

The Emergence of Family Medicine in Kyrgyzstan

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Background and Objectives: *In post-Soviet Central Asia, Kyrgyzstan has emerged as the leader in family medicine reform. This paper examines the factors that have allowed family medicine to become the foundation of primary care and the rationale for retraining specialists in primary care.* **Methods:** *Critical elements of successful family medicine reform have included national policy, international cooperation, training programs, support structures, and quality measures. The national policy has contributed to an environment that has allowed many international organizations to participate in the process of reforming the health care system. The 9-year training process was a momentous nationwide development task that was supported by various structures, organizations, and events and included the implementation of quality measures.* **Analysis:** *Various reports, studies, and evaluations support the positive impact family medicine has had on patient satisfaction, physician attitude, and scope of practice. Further, one study indicates improved health outcomes in terms of decreased years of potential life lost.* **Results:** *The national policy of reform that is in favor of family medicine, and international donor agencies-supported training, produced the following results: a group of family medicine teachers, 98% (2,691) of the country's primary care doctors retrained in family medicine, and there were 372 family medicine resident graduates. To ensure quality, objective structured clinical exams were implemented in all levels of training.* **Conclusions:** *It will take many more years to fully establish family medicine in the medical culture of Kyrgyzstan and reap its full benefits, but already it is contributing toward improvements in the quality of patient care.*

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The Kyrgyz Republic was the first Central Asian Republic to declare its independence from the Soviet Union in 1991, but it was not alone in addressing the need to restructure its health system. Many countries of the former Soviet Union are attempting health system reforms in areas of finance, utilization, management, and policy. Some of these reforms include family medicine as the primary care base. Lember¹ was the first to describe family medicine training in Estonia, while others reported on family medicine training programs in Russia.²⁻⁴ However, few have documented the process of establishing family medicine nationwide in a Central Asian Republic.⁵

Kyrgyzstan is recognized for its successful health reforms, including the countrywide introduction of family medicine as a specialty.⁶ Although the reforms

are far from complete, much has been accomplished during the first 10 years since the introduction of family medicine in Kyrgyzstan. This article summarizes these accomplishments and describes how they were achieved.

Background

Kyrgyzstan is located in Central Asia, bordering China, Kazakhstan, Uzbekistan, and Tajikistan (Figure 1). Its population of 5.1 million people includes many ethnic groups, predominantly the Kyrgyz, Uzbeks, and Russians. General indicators of Kyrgyzstan's health are comparable to those of other Central Asian countries but are below those of central and eastern European nations.^{7(p.1)} According to 2003 WHO estimates, the life expectancy for men is 59 years and for women 68 years.^{7(p.7-14)} As in all former socialist countries, the ratio of physicians is high, with 2.6 physicians per 1,000 population.⁸

Prior to the breakup of the Soviet Union, Kyrgyzstan relied on a centralized and subsidized health system directed from Moscow. The system, without a primary

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Figure 1

Map of Kyrgyzstan and Locations of Family Medicine Training Centers



care backbone, had themes of overspecialization, fragmentation of care, overutilization of hospital services, polypharmacy, excess hospital capacity, bureaucracy, and inefficiency. Until 1997, children needed to see more than five specialists before being allowed to enter school, and most pediatricians referred ear infections to otolaryngologists. The government spent only 10% of its health care budget on primary care and outpatient specialty care.⁹ After independence, Kyrgyzstan could not afford to run this complex system. National spending on health care plummeted from 4.1% of gross domestic product (GDP) in 1990 to 1.9% in 2002.¹⁰

In the Western world, the general evidence supports family medicine as cost-effective with quality that is equal to or better than a system based on specialty care. After the breakup of the Soviet Union, however, there was no experience in Kyrgyzstan, nor evidence,

that supported retraining Soviet-style specialists into family physicians. Nonetheless, a decision was made by the Ministry of Health (MOH) through consensus with consultants and donor agencies to retrain specialists into family physicians. This decision was based on an urgent need to find a quick source of trainers, decrease hospitalization referrals, and increase the scope of practice of physicians.

Development of Family Medicine

The development of family medicine has been accomplished through the commitment of the Kyrgyz Republic's MOH, cooperation of many international entities, a combination of short- and long-term training programs, and the creation of a variety of support systems. A timeline of the training, support structures, and events is summarized in Figure 2.

National Policy

At the request of the MOH in 1994, the World Health Organization (WHO) recommended a primary health care model for Kyrgyzstan. The MOH created a comprehensive health care reform plan—Project Manas. This sweeping plan for 1996–2006 was designed to decrease costs and increase quality by developing single-payer health financing, educating the population regarding health, decreasing hospital capacity, restructuring outpatient health care delivery, and introducing family medicine.¹¹ The current reform plan, called Manas Taalami, will continue the reforms from 2006 through 2010 to further improve the delivery of high-quality health services that correspond to societal needs.¹²

International Cooperation

Family medicine education, training, and reforms were possible due to a unique collaboration and commitment of consultants, educators, and funding agen-

cies. Financing, technical guidance, and political expertise from Abt Associates, the United States Agency for International Development’s Zdrav Reform and ZdravPlus Programs, the World Bank, and other agencies were crucial for effecting change. The long-term presence of American physicians (four family physicians and a surgeon) volunteering with the nonprofit humanitarian organization Scientific Technology and Language Institute (STLI), was integral to the successful emergence of family medicine.

Training of Trainers

Since Kyrgyzstan had no family physicians, a pilot program began in 1995 to train eight family medicine teachers in a rural province (Issyk Kul).^{13,14} In 1997, this training of trainers (TOT) program shifted to the capital city of Bishkek, where, over the next 5 years, 63 internists, pediatricians, and gynecologists completed the year-long course to become teachers of family medicine. STLI’s physicians worked with local colleagues

Figure 2

Timeline for Training, Support Structures and Programs, and Events in Kyrgyzstan

Timeline for the Introduction of Family Medicine in Kyrgyzstan													
Programs		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Training	Short	FM Teacher Training for Kyrgyzstan						71 graduates (1-year curriculum)					
	Short	FM Retraining for Doctors in Kyrg.						2691 graduates (4-month curriculum)					
	Long Term	2-yr. Family Medicine Residency	Med School Joint Program				191 residents		142 residents (109 North & 33 South)				
		CME (doctors involved annually)								175	175	902	1740
Support	Family Medicine Association	Initial development			Independent Non-Governmental Organization								
	7 State FM Training Centers Created	K	Bi		O	J	N&T	B					
	Financial, Legal and Policy Reforms	Includes increased scope of practice and salaries for family doctors											
	Health Delivery System Restructuring	Creation of "Family Group Practices"											
	Quality Improvement Program							About half of the FGPs with experience by 2006					
Focus Events	Physicians With Heart												
	FMEI Family Medicine Conferences												
Kyrg. = Kyrgyzstan K = Karakol, Bi = Bishkek, O = Osh, J = JalalAbad, N = Naryn, T = Talas, B = Batken FGP = Family Group Practice FMEI = Family Medicine Education International													

to develop and enhance a curriculum that combined didactics with longitudinal outpatient clinical experience in a newly created family medicine training center (FMTC). Following graduation, these family medicine trainers (FMTs) have continued to participate in periodic faculty development courses, often as a means of integrating vertically designed health care programs into the national educational system. For example, many WHO courses, such as the “Integrated Management of Childhood Illnesses,” were taught first to the FMTs, who then taught them nationally. Some TOT graduates came from the national medical school (Kyrgyz State Medical Academy) and returned there to work in the new family medicine residency program.

Because of the urgent need to strengthen primary care, family medicine training was initiated simultaneously along two parallel tracks: (1) a 4-month retraining course for most of the existing outpatient internists, pediatricians, and gynecologists and (2) a 2-year family medicine residency.

Retraining of Primary Care Physicians

In 1997, retraining of the nation’s existing primary care physicians began in Bishkek. Local specialty physicians and STLI doctors initially taught this retraining course, after which the new FMTs gradually assumed full responsibility for the program. The program expanded nationally as the network of FMTCs developed, eventually to provide almost all of the country’s primary care doctors with 4 months of family medicine retraining. This retraining helped to “jump start” family medicine, while the longer-term family medicine training programs were getting established.

Residencies

The first long-term training programs began in 1998 with the formation of two family medicine residencies. These 2-year programs were initially staffed entirely by specialists but later by the new family medicine teachers. The initial political push for family medicine resulted in excessive numbers of residents, but in 2002 the two residencies combined, with the help of the American International Health Alliance and ZdravPlus, and focused more on quality and less on quantity. Also, a branch of the national residency program was opened in Osh, the largest city in the south, in 2004.

Continuing Medical Education

A continuing medical education program began in the Issyk Kul province in 2002 for graduates of both the retraining program and the residency program. This program gradually expanded throughout the national network of FMTCs and continues to evolve although it faces significant logistical and financial challenges.

Support of Family Medicine

Although training is important, other support structures such as consultants, organizations, and events were needed to facilitate the new specialty. The Kyrgyz State Medical Institute for Retraining and Continuing Education gradually created a national network of seven FMTCs. Teachers for these FMTCs were recruited from the cities where the centers were located to attend the 1-year national TOT program in Bishkek, after which they returned to their respective training centers. These peripherally located centers were instrumental in retraining rural physicians (Figure 1). Consultants from Abt Associates were invaluable in providing financial, legal, and political advice to the reform process.

Family Medicine Association

A Family Group Practice Association (FGPA) was created in 1997 to help the new specialty survive and grow. One of the association’s first tasks was restructuring primary health care to form small groups made up of pediatricians, internists, and obstetricians. Ten national and 14 regional representatives are involved in training family physicians in management, advocating for adequate reimbursement, improving health information systems, improved working conditions, policy development, and disseminating national health policy information.

Focus Events

Several focus events served to elevate the status and credibility of family medicine. “Physicians With Heart” trips by the American Academy of Family Physicians in conjunction with Heart to Heart International, in 1996 and 2003, combined vital humanitarian aid, education, and political influence to improve the image of family medicine in the public and political arenas. Multiple smaller events such as week-long family medicine seminars held by Family Medicine Education International promoted family medicine among medical students and medical school faculty.

Quality Measures

When the initial reform plans were drawn up, there were no plans made for evaluation except for assessing numbers of retrained doctors produced. Over time, quality, not quantity, became a question. In the initial training of teachers and retraining of specialists, written evaluations were conducted. In 2002, the Objective Structured Clinical Exam (OSCE) was used for residency training and for the TOT program and recertification of teachers. The OSCE method was used to evaluate a sample of physicians nationally in 2003 and became part of the evaluation for the training outcome in the Practical Approach to Lung health (PAL) training from 2004–2005.

Health Outcomes

Evaluation Methods

Given the large scope and duration of implementing family medicine in Kyrgyzstan, assessments have been conducted by a wide variety of organizations and people using many different methods,¹⁵⁻²⁰ (and personal correspondence with Lilli Niemi, Kyrgyz-Finnish Lung Health Program, Bishkek, Kyrgyzstan, January 24, 2007, and with Tobias Schuth, Kyrgyz-Swiss-Swedish Health project, Bishkek, Kyrgyzstan, February 2, 2007), as summarized in Table 1. These assessments included evaluations of physicians' attitude toward reform, patient satisfaction, scope of practice, and health outcome measures. Health outcome measures are detailed below.

Several internationally supported studies have shown improvements in patient-related outcomes. For example, the Swiss Red Cross, working with Village Health Committees, began monitoring population health practices in certain areas (personal correspondence with Tobias Schuth, Kyrgyz-Swiss-Swedish Health project, Bishkek, Kyrgyzstan, February 2, 2007).

A total of 141,485 adults were surveyed by volunteers with automatic wrist cuffs to measure blood pressure. The province of Issyk Kul demonstrated a greater percentage of blood pressure control (defined as systolic <140 and diastolic <90 mmHg) in patients diagnosed with and taking prescriptions for hypertension. There, 35.4% of 6,243 patients known to have hypertension had their blood pressure controlled as compared to blood pressure control in two other provinces. There may be several factors that contribute to this regional difference, but we believe one important factor is that the Issyk Kul doctors have had more family medicine and quality improvement training, which enabled them to better treat hypertension.

Consultants for the US Centers for Disease Control and Prevention (CDC) examined the indicator of years of potential life lost up to the age of 65 years (YPLL-65) in the Kyrgyz Republic from 1999 and 2003.²⁰ This indicator emphasizes areas that are affected by preventable and treatable causes and potentially magnifies childhood mortality. The indicator is considered significant if there are changes greater than 25%. The YPLL-65

Table 1

Research Summary: Organizations, Instruments, Methods, Measurements, Results, and Reference

Organization	Instruments	Methods	Measurement	Result	Reference
STLI	Physician survey	665 doctors in three different resource investment cities	Physician attitudes	Better attitudes toward reform in areas with more resource investment	15
World Bank	Physician and facility survey	200 doctors in three different resource investment areas	Physician behavior and patient preference	Patients prefer FPs versus specialists, FPs increased scope of service, declining referrals and hospitalizations	16
ZdravPlus	Survey, chart review	2,438 patients treated by 32 doctors in two provinces	STI treatment by FPs and specialists	FPs treat STIs with less cost, equal quality, better satisfaction compared to specialists	17
ZdravPlus	Population survey	1,200 adults surveyed from three provinces	Patient satisfaction	Increased patient preference of FP versus specialist over 4 years	18
Kyrgyz Republic MOH and KSMI	Survey, OSCE	233 doctors from all provinces tested in two out of seven clinical cases	Clinical skills	Overall mean of OSCE score was 60.2% in first-time exposure to method	19
Kyrgyz-Finnish Lung Health program	Pretesting and posttesting and OSCE	912 doctors in all provinces	Knowledge and clinical skills	Post-training OSCE score a mean of 75%	L. Niemi*
Swiss Red Cross village health committees	Population measurements Nonvalidated but comparable	BP measured with same automatic wrist cuffs on 141,485 patients from three different provinces	Control of BP in patients diagnosed with and taking medication for HTN	Patients in Talas were 25.9% controlled, Naryn 30.5%, and Issyk Kul 35.4%.	T. Schuth*
Consultants for CDC	Population statistics	Calculation based on years of potential life lost up to age 65	Measurement of public health-related disease mortality impact	Decreased YPLL-65 for intestinal infections and lung diseases in all ages and for viral hepatitis, lung diseases, and intestinal infections in 0–14 years	20

BP—blood pressure
 CDC—Centers for Disease Control and Prevention
 FP—family physician
 HTN—hypertension
 KSMI—Kyrgyz State Medical Institute

MOH—Ministry of Health
 OSCE—Objective Structured Clinical Exam
 STI—sexually transmitted infection
 STLI—Scientific Technology Language Institute
 YPLL-65—years of potential life lost up to 65 years

* personal correspondence

for intestinal infections and lung diseases in all ages (0–64) significantly fell by 66% and 31%, respectively. Among children (0–14 years) the YPLL-65 decreased in the areas of viral hepatitis (77% reduction), intestinal infections (66% reduction), and lung diseases (36% reduction). In contrast, traffic fatalities increased for all ages (0–64) to +82%.

System Outcomes

National Policy

Improvements in primary care and downsizing of tertiary care have resulted in cost savings to the government. Even more importantly, the government has reinvested a significant portion of that savings back into primary care, improving primary care's percentage of health care funding from 24% in 2001 to 33% in 2003.²¹

International Cooperation

One impressive result that is hard to quantify is the high level of cooperation among various organizations. In general, they have sought broad retraining goals and worked through joint partnerships. This cross-funding enabled a positive environment of trust to develop within the broader task of health reform.

Training Outcomes

The number of graduates from the family medicine training programs includes 71 teachers of family medicine, 2,691 retrained doctors,²² and 372 residents.²³ Of the 71 teachers, 33 teachers are still involved in long-term training programs, 1,924 retrained doctors are still working,²⁴ and out of 84 graduates from 2003 and 2004, 57% work in family medicine centers.²³ Currently, there are 17 first-year and 37 second-year family medicine residents throughout the country.²³ Sixty-five percent of the retrained doctors participated in the continuing medical education (CME) program in 2005.²⁴

Support for Family Medicine

The FGPA assisted the process of reorganizing the primary care delivery system so that it is now based on 693 "Family Group Practices" (FGP) consisting of retrained physicians, each also trained in practice management. A program of internal quality improvement (QI) was taught to 340 groups, and in 164 of these groups a QI process is active.²⁵ Twenty-nine FGPs are now independent legal entities. In the area of policy development, the FGPA has written normative documents that define scope of services for family physicians.

Quality Measures

The clinical skills of family physicians were examined on a national level using the Western-accepted method of the OSCE. A total of 233 retrained doctors were tested in 2003. They were randomly assigned two stations out of seven and achieved a mean score of 60.2%.²⁶ In 2005, the OSCE method was used again

in follow-up monitoring of the WHO modules on Practical Approach to Lung Health conducted by the Kyrgyz-Finnish Lung Health Program. After 912 family physicians were trained in basic respiratory disease and given necessary equipment, they scored a mean of 75% (personal correspondence from Lilli Niemi, Kyrgyz-Finnish Lung Health Program, Bishkek, Kyrgyzstan, January 24, 2007).

Discussion

It is complicated to assess the direct effect that family medicine has had on the health care system and the health of the population due, in part, to the relatively short time since its introduction. Because health reforms have been rolled out gradually, some areas have only recently implemented family medicine, and it is still too early to draw definitive conclusions about the country-wide success of family medicine. Nevertheless, regional comparisons demonstrate positive trends suggesting health and economic benefits in more mature areas (ie, areas that have had reforms in place longer with greater financial system changes, more equipment and resources supplied, and more training with follow-up support). Due to the urgency of the health care crisis, there were few baseline measurements. Still, various studies demonstrate that there has been an increase in the scope of practice and beneficial health outcomes for the population. The decrease in years of potential life lost may be the first larger indicator that primary care medical services have improved.

The OSCE results of 2003 and 2005 are encouraging considering that, prior to the reforms, these physicians had out-of-date training and limited equipment—typically an old stethoscope and sphygmomanometer—and never had otoscopes or peak-flow meters.

The FGPA has provided essential political advocacy, helping to maintain a viable niche for family medicine within the rapidly evolving health care system. Implementing quality improvement systems is a pioneering step in a health system that formerly was centrally directed and issued punitive consequences for non-compliance.

The main weakness of the methodology presented in this paper is that there was no initial plan or baseline data to directly assess family medicine development from the beginning. On the other hand, the World Bank Study²⁷ has been encouraging since it is an independent assessment not performed by the consultants immediately involved in training.

The following challenges are not unique to Kyrgyzstan: (1) reluctance of trained doctors in urban areas to practice outside of their specialty, (2) difficulty in training due to limited clinical skills and different learning styles, (3) resistance of specialists to accept family medicine, and (4) the high rates of emigration to neighboring countries where salaries are significantly higher.²⁸

Despite these challenges, there appears to be initial success for family medicine in Kyrgyzstan, likely attributable to numerous factors, including (1) relatively consistent commitment from the MOH, (2) unprecedented partnership among the government, international donors, development agencies, nongovernmental agencies, volunteers, and others, (3) the strategy of starting with pilot programs, then rolling out successful programs step-by-step nationally, (4) initiating programs within existing national institutions, then building sustainable capacities within those institutions, and (5) the hospitable, cooperative character of the people of Kyrgyzstan. Several of these keys are mentioned as strategies for change in the WHO/WONCA book, *Improving Health Systems: The Contribution of Family Medicine*.²⁹

Conclusions

Family medicine has been successfully planted in Kyrgyzstan and continues to grow. The results presented in our paper suggest that “Project Manas,” including the introduction of family medicine, has improved the quality of patient care while decreasing costs. However, family medicine’s roots need to deepen, particularly in the areas of academic medicine and CME, if it is to be sustainable and progressive. The government’s financial and legal policy reforms also need to continue to develop so the health system may benefit fully from family medicine. Hopefully, Kyrgyzstan’s experience with family medicine development will continue to serve as a useful model to those involved with health systems reform, particularly in a post-Soviet context.

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