.8 (12)	10.1 (43)
Paid for medicine during visit	17.0 (15)	15.1 (14)	15.7 (19)	15.6 (19)	15.8 (67)

Medicine was prescribed during visit	75.0 (66)	87.1 (81)	85.1 (103)	79.5 (97)	81.8 (347)
	% of those who received a prescription (#)				
Purchased all medicines prescribed by physician	54.5 (36)	55.6 (45)	63.1 (65)	70.1 (68)	61.7 (214)
Purchased some of the medicines prescribed by physician	23.3 (16)	37.0 (30)	23.3 (24)	21.7 (21)	26.2 (91)
Purchased none of the medicines prescribed by physician	21.2 (14)	7.4 (6)	13.6 (14)	8.2 (8)	12.1 (42)
Did not obtain prescribed drugs because of cost	30.3 (20)	19.8 (16)	14.6 (15)	16.5 (16)	19.3 (67)

IX. Quality of Care

Individuals who sought treatment for their health problems were asked questions to ascertain the quality of the care they received and their level of satisfaction with the care. An assessment of the quality of care received is presented in Table 22. Most of the individuals, nearly 80 percent, were seen by a physician, though the percentage is slightly lower, 73.8 percent, among the lowest income individuals. More than 70 percent of individuals reported spending less than 20 minutes with the health care provider, but 96.9 percent felt that the time spent was sufficient to solve their problem. Only 56.6 percent, however, felt that their exam was very thorough, and among the poorest individuals, only 47.7 percent thought that their exam was very thorough. The gap between the poorest and the wealthiest income quartiles is 22.8 percentage points.

Opinions about the communication and attentiveness of the provider show more significant differences across income group. Whereas 86.9 percent of the highest income individuals felt that the provider listened to them very well, only 75 percent in the lowest income category felt that the provider listened to them very well. Similarly, whereas 84.4 percent of the highest income individuals felt that the provider explained things to them very well, only 78.4 percent of individuals in the lowest income quartile reported a similar opinion. Although individuals in the sample who paid more out of pocket for health care tend to report higher levels of satisfaction, not all of the difference in satisfaction is explained by level of payment. For example, the proportion of individuals reporting that the doctor explained things very well and listened very well does not appear to vary by the amount paid out of pocket for services.

Table 22: Quality of Care

Indicator of Quality	% of Those Seeking Health Care in the Past 30 Days (#)				
	Income Quartile				
	First (lowest)	Second	Third	Fourth (highest)	Total Sample
Seen by a doctor	73.8 (65)	83.9 (78)	74.4 (90)	82.8 (101)	78.8 (334)
Spent less than 20 minutes with provider	78.4 (69)	72.0 (67)	76.9 (93)	76.2 (93)	75.9 (322)
Time spent with provider sufficient to solve problem	95.4 (84)	96.8 (90)	97.6 (118)	97.5 (119)	96.9 (411)
Exam was very thorough	47.7 (42)	51.6 (48)	52.9 (64)	70.5 (86)	56.6 (240)
Provider listened very well	75.0 (66)	77.4 (72)	82.6 (100)	86.9 (106)	81.1 (344)
Provider explained things	78.4	78.5	82.6	84.4	81.4

very well	(69)	(73)	(100)	(103)	(345)

There are no clear differences in perceived quality of care between individuals in the reform rayons and those in the control rayons. No significant differences in the amount of time spent with the provider or whether the time spent was considered to be sufficient. Patients from reform rayons were slightly more likely, however, to report that their exam was thorough (58.3 versus 53.0 percent), and that the provider listened very well and explained things very well (81.4 and 81.7 percent versus 80.9 and 80.9 percent, respectively).

X. Discussion

The analysis of this household survey of the rural population in six rayons in Ferghana Oblast raises concerns about the impact of out-of-pocket payments for health care on access to care for the poor in rural Uzbekistan. Although the vast majority of households in the sample can be considered poor and the variability in income in the sample is not very large, there do appear to be significant differences in access to health care, particularly among the poorest 25 percent of the sample whose cash income is extremely limited. Furthermore, households in the poorest income quartile rely heavily on pensions, child/maternity payments and other welfare benefits for their cash income, so they may become more vulnerable to the increasing out-of-pocket costs of health care if government spending on these benefits is reduced.

The poor in this sample appear to have significant barriers to obtaining necessary, high-quality health care based on four main observations. First, poor individuals are less likely than individuals from wealthier households to report illness. This pattern is particularly significant among poor males. Therefore, any measures of access to health care and interventions to improve access should take into consideration the patterns of illness reporting or under-reporting.

Second, the poor are also less likely to seek care once an illness is reported, and when they do seek care they pay less out-of-pocket on average than wealthier individuals. To the extent that higher out-of-pocket payments make higher quality of care available, the poor may also be receiving lower quality of care. This is supported by the third observation that poor individuals seeking health care are less likely to have drugs prescribed, less likely to buy drugs that are prescribed, less likely to be referred, and less likely to be hospitalized. The poor also perceive that they received less attentive treatment. Finally, the fourth observation from the study is that it is highly probable that out-of-pocket payments for health care put poor households at extreme risk of falling deeper into poverty, as on average total payments in one month for an episode of illness consumed nearly 90 percent of poor households' cash income.

The primary health care reforms being implemented in three rayons of Ferghana Oblast are aimed at increasing access to high-quality primary health care, particularly among the rural poor. Although significant differences are not yet observable in access to health care between rayons where reforms are being implemented, and the control rayons, this survey was carried out as a source of baseline information to monitor improvements. As the quality of primary health care improves in the reform rayons, it is anticipated that poor households will be able to meet more of their health care needs in the lower cost primary care sector, and their overall access to adequate services will be improved.

XI. Endnotes

[1] Although it is known that cash income is often reported with large error and does not adequately capture own-consumption of goods produced by the household, budget limitations for the survey prevented more detailed collection of household income and expenditure data. An effort was made to validate the income data as a proxy for socioeconomic status using information about household assets and food consumption. The high degree of correlation between reported cash income and other proxies of socioeconomic status provides some assurance that the income quartiles generated from per capita monthly cash income provide an adequate socioeconomic status gradient for the sample.