

Central Asian Public Health: Transition and Transformation

Genevieve Grabman

A dramatic demographic and epidemiological transition has occurred in Central Asia during the past decade, concurrent with the region's political and economic transition. This chapter attempts to explain the changing public health status in Central Asia by depicting the historical and social context in which public health is evolving. Kyrgyzstan, Kazakhstan, Uzbekistan, Tajikistan and Turkmenistan inherited their public health systems from the Soviet Union, and the demise of that empire has greatly impacted Central Asian public health. The collapse of centrally-controlled health care finance and planning precipitated an increased risk of sickness and death for the public. The newly independent Central Asian states began in the late 1990s to reform their national health systems in order to make public health care fiscally sustainable and responsive to health challenges. Still, Central Asia faces some critical health needs in the new millennium. Reflecting the region's transitional status, both chronic and infectious health conditions urgently require intervention from each nation's public health system.

Data and Statistics

Any study of Central Asian health requires a caveat on the data it presents: data collection in all Central Asian countries is notoriously difficult, statistical analysis may be poor, and reported figures are often skewed for political purposes. The infant mortality rate is only one of many government-reported statistics that may have little resemblance to a real figure. Doctors' use of Soviet death criteria results in a systemic mislabeling of infant deaths as stillborns, thus the true number of babies who die after birth is higher than the reported infant mortality rate indicates.¹ Regional governments' human immunodeficiency virus (HIV) and acquired immunodeficiency virus (AIDS) statistics also may significantly underestimate infection rates, as legally-required residency permit systems discour-

age many groups particularly vulnerable to HIV infection from registering with authorities.² In Turkmenistan and Uzbekistan, official statistics are particularly suspect, given the autocratic nature of these governments.

A less distorted picture of public health in the region can be obtained by focusing on data from the Kyrgyz Republic, or Kyrgyzstan. Although data verification remains problematic, recent government-provided health data is relatively reliable. Kyrgyzstan's Ministry of Health has received extensive technical assistance from the World Health Organization in reporting health statistics. Kyrgyzstan was also the site of an extensive United States-led Demographic and Health Survey (DHS) in 1997, permitting comparison of official statistics with independently collected information.

Kyrgyzstan: A Proxy for Central Asia

In its population's longevity, morbidity, and mortality, Kyrgyzstan represents the mean of Central Asian public health.³ Tajikistan and Turkmenistan, poorer countries than Kyrgyzstan, have higher mortality rates. Uzbekistan, a richer country than Kyrgyzstan, has lesser infant and under-five mortality rates and longer life expectancies. Until 1999, Kazakhstan's relative wealth also contributed to lower child mortality and higher life expectancy than in Kyrgyzstan.⁴

All of Central Asia is also mirrored in Kyrgyzstan's internal public health variations.⁵ Kyrgyzstan's poorest *oblasts* or states, Talas, Naryn, and Batken, have the country's highest rates of infant and maternal mortality. In cold, dry Talas and Naryn, with climates similar to Kazakhstan, acute respiratory infections and tuberculosis are more problematic than in the rest of Kyrgyzstan. In the southern oblasts of Jalal-Abad, Osh, and Batken, as in Tajikistan and southern Uzbekistan, diarrheal diseases are the major cause of morbidity and mortality in children. In these Kyrgyzstani states, fertility rates are also much higher than in other oblasts, due to the cultural and religious beliefs of the southern Kyrgyzstan's Uzbek and Tajik populations. Further, during the late 1990s and until 2001, the southern portion of Kyrgyzstan suffered invasions by Taliban-backed militants. This armed insurrection undoubtedly crippled the health care system and caused higher death rates in the affected areas, a result similar to that seen in war-torn Tajikistan.

Northern oblasts Chuy and Issyk-Kol have the most favorable health indicators in Kyrgyzstan. Similar to all Central Asian capitals, wealth is concentrated around the capital city in Chuy oblast, and the population here has better access to higher quality health care than do people in other

oblasts. Bishkek residents, like the inhabitants of all Central Asia's capital cities, enjoy the country's best health outcomes. Chuy and Issyk-Kol also have a high proportion of Russians living in them, similar to the demographics of Kazakhstan and many Central Asian capitals. Russians tend to have lower fertility rates and better mortality and morbidity outcomes than do native Central Asian peoples.

Finally, like the other Central Asian countries, Kyrgyzstan is reforming its Soviet-inherited health care system. Kyrgyzstan's health reform is the most advanced and widespread in Central Asia, having begun in the north of Kyrgyzstan, expanded to the south, and recently spread to Naryn and Talas. This health reform is expected to improve health outcomes throughout Kyrgyzstan.⁶

The Soviet Health System

The Soviet Union's Constitution was the first in the world to guarantee the right to health, stating, "Citizens of the U.S.S.R. have the right to health protection."⁷ The Soviet health care system therefore was designed to provide all citizens—and especially rural populations—with access to a basic level of care. At the expense of preventative care, provider choice, and efficiency, Soviet socialized medicine achieved impressive public health accomplishments. The ratio of doctors and nurses to population was among the highest in the world. Many diseases once endemic, including diphtheria, smallpox, cholera, polio, whooping cough, and typhus, were virtually eradicated. On average and indicative of results seen in the Central Asian Soviet republics, USSR, life expectancies doubled between the 1917 October revolution and 1970.⁸

The Soviet health system was a single-payer scheme, where the government provided all health care free of charge, according to norms formulated by the Ministry of Health in Moscow and resource distribution determined by the Semashko All Union Research Institute in Moscow.⁹ Republic-level health ministries were responsible for implementing Moscow's policies through oblast-level health departments. In turn, the oblast health departments directed health care through rayon (county) and at the city health administrations. In each republic and oblast, a sanitary epidemiological service (Sanepid or SES) oversaw the control of communicable diseases and acted as a "check" on the health departments' work.¹⁰

To provide universal health care coverage, the Soviet system automatically assigned each citizen to a polyclinic that assumed responsibility for the person's health and served as the portal of entrance to the medical care system.¹¹ The patient could not choose his or her physician; the

patient's residence in a micro-district usually determined her polyclinic assignment. However, high ranking members of the Communist Party and employees in some collective enterprises, such as factories and farms, were assigned to clinics and hospitals reserved for their use. The one polyclinic per micro-district, staffed by an internist for men, a pediatrician for children, an obstetrician for women, a dentist, and a nurse, provided routine outpatient care to the micro-district's approximately 4000 people. In rural areas with long distances between polyclinics called *selskaya vrachebnaya ambulatorya*, or SVAs, people could receive basic care from first aid specialists and midwives at health posts *feldsher accousserski punkt* or FAPs.

If referred by their polyclinic or if self-referred, Soviet citizens could seek more advanced health care at the rayon's central town hospital and specialty polyclinics. In rural areas, limited medical care was available at small hospitals *selskaya uchaskovaya bolnitsia*, or SUBs. Still more specialized and better equipped hospitals for specific diseases and conditions—cancer, tuberculosis, sexually transmitted infections—could be found in the main city of each oblast and in republic's capital city.

Kyrgyzstan was a beneficiary of the Soviet health care system in many ways. Although costly and hospital-heavy, the Kyrgyzstan's Soviet health care system successfully decreased infant and child deaths and increased life expectancy. The Soviet system also provided all children and expectant mothers with free health care.¹² As a result, Kyrgyzstan's official infant mortality rate dropped from 111 in 1970 to 52 in 2001, and the under-five mortality rate decreased from 146 in 1970 to 61 in 2001.¹³

While it sounded like a positive situation for all involved, the Soviet model of health care had many drawbacks.¹⁴ The system relied on vast numbers of specialists and multiple, redundant specialist facilities.¹⁵ In turn, the system produced few community-level health professionals skilled in preventive care, such as generalists and nurse practitioners.¹⁶ Many doctors were trained only to address the needs of a specific sex or age group suffering from a specific disease, while nurses had limited skills and undertook only basic tasks. As an example of the extreme overspecialization of Soviet health care, Kyrgyz obstetricians neither owned nor knew how to use stethoscopes. Clinical management required lengthy hospital stays for many conditions, such as tuberculosis and influenza, which could have been treated in outpatient facilities.¹⁷ The system's financing structure encouraged this tertiary care focus by funding hospitals according to their bed quantity, rather than their number of patients. Such treatment and financing regimes required a large number of hospital beds, which led to low occupancy levels. Finally, the Soviet system failed to encourage a

sense of health responsibility among the citizenry or innovation amongst the providers.¹⁸ Government subsidies supported health care and the population grew to expect free healthcare services. No private health care or health insurance was necessary or permitted.

Soviet Collapse

With the disintegration of the Soviet Union in 1991, the disruption caused by a forced transition from a collectivist system to a market economy brought about a near collapse of the health care system in the newly independent states.¹⁹ Like the other Central Asian nations, Kyrgyzstan was left utterly without money to support its social sector, including its public health systems.²⁰ The share of the government budget going to health care fell by about a third between 1991 and 1992.²¹ At the same time, the percentage of the gross domestic product spent on health care fell from just over four to two percent.²² The country's poor economic situation led to health services deterioration as equipment became antiquated, drug stocks dwindled, and buildings decayed.²³ Salaries for doctors and nurses, if paid at all, fell from 79 percent of the average salary in 1995 to just 59 percent in 1998.²⁴

The resource requirements of Kyrgyzstan's socialized public health system became untenable in the 1990s. Hospitals swallowed 73 percent of the healthcare funds, while the primary healthcare system received only 16 percent of the already diminished health budget.²⁵ Focus on tertiary care resulted in resources being spread too thin, and in under-financing of local level services. In turn, this led to mandatory informal payments to healthcare providers, a practice particularly detrimental to the poor. The World Bank bluntly states, "Resources wasted on half-empty facilities, poorly insulated buildings, or medical technologies that do not function rob the system of resources that could be put to effective use" on the primary health care level.²⁶ A well-functioning health care system is the single most important element in reaching the poor with prevention and treatment.²⁷

Central Asians' health status declined due to the effects of poverty and lack of health care access. In Kyrgyzstan and particularly in the country's rural areas, the poverty rate increased from 40 percent to 63 percent between 1993 and 1996.²⁸ Lack of funding for the state health care system barred large segments of the population from basic medical services,²⁹ as the need to pay for health care prevented or delayed some poor families from seeking care.³⁰ Lack of adequate health care and poor nutritional status played pivotal roles in the significant growth in Kyrgyzstan's infant

and child mortality rate.³¹ Life expectancy also dropped by several years, as Kyrgyzstanis struggled to obtain food and health care in the mid-1990s.³²

Further indicating the dire state of Central Asia's post-Soviet public health, Kyrgyzstani tuberculosis (TB) incidence rates increased 100 percent from 1991 to 2000. While the upsurge followed trends expected for the Central Asian region,³³ Kyrgyzstan's TB incidence grew faster than any other former Soviet state.³⁴ New TB infections in Kyrgyzstan may soon approach Tajikistan's very high TB incidence of 250 cases per 100,000 people.³⁵

Tuberculosis is a disease of poverty, easily spread in crowded conditions and infecting the sick and malnourished.³⁶ Through coughing, talking, or spitting, each person with active, untreated TB will infect on average between 10 and 15 people every year.³⁷ In infected people, the TB bacilli can lie dormant for several years; when an infected person's immune system is weakened, his or her chances of falling ill with active TB increase. Populations lacking food or adequate living space, alcoholics, and people living with HIV/AIDS are at particular risk of becoming infected with TB and in developing the active disease. As it spreads, TB further strains the already under-funded Central Asian public health systems by requiring them to provide needed treatment to the sick. Tuberculosis also greatly increases the burden on the poor, as the disease spreads through families and as its debilitating effects limit the ability of the poor to work and better their situations.

Post-Soviet Reforms

The Soviet health care system was wasteful and, as the system's 1990s collapse showed, unsustainable.³⁸ In response to the region's unabated economic crisis, Central Asia's health care systems have been forced to undergo a comprehensive reform to rationalize their financing and to emphasize primary care.³⁹ The type and pace of change differs in each of the countries, and Kyrgyzstan's reforms are the most complete and institutionalized.⁴⁰

The national health reform program began in the north of Kyrgyzstan in 1996 and more recently expanded to the south and to Talas and Naryn oblasts. Kyrgyzstan's health reform fosters lower-cost primary care through the creation of family medicine practice groups (FGPs), rationalization of the health system's excess physical capacity, and development of a tax-supported healthcare financing system.⁴¹ Supported by a World Bank structural assistance loan and U. S. Agency for International Development

(USAID) technical assistance, the Kyrgyz government determines the reform's objectives and implements and monitors its performance.

Radically departing from the prior system of assigning patients to doctors, the reformed health system permits families to choose their FGP from among those in the district. Each FGP is composed of a pediatrician, an internist, a gynecologist, and at least two nurses, all retrained in modern family medicine protocols. The FGP structure allows family members to receive their health care at one location, and FGPs act as gatekeepers to higher levels of care.

The architects of the health reform hoped that, if Kyrgyzstanis took personal responsibility for their own health and used FGPs' preventative and primary care services, the cost of Kyrgyzstan's system would decrease, and the health status of the population would improve. Consistent with these goals, a national Ministry of Health marketing team informs the Kyrgyz population about the ongoing reforms and conducts health promotional campaigns. Systemic reform cannot depend on health education efforts alone, however. "Financial investment in family group practices and outpatient drugs is necessary to give patients access to medicine at the primary healthcare level and to allow FGPs to function and to expand their scope of services."⁴²

As a method of freeing funding for health reform, poorly utilized or redundant hospitals or specialized polyclinics are to be closed. Most of the facilities slated for closure are SUBs in rural areas or city hospitals. Despite being located close to remote population enclaves, these facilities have little or no supplies and offer very limited services when compared with hospitals and polyclinics in the rayon center cities. Staffing and heating excess buildings drains oblast health budgets, taking funds sorely needed for basic drugs, food, supplies, and salaries. Although individual doctors oppose closing health facilities, which provide them informal payment opportunities, the oblast health departments are committed to rationalizing the health sector's resources.⁴³ Money saved from closing high cost, underutilized hospitals creates pools of funds for FGP capital investments, provider salaries, and oblast drug supplies.⁴⁴

Even with this rationalization of the systems' capacity, the revenues of Central Asian governments are insufficient to support national public health systems. In Kyrgyzstan, a mandatory health insurance fund (MHIF) provides additional resources for the health reform. The MHIF receives funds from earmarked payroll taxes and pools this money. Using innovative payment methods and based on information collected through new health information systems, the MHIF then allocates the funds to oblast

health departments for essential drugs. For hospital services, patients must pay formalized, government-approved co-payments, although the MHIF covers the costs of medication.

The MHIF mechanism has given impetus to the health reform's implementation.⁴⁵ The availability of outpatient drugs provides an incentive to reduce hospital admissions and to expand primary healthcare services.⁴⁶ A government decree to include all children as MHIF beneficiaries in 2000 expanded the fund's role to include coverage of health services.⁴⁷ Further, formal patient co-payments have significantly reduced informal payments to health providers and corruption in the health system.⁴⁸ Providers now have a legitimate means of increasing their salaries, and patients are given prior notice of the charges for their health care.

Currently, among the Central Asian Republics, only Kyrgyzstan has a functioning MHIF. The other Central Asian republics are reluctant to replicate this off-budget financing system. Uzbekistan, Tajikistan, and Turkmenistan have not developed a health insurance fund, and Kazakhstan's MHIF lasted three years before it was eliminated due to political wrangling and because of the lack of legal and regulatory systems necessary for the MHIF's support.⁴⁹

Kyrgyzstan's willingness to implement health sector reform has served as a catalyst for attracting and coordinating international health aid in Kyrgyzstan. A variety of governments and organizations, including the World Health Organization (WHO), World Bank, the European Bank of Reconstruction and Development, and the Asian Development Bank, have provided training and support for doctors, nurses, and midwives throughout the country. Other donors, such as the United Nations Children's Fund (UNICEF) and USAID, have provided immunizations and nutritional supplements and have conducted breastfeeding training classes.⁵⁰ Initial studies demonstrate that the reformed, rationalized, retrained, and refunded health care system also provides better quality services.⁵¹ Improved public health and infant and child survival are expected from these efforts.⁵²

Demographic and Epidemiological Transitions

The transitional state of Central Asia's public health system has precipitated changes in the area's patterns of population and disease growth. Immediately before and after the Soviet collapse, Central Asia's health indicators resembled those of a developing country with high birthrates but high infant and maternal death rates. The leading causes of death were infectious diseases. More recently, the causes of Central Asians' deaths are

changing; chronic conditions more often found in developed countries, such as heart disease, are increasingly producing a greater percentage of deaths. At the same time, infant and under-five mortality rates appear to be improving throughout the region. Maternal mortality, preventable deaths due to pregnancy, childbirth, and abortion complications, is also decreasing. In 1990, 110 Central Asian mothers died for every 100,000 women having a live birth.⁵³ By 2002, the average maternal mortality ratio had dropped to 65 women per 100,000 having a live birth.⁵⁴

Demographic Transition

Like the rest of Central Asia, Kyrgyzstan is undergoing a transition from high fertility and mortality rates to low fertility and mortality rates. Kyrgyzstan's total fertility rate is officially 2.5, which is relatively low.⁵⁵ Yet a high prevalence of abortion in Kyrgyzstan, as in all former Soviet countries, may obscure a much higher actual total fertility rate, suggesting that the country still is in the middle of a demographic transition.⁵⁶

Central Asia's children face a moderate risk of death during their first five years of life. In 2001, for every 1,000 babies born alive in Kyrgyzstan, 52 died before their first birthday.⁵⁷ Of children under five years of age, 61 died for every 1,000 children.⁵⁸ Again, these official rates may understate the true number of deaths of Kyrgyz children. Others estimate that 76.5 infants die for every 1000 born alive.⁵⁹

Most of Central Asia's population is slow-growing due to the effects of migration. In Kyrgyzstan, the crude birth rate is estimated at 26.06 births per 1,000 population; the crude death rate is expected to be 9.10 deaths per 1,000 population.⁶⁰ Rapid population growth is expected where a country's crude birth rate exceeds its crude death rate; yet Kyrgyzstan's population grew only by an estimated 1.46 percent in 2003.⁶¹ This lower population growth resulted from 2.37 per 1,000 people migrating from Kyrgyzstan.⁶²

Uzbekistan is an exception to Central Asia's demographic trend of lower birth and death rates. With 40 percent of its citizens younger than 16 years old, Uzbekistan's population is expected to double in 50 years to 50 million people.⁶³ Such rapid population growth clearly will exacerbate the deteriorating post-Soviet health system. To merely maintain its current level of health care, Tashkent will need to more than double the amount of resources dedicated to health services.⁶⁴

Epidemiological Transition

Central Asia represents a pre- and post-epidemiological transition mix, where new health concerns, especially alcoholism and smoking, compound the effects of diseases spread due to poverty and the collapsing healthcare system. Throughout the region, the top causes of adult morbidity and mortality are both chronic and infectious conditions found in developing (pre-transitional) and developed (post-transitional) countries. Most adult deaths in Kyrgyzstan, for example, are attributed to respiratory infections, chronic cardiovascular conditions, and accidents or injuries.⁶⁵

High mortality due to chronic, preventable conditions is characteristic of post-transitional countries. Cardiovascular disease is the largest contributor to the gap in mortality between Central Asia and industrialized countries, with rates about five times higher than in Western Europe.⁶⁶ The high prevalence of smoking, especially among Central Asian men, is the cause of much cardiovascular mortality.⁶⁷ Alcoholism is also contributing to a rising rate of mortality and morbidity due to cardiovascular disease deaths⁶⁸ and to injury, including injuries caused by alcohol-fueled domestic and gender-based violence.⁶⁹

Rising rates of deaths from non-communicable diseases notwithstanding, sickness caused by infectious diseases indicates that Central Asian countries remain, in many ways, “developing countries.” In Central Asia, infectious respiratory and diarrheal diseases kill many infants and young children.⁷⁰ Sexually transmitted infections are also spreading rapidly among Central Asian youth and adults.⁷¹ Further, the region faces growing rates of tuberculosis and drug resistant tuberculosis infection.⁷² For the Central Asian region, more years of life are lost to disability from communicable diseases, maternal and perinatal conditions, and nutritional deficiencies than from all non-communicable conditions combined.⁷³

The effects of Central Asia’s demographic and epidemiological transition can be summarized through a description of Kyrgyzstan’s population. If they survive their early childhood, Kyrgyzstan’s ethnically diverse 4.6 million people can expect to live, on average, for 68 years before succumbing to either a disease typical of a developing country or a lifestyle-related sickness common to a developed country. Given Kyrgyzstan’s mortality rates due to respiratory disease, which are the highest in the former Soviet Union, Kyrgyz’s risk of dying due to tuberculosis is particularly acute.⁷⁴

Pressing Health Challenges

Central Asia in transition exhibits some of the worst features of both developed and developing countries, with high rates of heart disease and childhood infections.⁷⁵ This pattern indicates the importance of strengthening health education and addressing malnutrition and other infectious, chronic, and injury-caused health threats.

Health Promotion/Education

The lack of basic health education and health awareness promotion in Central Asia is perhaps the most important problem facing the region's health sector.⁷⁶ The region's top causes of mortality and morbidity—both infectious and chronic—could be addressed through education programs targeting both adults and children and focusing on behavior change. For example, if parents and children were taught the importance of handwashing after defecation and before food preparation, this would help prevent the incidence of diarrhea. Similarly, educating people about the risks of smoking and of non-monogamous, casual sexual behavior might cause people to avoid these behaviors. Given Central Asia's many childhood deaths from diarrhea, and the region's rising rates of mortality from smoking and morbidity from sexually transmitted diseases, health education is essential.

With decreasing health budgets, the Central Asian states' crumbling public health systems have scarce resources to develop and implement health promotion programs. The region's ongoing health reform gives the international community opportunities to assist Ministries of Health in the creation of health education projects. Consistent with the goals of health reform, preventative, community-level health initiatives are less expensive than the Soviet curative health system, and involve people in the health decisions that affect them.

In Kyrgyzstan, USAID formatted a health promotion pilot project in Chuy oblast. Through this project, FGPs give health talks in schools and businesses, set up information centers in communities to distribute health educational materials, and show video spots on prevention of various diseases, including sexually transmitted infections (STIs).⁷⁷ In Uzbekistan, this program trained Ferghana Oblast schoolteachers to develop plans for primary school health lessons. Lessons covered topics such as bodily and oral hygiene, nutrition and anemia, acute respiratory infections, diarrhea, "bad habits" (including smoking, alcohol, and drugs), and reproductive health focused on puberty.⁷⁸

Health promotion work requires improving the communications skills of front-line, community health workers.⁷⁹ Increasing the skills of nurses is of particular importance in Central Asia, where 70 percent of the population is rural-based with little access to doctors.⁸⁰ In many cases, nurses and midwives at rural FAPs are the first and only health care providers available to the population. As part of the health reform in Kyrgyzstan, FGP nurse retraining programs in management of childhood illness and reproductive health are active in six of the country's seven oblasts.⁸¹

Nutrition

Malnutrition is one of the primary causes of under-five child mortality in Central Asia.⁸² However, the effects of micronutrient deficiency reach far beyond mere mortality; both goiter and anemia are extremely prevalent in the region's women and children. In the Ferghana Valley, between 60 and 80 percent of women and young children suffer from anemia caused by an iron-poor diet.⁸³ Throughout the Central Asia republics, only non-iodized salt is commonly available, resulting in a steep rise in iodine deficiency disorders over the past five years,⁸⁴ and disabling up to 90 percent of young children in some areas of Kyrgyzstan.⁸⁵ Since a mother's iron or iodine deficiency may impair the cognitive and physical development of her children, the health of future Central Asians depends on addressing malnutrition now. To call attention to the problem of malnutrition in Uzbekistan, international donors created a three-part television series entitled "Simple Truth" that promotes the consumption of meat and other iron-rich foods.⁸⁶

Another nutritional intervention, exclusive breastfeeding, could play an important role in reducing Central Asian infant and child mortality from causes other than malnutrition. Diarrhea and acute respiratory infection are responsible for much of the region's infant and child mortality and morbidity. Breastfeeding helps to prevent and reduce the incidence of diarrheal and respiratory disease in infants. Despite this beneficial effect of breastfeeding, many Central Asian mothers wean their infants or give their babies tea and other liquids.⁸⁷ Thus, increasing the number of mothers who exclusively breastfeed their children up to six months of age could reduce the infant and child mortality rate.

Infectious Disease

AIDS

In 1999, Central Asia had the world's steepest increase in HIV infection;⁸⁸ yet the true extent of AIDS—caused by HIV—in Central Asia is un-

known, due to the lack of accurate reporting.⁸⁹ Kazakhstan's government reported the highest HIV/AIDS prevalence rates in Central Asia, with 1,122 HIV positive cases and 31 AIDS cases, but only 92 HIV infection cases are confirmed across the border in Kyrgyzstan.⁹⁰ Broader regional data may be a harbinger of an imminent AIDS epidemic, much worse than official figures indicate. From 1995 to 2000, the estimated number of HIV infections in Eastern Europe and Central Asia increased by more than twenty-fold, from less than 30,000 to more than 700,000.⁹¹ The infection incidence similarly continues to grow exponentially in the region, with 250,000 new infections in 2000 alone. In Kyrgyzstan, the majority of new HIV cases are among injecting drug users (IDUs) living in Osh and the Ferghana Valley. In Osh and Bishkek, over 5 percent of IDUs are likely HIV infected.⁹²

The AIDS epidemic will soon spread from IDUs to their sexual partners and to the general heterosexual population, indicated by a rapid rise in other STIs in the region. Central Asia syphilis prevalence rates exploded in the 1990s, jumping almost 150 percent in Kyrgyzstan from 1990 to 1996 and a staggering 225 percent in Kazakhstan during the same period.⁹³ In 1999, one in every 90 Kyrgyzstani men had syphilis.⁹⁴ Syphilis and HIV are both transmitted through unprotected sexual intercourse, so groups at risk for syphilis also are at risk for HIV. In addition, STI infection increases the likelihood of HIV transmission during unprotected sex.⁹⁵

Central Asian adolescents are a particularly high-risk group for sexually transmitted infections, including syphilis and HIV. In Kyrgyzstan, the 1998 incidence of STIs in urban youth was 170 per 100,000, an infection rate considerably higher than the average urban population (100 infections per 100,000 people).⁹⁶ The causes of the disproportionate STI youth infection rate are likely due to adolescents' hazardous sexual activity and lack of disease prevention ability or knowledge. Indeed, 40 percent of sexually active urban adolescent Kyrgyz girls reported receiving remuneration for sexual intercourse.⁹⁷ This information about risk taking behavior portends a serious challenge to Central Asian public health.

Tuberculosis

Despite recent efforts to diagnose and control TB, the disease is spreading unabated in Central Asia. Kyrgyzstan is combating the most serious new epidemic of TB in the former Soviet Union. Of the country's 4.6 million people, 126.9 out of every 100,000, approximately 5837 people, are currently infected;⁹⁸ and the new infection rate may soon reach 250 per 100,000.⁹⁹

The development of multi-drug resistant tuberculosis (MDR-TB) makes addressing tuberculosis infection a public health priority for all of Central Asia. MDR-TB is rising at alarming rates in the former Soviet Union and threatens global TB control efforts.¹⁰⁰ MDR-TB is virulent because the disease cannot be controlled by isoniazid and rifampicin, the two most powerful, and least expensive, anti-TB drugs.¹⁰¹

Drug-resistant TB is caused by inconsistent or partial chemotherapy—when TB patients do not take all their drugs regularly for the required period.¹⁰² Central Asians often treat themselves for TB, purchasing antibiotics from street vendors and discontinuing treatment once they feel better, but before the TB bacilli are killed.¹⁰³ Health workers also may prescribe the wrong treatment regimens for a patient's TB. These TB drug treatments are individualized and do not follow WHO recommendations, resulting in low cure rates, cases of chronic infections, and drug-resistance.¹⁰⁴ Further, the TB drug supply is unreliable and treatment may be interrupted when delivery of medication is delayed.¹⁰⁵ Whereas during the Soviet period patients were treated with at least three anti-TB drugs, health personnel now often have to rely on only two drugs, isoniazid and rifampin. Given the high likelihood in the region of pre-existing resistance to one of these agents, this situation will lead to the generation and transmission of multidrug-resistant strains.¹⁰⁶

TB infection is particularly rife in Central Asia's prisons. Prison inmates are more susceptible to the disease because TB spreads in the overcrowded, poorly ventilated cells, and because the prisoners themselves are often sick and malnourished.¹⁰⁷ Due to lack of treatment and medication, many prisoners develop MDR-TB.¹⁰⁸ Statistics from Kazakhstan show that the TB morbidity rate among prisoners is more than 20 times higher than among the general population.¹⁰⁹ In Kyrgyzstan, more than 10 percent of all inmates are likely infected with TB—close to 2,000 people in 40 prisons.¹¹⁰ Of these, roughly 30 percent are likely to be infected with MDR-TB.¹¹¹ When prisoners are released and return home, they spread their MDR-TB to their communities.¹¹² In an effort to reduce prison costs and overcrowding, Kyrgyzstan offered amnesty to individuals convicted of petty crimes—nearly 50 percent of the prisoners in the country. Among the first groups scheduled to receive amnesty were prisoners with tuberculosis.¹¹³

Tuberculosis control in Central Asia is needed immediately before the disease spreads from Central Asia to other countries. The WHO is attempting to assist Central Asian governments in implementing a rapid TB detection and treatment strategy called Directly Observed Treatment,

Short Course (DOTS).¹¹⁴ DOTS has been effective in controlling traditional TB, producing cure rates of up to 95 percent even in the poorest countries. DOTS also prevents the development of MDR-TB by ensuring the full course of treatment is followed. The World Bank has ranked the DOTS strategy as one of the “most cost-effective of all health interventions.”¹¹⁵

Kyrgyzstan’s government has prioritized TB eradication.¹¹⁶ With WHO help, DOTS protocols are being taught to primary care practitioners at the community-level.¹¹⁷ Generalists’ wide coverage places them in a position to reach a much larger segment of the population than that attended by the Soviet vertical TB control system.¹¹⁸ Yet the under-financed primary healthcare system in Kyrgyzstan is limited in the care it can provide. A six-month supply of drugs for DOTS costs eleven U.S. dollars per patient,¹¹⁹ thus \$50,000 is needed to treat those currently infected in Kyrgyzstan. A comprehensive TB control program also requires funds to support home visits to the most seriously ill in their communities, to ensure that the sick follow their treatment regimes.

Lack of funding in the health care system prevents countries from providing the expensive medicines needed to fight MDR-TB. Although international donors provide some TB medication, Central Asian Ministries of Health have no available funds to extend TB-control services to underserved populations, such as those in prison. While the WHO and others have vigorously promoted the DOTS program in Kyrgyzstan, little can be accomplished without targeted monetary support for the new TB protocols.

Gender-Based Violence

Central Asian women are suffering a growing incidence of domestic and other gender-based violence. Post-Soviet economic hardships, changing social roles of men and women, and men’s alcohol consumption all contribute to a greater incidence of spousal beatings, and the revival of “traditional” practices harmful to women.¹²⁰ In particular, bride stealing, that is, the kidnapping, rape, and subsequent forced marriage of a young woman, has increased in Kyrgyzstan, Kazakhstan, and in some regions of Uzbekistan.¹²¹ Ethnographers attribute the recent increase in bride stealing to young men’s newfound ability to abuse women with impunity¹²² and men’s desire to avoid the “inconveniences” of courtship and a wedding.¹²³ In Karakalpakstan, Uzbekistan, bride stealing is related to the revived practice of “qalym,” or bride price. Prospective grooms who wish to avoid

paying a sizable qalym often resort to stealing their intended spouse without her consent.¹²⁴

Only scant data is available describing the incidence of bride stealing, the prevalence of stolen brides, or the characteristics of the victim. A late 1990s study of women in a region in southern Kazakhstan found that 80 percent of these women were stolen as brides.¹²⁵ In 1996, *The Economist* estimated that one in five marriages of Kyrgyz (approximately 240,000 women) were a result of bride stealing.¹²⁶ Only one sociological survey has sought to depict both the practice and the characteristics of men and women involved in Kyrgyz bride stealings. A convenience sample of over 300 bride stealings found that the abducted brides ranged in age from 16 to 28 years old (average 19.4 years), while abductors ranged from 17 to 45 (average age 23.5 years).¹²⁷

Bride stealing apparently occurs at such a rate that its harm to women constitutes a public health problem.¹²⁸ The tradition affects women's physiology and psychology. A woman may suffer physical trauma at the time of abduction. Many stealings involve the use of blunt force to "capture" the bride.¹²⁹ Following capture, the woman may be raped,¹³⁰ resulting in severe damage to her external and internal reproductive organs.¹³¹ The bride stealing practice also may put women at risk for sexually transmitted infections. The stolen bride is not able to negotiate her sexual initiation with her new husband, and it is very unlikely that she will be able to insist on condom use during intercourse.¹³² Similarly, bride stealing renders a woman completely vulnerable to her abductor and his family. This power imbalance puts the bride at risk of future domestic violence at the hands of her new husband.¹³³ For adolescents, bride stealing may result in a greater risk from maternal mortality due to obstructed labor, a problem in women whose physical development is not complete at the time of pregnancy.¹³⁴

Bride stealing also harms women's psychological health.¹³⁵ A woman kidnapped and raped by a stranger is subject to severe mental trauma¹³⁶ and lingering post-traumatic stress disorder.¹³⁷ Even if a bride is able to reject her abduction and return to her home, she may suffer rejection from her peers and family.

Central Asian governments' prevention of bride stealing and other forms of gender-based violence is demanded by domestic and international law. The Kyrgyz Criminal Code, for example, imposes a two-year prison sentence on those who "steal" a person for the purposes of marriage.¹³⁸ In addition, Kyrgyzstan is party to human rights treaties that demand countries protect and promote women and girl's rights.¹³⁹ Despite these obligations to protect women, however, out of hundreds of thousands of women

stolen, only two bride stealing cases were litigated in Kyrgyzstan from 1985 to 1996.¹⁴⁰ By failing to address violence against women, the Central Asian states also fail to protect the public's health.

Conclusion

With their transition from dependent Soviet states to independent countries, Kyrgyzstan, Kazakhstan, Uzbekistan, Tajikistan, and Turkmenistan have undergone massive economic, social, and political upheaval. These rapid changes have resulted in the Central Asian states' inability to maintain their Soviet-inherited health system. The Soviet Union obtained its public health successes through extensive financing of regional medical and epidemiological departments that operated according to centrally established goals. The system relied on a massive infrastructure of tertiary care facilities and required lengthy patient management by medical specialists. These public health protocols and systems were not financially or medically effective for independent, but bankrupt, Central Asia. The Central Asian governments' failure to provide preventative health care programs, coupled with the population's increasing poverty, created favorable conditions for the spread of infectious disease and the expansion of chronic, lifestyle-related health conditions.

Driven by their legal obligations to address the causes of sickness and death, and their desire to maintain their citizens' health, Central Asian republics began in 1992 to reform their public health systems. At least in Kyrgyzstan, these reformed health care systems focus on preventative care provided by better-trained generalists, and are supported by innovative financing schemes. The health reforms offer a mechanism for the Central Asian republics to increase the population's involvement in and understanding of health care decision making, thus decreasing the population's need for costly curative care. However, Central Asia's nascent public health systems already face challenges from the health problems of the region's epidemiological and demographic transition. In some areas, the majority of women and children suffer the effects of malnutrition. Simultaneously, HIV/AIDS and other sexually-transmitted infections, TB infection, and gender-based violence are increasingly prevalent.

Failure to take rapid action to meet these health challenges will have grim results for the whole of Central Asia. Governments and public officials who blindly ignore some public health threats, such as those affecting women or other marginalized groups, will contribute to the weakening of norms and laws that could lessen vulnerability and that could serve as tools for improving health status. In addition, lack of response to one

health challenge can lead to the spread of incurable diseases throughout the region, even to areas yet untouched. The region's most pressing health conditions interact with one another, each rendering the population vulnerable to the others. As discussed in this chapter, abused women are likely to be infected with STIs; people infected with an STI like syphilis are more likely to contract HIV; and malnutrition weakens the population's resistance to TB, as does HIV infection.

Although it may have increased the health risks to the public, Central Asia's demographic, epidemiological, and political flux also offers the region unique opportunities for improving individuals' health knowledge, raising standards of care, and empowering women. It has been only a little more than a decade since the Central Asian republics' independence, and the countries are still searching for the most effective and efficient ways to structure their public health systems. In each nation, ongoing discussions about the potential for health care reform and engagement with international donor organizations indicate a willingness to exchange new ideas for old responses. The form such reforms take may differ in each Central Asian country, according to that country's needs and context, yet no more can the region afford curing its sick population primarily with hospitals and specialists. Central Asia's pressing health problems of malnutrition, sexually transmitted diseases, tuberculosis, and gender-based violence can be prevented only through increasing awareness about and by giving communities the resources (vitamins, condoms, DOTS medications, trained police, respectively) to address these conditions. Of paramount importance is for Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan to reaffirm a focus on community-based health promotion and education and a commitment to allocate funding to such programs.

Notes

¹ W. Ward Kingkade and Eduardo E. Arriaga, "Mortality in the Newly Independent States: Patterns and Impacts," in *Premature Death in the New Independent States*, eds. J.L. Bobadilla et al., eds. (Washington, DC: National Academy Press, 1997), 157.

² Renata Rutman, "Antiquated Residency Rules Pose Public Health Threat in Central Asia," *Eurasia Insight* (December 29, 2001).

³ United Nations Children's Fund (UNICEF), "Basic Indicators" Statistical Table 1, State of the World's Children (2003) (reporting statistics from 2001), available at <<http://www.unicef.org/sowc03/tables/table1.html>>.

⁴ Kazakhstan's reported infant and under-five child mortality has risen dramatically in the past two years; during the same time, life expectancy in the country has decreased. Compare UNICEF,

supra note 3 with UNICEF, State of the World's Children, "Basic Indicators" Statistical Table 1 (2001) (reporting statistics from 1999), available at <<http://www.unicef.org/sowc01/tables/table1.html>>.

⁵ See generally, United Nations Development Program (UNDP), Kyrgyzstan: Common Country Assessment (Bishkek: UNDP 2001), 99-100 (noting regional variations in Kyrgyzstan).

⁶ See generally, Republican Medical Information Center, Characteristics of the Health Care Delivery Network (Bishkek: Ministry of Health of the Kyrgyz Republic, 1999).

⁷ Constitution of the Union of Soviet Socialist Republics, Article 42 (1977).

⁸ Anita Parlow, "The Central Asia Health Care Collapse," *Eurasia Insight* (December 21, 2001).

⁹ Martin McKee et al., eds., *Health Care Systems in the Central Asian Republics* (European Observatory on Health Care Systems (Buckingham: Open University Press, 2002), 7.

¹⁰ N.N. Brimkulov and S.M. Kuchuleev, "Primary Health Care in Kyrgyzstan" (Rotems Foundation, 2001). Online, available at <http://www.rotem.ro/eng/pages/kyrgyzstan.html>, retrieved Aug. 31, 2003.

¹¹ McKee et al., supra note 9, 71.

¹² World Bank, *Making Transition Work for Everyone: Poverty and Inequality in Europe and Central Asia* (Washington, DC: World Bank Group, 2000), 258.

¹³ UNDP, "Kyrgyzstan," Human Development Report 2003 (Oxford: Oxford University Press 2003), available at <http://www.undp.org/hdr2003/indicator/cty_f_KGZ.html>.

¹⁴ McKee et al., supra note 9, 7.

¹⁵ United States Agency for International Development (USAID), "Quality Primary Health Care," USAID Central Asian Republics Briefs (2003), available at <http://www.usaid.gov/regions/europe_eurasia/car/briefers/primary_health.html>.

¹⁶ Julie DaVanzo and Clifford Grammich, "Dire Demographics: Population Trends in the Russian Federation" (Washington, DC: RAND, 2001), 50, available at <http://www.rand.org/publications/MR/MR1273/>.

¹⁷ USAID, supra note 15.

¹⁸ McKee et al., supra note 9.

¹⁹ Alexander Casella, "Health Care Systems Under the Weather," *Asia Times Online* (January 18, 2001). Reprinted by Asia Human Rights Commission, online, at <http://www.ahrchk.net/news/main-file.php/ahrnews_200201/2292/>, retrieved September 30, 2002.

²⁰ Cf. N. Almagambetova, "Overhauling the Health-care System in Kazakhstan," *Lancet* 354 (9175) (1999): 313 (discussing the financial crisis in Kazakhstan's social sector). Also cf. S. Keshavjee and M.C. Bacerra, "Disintegrating Health Services and Resurgent Tuberculosis in Post-Soviet Tajikistan: An Example of Structural Violence," *JAMA* 283(9) (2000):1201 (discussing the results of the financial crisis in Tajikistan's health sector).

²¹ McKee et al., supra note 9, 38.

²² *Ibid.*

²³ *Ibid.*, 7.

²⁴ *Ibid.*, 29.

²⁵ European Observatory on Health Care Systems, *Health Care Systems in Transition: Kyrgyzstan* (Copenhagen: European Observatory on Health Care Systems, 1996), 16.

²⁶ World Bank, supra note 12.

²⁷ *Ibid.*

²⁸ Peace Corps of the United States, *Kyrgyz Republic: Country and Culture* (2000). Online, available at <<http://www.peacecorps.gov/countries/kyrgyzrep/culture.htm>> retrieved Sept. 30, 2002.

²⁹ Casella, supra note 19.

³⁰ McKee et al., supra note 9, 103.

³¹ World Bank, World Development Indicators Database, July 2002. Online, available at <<http://www.devdata.worldbank.org/data-query>, retrieved Sept. 30, 2002>.

³² World Bank, supra note 12, 260; USAID, supra note 15.

³³ Kabar News Agency, "U.N.: 55 Percent of Kyrgyz Population Below Poverty Line," BBC Worldwide Monitoring (January 20, 2000).

³⁴ UNDP, *supra* note 13.

³⁵ Keshavjee and Becerra, *supra* note 20. At 88 cases per 100,000 people, tuberculosis prevalence in Kyrgyzstan already exceeds that in Tajikistan (83 cases/100,000 people), see UNDP, *supra* note 13.

³⁶ WHO, "Tuberculosis," Information Fact Sheet No. 104 (2000).

³⁷ *Ibid.*

³⁸ USAID, "Kyrgyzstan," FY 1998 Congressional Presentation (June 1998), available at <<http://www.usaid.gov/pubs/cp98/eni/countries/kg.html>>.

³⁹ *Ibid.*

⁴⁰ McKee et al., *supra* note 9, 7.

⁴¹ Brimkulov and Kuchuleev, *supra* note 10.

⁴² Personal communication with Sheila O'Dougherty, Regional Director, ZdravPlus, USAID/World Bank Central Asian Health Reform Project, Bishkek, Kyrgyzstan (October 10, 2000).

⁴³ Personal communication with Mary Murphy, Kyrgyzstan Program Manager, Zdrav Plus, USAID/World Bank Central Asian Reform Project, Washington, DC (August 25, 2002).

⁴⁴ See generally, ZdravPlus, Six Month Report, January - June, 2002, (Almaty, Kazakhstan: Abt Associates 2002), 44. This report states, "Under the old health financing system, the MOH or providers were unable to reinvest any savings they created, as they [the savings] would revert to the [Ministry of Finance]... Pooling funds allows reinvestment of savings as all the money is in one pool, not in budget line items. Provider payment systems allow providers the autonomy to create and reinvest savings."

⁴⁵ Michael Borowitz et al., "Conceptual Foundations for Central Asian Republic Health Reform Model," Technical Report of the ZdravReform Program (Almaty, Kazakhstan: Abt Associates, 1999).

⁴⁶ ZdravPlus, *supra* note 44, 45.

⁴⁷ McKee et al., *supra* note 9, 104.

⁴⁸ ZdravPlus, *supra* note 44, 46-47.

⁴⁹ *Ibid.*, 4-5, 18. See also McKee et al., *supra* note 9, 104.

⁵⁰ USAID, *supra* note 38.

⁵¹ ZdravPlus, "Quality Improvement System Improves Reproductive Health Services, Enhances Client Satisfaction, and Empowers Health Workers in Kyrgyzstan," Road to Results (Almaty: Abt Associates, 2001).

⁵² Republican Medical Information Center, Characteristics of the Health Care Delivery Network (Bishkek, Kyrgyzstan: Ministry of Health of the Kyrgyz Republic, 1999).

⁵³ World Health Organization (WHO), "Annex Table 1: Basic Indicators," World Health Report 1999 (Geneva: WHO, 1999), available at <http://www.who.int/whr/2002/en/whr2002_annex1.pdf>.

⁵⁴ UNICEF, *supra* note 4 at "Women," Statistical Table 7.

⁵⁵ United States Central Intelligence Agency (CIA), "Kyrgyzstan," *CIA World Factbook 2003* (Washington, DC: CIA, 2003), available at <<http://www.cia.gov/cia/publications/factbook/geos/kg.html>>.

⁵⁶ Population Resource Center, The Replacement on Abortion by Contraception in Three Central Asian Republics (Washington, DC: The Center, 1998).

⁵⁷ UNICEF, *supra* note 3.

⁵⁸ *Ibid.*

⁵⁹ B.A. Anderson and B.D. Silver, "Issues of Data Quality in Assessing Mortality Trends and Levels in the New Independent States" in Bobadilla et al., *supra* note 1.

⁶⁰ CIA, *supra* note 55.

⁶¹ *Ibid.*

⁶² *Ibid.*

⁶³ Antoine Blua and Bruce Pannier, "Central Asia; Uzbekistan Races to Reverse Health Trends as Population Booms (Part 3)," Radio Free Europe/Radio Liberty (RFE/RL) (March 22, 2002), available at <<http://www.rferl.org/nca/features/2002/03/22032002125509.asp>> .

⁶⁴ *Ibid.*

⁶⁵ C.M. Davis, "Health Care Crisis: The Former Soviet Union," RFE/RL Research Report (October 8, 1993).

⁶⁶ McKee et al., *supra* note 9, 61.

⁶⁷ Centers for Disease Control and Prevention (CDC), "Kyrgyzstan," Tobacco of Health: A Global Status Report (2000), available at <<http://www.cdc.gov/tobacco/who/kyrgyzst.htm>>.

⁶⁸ Alexandra Poolos, "East: Taking the Pulse of Post-Soviet Health Care (Part 1)," RFE/RL (March 22, 2002), available at <<http://www.rferl.org/nca/features/2002/03/22032002125429.asp>>.

⁶⁹ Expert Center for Social Research (Uzbekistan), "Consultations with the Poor: Participatory Poverty Assessment in Uzbekistan for the World Bank World Development Report 2000/01," National Synthesis Report (1999), 22.

⁷⁰ WHO, *supra* note 53, Annex Table 3. See also UNICEF, *supra* note 3 (showing that Kyrgyzstan's infant mortality rates and under-five mortality rates are similar to other Central Asian countries).

⁷¹ World Bank Group, "Improving Health Status and Reforming Health Systems in Europe and Central Asia," ECA Sector Brief - Health (September 2000).

⁷² *Ibid.*

⁷³ WHO, *supra* note 53, Annex Table 4.

⁷⁴ World Bank Group, *supra* note 71.

⁷⁵ McKee et al., *supra* note 9, 7.

⁷⁶ Cf. DaVanzo and Grammich, *supra* note 16.

⁷⁷ ZdravPlus, *supra* note 44, 33.

⁷⁸ *Ibid.*, 55.

⁷⁹ *Ibid.*, 30.

⁸⁰ See generally, "Tajikistan: Urgent Need for Health Education," Integrated Regional Informational Networks of the U.N. Office for the Coordination of Humanitarian Affairs (IRIN) - Kofarnihon (July 25, 2002).

⁸¹ ZdravPlus, *supra* note 44, 36.

⁸² WHO, "Annex Table 3," World Health Report 2000 (Geneva: WHO 2000).

⁸³ Blua and Pannier, *supra* note 63.

⁸⁴ "Kazakhstan: Boosting Nutrition with a Pinch of Salt," IRIN - Almaty (August 8, 2002).

⁸⁵ Personal communication with Rudy Rodrigues, Resident Project Officer, UNICEF-Kyrgyzstan, Bishkek, Kyrgyzstan (1998). See also, World Bank, *supra* note 12, 261.

⁸⁶ ZdravPlus, *supra* note 44, 36.

⁸⁷ Personal communication with Dr. Damira Tursunbekova, Technical Advisor, BASICS, USAID Child Survival Project, Bishkek, Kyrgyzstan (1998). See also, World Bank, *supra* note 12, 260.

⁸⁸ USAID, "Health Issues," USAID Central Asian Republics Briefs (2003), available at <http://www.usaid.gov/regions/europe_eurasia/car/briefers/health_issues.html>.

⁸⁹ Renata Rutman, "Antiquated Residency Rules Pose Public Health Threat in Central Asia," *Eurasia Insight* (December 29, 2001) (noting that the dearth of HIV data is related to Central Asia's continuing reliance on the residency registration system which hinders unregistered residents, such as refugees and internally displaced people, from seeking government-provided HIV counseling and treatment).

⁹⁰ WHO and UNAIDS, "Kyrgyzstan, 2001 Update," Epidemiological Fact Sheet (Geneva: UNAIDS/WHO, 2001).

⁹¹ Doris S. Mugrditchian, UNAIDS, UNICEF, and USAID, Report from Conference on the Prevention of HIV/AIDS and Sexually Transmitted Infections in Central Asia, Almaty, Kazakhstan, May 16-19, 2001, 4.

⁹² *Ibid.*

⁹³ WHO, "Syphilis Prevalence Rates in the Former Soviet Union Countries, 1990-1996," Global Prevalence and Incidence of Selected Curable Sexually Transmitted Infections (2001), 23. The incidence of syphilis has decreased from its 1997 apex to 73.5 per 100,000 population, see WHO and UNAIDS, "Kyrgyzstan, 2002 Update," Epidemiological Fact Sheet (Geneva: UNAIDS/WHO, 2002).

⁹⁴ Personal communication with Dr. Ainagul Isakova, Family Practice Group Director, Ministry of Health of the Kyrgyz Republic, Bishkek, Kyrgyzstan (1999). See also, UNDP, *supra* note 5, 100.

⁹⁵ UNAIDS, "Questions and Answers about AIDS: Prevention and Care" (2003), available at <[http://www.unaids.org/Unaid/EN/Resources/Questions_Answers/Q_A+III_Selected+issues_prevention+and+care/Section+VIII_Sexually+Transmitted+Infections+\(STIs\).asp](http://www.unaids.org/Unaid/EN/Resources/Questions_Answers/Q_A+III_Selected+issues_prevention+and+care/Section+VIII_Sexually+Transmitted+Infections+(STIs).asp)>, stating, "The prevention and treatment of STIs are key strategies in the fight against HIV/AIDS because the presence of STIs magnifies the risk of HIV transmission during unprotected sex tenfold."

⁹⁶ Mugrditchian, *supra* note 91 11.

⁹⁷ *Ibid.*

⁹⁸ UNDP, Kyrgyzstan 2000 program website. Online, available at <<http://www.undp.kg/english/country.html>>, retrieved September 30, 2002. Website notes an increase of TB over data reported in UNDP, *supra* note 5.

⁹⁹ Keshavjee and Becerra, *supra* note 20, 1201.

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*

¹⁰² *Ibid.*

¹⁰³ K. Lally, "As the Aral Sea Retreats, Dust and Disease Flourish," *The Sun* (Baltimore, MD) February 14, 1999, 1A.

¹⁰⁴ World Bank, *supra* note 12.

¹⁰⁵ WHO, *supra* note 25.

¹⁰⁶ Keshavjee and Becerra, *supra* note 20.

¹⁰⁷ International Helsinki Federation for Human Rights, "Kyrgyzstan," Annual Report (1999), available at <<http://www.ihf-hr.org/reports/ar99/ar99kyr.html>>.

¹⁰⁸ Project Hope, News website (2000). Online, available at <<http://www.projecthope.org/news/prisons.html>>, retrieved September 30, 2002.

¹⁰⁹ *Ibid.*

¹¹⁰ Roy Walmsley, UK Home Office Research, Development and Statistics Directorate, "Research Findings," World Prison Population List (1999), 88. See also, International Helsinki Federation for Human Rights, *supra* note 107.

¹¹¹ International Helsinki Federation for Human Rights, *supra* note 107.

¹¹² Cynthia Long and Doug Rekenhaller, Jr., "Phoenix-Like, Tuberculosis Rises Again to Threaten World Health," Disaster Relief website (March 26, 1999). Online, available at <<http://www.disasterrelief.org/disasters/990319tuberculosis/>>, retrieved September 30, 2002.

¹¹³ "Kyrgyz Mull Amnesty for Half of Prison Population," Reuters (December 26, 2000).

¹¹⁴ M.C. Raviglione et al., "Assessment of Worldwide Tuberculosis Control," 350(9078) *Lancet* (1997) 624-29.

¹¹⁵ *Ibid.*

¹¹⁶ Kabar News Agency, *supra* note 33.

¹¹⁷ ZdravPlus, *supra* note 44, 43 (noting that the Kyrgyz MOH announced that it is developing an order making FGP doctors responsible for the continuation phase treatment of tuberculosis).

¹¹⁸ A. Pio and K. Western, "Tuberculosis Control in the Americas, Current Approaches," 10 *Bulletin Pan-American Health Org.* 3 (1976).

¹¹⁹ WHO, *Treatment of Tuberculosis: Guidelines for National Programs* (Geneva: WHO, 2nd ed., 1997).

¹²⁰ Expert Center for Social Research (Uzbekistan), *supra* note 69.

¹²¹ Sue Lloyd-Roberts, "Plight of Kyrgyzstan Brides Who Are Kidnapped, Raped and Abandoned," *Independent*, March 6, 1999, 18 (arguing economic reasons for the revival of bride stealing). See also, Lori Handrahan, "Political Participation and Human Rights in Kyrgyzstan: Civil Society, Women, and a Democratic Future," 1 *Women: Personal is Political, Local is Global* (1997) (arguing that the renewal of bride stealing is a form of "political or national expression").

¹²² U. Babakulov, "Kyrgyz Women Suffer in Silence," *ISAR* (April 10, 2001). Online, available at <<http://www.isar.org>>, retrieved September 30, 2002.

¹²³ Personal communication with Gulnara A. Aipaeva, Kyrgyz Ethnology Dept., American University in Kyrgyzstan, Bishkek, Kyrgyzstan (March 30, 2001).

¹²⁴ Expert Center for Social Research (Uzbekistan), *supra* note 69.

¹²⁵ Cynthia Werner, "Marriage, Markets, and Merchants: Changes in Wedding Feasts and Household Consumption Patterns in Rural Kazakhstan," 19 (1/2) *Culture & Agriculture* 6.

¹²⁶ "The Stolen Brides of Kyrgyzstan," 341 *The Economist* 40 (1996).

¹²⁷ Russ L. Kleinbach, *Kyrgyz Bride Kidnapping: Third Edition* (2001), available at <<http://faculty.philau.edu/kleinbachr/new>>.

¹²⁸ Compare with tuberculosis, which afflicts about 0.5 percent of Kyrgyzstan's population and is considered an epidemic warranting immediate action; see UNDP, *Kyrgyzstan: Country Report* (2000), available at <<http://www.undp.kg/english/country.html>>.

¹²⁹ Kleinbach, *supra* note 126, 12-14.

¹³⁰ *Ibid.*

¹³¹ S.A. Baker & B. Beadnell, "The Role of Domestic Violence in Heterosexual Women's Sexual Safety," Nat'l. Conf. Women HIV 122 (1997) (abstract no. 122.3).

¹³² *Ibid.*

¹³³ CDC, Family and Intimate Violence Prevention Team, Power and Control (September 12, 1998). Online, available at <<http://www.cdc.gov/ncipc/dvp/fivpt/spotlite/power.html>>, retrieved September 30, 2002.

¹³⁴ WHO, Division of Reproductive Health, World Health Day 1998: Maternal Mortality (1998). Online, available at <http://www.who.int/archives/whday/en/pages1998/whd98_01.html>, retrieved September 30, 2002.

¹³⁵ Monee Project, UNICEF, Innocenti Center, "Chapter 5," Regional Monitoring Report, 77 (6th report 1999).

¹³⁶ See generally, L. Miriam Dickinson et al., "Health-Related Quality of Life and Symptom Profiles of Female Survivors of Sexual Abuse," 8 *Arch. Fam. Med.* 35 (1999).

¹³⁷ American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV* 4th ed. (Washington, DC: American Psychiatric Association, 1994).

¹³⁸ Criminal Code of the Kyrgyz Republic, Normative Acts §155 (1994).

¹³⁹ Convention on the Rights of the Child, G.A. Res. 25, U.N. GAOR, 44th Sess., Annex, Agenda Item 108, at 12-13, U.N. Doc. A/Res/44/25 (1989). Signed by Kyrgyzstan on July 7, 1990; ratified on October 21, 1991. International Covenant on Civil and Political Rights, G.A. Res. 2200, U.N. GAOR, 21st Sess., Supp. No. 16, at 53-54, U.N. Doc. A/6316 (1966); acceded to by Kyrgyzstan on October 7, 1994. International Covenant on Economic, Social, and Cultural Rights, G.A. Res. 2200, U.N. GAOR, 21st Sess., Supp. No. 16, at 51, U.N. Doc. A/6316 (1966); acceded to by Kyrgyzstan on October 7, 1994. Treaty for the Elimination of All Forms of Discrimination Against Women, G.A. Res. 34/180, U.N. GAOR, 34th Sess., Supp. No. 46, at 80, U.N. Doc. A/34/46 (1980); acceded to by Kyrgyzstan on February 10, 1997.

¹⁴⁰ "The Stolen Brides of Kyrgyzstan," *supra* note 125.