American International Health Alliance

Health Partnership Program
Central Asia Republics

1998 – 2006

Final Performance Report

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The American International Health Alliance, Inc. (AIHA) is a 501(c)(3) not-for-profit corporation created by USAID and leading representatives of the US healthcare sector in 1992 to serve as the primary vehicle for mobilizing the volunteer spirit of US healthcare professionals to make significant contributions to the reform of healthcare overseas through partnerships.

PREFACE

This final performance report is a comprehensive overview of AIHA programs in the Central Asian Republics (CAR) between 1998 and 2006. The report describes AIHA's unique partnership twinning model, the development and evolution of the program in the region, and the main program components funded during this period. The report presents summary results by country, including details of each partnership and project, together with profiles of selected US and CAR partners, as well as more in-depth success stories. Also included are overviews of results from the perspective of key regional and cross-cutting areas of impact. The conclusions section reflects on the overall legacy and lessons learned.

The views expressed in this final report do not necessarily reflect those of USAID.

AIHA's mission is to advance global health through volunteer-driven partnerships that mobilize communities to better address healthcare priorities while improving productivity and quality of care. Founded in 1992 by a consortium of American associations of healthcare providers and of health professions education, AIHA is a nonprofit organization that facilitates and manages twinning partnerships between institutions in the United States and their counterparts overseas. It has supported to date 116 partnerships linking American volunteers with communities, institutions, and colleagues in 22 countries in a concerted effort to improve healthcare services. Operating with funding from the United States Agency for International Development (USAID), the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services, the Library of Congress, the Susan G. Komen Breast Cancer Foundation and other organizations, AIHA's programs represent one of the US health sector's most coordinated responses to global health concerns.

ACKNOWLEDGEMENTS

The American International Health Alliance (AIHA) wishes to express its sincerest gratitude to the countless professionals in Central Asia and the United States who gave so generously of themselves to the partnership program in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The program was successful because these individuals demonstrated the courage and commitment to change; the patience, dedication, and hard work to gain new knowledge and skills; and a generous spirit of trust and collaboration. Together they made significant contributions to improving healthcare services and delivery for thousands of people throughout the region.

AIHA also thanks the United States Agency for International Development (USAID) for the opportunity and privilege of working in the CAR region and for its steadfast support of the partnership program.

Finally, AIHA gratefully acknowledges the contributions of dedicated staff in its Washington, DC, and regional offices in managing and implementing the program and in preparing this final performance report.

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ACRONYMS AND ABBREVIATIONS

AAMC	Association of American Medical Colleges
AIHA	American International Health Alliance
ARV	Antiretroviral
AUPHA	Association of University Programs in Health Administration
CA	Cooperative Agreement
CAR	Central Asian Republics
COPC	Community-oriented Primary Care
CPG	Clinical Practice Guidelines
EBP	Evidence-based Practice
ECFMG	Educational Commission for Foreign Medical Graduates
EMS	Emergency Medical Services
EMSTC	Emergency Medical Services Training Center
FAIMER	Foundation for Advancement of International Medical Education and Research
FGP	Family Group Practice
FMC	Family Medicine Center
FMTC	Family Medicine Training Center
F-RCEM	Ferghana Affiliate of the Republican Center for Emergency Medicine
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HME	Health Management Education
HMTC	Health Management Training Center
ICT	Information and Communications Technology
ICTC	Infection Control Training Center
IMED	International Medical Education Directory
INLI	International Nursing Leadership Institute
KSMA	Kyrgyz State Medical Academy
KSPH	Kazakhstan School of Public Health
LCME	Liaison Committee on Medical Education
LRC	Learning Resource Center
MCH	Maternal and Child Health
MOH	Ministry of Health
MOHMI	Ministry of Health and Medical Industry (Turkmenistan)
NCC	Nursing Coordinating Council of Central Asia
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
NIS	Newly Independent States of the former Soviet Union
NRC	Nursing Resource Center
NRTC	Neonatal Resuscitation Training Center
OSCE	Objective Structural Clinical Examination
PHC	Primary Health Care
PMTCT	Prevention of Mother-to-Child Transmission of HIV
PSR	Practice Standard Review
RCEM	Republican Center for Emergency Medicine (Uzbekistan)
RTCFM	Republican Training Center for Family Medicine (Tajikistan)
STI	Sexually Transmitted Infection
TashMI I	First Tashkent State Medical Institute

TashMI II	Second Tashkent State Medical Institute
TB	Tuberculosis
TOT	Training-of-Trainers
TSMI	Turkmen State Medical Institute
UMSN	University of Minnesota School of Nursing
UN	United Nations
USAID	United States Agency for International Development
USF	University of South Florida
VCT	Voluntary Counseling and Testing
VCU	Virginia Commonwealth University
WFME	World Federation for Medical Education
WHO	World Health Organization
WWC	Women's Wellness Center

EXECUTIVE SUMMARY

The USAID-funded Health Partnerships Program in Central Asia has been linking American healthcare professionals through twinning partnerships with their counterparts in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan to improve both the quality and accessibility of health-related programs and services in these five countries since 1992.

In 1998, USAID awarded AIHA a second round of cooperative agreements to apply its unique volunteer-based twinning model to new regional health reform priorities. From 1998 to 2004, six new partnerships were formed in accordance with AIHA's traditional institution-to-institution model. Building on the many successes of earlier hospital-based alliances, these partnerships focused on primary healthcare, health management education, and emergency medical services.

Starting in 2004, multi-institutional regional partnerships promoting medical education and nursing development were established in an effort to elevate health professions education in Central Asia to international standards. At the same time, AIHA-managed projects were initiated to better address the region's changing healthcare needs, in particular through the:

- dissemination of successful new models of healthcare service delivery including community-oriented primary care and family medicine;
- development and expansion of social work both as an independent profession and a key element of effective primary care; and
- institutionalization of training capacity to prevent mother-to-child transmission of HIV.

Together, the dedicated efforts of AIHA partners and staff on both sides have resulted in positive and sustainable changes at the individual, institutional, community, national, and regional levels. Flexible in nature and readily adapted to the changing needs of countries in the region, the Health Partnerships Program in Central Asia has planted the seeds of ongoing healthcare reform by establishing new processes and nurturing professional and institutional growth.

Recognizing the value of region-wide collaboration, a key element of USAID's Health Partnerships Program's strategy for advancing health system transition in Central Asia has been realized through the creation and support of task forces, working groups, and regional partnerships. The Council of Rectors—a group of senior educators representing medical schools from all five countries in the region and sharing a commitment to advancing health workforce development—is one example of this approach. Working closely with AIHA staff, members of the regional medical education partnership, and international experts, the Council of Rectors developed a set of qualifications and competencies for all graduates of medical schools in the region.

Nurses have also benefited from this approach through a regional partnership designed to expand opportunities for education, training, and professional growth. Since 1999, the Health Partnerships Program has supported the Central Asia Nursing Coordinating Council, an entity designed to advance regional efforts to improve nursing education, practice, research, and leadership. A regional nursing partnership established in 2004 linked the University of Minnesota School of Nursing with six nursing colleges in Kazakhstan, Kyrgyzstan, and Uzbekistan to address issues of faculty and curriculum development, as well as nursing leadership.

As agents of change, individuals and institutions involved in USAID's Health Partnerships Program in Central Asia have been leading both national and regional health system reforms over the past eight years. Notable areas of accomplishment and key achievements include:

Health Professions Education

- introduction of the region's first doctoral program in public health and healthcare and a new master of health administration and public health at the Kazakh School of Public Health;
- development of a new family medicine curriculum implemented in medical schools throughout Kyrgyzstan;
- development of HIV/AIDS education modules used at medical education institutes in all five countries in the region;
- creation of a regional medical education database to track institutional statistics, information on curricula, and other quality indicators across all five nations; and
- revision or development of 116 new curricula or instructional methods for use at in basic or baccalaureate-level nursing programs throughout the region.

Primary Healthcare

- development of national primary care clinical practice guidelines in coordination with the Ministry of Health of Tajikistan;
- establishment of two Family Medicine Training Centers in Turkmenistan where 890 primary care physicians and nurses have been trained; and
- implementation and expansion to a community of more than 74,000 people of a comprehensive, integrated, patient-centered model of clinical and social services known as community-oriented primary care in Kazakhstan.

Evidence-based Medical Information and Communications Technologies

- establishment of 36 Learning Resource Centers that provide ICT support to a community of 34,519 health professionals;
- provision of training to 6,514 physicians in the use of information and communications technologies such as the Internet and evidence-based medical resources to expand their knowledge and improve the quality of patient care; and
- fulfillment of 11,388 individual information requests over the funding period.

Emergency Medical Services

- establishment of four new EMS Training Centers in the region during the funding period—one in Ashgabat (1999), one in Tashkent (1999), one in Ferghana (2000), and one in Dushanbe (2000);
- facilitation of training for more than 23,265 healthcare practitioners, first-responders, and non-medical professionals throughout the region; and
- development or expansion of EMS training curricula for healthcare providers and first-responders.

HIV/AIDS

- engagement of political support for a national program for the prevention of mother-to-child transmission of HIV in Kazakhstan and other countries in the region;

- training of master trainers in PMTCT from pilot sites in Kazakhstan and Uzbekistan; and
- creation of a PMTCT Training Center in Temirtau, Kazakhstan, to build region-wide capacity to stop vertical transmission of HIV.

Whether by establishing and supporting skills-based training centers, creating comprehensive new models of prevention and treatment, or opening innovative, patient-focused care centers, AIHA, its partners, and others involved in USAID's Health Partnerships Program have been agents of positive change in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, building critically-needed human and institutional capacity. The Central Asian healthcare professionals involved in these programs have benefited not only from the knowledge and technical skills their American counterparts shared, but also from the collaborative learning process that drives partnership activities.

While many healthcare challenges remain in the Central Asia Region, the Health Partnership Program and other related projects supported by USAID and managed by AIHA have created a new paradigm for international collaboration and the provision of technical assistance. By working directly with healthcare professionals and policymakers in these nations, partners have helped lay a strong foundation for ongoing change. Political support and individual commitment have been critical to the success of the Health Partnerships Program in Central Asia and to bringing about sustainable health system reform. Having strengthened existing institutions or created new ones, partners have ushered in programs that are more relevant and responsive to the populations they serve, leaving healthcare leaders in these countries better positioned to sustain these services and seek new opportunities to improve quality of care.

This final performance report is a comprehensive overview of USAID's Health Partnerships Program in Central Asia in Central Asia between 1998 and 2006. The report describes the development and evolution of the program in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, and the main program components funded during this period. In particular, Section III of the report presents summary results of major areas of impact while Section IV provides selected best practices and lessons learned. Additional details and information on individual partnerships and projects can be found at www.aiha.com.

I. PROGRAM OVERVIEW

A. INTRODUCTION

The health partnership program in Central Asia was built on a foundation of USAID support to healthcare reform efforts in the region that began after the collapse of the Soviet Union in 1991. Beginning in 1992, AIHA established a total of 15 healthcare partnerships in the five Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan that addressed a range of health sector priorities including women's health, nursing and medical education, emergency medicine, and primary care. The second NIS Health Partnerships Program (1998-2006), much like the initial health partnerships program in Central Asia (1992-1998), was designed to promote sustainable US/NIS partnerships that would foster more effective and efficient delivery of health services in Eurasia. In keeping with AIHA's partnership methodology and model (described in the following section) the program emphasized building institutional and human resource capacity to facilitate the sustainability and replication of successful healthcare interventions introduced through the partnerships.

Under the initial cooperative agreement (CA) signed with USAID in 1992, AIHA established six hospital-based partnerships—two in Kazakhstan, one in Kyrgyzstan, one in Tajikistan, and two in Turkmenistan. The partnerships improved targeted healthcare services while strengthening the countries' capacity for ongoing improvements in quality of care. They addressed priorities such as expanding access to innovative women's health services, improving emergency medical services and nursing services, and institutionalizing changes through, for example, the development of new management practices, new information systems, improved surgical techniques, and better infection control practices. Information on the specific goals and achievements of each of the original group of CAR partnerships can be found on the AIHA Web site at www.aiha.com.

At the end of the first CA funding period in 1998, USAID awarded the competitively-solicited NIS Health Partnerships Program to AIHA. The award comprised a "Basic Agreement" that provided the overall scope, authority, and parameters of the program, along with five "Sub-regional Agreements." Four of the sub-regional agreements focused on individual regions: Russia, Central Asia, the Caucasus, and West NIS. The fifth—a region-wide agreement—promoted inter-regional sharing, dissemination, and common initiatives, such as in neonatal resuscitation, nursing, and women's health, across the NIS. The program and underlying CAs were funded for an initial five-year period with provisions for an extension of up to five additional years.

Under the 1998 CA awarded by USAID/Central Asia (EE-A-00-98-00010-00), AIHA was tasked with establishing partnerships in Central Asia in support of USAID's strategic objectives. With respect to the partnership program, USAID/CAR placed its greatest emphasis on primary care service delivery programs that would show meaningful results locally and that would be replicable nationally. USAID's strategy prioritized the development of primary care service delivery at model community-based sites. AIHA health partnerships supported these sites through capacity-building programs that emphasized practical multi-disciplinary retraining of health professionals and that complemented other USAID and international donor efforts to educate family physicians, a central pillar of the primary care reforms in the region. In addition, USAID/CAR assigned a high priority to

supporting the development of other key aspects of health professions education that were deemed to be critical to improving primary care and reforming the healthcare system, particularly those involving the disciplines of public health, management, and policy. With a view towards creating a mutually supportive environment for complementary programs, USAID envisioned partnerships working closely with other USAID health and social sector programs in the region to support the development of maternal and child health networks, emergency medical services, medical training, professional associations, evidence-based medicine, and activities that addressed infectious disease, alcohol abuse, and community involvement.

Under this CA, AIHA's initial five-year program in Central Asia (FY99-FY03) comprised: (a) one-year sustainability grants to four existing partnerships; (b) six new partnerships—two in Kazakhstan and one each in Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan; and (c) cross-partnership programs. Of the six new partnerships, three focused on aspects of primary care, two related to medical and health management education, and one focused on urgent medical care. Using funds that were not previously programmed, AIHA established an additional partnership focusing on health management education in 2002 in Uzbekistan. The cross-partnership activities included continued support for programs initiated under the previous CA—specifically Internet connectivity and support for new activities related to AIHA's infection control, primary healthcare, nursing, and women's health initiatives.

At the end of the five-year award period in September 2003, USAID/CAR granted AIHA a three year extension (FY04-FY06). Programs during this period addressed USAID's strategic objective to increase utilization of quality primary healthcare services by expanding community and individual responsibility for health; by improving the quality of care, including maternal and child health and programs addressing infectious diseases, such as HIV/AIDS; by educating, training, and retraining health professionals; and by improving resource use through expanded health management capabilities. The program developed consisted of four partnerships and two programs managed by AIHA. AIHA continued its support for two existing partnerships—one in Uzbekistan focusing on health management education and another in Turkmenistan working on training primary care teams of doctors and nurses. AIHA also introduced a new regional model for two new partnerships focused on nursing and medical education. These multi-institutional partnerships drew upon key medical and nursing education institutions from each of the three participating CAR countries (Kazakhstan, Kyrgyzstan and Uzbekistan). The two non-partnership projects were largely extensions/replications of AIHA's successful prevention of mother-to-child transmission of HIV (PMTCT) model program in Odessa, Ukraine, and the community-oriented primary care center at the "Demeu" Family Practice Center in Astana, Kazakhstan.

In early 2004 the University of North Dakota, the US partnership institution involved with the Turkmenistan primary care partnership that was originally meant to continue through FY06, concluded its involvement in the partnership. Through a memorandum of understanding with the Ministry of Health and Medical Industry in Turkmenistan, AIHA continued the program without a US partner and expanded its objectives to include the development of a health management education program at the Turkmen State Medical Institute. This became the third program that AIHA would manage directly, using the resources of model programs developed through partnerships. In Turkmenistan, the Kazakhstan School of Public Health (KSPH) was instrumental in developing the health management program.

The AIHA partnership program in Central Asia officially came to a close on September 30, 2006.

B. THE AIHA PARTNERSHIP MODEL

In Central Asia, as elsewhere in Eurasia, AIHA applied its central program methodology—a unique voluntary, twinning model, developed and refined over the years, in which a US community's health-related institutions are partnered with institutions and communities in developing and transitional countries. By embracing city, county, and statewide relationships and conducting peer-to-peer professional exchanges, these partnerships work together to develop practical solutions to healthcare delivery problems; create model programs; disseminate lessons learned; and effect broad, systemic change during and after the USAID-funded partnership period.

Key elements of AIHA's twinning partnership model include:

- Voluntarism: significant in-kind contributions of human, material, and financial resources
- Institution-based partnering for capacity-building and systematic change
- Peer-to-peer collaborative relationships that build mutual trust and respect
- Transfer of knowledge, ideas, and skills through professional exchanges and mentoring
- Benefits flowing in both directions
- Replication and scaling-up of successful models
- Sustainability of achievements and relationships
- "Partnership of partnerships" for networking, sharing, and creating common approaches and solutions

Over the years, external evaluations of AIHA's twinning model have consistently affirmed the positive and lasting contributions partnerships have made to efforts to improve healthcare and the overall health status in partner countries. These independent evaluations have also indicated that AIHA partnerships have played an important role in transitional nations by building local capacity; creating sustainable relationships, increasing international cooperation and understanding, and promoting democratic values. As this report documents, many of the program outcomes can be attributed to the unique partnership model, in which the highly collaborative and participatory approach engendered mutual trust and a high degree of ownership of solutions by those partners who were ultimately responsible for implementing and sustaining the improvements. Furthermore, the partnership approach had a great and lasting impact on the US partners as well.

C. PROGRAM DESIGN AND IMPLEMENTATION

The Central Asia Context

At the end of the Soviet era health indicators for the countries of Central Asia generally were among the poorest in the NIS. The countries faced relatively higher incidences of infectious disease, adverse environmental conditions, and higher infant and maternal mortality and morbidity. The economic difficulties accompanying the collapse of the former Soviet Union exacerbated many of these problems. Much of the government and social infrastructure that supported healthcare became become increasingly incapacitated while the overall risk to the health of the population in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan continued to rise. One alarming

statistic was the decline in life expectancy across the region; for the population of Kazakhstan, for example, from 63.8 in 1990 to 58.5 in 1996 for males and from 73.1 to 70.0 for females over the same period. Much of the decline in health could be attributed to sharp reductions in preventive care services, increased incidence of infectious disease as a result of institutional and infrastructure breakdown and current economic conditions, inadequate chronic disease management, poor lifestyle choices, increasingly adverse environmental and occupational health conditions, and increased accidents.

Beginning in 1993 USAID/CAR targeted healthcare reform through the health partnership program to promote more efficient and effective healthcare and to improve health disease management, women's reproductive health, and institutional and health system delivery capacity. The program implemented in Central Asia from 1999 through 2003 was designed to build on the lessons learned and past accomplishments of the hospital partnerships in the region while addressing USAID's priorities. With respect to the partnership program, USAID/CAR placed its greatest emphasis on primary care service delivery programs that emphasized the retraining of current health professionals. In addition, USAID/CAR assigned a high priority to supporting the development of other key aspects of health professions education critical to improving primary care and reforming the healthcare system, particularly those involving the disciplines of public health, management, and policy. USAID envisioned a program promoting evidence-based medicine, maternal and child health networks, emergency medical services, medical training, and programs to address infectious disease and community involvement.

Planning

In 1998, AIHA prepared a preliminary, overall strategy for each of the five Central Asian countries. The strategy included continuation of existing essential programs, completion of programs or activities planned but not completed in the previous cooperative agreement, support of successful initiatives, and sustainability grants to existing AIHA partners. AIHA held extensive meetings in Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan, and Uzbekistan with ministry officials, local health providers, previous NIS and US partners, and other USAID contractors to assess health services, needs, and potential sites for new primary care and health professions education-related partnerships and related supportive activities in each of the countries. USAID/CAR mission representatives participated with AIHA's executive and regional directors in the visits to Turkmenistan, Tajikistan, and Uzbekistan.

Recognizing that community-based healthcare partnerships that promoted a reorientation toward primary care would constitute most of AIHA's activities in CAR (and in the NIS in general), AIHA initiated a PHC consensus development process in December 1998. Twenty-four NIS and US senior health officials participated in the AIHA Primary Care Advisory Committee meeting held in Washington, DC. The rector of the Kyrgyz Medical Academy and the head of the Department of Family Medicine of the Kazakh State Medical University represented Central Asia on the advisory committee. The committee was charged with addressing a broad range of issues regarding primary care including: defining a framework of core services; how to best assess a community's specific primary care needs; the respective roles of family practitioners and specialists and their inter-relationships; the respective roles of nurses and other key care givers; the relationship of primary healthcare to the broader network of community education and social services; the education, in-service training and certification of health professionals; the development, dissemination and use of practice guidelines; evidence-based practice and continuous quality improvement; successful care

and resource management systems; and the relationship of public and personal health. The CAR representatives' active participation in the committee meeting allowed for close collaboration in the strategic design of the overall focus of the new primary care partnerships for Kazakhstan and Kyrgyzstan.

Following the primary care meeting, AIHA regional staff and USAID/CAR mission staff continued to discuss USAID's strategy related to the program in each of the countries. In Central Asia, AIHA worked closely with the USAID mission during the fall of 1998 in a strategic planning process to define the scope, number, and types of partnerships for the initial five-year period under the new CA.

USAID's three-year extension (2004-2006) of the CAR cooperative agreement beyond the original five years resulted in a series of discussions between USAID/CAR and AIHA to reach consensus on strategies and the focus of partnership activities. The programs were designed to build on the strength of existing partnerships and projects, to complement the efforts of other AIHA and USAID strategic partners (e.g., CDC, WHO, the World Bank, Abt Associates), and to address the critical issue of HIV/AIDS prevention, which had become a new program emphasis at USAID/CAR. The programs also responded to USAID's strategic objective to increase utilization of quality primary healthcare in select populations as well as to emphasize a broader multi-country focus; expand community and individual responsibility for health; improve the quality of care, including maternal and child health and care related to infectious diseases such as HIV/AIDS, tuberculosis, and hepatitis; educate and train family physicians and nurses; and improve resource use through expanded health management capabilities. The FY04-06 program included continuation of partnerships that focused on building training capacity in family medicine and health management, the establishment of new regional medical education and nursing education partnerships, and the expansion of the community-oriented primary care and PMTCT pilot programs.

Sustainability Grants

As provided for in the 1998 cooperative agreement program description, AIHA awarded small-scale grants to selected partnerships established under the previous CA. The purpose of these grants was to provide partnerships with an additional year to further solidify their accomplishments and strengthen their capacity to sustain those achievements. In keeping with this purpose, AIHA set the following requirements for applications: a) joint submission by US and NIS partners reflecting collaborative development of a workplan and budget; b) a targeted workplan and realistic budget in support of discrete objectives; c) relatively little funding required to achieve objectives; and d) clear contribution to the sustainability of partnership achievements and/or the partnership relationship, or improved likelihood of replication/dissemination of partnership successes. USAID approved solicitation for six sustainability grants - two for Kazakhstan and one each for Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. No sustainability grants were awarded, however, in Tajikistan or Turkmenistan. In Tajikistan, the previously existing partnership was instead funded as a new multi-year partnership focused on providing assistance to the MOH in the development of a practical skills-based training program for primary care practitioners. In Turkmenistan, in lieu of a sustainability grant, a one-year partnership agreement was established between the Tiz Komek Medical Center in Ashgabat and the Richmond Ambulance Authority in Richmond, Virginia, to establish an Emergency Management Services Training Center (EMSTC). This was based on a request from the Ministry of Health and Medical Industry (MOHMI) to provide further training for

instructors at the EMS Training Center in Ashgabat and to orient key policy makers responsible for improving the organization of emergency medical services in the country. AIHA ultimately awarded one-year sustainability grants to the following four hospital partnerships:

- Almaty, Kazakhstan/Tucson, Arizona
- Semipalatinsk, Kazakhstan/Houston, Texas
- Bishkek, Kyrgyzstan /Kansas City, Kansas
- Tashkent, Uzbekistan /Chicago, Illinois

New Partnerships

During the period from 1999 to 2003, seven new partnerships were initiated in the CAR—five in 1999 (two in Kazakhstan and one each in Kyrgyzstan Tajikistan, and Turkmenistan) and one each in 2000 and 2002 (both in Uzbekistan). The partnerships were created within the framework of USAID's overall NIS-wide focus on primary healthcare and USAID/CAR's region-specific priorities. The sites and programmatic emphasis for each of the partnerships were identified and selected in consultation with USAID and the ministries of health and/or education in each of the five countries.

In Kazakhstan, Astana was selected as the site for a new partnership to implement a model, community-oriented and family-centered primary care service delivery system. Also, at the request of the government of Kazakhstan in early 1998, USAID indicated its willingness to support the development of the Kazakhstan School of Public Health (KSPH) in Almaty through the health partnership program. As a result, KSPH was selected to develop programs in health services management and health policy development and administration.

In Kyrgyzstan, the Kyrgyz State Medical Academy (KSMA) was identified as the site for a partnership to focus on developing faculty and curricula for the training of undergraduate and post-graduate primary healthcare practitioners and to implement two model primary care service delivery clinics (one urban, one rural) to serve as practice sites for the education and training programs.

In Tajikistan, the National Primary Health Care Training Center (NPHCTC) in Dushanbe was selected by the MOH as the development site for a practical skills-based training program for primary care practitioners.

In Turkmenistan, the Ministry of Health and Medical Industry (MOHMI) requested that the health partnership program assist in the development of a practical skills training center for primary care practitioners to be located in Ashgabat.

In Uzbekistan, in keeping with the government's strategy for developing its urgent medical program, USAID supported the establishment of a one-year agreement to develop an Emergency Medical Services (EMS) Training Center in Tashkent at the Second Tashkent Medical Institute (TashMI II) and a continuing partnership to establish an EMS Center in the Ferghana region of Uzbekistan. In 2002 AIHA also established a new health management education partnership in Uzbekistan at the First Tashkent Medical Institute (TashMI I). This partnership was initiated under the 1998 CAR sub-regional award and continued through the three-year extension of the agreement.

Under the three-year extension, AIHA funded two new regional partnerships—a variation of the traditional AIHA partnership model. AIHA and many of the CAR partnerships had been focusing on various forms of health professions education, ranging from the development of training programs for family physicians and nurses to regional coordination by the CAR Council of Rectors and the Council of Nurses (described later in this report). In order to build on these accomplishments, USAID and AIHA agreed that two broader multi-institutional regional partnerships—focusing on undergraduate medical education and nursing education—would be an appropriate means to stimulate change and implement broader health professions education reform.

For all of these partnerships, AIHA used an open solicitation process designed to identify US partner organizations with the institutional capabilities and expertise to meet the program goals and the broad institutional commitment to participate under the program's voluntary partnership model. The solicitation announcements were widely distributed among potential institutional candidates via AIHA's Web site, numerous online mailing lists, and to a broad network of health-related associations, health professions education institutions, and healthcare centers.

After an extensive proposal review process, AIHA selected US partners and submitted the proposed partnership institutions to USAID for concurrence. Once concurrence was obtained and the new partnerships were officially announced, AIHA issued subgrants to the US partner institutions and then organized and implemented separate, detailed orientations for each of the US partners. Among other topics, these orientations covered the partnership model, USAID and AIHA policies and procedures, expectations of the partners, best practices, and monitoring and evaluation.

The result was the establishment in 1999 of the following five partnerships in Central Asia:

- Almaty, Kazakhstan/Richmond, Virginia (*health management education)*
- Astana, Kazakhstan/Pittsburgh, Pennsylvania (*primary healthcare)*
- Bishkek, Kyrgyzstan/Reno, Nevada and Tampa, Florida (*health professions education, family medicine, nursing, healthcare management)*
- Dushanbe, Tajikistan/Boulder, Colorado, then Grand Forks, North Dakota *(primary healthcare, family medicine training)*
- Ashgabat, Turkmenistan/Grand Forks, North Dakota (*primary healthcare, family medicine training*)

Subsequently, in 2000 and 2002 respectively, USAID provided funding for two additional partnerships:

- Ferghana and Tashkent, Uzbekistan/Atlanta, Georgia *(emergency medical services)*
- Tashkent, Uzbekistan/Lexington, Kentucky *(health management education)*

In 2004 as part of the three-year extension the regional partnerships in nursing and in medical education were established. These partnerships were the first multi-institutional partnerships developed under the AIHA partnership model. The nursing education partnership linked one US university nursing school and six CAR nursing programs—two each from Kazakhstan, Kyrgyzstan, and Uzbekistan. The medical education partnership matched one US medical school and seven medical institutes—two each in Kazakhstan, Kyrgyzstan, and Uzbekistan and one from Tajikistan. Turkmenistan was not included in the partnership because of the restrictions placed on travel by the government. The two regional partnerships were:

- Astana and Almaty, Kazakhstan; Bishkek, Kyrgyzstan; Tashkent, Uzbekistan/Minneapolis, Minnesota (n*ursing education and leadership*)
- Astana and Aktobe, Kazakhstan; Bishkek and Osh, Kyrgyzstan*;* Dushanbe, Tajikistan; Tashkent, Uzbekistan/Tampa, Florida (*medical education*)

While the areas of focus varied, all the partnerships were consistent with and contributed to USAID/CAR's strategic objective of increasing the utilization of quality primary healthcare in select populations.

Cross Partnership Programs

USAID supported a rich array of collaborative inter-partnership and supportive activities designed by AIHA to supplement and enhance the individual partnerships and projects. AIHA established region-wide programs addressing specific healthcare issues to provide a mechanism for greater inter-partnership sharing, collaboration, and problem solving. Continuing support for these cross-partnership programs comprised the third component of AIHA's CAR program under the CAR sub-regional ca initiated in 1998. These programs, developed beginning in 1994, covered emergency and disaster medicine, healthcare management, infection control, information and communication technology (ICT), neonatal resuscitation, nursing, and women's health. Through these cross-partnership programs, AIHA engaged partners from the CAR region in region-wide task forces designed to develop new and innovative ideas and approaches to improving care. AIHA's cross-partnership programs also supported the participation of CAR partners, experts, and policy makers in training workshops and conferences. Finally, AIHA supported the provision of Internet connectivity and the re-supply of clinical and training centers associated with these programs.

AIHA Managed Programs

In developing the program for the extension of its cooperative agreement for 2004 through 2006, AIHA included two non-partnership programs. Both of these projects were extensions/replications of past AIHA partnership or model programs. The first of these projects, the Community-oriented Primary Care: Health and Social Integration model program (Kazakhstan), was designed to expand community and individual responsibility for health. The second, the Prevention of Mother-to-child Transmission of HIV (PMTCT) replication project (Kazakhstan, Uzbekistan), addressed the growing concern of the increasing incidence of HIV/AIDS in CAR.

Initially developed through the Astana/Pittsburgh partnership, the "Demeu" Family Medicine Center in Astana, Kazakhstan, achieved notable success in delivering basic but high-quality primary care to adults and children. AIHA and USAID/CAR agreed that the Demeu model had strong potential in helping to address a broad range of complex health and social issues in CAR. The replication program envisioned the development of a social work training program at four sites in Kazakhstan with limited partnership support.

In developing the PMTCT program in CAR, AIHA expanded the capacity that was developed and funded under the USAID region-wide cooperative agreement at the Southern Ukraine AIDS and Education Center in Odessa, Ukraine. This resource sharing enabled USAID/CAR to begin addressing PMTCT in an especially cost-effective manner. Using the curriculum and training materials developed by AIHA and SUAEC in Odessa, USAID/CAR was able to support the

procurement of equipment, training, and technical assistance from the US and Ukraine to build the replication sites.

A third program was added to the list of programs managed by AIHA when in early 2004 the University of North Dakota terminated its participation in the partnership program. Under an agreement with the MOHMI in Turkmenistan and with concurrence from USAID/CAR, AIHA initiated the management of the health partnership program in Turkmenistan, focused on the establishment of a second family medicine training center and the development of a health management education program that would enhance the ministry's capacity to reform the healthcare system. In implementing these programs, AIHA collaborated with the graduated HME partners at the Kazakhstan School of Public Health as well as other graduated AIHA partners in the region that had established family medicine, EMS, and neonatal resuscitation training centers.

Evaluation, Monitoring, and Reporting

AIHA's monitoring and evaluation (M&E) system and processes evolved to meet the changing needs and requirements as the partnership program matured. Initially, the focus was largely on monitoring the performance of individual partnerships. However, as the need for a more comprehensive and systematic M&E system became clear from recommendations by evaluators and by USAID, AIHA established an independent monitoring and evaluation unit and began to implement a wider range of M&E activities.

At the partnership level, AIHA worked closely with partners to assist them in developing workplans that incorporated M&E components, including measurable objectives, outputs, outcomes, and indicators. AIHA also encouraged partners to collect baseline data wherever possible. Many of the partnerships, however, faced constraints in trying to conduct such baseline assessments or collecting quantitative data on an ongoing basis due to the lack of human capacity, resources, and reliable systems available at the CAR partner institutions.

AIHA's monitoring of the partnerships occurred at many levels and in varying forms, including: 1) ongoing review of progress in workplan implementation; 2) review of monthly financial reports; 3) tracking of partnership exchange trips through a travel database; 4) tracking of in-kind contributions (of both time and resources) through a special in-kinds database; and 5) regular site visits to CAR partner institutions. Partners also reported to AIHA through quarterly progress reports. In addition to these progress reports, AIHA collected data from CAR partners for each of its cross-partnership programs and initiatives (e.g., EMS, PMTCT, LRC). Using each of these various data sources, AIHA submitted quarterly reports to USAID describing the incremental progress of each of the partnerships and programs, as well as an annual program report, which provided more detailed analysis of statistical trends and progress toward the medium- and long-term objectives of each project.

At the inter-partnership level, AIHA developed objectives for its cross-partnership programs and collected data wherever feasible and appropriate, such as service and other program statistics from the Learning Resource Centers (LRCs) and Nursing Resource Centers (NRCs). Over the years, AIHA also supported a number of internal and external assessments and evaluations. For example, AIHA conducted assessments examining the network of NRCs and Women's Wellness Centers (WWCs) in the NIS and CEE. Among the targeted external assessments of relevance to CAR were: "The Diffusion of Medical Information Technology in Central and Eastern Europe and the New

Independent States" (Learning Resource Centers), University of Minnesota, October 1998; and Assessment of Women's Wellness Centers, University of Illinois at Chicago, 2001. While largely qualitative and process-oriented, these assessments and evaluations provided useful information about the status of these programs, some analysis of outcomes such as observable attitude changes among staff, adherence to clinical practice guidelines and evidence-based practices, as well as some evaluation of the sustainability of the programs.

At the program-wide level, AIHA participated in several external evaluations, including a 1997 evaluation of AIHA's overall partnership program (NIS and CEE) conducted by Butler, et.al. The findings and recommendations from that evaluation were incorporated into the new partnership programs AIHA initiated under the new CA in 1998. In addition, with the end of the first generation of partnerships that year, AIHA commissioned consultants to engage all CEE and NIS partnerships in a self-assessment process. This multi-faceted exercise resulted in a report of partnership achievements as well as recommendations to AIHA for strengthening the partnership program.

Under the CA awarded in 1998, provisions were made for an interim independent summative evaluation of AIHA's overall program. This mid-term evaluation, conducted by a "Continuing Evaluation Panel" (CEP) of internationally recognized healthcare experts worked closely with AIHA over the course of 18 months as they assessed program context, conducted interviews and site visits, synthesized available program monitoring and outcome data, rendered an assessment of overall program effectiveness, and recommended strategic directions for future program enhancement, particularly in the area of monitoring and evaluation. The report by Vanselow, et.al., is available on AIHA's Website at www.aiha.com.

Finally, in 2006 USAID initiated an external evaluation of AIHA's primary healthcare program. The evaluation, conducted by the Terra P Group, a consulting firm, took place in the fall of 2006, with site visits to AIHA program sites in Ukraine, Moldova, Russia, and Kazakshtan. Based on preliminary feedback from the evaluation team, the final evaluation report, due in January 2007, is expected to give a full impact analysis of the legacy of the partnership program, including evidence that AIHA's primary healthcare programs have contributed to reductions in the burden of disease. In Kazakhstan, the evaluation team was particularly impressed with the model developed by the Astana partners and the community-oriented primary care (COPC) replication sites to integrate family medicine with social support services.

Program Management/Administrative Support

AIHA managed its CAR program out of its headquarters in Washington, DC, and its regional office in Almaty. Over the years and in response to the recommendations of several outside evaluations and advisory groups of partnership representatives, AIHA increased the role of its regional and country offices in program development, project management, monitoring, and reporting. Through its Washington and Almaty offices AIHA provided ongoing programmatic and logistical support to partnerships to facilitate and coordinate interactions between US partners and their CAR counterparts in the implementation of their workplans. A major part of the logistical support was in the form of travel-related services, including those provided by AIHA's in-house travel agent. Regional offices also provided administrative and information technology support and served as AIHA's primary liaison with the national ministries and other authorities, USAID CAR mission, and other international donors and programs.

D. THE CENTRAL ASIA PROGRAM IN NUMBERS

Partnerships and projects	=	25
US cities involved	=	13
US partner institutions involved	=	48
CAR cities involved	=	15
CAR partner institutions involved	=	43
US partner volunteer exchange trips to CAR	=	372
CAR partner volunteer exchange trips to the US	=	448
Total exchange trips	=	834
Primary health care centers established (family practice centers and women's wellness centers)	=	8
Patient visits to Women's Wellness Centers	=	350,000
Learning Resource Centers (LRCs) established	=	36
Health professionals trained by LRCs	=	6,514
Training Centers established (EMSTC, NRTC, FMTC, HMTC, ICTC, PMTCT, Social Work)	=	16
Trainees at the EMSTCs	=	23,265
Health professionals trained at the NRTCs	=	1,431
Health professionals trained at the FMTCs	=	1,190
Health professionals trained at the HMTCs	=	11,407
Health professionals trained at the PMTCT training center	=	111
Health professionals trained at the social work training center	=	80
Total USAID Funding	=	$18,699,998
Value of in-kind contributions by US partners	=	$13,886,401

II. COUNTRY SUMMARIES

The following pages provide a program summary of each of the five Central Asian countries where AIHA worked. Each summary includes a map, highlights of key results, and a chart of the partnerships and projects supported with the years of activity and institutions involved. A background section provides a brief context of the healthcare situation in the country at the time and a description of how the USAID funded program evolved there.

The main section of each summary discusses key results for each partnership and project, highlighting the accomplishments within each of the main program areas. (More detailed information about each partnership can also be found on AIHA's Web site at www.aiha.com.) Profiles of selected US and CAR partners which provide a personal perspective on achievements and experiences of the partnerships as well as in-depth success stories highlighting noteworthy achievements have also been included.

A. KAZAKHSTAN (1999-2006)

Country Highlights:

- KSPH initiated a new doctoral program in Public Health and Healthcare—the first of its kind in the region—and a new Master of Health Administration/Master of Public Health program.
- The "Demeu" Family Medicine Center was opened in Astana with a focus on community-based primary care.
- A social work training center was established at the "Demeu" Family Medicine Center.
- Four community-oriented primary care (COPC) programs were established at primary healthcare centers in Kazakhstan.
- A PMTCT training center was opened in Temirtau.
- HIV/AIDS curriculum modules and supportive teaching materials were developed for use in medical education.

Partnerships/ Projects	Years	Focus Areas	Partner Institutions
Almaty/Tucson	1999-2000	Nursing, Infection Control	• TMC Healthcare • Carondelet Health Care Corporation of America • University of Arizona Medical Center • University of Arizona Colleges of Medicine, Nursing and Pharmacy • Columbia Northwest Hospital • El Dorado Hospital • Veterans Affairs Medical Center • Sister Cities Committee • EnviroMed • Tucson General Hospital • Kazakh Research Institute of Pediatrics • Almaty City Emergency Medicine Hospital (ACEMH) • Almaty Regional EMS Training Center • Almaty Medical College • Almaty Women's Wellness Center (WWC) • Almaty City Perinatal Center • Almaty City Health Administration • Ministry of Health

Semey/Houston	1999-2000	Oncology, Nursing	• Semey Regional Administration • Regional Oncology Dispensary • Regional Clinical Hospital • Regional Children's Hospital • Emergency First Aid Hospital • Regional Diagnostic Treatment Center in Kurchatov • Semey Gynecological Hospital • The Methodist Hospital • Baylor College of Medicine
Almaty/Richmond	1999-2003	Health Management Education	• Kazakhstan School of Public Health • Virginia Commonwealth University
Astana/Pittsburgh	1999-2004	Primary Healthcare	• Pittsburgh Mercy Health System • Sto-Rox Health Center • Allegheny County Health Department • Family Health Council Inc. • University of Pittsburgh's School of Public Health • Women's Center and Shelter • Allegheny County Department of Human Services • Carlow School of Nursing • Astana City Health Administration
Regional Nursing	2004-2006	Nursing Education	• State Nursing College (Astana) • Almaty Nursing College • University of Minnesota School of Nursing
Regional Medical Education	2004-2006	Medical Education Reform, Medical Faculty Development, Research	• Kazakh State Medical Academy, Astana • West Kazakhstan Medical Academy, Aktobe • University of South Florida Health Sciences Center
Community-oriented Primary Care	2004-2006	Primary Healthcare	• Demeu Family Medicine Center • Columbia University School of Social Work
Prevention of Mother-to-Child Transmission of HIV/AIDS	2004-2006	HIV/AIDS Prevention	• Karaganda City Maternity Hospital • Temirtau City Maternity Hospital • Pavlodar Oblast Maternity Hospital • Almaty City Maternity Hospital

BACKGROUND

After declaring independence, Kazakhstan, with its large ethnically-Russian minority, faced a number of demographic and health challenges as it transitioned from the Communist system. Between 1992 and 1997 the population dropped by nearly 1.4 million people, mainly due to out-migration. Male life expectancy fell from 63.9 in 1990 to 59.4 in 1997, and female life expectancy dropped from 73.4 to 70.6 during the same period. Chronic diseases such as hypertension and diabetes began to emerge while communicable diseases such as tuberculosis, diphtheria, and hepatitis began to reemerge.

Healthcare services were barely maintained by the system of universal coverage, and out-of-pocket expenditures increased dramatically.

Healthcare reform in Kazakhstan was driven by several factors including the need for a stable healthcare budget, a shift to more cost-effective care, and the need to improve the deteriorating health status of the population. Historically, most of the healthcare budget was devoted to maintaining an extensive system of inpatient services. The reform policy on "optimizing healthcare facilities," introduced primarily since 1997, dramatically reduced the number of hospitals and beds, and as in the other Central Asian republics demonstrated a reorientation toward primary healthcare, including efforts to upgrade the skills of health practitioners and retrain physicians in family medicine. To undertake such reforms required changes in the system of medical education, which suffered from overspecialization. Other reforms focused on trying to decentralize management and to introduce market principles and payment reforms. Although implementation of health reforms in Kazakhstan was delayed until the mid1990s while broader economic reform remained a higher government priority, improvements in the health sector have been more rapid than in most other countries in the region because of the substantially better economic conditions, owing largely to the natural resources (e.g., oil) indigenous to the country.

AIHA began to work in Kazakhstan in 1993 with a hospital partnership between Tucson, Arizona, and Almaty. The partnership focused on several areas, including emergency medical services, nursing reform, infection control, and women's health, all of which were eventually developed into AIHA cross-partnership initiatives. A second partnership between Houston, Texas, and Semey was established in 1995. This partnership focused on oncology, nursing, maternal and child health, healthcare management, continuing medical education, and public health. Both of these partnerships received sustainability grants under the new cooperative agreement—the Almaty/Tucson partnership to finalize its programs in infection control and nursing and the Semey/Houston partnership to complete work on a cancer registry and the establishment of the Semey Nursing Association.

Under the new cooperative agreement (1999-2003) the partnerships that AIHA established were focused on building capacity for primary care service delivery with an emphasis on practical multi-disciplinary retraining of health professionals. These partnerships were intended to complement other USAID and international donor efforts to educate family physicians, a central pillar of the primary care reform in the region. The program extension from 2004 through 2006 included two non-partnership projects, the replication of the community-oriented primary care model established by the Astana/Pittsburgh partnership and a program in prevention of mother-to-child transmission of HIV that extended the successful program AIHA had previously established in Odessa, Ukraine. Also, selected medical and nursing schools in Kazakhstan participated in the two new regional partnerships focused on medical and nursing education.

KEY RESULTS

- **Almaty/Tucson Sustainability Grant (1999-2000)**

Infection Control

- The partnership organized a National Infection Control Conference for over 120 policymakers, representatives of national and oblast sanitary-epidemiologic stations, and other leading regional specialists throughout Kazakhstan. The conference addressed a range of topics, including patient-focused infection control, impact of the environment on infection control, disinfection and sterilization, the role of the microbiological laboratory, community infections, and infection control in tuberculosis treatment facilities.
- Based on recommendations that came out of the conference, the Committee of Health within the Kazakhstan Ministry of Health issued a governmental order to enact a new policy aimed at implementing new standards and practices to reduce nosocomial infections.

- **Semey/Houston Sustainability Grant (1999-2000)**

Oncology

- Partners conducted an East Kazakhstan Regional Cancer Registry Conference, attended by over 80 healthcare professionals from the region. During the conference, US partners held special sessions on epidemiology and quality control, performed demonstrations on partnership-developed and upgraded cancer registry software, and provided consultations at two of the cancer registry sites.
- The partners have continued to collect and enter data into the cancer registries at their respective oncology dispensaries, using the software developed collaboratively during the partnership. They also received software to upgrade their computers to further facilitate the compilation and analysis of data. As of March 2001, over 7,000 entries had been recorded in the registries at the three sites.
- Physicians from Pavlodar and Semey attended the 2nd World Conference for Cancer Organizations in Atlanta, Georgia. Together with a US oncologist, they gave a presentation about the cancer registry software developed by the partnership.

Nursing

- Partners established the Semey Nursing Association, the first nursing association in Kazakhstan and in CAR.

- **Almaty/Richmond Partnership (1999-2003)**

Educational Capacity

- Partners developed a new Master of Health Administration/Master of Public Health program, creating the curriculum, course syllabi, and teaching materials for the 26-course program. By the end of 2002, twenty students had graduated from the program and 14 more were enrolled.
- The partners developed a master's degree program in applied epidemiology.
- With support from the Ministry of Education, the Kazakhstan School of Public Health initiated a new doctoral program in Public Health and Healthcare. The program, the first of its kind in the country, has the capacity to enroll up to five candidates each year.

- The partners at KSPH initiated a distance education program. Preliminary courses were developed in management and economics, epidemiology and biomedical statistics; an on-line program was offered to participants of short-term certificate programs beginning in 2003.

Health Management Capacity

- The partnership focused on improving the content of existing short courses as well as developing new courses to meet the needs and demands of healthcare managers in Kazakhstan. KSPH now offers a total of 34 courses (from 2-4 weeks in length) dealing with various aspects of health management. Since 1999 over 9,000 healthcare professionals have participated in one or more of KSPH's management courses.
- KSPH developed a certificate program in management for practicing healthcare managers.

Research Capacity

- KSPH has actively engaged in providing research services for domestic and international clients. They contracted with the Kazakhstan Ministry of Health to provide an analysis of its health reform efforts which resulted in two reports: "Monitoring and Evaluation of the Reform Process in Kazakhstan" and "Health Economic Problems of Designing and Implementing Compulsory Health Insurance."
- KSPH developed a health survey and a food safety project with the World Health Organization.
- By the end of 2002, eight research projects had been submitted for funding, including two joint projects with other universities. Six of the eight received funding.
- KSPH was selected as a meeting site for the Kazakhstan Research Council for a period of two years. In 2002 KSPH organized a conference in Almaty for both local and international experts with the theme "Emerging Issues in Health Economics, Revitalization of Health Insurance and Health Care Financing in Kazakhstan."

International Collaboration

- KSPH took the lead in helping to establish the Kazakhstan Public Health Specialists Association in 2001. The focus of the association is to promote inter-agency cooperation on healthcare issues and continuing education on topics related to public health. The association currently has over 1,000 members and has held association conferences annually since 2001.
- KSPH has now been accepted as an equal collaborator with a number of international educational and research organizations. KSPH participates in international student and research exchanges with both European and US educational institutions.
- KSPH, together with the British Council, organized a series of workshops on management, economics, and epidemiology in healthcare, primarily for national and regional primary healthcare managers.
- In 2002-2003, KSPH collaborated with WHO to present five workshops on food safety.
- With the United Nations Family Planning Agency (UNFPA), KSPH is engaged in designing programs in reproductive health for ob/gyns and midwifes.

Information Resources

- Partners created the Central Asian Health Services Research Journal, which was officially registered in Kazakhstan and endorsed by all Central Asian Republics. The first issue was published in September 2001 and continues to be published in 2006. The journal is produced in Russian with English abstracts.

- **Astana/Pittsburgh Partnership (1999-2004)**

Community-oriented Primary Care (COPC)

- The partnership opened the "Demeu" Family Medicine Center in 2000 to serve a population of 16,000 adults and children.
- The "Demeu" Family Medicine Center established a new system of patient registration, which allows patients to make an appointment with a physician, nurse, social worker, psychologist, or a lawyer.
- A multi-disciplinary Community Advisory Board (CAB) was established to identify and support intervention programs for high-risk groups such as orphans, low-income families, tuberculosis patients, substance abusers, diabetics, and mental health patients.
- The CAB also worked to develop media relations and promotional events.
- The partners organized numerous patient clubs to provide disease and self-help information on chronic diseases, to promote social welfare for the elderly, to provide lifestyle education for students, and to support the families of disabled children.

Social Work

- Working with Voluntary Service Overseas (VSO), a British social services organization, the partners provided social worker training to Demeu staff on community health and serving vulnerable groups.

- **Regional Medical Education Partnership (2004-2006)**

This partnership focused on curriculum reform and faculty development for undergraduate medical education throughout Central Asia. Representatives from the ministries of health and education as well as the rectors from the Kazakh State Medical Academy in Astana and the West Kazakhstan Medical Academy in Aktobe participated in a series of meetings and conferences to identify partnership objectives and then develop and implement strategies for achieving them. In addition the vice rectors of education, research, admission and student affairs, business, finance, and international affairs participated in a series of peer networks to help make progress in each of their respective areas of activity. *For more detailed information about the accomplishments of this partnership, please see the section on medical education under the Health Professions Education section of this report.*

- **Regional Nursing Partnership (20004-2006)**

The regional nursing partnership was developed to support curriculum reform, faculty development, and the strengthening of nursing leadership and professional development. Because nursing education throughout the Central Asian republics was at varying levels, the partnership worked to reform nursing education in two tracks, at the basic and the baccalaureate level. The State Nursing College (Astana) and the Almaty Nursing College both participated in establishing reform in basic nursing education in Kazakhstan. *For more detailed information about the accomplishments of this partnership, please see the section on nursing under the Health Professions Education section of this report.*

- **Community-oriented Primary Care: Health/Social Integration Model (AIHA-managed Project) (2004-2006)**

COPC Replication

- AIHA signed a Memorandum of Understanding (MOU) with the Kazakhstan Ministry of Health and the Ministry of Labor and Social Welfare to formalize their commitment to the community-oriented primary care model throughout various regions of Kazakhstan. This document provided a commitment that social workers from the Department of Labor and Social Welfare would work on staff at the replication site family practice centers.
- AIHA supported the development of four COPC replication sites at family group practice sites—one in Uralsk, two sites in Semey, and one in Aktobe—where social workers have been incorporated into the family practice.
- Each of the four replication sites developed support clubs for risk groups that were identified through an assessment of their communities. A total of 16 support clubs have been developed for the elderly, teenagers, disabled adults and children, and patients with chronic diseases.
- The effectiveness of the COPC model has been demonstrated by reductions in the number of ambulance calls, visits to specialists, and hospitalizations in the project site catchment areas.

Social Work Training

- A training curriculum and manual on basic social work theory and practice was developed by faculty from the Columbia University School of Social Work. The curriculum was piloted at a five-day training workshop for 11 future trainers from project.
- AIHA established a social work training center at the "Demeu" Family Medicine Center. Demeu trainers have provided training on basic social work theory and practice to over 60 individuals.
- Thirty-five social workers and other staff from the replication sites were trained in developing assessments/questionnaires, creating community profiles, and collecting and recording data.

Prevention of Mother-to-Child Transmission of HIV (AIHA-managed Project) (2004-2006)

Training Capacity

- AIHA established the CAR training center for the prevention of mother-to-child transmission of HIV (PMTCT) in Temirtau and trained six instructors from Pavlodar, Karaganda, and Almaty as master trainers. The instructors teach the PMTCT curriculum that has been previously developed at AIHA's training center for PMTCT and pediatric care in the Southern Ukraine AIDS Education Center (SUAEC) in Odessa. The Temirtau faculty provides courses in pediatric PMTCT, PMTCT for policy makers, voluntary counseling and testing (VCT), and the WHO Generic Training Package courses.
- At the end of 2006, a total of 80 healthcare professionals and policy makers have received training in different areas of PMTCT at the Temirtau center. In Pavlodar, the local partners reported that the instructors trained at Temirtau have provided training for 444 physicians and nurses, including ob/gyns, pediatricians, and PHC providers, in 2004-2005.

Implementation Monitoring

- AIHA designed a patient record database that was installed at each project site. This comprehensive database was designed to serve as a planning and management tool for the implementation of an effective PMTCT program. Database coordinators were trained to input the data during each of the key clinical steps in the birth process for HIV-positive women.
- Data analysis helped project implementers to identify changes that needed to be addressed in the PMTCT protocol. Issues identified included the need for a change in the policy on voluntary counseling and testing and the need for a rapid test to be made available as part of the standard protocol for delivery.

Political Support at National and Oblast Levels

- The PMTCT project has benefited from political support at both the national and oblast levels. At the national level, AIHA ensured that the PMTCT activities were a component of a coordinated national HIV/AIDS prevention and treatment program. At the regional level, AIHA encouraged representatives from both the Pavlodar and Karaganda regions to issue decrees laying out a regional strategy for implementing PMTCT. The decrees designated project sites and implementers (the local AIDS center, maternity hospitals, PHC providers and NGOs) and detailed responsibilities and collaboration strategies to ensure a continuum of care and support.

SUCCESS STORY: Building a Strong Foundation for Urgent Care Training in Kazakhstan

Almaty EMS Training Center Joins Kazakh National Institute for Postgraduate Medical Education, Expands Program Launched by AIHA and USAID in the 1990s

In emergency situations, life or death is often determined within the first few minutes of a crisis. The medical knowledge and expertise of first-responders coupled with a reliable emergency response infrastructure can make a critical difference when an unexpected illness, accident, or widespread disaster occurs.

In Eastern Europe and Central Asia, a lack of well trained first-responders combined with a relatively weak emergency response infrastructure result in death rates from accidents and cardiac incidents that are roughly three times greater in than those in the United States, according to WHO studies. As a result, many countries in the region have made improving pre-hospital and hospital-based emergency care a key priority of their health system reform efforts.

In Kazakhstan, a Central Asian nation of 15.2 million inhabitants, the Almaty EMS Training Center has been at the forefront of the nation's efforts to strengthen emergency response and urgent care capacity. The training center was established in October 1994 by the American International Health Alliance (AIHA) through a USAID-funded partnership linking healthcare institutions from Almaty with counterparts in Tucson, Arizona. Now part of the National Institute for Postgraduate Medical Education, the center serves as the university's Department of Emergency Care and is supported by the Kazakh Ministry of Health. As a result, its training courses have been expanded and are being offered nationwide.

Over the past 12 years, the Almaty EMS Training Center has provided basic and advanced life support training to nearly 6,000 first-responders to emergencies ranging from routine medical cases

and traumas to disasters involving mass causalities. Training for healthcare professionals focuses on topics including CPR, emergency obstetrics, intubation, spinal immobilization, disaster response, and triaging practices that can be performed at the accident site, en route to, and in the hospital setting. The center also plays a critical role in upgrading urgent care skills necessary for the management of medical emergencies among primary healthcare personnel, as well as teaching life-saving skills to non-medical professionals such as flight attendants, firefighters, oil industry workers, and traffic police who may be called upon to provide emergency care.

"In Kazakhstan, accidental injuries, heart attacks, strokes, and high-risk deliveries represent the main reasons people require urgent care. In this respect, we are no different than much of the world," explains EMS Training Center Director Rakhmet Rakhimbaev. "We do have some environmental conditions in and around Almaty that make allergic reactions, acute asthma, poisonous bites, and natural disasters such as earthquakes and mudslides a concern, as well."

The courses taught at the center emphasize the acquisition of practical skills and are composed of learning modules accompanied by computer presentations, slides, overheads, and handouts. They also allow plenty of time for hands-on exercises that use mannequins as teaching tools. Training modules are constantly being updated to reflect current trends in emergency care and are adapted to meet the unique needs of individual communities and regions.

"Before this facility was opened, Kazakhstan didn't have a center that offered advanced urgent care training. Because of our partnership with AIHA and our colleagues from Tucson, though, both clinicians and lay people now have a place where they can learn emergency techniques from basic first aid to more advanced interventions," says Yuri Silachev, who directed the EMS Training Center from 1999 to 2005. "Our courses are rooted in modern, evidence-based protocols and designed to lay out step-by-step the procedures that should be taken to address a wide range of medical emergencies," he continues, explaining that the partnership's work changed the way emergency medicine is practiced in the country.

Stressing the importance of the skills-based training methodology used at the center, Silachev describes how pleased participants are with how much they learn during the courses. "Most of are students are quick to admit that they've never had the opportunity to take such courses and they are grateful for the new knowledge and skills they have gained, as well as for the expertise of the instructors, who have all been trained in adult learning techniques," he says.

Rakhimbaev agrees, noting that students routinely call or write letters of thanks after completing a course. "The urgent care skills acquired at our center are in great demand and most of our trainees employed in the healthcare field don't have any problems with professional advancement. What we teach is equally important for non-medical professionals—especially those whose work routinely puts them in close contact with dangerous situations," he points out.

Discussing his plans for future development at the Almaty EMS Training Center, Rakhimbaev concludes, "Training first-responders to save lives should be one of Kazakhstan's main healthcare priorities because far more people die from accidents and other emergency situations than other causes. As far as urgent care goes, time is one of our worst enemies and we need to be better prepared for battle. That's what our courses are all about."

B. KYRGYZSTAN (1999-2006)

Country Highlights:

- A national burn registry was initiated as a result of the Bishkek/Kansas City partnership.
- A forty-bed hospice unit was established at the Institute of Oncology and Radiology.
- A national family medicine residency training program was developed at KSMA.
- A family medicine model clinic, which serves as a study base for KSMA and other training programs, was established.
- KSMA established both a Department of Nursing Education and a Department of Management Education.
- A multi-disciplinary "Community Assessment Team" (CAT) was established as part of the Bishkek/Reno and Tampa partnership.
- HIV/AIDS curriculum modules and supportive teaching materials were developed for use in medical education.

Partnerships/Projects	Years	Focus Areas	Partner Institutions
Bishkek/Kansas City	1998-1999	Hospice, Burn Care	• Kansas University Medical Center • Kyrgyz Institutes of Oncology and Radiology • Institute of Obstetrics and Pediatrics, Cardiology and Internal Medicine
Bishkek/Tampa and Reno	1999-2003	Medical Education, Community Health, Family Medicine	• Kyrgyz State Medical Academy • University of Nevada School of Medicine • University of South Florida Health Services Center
Regional Nursing	2004-2006	Nursing Education	• Bishkek Nursing College • Kyrgyz State Medical Academy Higher Nursing Education • University of Minnesota School of Nursing
Regional Medical Education	2004-2006	Medical Education Reform, Medical Faculty Development, Research	• Kyrgyz State Medical Academy • Medical Department Osh State University • University of South Florida Health Services Center

BACKGROUND

At independence in 1991 Kyrgyzstan, like the others Central Asian republics, inherited massive, inefficient healthcare systems that it could not support financially. The country's public health, service delivery, health finance, and medical education systems could not cope with the range of problems, and this led to declines in various health indicators, including falling life expectancy. The country experienced heavy burdens of chronic, especially cardiovascular, disease; relatively high infant mortality; re-emerging diseases like tuberculosis, syphilis, and malaria; and the emergence of HIV/AIDS. At the same time, physicians were not being prepared to provide high quality, evidence-based services to treat the most common and urgent conditions facing the population.

In 1996 the Kyrgyzstan Ministry of Health, with the support of WHO, initiated the "Manas" Program, the country's first national healthcare reform effort. The reform focused on the delivery system; top priorities included the development of family group practices in the ambulatory setting; the development and implementation of a new payment system; and improvements to the health delivery system's physical infrastructure. To complete and sustain these reforms, the AIHA partnership program worked to support improvements in medical education and to provide clinical training programs for physicians, nurses, and healthcare administrators.

AIHA established its first Kyrgyz partnership between Bishkek and Kansas City in 1992. This partnership focused on improving hospital care, family medicine, hospice care, and blood banking. In 1998, this partnership received a one-year sustainability grant to conclude its activities related to improving the services provided at the established hospital burn units and to establish a hospice program at the Institute of Oncology and Radiology.

The Bishkek/Tampa and Reno partnership was originally established between the Kyrgyz State Medical Academy (KSMA) and the University of Nevada Medical School to focus on medical education and family medicine curriculum development. USAID approved the transfer of the US partner to the University of South Florida Health Sciences Center in 2001. The partnership developed a national family medicine residency training program and established a model family medicine clinic to serve as the training base for the KSMA family medicine residency program. With the support of the USAID-funded ZdravPlus program, the partners formed the Council of Rectors for Medical Education and Workforce Planning in Central Asia to establish a forum for regional cooperation that would lead to improvements in medical education in the region.

The partnership also helped KSMA to establish the Department of Higher Nursing Education, the first university program for nurses established in Kyrgyzstan. One of the priorities identified by the MOH and WHO through the Manas Program was the need to improve the preparation of healthcare managers. To support this objective, the partnership helped to establish the Department of Health Management at KSMA, and in 1999 the Institute of Management and Public Health started a five-year, full university education program in healthcare management.

The regional partnerships in medical and nursing education continued the process of health professions education initiated by the Bishkek/Tampa and Reno partnership. These partnerships focused on undergraduate/pre-service medical education and nursing education as a means to stimulate change and implement educational reform within medical and nursing institutions.

KEY RESULTS

- **Bishkek/Kansas City Sustainability Grant (1998-1999)**

Burn Care

- The burn care teams from Bishkek and Osh put into practice state-of-the-art burn care techniques, including hydrotherapy, debriding, early ambulation, and splinting to prevent contractures with physical and occupational therapy.
- The burn centers began providing training on burn patient care to general practitioners from other health providers in the region.
- Facilities and programs for exercise and rehabilitation for burn victims were established at Bishkek Hospital No. 4 and Osh Oblast Hospital.
- A burn registry was initiated.
- A multi-disciplinary team consisting of physicians, a nurse, and a firefighter was deployed to outlying areas to provide instruction to local first responders on the care of burn victims and referral protocols.
- The partnership established the Kyrgyz Association of Physicians/Combustiologists.

Hospice

- A 40-bed hospice unit was established at the Institute of Oncology and Radiology.
- Hospice staff received training on pain management and palliative care.

- **Bishkek/Reno/Tampa Partnership (1999-2003)**

Healthcare administration and nursing education

- The partners established new departments for health management and higher nursing education and developed training curricula for each. In developing these curricula, the partnership provided KSMA faculty with training that emphasized the introduction of innovative teaching methodologies.
- US partners conducted workshops on essential public health functions and core competencies, leadership and strategic planning, and grant writing and resource development.

Family Medicine Education

- The partnership developed a family medicine residency training program for the country in conjunction with the ministry of health and the Postgraduate Institute.
- KSMA established a family medicine clinic to serve as a model family medicine center and a clinical teaching site for medical and nursing students.

Research

- The partnership established a Community Assessment Team (CAT) and trained its members in strategic planning and the skills, tools, and methodologies for community assessment (including focus groups, questionnaires, and data collection).
- The CAT completed two community assessments. An assessment of family group practices (FGPs) found general dissatisfaction among respondents and identified the need to improve physician training. An evaluation of the new family medicine residency curriculum highlighted the need to provide more patient education programs.

- Partners developed a skills "toolbox" related to community education techniques, evaluation approaches, grants management, assessment of clinics, workforce planning, and strategic planning.
- US partners created a grants program in primary health and community assessment. Twenty-four applications from students and faculty were received, and seven small grants were awarded through the partnership.

➢ **Regional Medical Education Partnership (2004-2006)**

This partnership focused on curriculum reform and faculty development for undergraduate medical education throughout Central Asia. Representatives from the ministries of health and education as well as the rector from the Kyrgyz State Medical Academy and the Medical Department at Osh State University participated in a series of meetings and conferences to identify partnership objectives and then develop and implement strategies for achieving them. In addition the vice rectors of education, research, admission and student affairs, business, finance, and international affairs participated in a series of peer networks to help make progress in each of their respective areas of activity. *For more detailed information about the accomplishments of this partnership, please see the section on medical education under the Health Professions Education section of this report.*

➢ **Regional Nursing Partnership (2004-2006)**

The regional nursing partnership was developed to support curriculum reform, faculty development, and the strengthening of nursing leadership and professional development. Because nursing education throughout the Central Asian republics was at varying levels, the partnership worked to reform nursing education in two tracks, at the basic and baccalaureate level. The Kyrgyz nursing programs selected for participation in the partnership represented both tracks. The Bishkek Nursing College participated in establishing reform in basic nursing education, and the Kyrgyz State Medical Academy continued to develop the higher nursing education program initiated as part of the Bishkek/Reno and Tampa partnership. *For more detailed information about the accomplishments of this partnership, please see the section on nursing under the Health Professions Education section of this report.*

Partner Profile — *Tamara Kudaiberganova*

Fostering International Cooperation in Kyrgyzstan

When the Kyrgyz State Medical Academy in Bishkek began its partnership with the University of South Florida Health Sciences Center in Tampa, Tamara Kudaiberganova was excited by the opportunities the collaboration would bring to her institution. As director of international relations, Kudaiberganova is in charge of coordinating programs like the partnership, as well as assisting staff who are looking to develop research projects or draft grant proposals.

"The training I received through our partnership has helped me in many respects," Kudaiberganova says, citing workshops in leadership, presentation and communications skills, and grant-writing as some of the most useful. "I also found the community assessment and evaluation skills I gained through the partnership to be very helpful in my day-to-day work, as was a three-month Web course on bioethics, which I teach at the Academy," she explains.

Even though she has been an instructor at the Academy for more than a decade, Kudaiberganova is quick to point out how much the partnership has benefited her in that regard. "I feel that my knowledge on a broad range of health management and ethics topics has deepened and my ability to integrate all this into my teaching has improved. What I have learned helps me organized my lessons in a more interesting and coordinated way. I'm also better at motivating my students thanks to the training," she admits.

When it comes to motivating both students and colleagues, Kudaiberganova says she tries to lead by example. "Sometimes, it seems I want to do more than is doable," she says with a laugh, "but I believe in a proactive approach." Whether it is strategic planning to make the best use of limited resources or assisting staff who want to embark on a new research project or procure funding for a project, she uses what she has learned to tackle any challenge that comes her way. "The innovative programs introduced through our partnership raise the level of teaching at our institution," she says, concluding, "Our students are better prepared to take their place in the global scientific community."

C. TAJIKISTAN (1999-2006)

Country Highlights:

- The Republican Training Center for Family Medicine and two regional centers for the training and education of primary care providers were established.
- A skills-based curriculum in family medicine was developed and implemented.
- A nursing resource center and an emergency medical service training center were established.
- Primary care clinical practice guidelines were developed in coordination with the ministry of health.
- HIV/AIDS curriculum modules and supportive teaching materials were developed for use in medical education.

Partnerships/Projects	Years	Focus Areas	Partner Institutions
Dushanbe/Boulder	1999-2001	Family Medicine Training, Nursing, Emergency Medicine	• Republican Training Center for Family Medicine • Boulder Community Hospital
Dushanbe/Grand Forks	2002-2003	Family Medicine Training, Nursing, Emergency Medicine	• Republican Training Center for Family Medicine, Dushanbe • University of North Dakota
Regional Medical Education	2004-2006	Medical Education Reform, Medical Faculty Development, Research	• Tajik State Medical University • University of South Florida

BACKGROUND

After gaining independence from the Soviet Union, Tajikistan faced not only economic difficulties, but also political and ethnic controversies that led to a civil war in 1992. During this period, the country also suffered from natural disasters which further decreased the quality of life for the nation's populace. The health system inherited from the Soviet period was already in a state of decline, and these economic, political, and social crises resulted in further deterioration. Health expenditure was just US$2.5 per capita—less than two percent of GDP, and with the civil war, the government was not able to concentrate on economic reforms until a peace agreement was signed in 1997.

With support from WHO, the Tajikistan government initiated a national healthcare reform program that focused on prioritizing and strengthening primary healthcare. The reformers envisioned the development of training programs for a new level of health personnel—family physicians and family health nurses, who would serve as the new frontline health worker within the healthcare system. Retraining of specialist physicians to family practice became a national priority with the president mandating that 4,000 doctors be retrained by 2010. To support this mission, the ministry of health established the Republican Training Center for Family Medicine (RTCFM) in Dushanbe. The faculty of the center was charged with the task of creating four additional training centers to help train medical and nursing staff throughout Tajikistan as well as to disseminate the new model of primary care.

In 1999, at the request of the Tajik government AIHA extended the previous (1994-1998) partnership with Boulder Community Hospital to work in the area of primary healthcare reform. The partnership aimed to provide urgent care training to primary care providers; develop skills-based training modules in family medicine and primary care nursing; train faculty of the RTCFM; monitor and evaluate training faculty performance and provide additional training as necessary; and establish a Nursing Resource Center to support primary care nursing and nursing education efforts at the RTCFM.

When Boulder withdrew from the partnership in 2001, AIHA brokered a new partnership relationship for the Tajiks with their counterparts in family medicine training from Turkmenistan and their US partners from North Dakota. This relationship was short-lived, however, because the North Dakota partners withdrew from the region because of the difficulty in supporting professional travel exchanges. By this time, the Turkmenistan government was very restrictive in allowing its citizens to travel outside of the country and also in allowing citizens from many other CAR countries from visiting Turkmenistan.

Together with representatives from the Tajikistan Ministries of Health and Education, the Tajik State Medical University, the only medical university in the country, was also involved in the CAR regional undergraduate medical education partnership that began in 2004.

KEY RESULTS

- **Dushanbe/Boulder Partnership (1999-2003)**

Medical Education

- US and Tajik partners established the Republican Training Center for Family Medicine in 1999 in Dushanbe. Partners developed skills-based curricula in family medicine, including modules in emergency medicine, childcare from birth to puberty, adult care, and women's health. In 2004, the RTCFM updated and certified its six-month curriculum, which is also now being taught at the department of family medicine of the National Postgraduate Institute, as well as two regional "branch" family medicine training centers, that were established in 2000. The RTCFM's faculty of ten has the capacity to train about 100 physicians and nurses annually.
- A new HIV/AIDS module was developed by a CAR regional faculty taskforce, which is competency-based, learner-specific, and founded on the principles of evidence-based medicine. The module was adopted by Tajik State Medical University in 2006.

Nursing

- The partnership officially opened a Nursing Resource Center in Dushanbe in 2001. The ministry of health assigned staff to the NRC so that it could serve as a center for education and training of nurses in primary care settings.
- The Tajik Nursing Association, established with AIHA support in 1995, continued to be an active member of the CAR Nursing Coordinating Council through 2006.
- In 2005, AIHA sponsored the participation of a Tajik chief nurse at the 9th meeting of the Network of Government Chief Nurses in the WHO European Region in Copenhagen, Denmark. The meeting provided a unique opportunity for the Tajik nurse leader to network with European colleagues as well as to learn about WHO's nursing education programs.

Emergency Medical Services

- Since being established by the partnership in 2000, the Republican Training Center for Family Medicine has developed a variety of EMS courses. To date, 1,833 physicians, nurses, and medical students have taken EMS courses at RTCFM.

➢ **Dushanbe/Grand Forks Partnership (2002-2003)**

The partnership focus on education, nursing, emergency medical services, and primary care continued with a new US partner for an additional year. During this short period the partners updated and expanded the modules offered by the RTCFM, providing attention to infectious disease and aging, clinical assessment, and diagnosis. The partners also provided additional training in primary care nursing. After an attempted assassination of the President of Turkmenistan the three-country partnership was abandoned because approval for the Tajiks to travel to the Ashgabat Primary Care Training Center was no longer an option.

➢ **Regional Medical Education Partnership (2004-2006)**

This partnership focused on curriculum reform and faculty development for undergraduate medical education throughout Central Asia. Representatives from the ministries of health and education as well as the rector from Tajik State Medical University participated in a series of meetings and conferences to identify partnership objectives and then develop and implement strategies for achieving them. In addition the vice rectors of education, research, admission and student affairs, business, finance, and international affairs participated in a series of peer networks to help make progress in each of their respective areas of activity. *For more detailed information about the accomplishments of this partnership, please see the section on medical education under the Health Professions Education section of this report.*

D. TURKMENISTAN (1999-2006)

Country Highlights:

- The Ashgabat/North Dakota partners developed a model primary healthcare center at Health House No. 1.
- The Ashgabat/North Dakota partners developed a family medicine training center that provides practical, skills-based training to healthcare professionals from the Ashgabat region.
- The Health Management Training Center at the Turkmen State Medical Institute was established as a national training center for healthcare management.
- A second skills-based primary care training center was established to provide training for healthcare professionals from the five regions of the Turkmenistan.
- A Neonatal Resuscitation Training Center was opened.
- A national health statistics database was created for use by the health ministry and its regional health departments.

Partnerships/ Projects	Years	Focus Areas	Partner Institutions
Ashgabat/North Dakota	1999-2003	Medical Education, Primary Healthcare	• Ministry of Health and Medical Industry (MOHMI) of Turkmenistan • Ashgabat City Health Administration • University of North Dakota • North Dakota State Health Department • St. Aloisius Medical Center • West River Regional Medical Center • Dakota Association of Community Health Centers
Capacity Building for PHC and Health Management	2004 -2006	Primary Healthcare, Health Management Education	• MOHMI • Turkmen State Medical Institute (TSMI)

BACKGROUND

In the years after independence from the Soviet Union, Turkmenistan like the other Central Asian Republics faced challenges in meeting the healthcare needs of the population. Medical professionals did not have adequate training, they had little access to modern medical technologies, and medications were in short supply. Despite the ideal of universal, government-financed healthcare many residents, especially in the rural regions, did not have access to adequate healthcare, mostly due to a lack of financing from the federal budget to support it. When AIHA initiated programs in Turkmenistan, life expectancy (62.9 for males, 69.7 for females) was the lowest in the former Soviet Union. Cardiovascular disease was the most common cause of death, followed by cancer, respiratory disease, and accidents. Women and children suffered from the poorest health and were the most susceptible to disease and sickness. In 1991 Turkmenistan ranked highest in its infant mortality rate in the NIS, with forty-seven deaths per 1,000 live births, and very high on maternal death rate, with fifty-five deaths per 100,000 births.

In response to these developments, the Turkmenistan Ministry of Health and Medical Industry (MOHMI) in 1998 began to shift its focus from tertiary care to primary care as the key element of the country's healthcare reform program. To support the government's efforts, AIHA established a partnership between Ashgabat and North Dakota to develop a model primary care center and to provide primary care training as part of its new cooperative agreement.

Unfortunately, the lack of political and economic reform in the country made it difficult to operate the partnership program. Since Turkmenistan gained independence in 1991 under the personality cult of President Niyazov the country has remained largely closed to the outside world. Partnership travel was always difficult because of restrictions placed on the Turkmen partners. Travel to and from the country became even more difficult after an attempted presidential assignation in 2003. At that time, USAID/Ashgabat was instructed not to request entry visas into Turkmenistan for US partners until these visits had been coordinated with the Ministry of Health and Medical Industry. They also recommended that no more than two US partners come on each visit and that each visit be no longer than one week.

These additional constraints that were being placed on the partnership contributed to the US partners' decision to end their involvement in the project. In 2004 under the three-year program extension, rather than try to find new US partners to support the partnership, AIHA established an agreement with the MOHMI to continue to develop health professions training using US experts and graduated partners from the NIS. The program continued to support the development of family medicine and primary care training programs, including the establishment of an additional training center at the Scientific Center of Physiology. In addition, the MOHMI requested support in establishing a Neonatal Resuscitation Training Center (NRTC), a Learning Resource Center (LRC), and a Health Management Training Center (HMTC) that would further enhance the skills of healthcare managers. This led to AIHA's development of an HMTC and LRC at the Turkmen State Medical Institute and a NRTC at the Maternal and Child Health Scientific Research and Clinical Center in Ashgabat. AIHA also supported a request to help the ministry develop a database to track healthcare system usage statistics.

KEY RESULTS

- **Ashgabat/North Dakota Partnership (1999-2003)**

Primary Healthcare

- The partners developed a month-long skills-based primary healthcare retraining curriculum as well as a pre-and post-training evaluation tool for trainees. In addition, partners prepared protocols for evaluating trainers and established evaluation criteria for each teaching module. Protocols were also developed for evaluating the work of the Family Medicine Training Center (FMTC).
- The FMTC officially opened in 2001 at Health House No. 1 with six physician and nurse training teams. The FMTC conducts a 4-week training program each month for eight physician-nurse teams each session. The FMTC has trained more than 700 family medicine specialists who now work in primary care settings throughout the capital. Faculty from the Ashgabat Nursing College are now included as trainees in the training of primary care teams.
- Course evaluation reports based on pre-and post-tests conducted by the FMTC demonstrate an average 40-50 percent increase in knowledge and skills of the healthcare teams that have undergone training. Providers who received training at the FMTC also improved communication skills and learned patient-focused, rather than disease-focused care. The Turkmenistan Ministry of Health reported that the number of preventive visits to clinics increased as a result of the increased focus on prevention and early detection.
- The partners established a model primary healthcare unit at Health House No. 1. The staff consists of 10 physicians and 10 nurses who have received training at the FMTC. The physician-nurse teams operate the center on an appointment basis. The nurses take and record patient histories, and the physicians assess and treat patients according to established clinical practice standards. The center has a community outreach program that sponsors breast self-examination education, prenatal clubs, and school health education programs on smoking and substance abuse.
- The partners, with the support of AIHA, drafted a ministerial order on the status of the FMTC, designating the center as part of the medical education system, with its own full-time staff and certified courses. The Turkmenistan Ministry of Health and the Ashgabat Health Department have required that all family physicians and nurses in Ashgabat receive training at the center.

- **Capacity Building for PHC and Health Management (AIHA-managed project) (2004-2006)**

Primary Healthcare

- To provide hands-on practical skills training mainly for primary healthcare providers (family doctors, nurses and feldshers) from all regions of Turkmenistan, AIHA renovated and equipped a second FMTC located at the Scientific Center of Physiology, an institution that serves patients from throughout the country. Four faculty members (three physicians and one nurse) were selected and trained in teaching methodologies/adult learning, various clinical subjects, evidence-based practice, and management training on human resources and communications skills.
- The month-long curriculum has been revised to include modules on patient communication, management of chronic diseases, and mental health integration into primary care. The

training program has been reviewed and approved by the MOHMI as an official PHC retraining program.
- In cooperation with the March of Dimes, AIHA developed and implemented modules in women's health that were incorporated into the family medicine training curriculum.

Neonatal Resuscitation

- AIHA opened a Neonatal Resuscitation Training Center at the Maternal and Child Health Scientific Research and Clinical Center in Ashgabat in 2006. The center trains neonatal doctors in new approaches for resuscitating newborns and obstetrics. This is a critical need in Turkmenistan, which has the highest newborn mortality rate in Central Asia. The center's opening follows a training-of-trainers course provided to its staff by instructors from the Neonatal Center in Kiev, Ukraine, which was also opened with support from USAID and AIHA. The new training center will support the National Safe Motherhood Program, which is focused on decreasing child and maternal mortality rates in the country.

Health Management

- Five Turkmen government policymakers visited Canada and the US on a health insurance study tour in September 2004. The tour was organized in response to a request from the Turkmen government, which is charged with the introduction of obligatory health insurance by 2006.
- AIHA also organized a series of health management workshops for the faculty of the Health Management Training Center at Turkmen State Medical School. Faculty representing the Kazakh School of Public Health, the School of Health Care Management at the American University of Armenia, and the University of Central Florida led the workshops.
- A health management training center was opened at the Turkmen State Medical Institute in 2005 and serves as an engine of health sector reform in Turkmenistan. By helping to build a cadre of highly qualified healthcare administrators and managers, the center plays a critical role in the ministry's efforts to implement a medical insurance system.

Access to Health Information and Communications

- AIHA helped establish a Learning Resource Center (LRC) at the Turkmen State Medical Institute in order to help improve access to up-to-date health information. The staff of this LRC received training on basic computer skills, information retrieval, and evidence-based practice. The LRC was established to serve the faculty of the HMTC, but it is also utilized by the family medicine training centers and the health ministry.
- AIHA supported the development of a national health statistics database for the Turkmenistan MOHMI. This database was designed to help the central ministry collect information via modem from each of the country's regions. This database connects eight governmental offices in different parts of the country.

Bolstering the Skills of Family Medicine Specialists in Turkmenistan

If you were to ask Guljahan Annamamedova what she likes best about her work, she'd likely say "everything." As director of the Family Medicine Training Center at Health House No. 8 in Ashgabat, Turkmenistan, Annamamedova's job is an exciting one that puts her at the vanguard of efforts to improve access to primary care services in this Central Asian nation of 5 million people.

Opened in December 2005, the Family Medicine Training Center at the Scientific Center of Physiology is the second facility of its kind established in Ashgabat by AIHA with USAID funding and support. The first—which was established by a partnership that linked the Turkmen Ministry of Health and Medical Industry and Ashgabat Health House No. 1 with the University of North Dakota, the North Dakota State Health Department, and a consortium of other healthcare provider organizations—has provided training to practitioners from the capital city since it opened in May 2001. The second, which Annamamedova heads, was established to train physicians and nurses from five regions spanning Turkmenistan, as well as feldshers from rural areas.

"I myself received training in family medicine at the center at Health House No. 1," Annamamedova says, recalling how detailed and comprehensive the courses were and how excited she was at the prospect of replicating and expanding them at her own facility. "Other workshops and training seminars I attended through the AIHA project focused on internal medicine, primary care, women's health, and evidence-based practice. These were all instrumental to my professional development, as were the courses in adult learning methodologies and clinic management," she continues.

"Working with our partners and colleagues, we were able to fine tune our curricula and expand it as needed. In particular, one of the key strengths of our training model is its emphasis on the acquisition of practical skills," Annamamedova explains, noting that roughly one-third of course time is devoted to lectures with the remaining two-thirds devoted to hands-on, skills-building exercises. "This is a revolutionary approach here in Turkmenistan. Our courses are very interactive and we frequently rely on the mannequins and other teaching aids we received through the partnership to reinforce what our students have learned in the classroom," she says.

According to Annamamedova, the trainees are pleased not only with the methods, but also the content. "Family doctors who come to the center tell me that they have never taken a course that integrates so many aspects of care, from pediatrics and women's health issues to gerontology and the psycho-social aspects of primary care," she says, pointing out, "We even include neonatal resuscitation and emergency medical procedures based on curricula used at AIHA-sponsored training centers throughout the region."

Pre- and post-tests administered to trainees attests to the efficacy of the courses, Annamamedova concludes, saying, "It's so gratifying to see how eager they are to learn more and more. I am very proud of the fact that we are truly family medicine doctors now and that the practitioners we train are, too."

E. UZBEKISTAN (1999-2006)

Country Highlights:

- Two women's wellness centers were opened.
- An emergency medicine training center, a neonatal resuscitation training center, and two nursing resource centers were opened to provide continuing training resources.
- A health management training center that provides short courses to health administrator nationwide was opened in Tashkent.
- A thirty-six hour undergraduate health curriculum was developed and introduced in all medical schools in Uzbekistan.
- HIV/AIDS curriculum modules and supportive teaching materials were developed for use in medical education.
- The Bukhara Medical School Department of Higher Nursing Education introduced a 60-hour IT course for its nursing students.
- PMTCT pilot sites were established in Tashkent and in Yangiul.

Partnerships/Projects	Years	Focus Areas	Partner Institutions
Tashkent/Chicago	1999-2000	Women's Health	• Second Tashkent State Medical Institute (TashMI II) • The University of Illinois at Chicago
Tashkent and Ferghana/Atlanta	2000-2003	Emergency Medical Services	• National Republican Center for Emergency Medicine in Tashkent and Ferghana • Grady Health System • Emory University • Rural/Metro Ambulance Service • Emory and Morehouse Schools of Medicine • Rollins School of Public Health • Grady Memorial Hospital • Georgia Poison Center
Tashkent/Lexington	2002-2006	Health Management Education	• Tashkent Medical Academy (merged from the First and Second Tashkent State Medical Institutes in 2005) • University of Kentucky

Regional Nursing	2004-2006	Nursing Education	• Borovsky Nursing College • Republican Scientific Center for Emergency Medical Services • Bukhara State Medical Institute • University of Minnesota School of Nursing
Regional Medical Education	2004-2006	Medical Education Reform Medical Faculty development Research	• Tashkent Medical Academy (merged from the First and Second Tashkent State Medical Institutes in 2005) • University of South Florida
Prevention of Mother to Child Transmission of HIV/AIDS	2004-2006	HIV/AIDS Prevention	• Ministry of Health • Yangiul Maternity Hospital • Tashkent Maternity Hospital No. 1.

BACKGROUND

As in the other Central Asian republics, the economic recession that followed independence had an adverse effect both on the health of the population and the healthcare system in Uzbekistan. After independence in 1991, a number of ad hoc healthcare reform measures that attempted to refocus on the financing and delivery of healthcare services were set in motion. These reforms, which were in keeping with the changes that were happening across the region and supported by the international donor community—including the World Bank and USAID, were focused on improving maternal and child health services, reducing the public share of financing, selective privatization, decentralizing the management of health services, and improving the delivery of primary healthcare services.

In 1993 Uzbekistan undertook a program of privatization that began with the introduction of health insurance and continued with the gradual privatization of healthcare facilities. The role of the private sector in providing health services was understood mainly in the context of issuing licenses allowing providers and facilities to deliver and charge consumers for health services. In the late 1990s the government began to increase its emphasis on primary healthcare services with the creation of rural health centers. In response, USAID and other donor-supported programs focused on the provision of training and retraining programs for primary care professionals. The Uzbek government also identified the trauma care system as a high priority and decided to develop a network of new hospitals providing emergency care. The Republican Center for Emergency Medicine (RCEM) in Tashkent was designated as the lead institution in the national emergency care efforts.

AIHA first began to work in Uzbekistan in 1993 with a hospital partnership that linked the Second Tashkent State Medical Institute (TashMI II) with the University of Illinois at Chicago (UIC). This partnership focused on a wide range of topics, including neonatology, women's health services, nursing development, and healthcare management. The partnership, which had previously established a Women's Wellness Center (WWC) on the campus of the Institute, received a one-year sustainability grant to develop a second Women's Wellness Center in the city of Tashkent.

Under the new cooperative agreement, AIHA also established two new partnerships reflecting USAID's and the Uzbekistan government's health reform goals. First, a partnership between Atlanta and the National Republican Center for Emergency Medicine and its affiliate in Ferghana was established to support the strengthening of the country's trauma care network. Then in 2002, AIHA

established a partnership between the University of Kentucky in Lexington and the First and Second Tashkent State Medical Institutes. The latter partnership was aimed at strengthening health management education at the undergraduate, graduate, and continuing education levels with a view to creating a pool of qualified healthcare managers capable of meeting the country's needs for improved efficiency and quality of healthcare services. The Lexington partners worked with both TashMI I and II, with TashMI I focusing on the development of an undergraduate curriculum and TashMI II on the graduate curriculum. In 2005, the two medical institutes were merged to form the Tashkent Medical Academy, and the health management faculties were merged into one program at the former campus of TashMI II. The focus of the new rector of the Tashkent Medical Academy was to develop a totally new medical education program focused on primary care. However, his interest was to develop the program from the Uzbek experience, and there was little interest in working through USAID or AIHA's partnership program. Beyond the faculty development, no further work was accomplished on the graduate public program or the health management curriculum.

The program extension from 2004 through 2006 included two CAR regional partnerships and a non-partnership project focused on prevention of mother-to-child transmission of HIV (PMTCT) that extended the successful program AIHA established in Odessa, Ukraine. The regional partnerships were focused on medical and nursing education. TashMI I and II were selected to participate in the medical education partnership, while the Borovsky Medical College and Bukhara State Medical Institute participated in the nursing partnership.

The overall goal of AIHA's PMTCT project was to decrease mother-to-child HIV transmission by strengthening the national PMTCT systems in Uzbekistan and by implementing national PMTCT protocols. Progress in expanding the PMTCT project to sites in Uzbekistan was initially hampered by the lack of readiness in the country to support a PMTCT program. AIHA's initial assessment in 2004 revealed that anti-retroviral medications and resources to perform HIV testing were unavailable in the country. After a second assessment visit to Uzbekistan, however, conditions began to fall into place. By that time, the ministry had approved national protocols for HIV/AIDS care and treatment and had developed concrete plans for the procurement and purchase of ARV drugs. Based on the results of the second assessment trip as well as the recommendations from the Uzbekistan Ministry of Health, USAID, and the National AIDS Center, AIHA selected two sites for replication—Yangiul Maternity Hospital and Tashkent Maternity Hospital No. 1.

KEY RESULTS

- **Tashkent/Chicago Sustainability Grant (1999-2000)**

Women's Health

- In 2000, the partners established a second Women's Wellness Center in Tashkent. Unlike the first center, which was part of the TashMI II campus, the new center was set up in a populous area of the city as a freestanding, private center operating on a fee-for-service basis. The center served as a replicable model for extending primary care and preventive services on an outpatient basis to women throughout their life cycles. As a result of the WWC, greater attention was given to prevention activities directed at adolescents and the needs of underserved women, such as postmenopausal and elderly women.

- The Tashkent/Chicago partnership introduced services that were provided to women at the TashMI II center including: screening and medical examination of women experiencing peri- and post-menopausal symptoms; screening and medical examination of women, including teenagers, with symptoms of pelvic inflammatory disease; and various gynecologic procedures resulting in improved care.
- The WWCs provide health education classes in topics such as contraception and family planning, menopause, menstrual disorders, and preparing for childbirth.
- The partnership also focused on community outreach and patient education. Obstetricians and nurses began conducting health educational programs for patients, as well as outreach programs for teenage girls at high schools in the surrounding regions.
- Physicians have started to spend more time on disease prevention related to cancer and STIs. Diagnostic and treatment protocols were established for preventive medical examinations for teenage girls and women of various ages and for patients suffering from pelvic diseases.
- The center also instituted a patient registry. Patients are issued cards upon admission at the WWC, allowing better processing of patient data using the AIHA-established database.

➢ **Tashkent and Ferghana/Atlanta Partnership (2000-2003)**

Emergency Medical Services

- Partners opened an EMS Training Center at the Ferghana affiliate of the National Republican Center for Emergency Medicine (F-RCEM) in June 2000 with six trained instructors. Thousands of primary care physicians, nurses, feldshers, and ambulance personnel, including health professionals from other parts of the Ferghana Valley, have benefited from EMS training. Sixty surgeons were trained on the initial management of thoracic trauma; and nurses were trained in prevention of infections during intravenous therapy.
- An Emergency Department was established at the F-RCEM, which instituted new and improved practices for receiving and stabilizing patients. Using donated equipment, a six-bed cardio-resuscitation unit, equipped with cardiac monitors, a defibrillator, and specialized beds, was established. After the new unit was established, the percentage of effectively-treated cases of acute myocardial infarction increased from 75% in 2000 to 90% in 2002.
- US partners donated five fully-equipped ambulances to partners in Ferghana; and one ambulance was provided to the National Center for Emergency Medicine in Tashkent. The ambulances sent to Ferghana enabled the transport of severe patients from remote mountain areas, including Shahimardan, Soh, and Besh-Arik.
- The F-RCEM reported a significant drop in pre-hospital mortality as a result of staff training, upgraded equipment, and implementation of new procedures.

➢ **Tashkent/ Lexington Partnership (2002-2006)**

Health Management Education

- An undergraduate health management curriculum was designed, developed, and implemented. The 36-hour course, which provides an introduction to the essential functions and techniques of health services management, became part of the required undergraduate curriculum of the nine medical schools in the country. The partners developed case studies

and supporting instructional materials— including instructor guides and PowerPoint presentations—to support delivery of the course.

- Over twenty faculty members from the two Tashkent partner institutions were trained in instructional skills and case-based teaching and learning approaches.
- AIHA established a Health Management Training Center (HMTC), equipped with four laptops and LCD projectors, at a newly renovated building at TashMI I. In June 2005, the MOH issued an official decree establishing the HMTC as a national training center. The center has been providing short courses for healthcare administrators nationwide. Their draft 144-hour program of short courses is under review by the ministries of health and justice to become a certified continuing education program.

- **Regional Nursing Partnership (2004-2006)**

The regional nursing partnership was developed to support curriculum reform, faculty development, and the strengthening of nursing leadership and professional development. Because nursing education throughout the Central Asian republics was at varying levels, the partnership worked to reform nursing education in two tracks, at the basic and baccalaureate level. In Uzbekistan, the Borovsky Nursing College and its clinical site, the Republican Scientific Center for Emergency Medical Services, were selected as the sites for improvement in basic education, and the Bukhara State Medical Institute was chosen as the focus for advanced nursing program development. One issue that arose during the partnership was the fact that the Borovsky Nursing College was designed for students in secondary school (9^{h} to 11^{th} grade), while the University of Minnesota faculty was only prepared to work on nursing education at the post-secondary level. As a result, Borovsky's participation was limited to components related to faculty development. *For more detailed information about the accomplishments of this partnership, please see the section on nursing under the Health Professions Education section of this report.*

- **Regional Medical Education Partnership (2004-2006)**

This partnership focused on curriculum reform and faculty development for undergraduate medical education throughout Central Asia. Representatives from the ministries of health and education as well as the rectors from the First and Second Tashkent State Medical Institutes (merged into Tashkent Medical Academy in 2005) participated in a series of meetings and conferences to identify partnership objectives and then develop and implement strategies for achieving them. In addition the vice rectors of education, research, admission and student affairs, business, finance, and international affairs participated in a series of peer networks to help make progress in each of their respective areas of activity. In Uzbekistan participation by the Tashkent partners diminished significantly in 2005 with the changes in leadership at TashMI and TashMI II and the eventual merger of the two institutions into the Tashkent Medical Academy. As a result of the changes, key partners were reassigned or left their positions. The new rector did not appear to consider the partnership as a valuable tool for the academy's improvement and therefore limited the participation of key faculty at partnership events. *For more detailed information about the accomplishments of this partnership, please see the section on medical education under the Health Professions Education section of this report.*

- **Prevention of Mother to Child Transmission of HIV/AIDS Project (2004-2006)**

PMTCT Capacity Building

- Policy makers from Uzbekistan traveled to Odessa to receive training and observe the Odessa model for PMTCT in action. As a result, policy makers in Uzbekistan have begun to realize the importance of a comprehensive PMTCT program and have applied to the Global Fund Round 6 for PMTCT funding. The Uzbek government has approached AIHA to request a PMTCT country assessment and to seek assistance in writing their proposal.
- AIHA provided trainings on PMTCT for pediatric care teams and ob/gyn care teams along with a training on voluntary counseling and testing. AIHA equipped the two replication sites in Uzbekistan with medical equipment for Caesarean sections and personal protective equipment for staff.
- AIHA purchased computers and installed the PMTCT database at each of the replication sites. AIHA's database consultant conducted data collection training for data coordinators at each site and provided follow-up support and data collection, monitoring, and analysis.

SUCCESS STORY: Tashkent Clinic Offers Hope To Women Battling Cervical Cancer

When it comes to providing women's healthcare services, a patient's age is not at all important, according to Delfusa Kurnanbekova, an obstetrician and gynecologist at the Tashkent Women's Wellness Center in Uzbekistan. "After all, every one of our patients is someone's mother, someone's wife, or someone's daughter. No family can enjoy life to the fullest without the care and affection of these women," she points out.

The strength of Kurnanbekova's commitment to this notion is evident in the passion she has for the work she does each day at the Women's Wellness Center. Her many satisfied patients offer further testament to her professional skill and compassion. During clinic hours, there is always a line of people waiting outside her office despite the fact that the services she provides are not free of charge. Not one to rush through a consultation, Kurnanbekova makes sure each woman gets the care and attention she needs.

"People need to be educated to ensure they stay as healthy as possible and that means I must take the time to chat with each one. For example, very few women know that cervical cancer—which is one of the leading causes of mortality among women in Uzbekistan—can be caused by sexually transmitted infections such as human papilloma virus," she remarks, noting that she makes use of a multitude of teaching aids and educational brochures when explaining this and other health issues to her patients. While this client-centered approach is relatively uncommon in much of the former Soviet Union, it is the hallmark of the Tashkent Women's Wellness Center.

A physician counsels a patient at the Tashkent Women's Wellness Center

Situated in the Uzbek capital, the center provides a broad range of clinical care and related services to women of all age groups from adolescence through the reproductive years, menopause, and beyond. The facility was opened in 1997 through the efforts of a volunteer-driven partnership that

linked the Second Tashkent State Medical Institute in Tashkent with the University of Illinois Medical Center in Chicago. Established by the American International Health Alliance (AIHA) with funding from the US Agency for International Development (USAID), the Tashkent/Chicago partnership selected women's health as one of the key priorities for its collaboration. Since 1992, partners have emerged as pioneers in women's health by introducing a number of new programs and services, including Pap smears for the diagnosis of cervical cancer.

Because cervical cancer is so prevalent in Uzbekistan, combating the disease is critical Kurnanbekova says. "If diagnosed at its earliest stages, it is a completely curable disease unlike other cancers affecting the lung, stomach, or skin, for example. Unfortunately, many medical institutions here still use histological analysis to identify cervical cancer, which often produces inaccurate results. Thanks to our partnership, we were the first clinic in the country to introduce Pap tests. This method makes it possible to identify cancerous changes on a cellular level when the disease can still be successfully treated," she explains. This has resulted in considerably higher early detection rates than in other women's clinics. More importantly, it has translated into a greater number of women who have won their battle with cervical cancer and families who were spared the pain of losing them.

Zhamilya Sadykova is one of these women. Two years ago, the 49-year-old school teacher from Tashkent came to the Women's Wellness Center, where she was later diagnosed with cervical cancer. Although the prospect of undergoing a hysterectomy was terrifying at first, Sadykova's fears were short-lived thanks to Kurnanbekova and the other clinicians and staff at the center.

"I was so lucky to come across this center. This was the first time in my life that a doctor told me in detail about an illness, the operation itself, and its consequences," the mother of three explains. "Dr. Kurnanbekova presented all the information so logically and competently. She very easily convinced my husband and me that our personal life would not come to an end after the operation, which is a common belief here. After speaking with the physician he told me to proceed with the operation as soon as possible and that is what we did."

The operation, Sadykova says, was a complete success thanks to Kurnanbekova. "I was in her capable hands from beginning to end. When I awoke from the anesthetic, my whole family was sitting in the ward with me and so was Dr. Kurnanbekova. As soon as I looked into her eyes, I felt a sense of calm because I could tell everything went well. Two years have passed since then and all of my follow-up tests have been wonderful with no sign of cancer or other problems. Now my daughters, my niece, and my husband's sister are also her patients," she maintains, adding, "When my son gets married, I'll take his wife to see her as well!"

Kurnanbekova credits a good deal of her knowledge and skills to her involvement with the AIHA partnership. "The efficiency of a doctor's work depends on the schooling she receives and our entire Women's Wellness Center team was very lucky for the opportunity to learn a completely different approach to women's healthcare thanks to our partners in Chicago. Through our collaboration, we implemented many innovative methods of diagnosing and treating diseases and learned how to interact more effectively with patients," she acknowledges. The partnership program also gave Kurnanbekova and her colleagues the tools and support they needed to extend the benefits of their work

"From the moment we opened our center in 1997, we began looking for ways to introduce Pap tests on a national level," Kurnanbekova says, admitting that it was a daunting task given the fact that there were no cytologists trained in the method in all of Tashkent who could provide a second-level review of their findings. "We had to search for literature and find articles on the Internet—something our partners and various AIHA workshops and conferences contributed greatly to. Finally, we had enough resources to deliver a complete training package to the outside cytologists. When they had mastered the methodology, though, we realized we did not have a sufficient number of reagents for them. Right at that same time, funding for our partnership was coming to a close."

Help came in the form of a Peace Corps volunteer who worked at the center during 2000-2001. Nurse Emily Fedullo—who later joined AIHA's staff as a Washington, DC-based program officer—helped clinic staff draft a winning proposal for a USAID grant to create a cytology laboratory at the center, which opened in 2002. Others helped pull things together, too, Kurnanbekova says. "Another Peace Corps volunteer helped us gather the results of 200 cytological analyses, which were then sent to the United States for an independent review. The results were not comforting. In one instance, we had overlooked a case of cancer. But we learned from our early mistakes and got further training and assistance from AIHA and Jan Reimers, a doctor at the Tashkent International Clinic, she notes with satisfaction.

As some of the country's leading specialists in the field of cervical cancer, staff at the Tashkent Women's Wellness Center are providing training on its screening and treatment to practitioners throughout Uzbekistan thanks to support from the United Nations Fund for Population Activities (UNFPA). This training is bolstered by a joint of UNFPA-Uzbek Ministry of Health program that in 2005 outfitted oncology centers in five major regions with diagnostic equipment and provided primary care institutions with Pap test kits. "Our dreams are coming true," Kurnanbekova says with a smile, stressing that the secret of the success can be summed up in two words: desire and persistence. "Of course, there is a lot of hard work behind all this, but the level of satisfaction from what has been achieved makes it all worthwhile," she asserts.

Zhamilya Sadykova couldn't agree more. "I am all for this sort of intelligent, proactive brand of medicine. Having the right information along with the support of skilled, compassionate professionals makes it much easier for me and my family to stay healthy," she says, concluding, "I feel wonderful and I am happy that I can now live peacefully and help my children raise our grandchildren. Our family has always been a strong and friendly one. Now, it is also a healthy one."

III. MAJOR AREAS OF IMPACT

This section describes the key results of AIHA's CAR program. It is organized to describe the main areas of impact across countries and individual partnerships and projects. It seeks to capture the outcomes in terms of the contribution AIHA's program have made in: health professions education and leadership development, both through formal education and in skills-based training; primary care and women's services and delivery; specialized services including emergency services and prevention of the transmission of HIV/AIDS from mother to child, and access to health information and communications. Included are the strategic approaches AIHA incorporated into the program to address key issues across multiple partnerships or where partnership-level priorities were supplemented by special AIHA initiatives. It describes the US partner impact as well as how successful programs have been disseminated and replicated.

In addition, the key results and challenges specific to each impact area are provided. Also appearing in these sections are profiles of selected US and CAR partners which provide a personal perspective on the achievements and experiences of the program. Finally, in-depth success stories explore in detail noteworthy achievements that exemplify the level of impact in each area.

A. Health Professions Education

The reform of healthcare in Central Asia has focused on the delivery system, with the top priorities including the development of primary healthcare in the ambulatory setting; the development and implementation of new systems of payment; renovation of the physical infrastructure; and the development of human resources. In support of CAR reform efforts, USAID/CAR assigned a high priority to the education of health professionals, particularly those involved in the disciplines of medicine, nursing, public health, management, and policy. If these professionals were to participate effectively in the reform process and in the new healthcare system, their education needed to support the desired outcomes of the reform. This represented a significant undertaking since it would require the evaluation and adaptation of current educational curricula at medical and nursing schools as well as the development of re-training programs for current practicing health professionals.

AIHA's early hospital partnerships often focused on health professions education as a primary or secondary area of activity. These partnerships worked on standardizing or improving the testing of medical students, improving nursing roles, and developing the nursing profession. In collaboration with the Association of University Programs in Health Administration (AUPHA), AIHA also developed and provided workshops on management techniques, financing, and leadership skills for partner institutions.

The partnerships developed from 1998 forward have been focused on building capacity within educational institutions to train future providers of primary care and healthcare managers. More recently sufficient demand and critical mass developed in CAR to warrant a more intense multi-national effort. In 2004 the first multi-country partnerships in pre-service (undergraduate) medical education and baccalaureate nursing education were initiated in CAR. AIHA also contracted with Abt Associates' ZdravPlus program to collaborate on programs and activities implemented under

two notable regional councils—the Central Asian Republics Council of Rectors (COR) and the Central Asia Region Nursing Coordinating Council.

1. MEDICAL EDUCATION

"The partnership is fortunate because we have the support of USF's medical faculty and administration, and we have collaborators at the leading international organizations working on medical education reform throughout the world. We don't have to invent anything new in Central Asia; our challenge is to take the world's best ideas and modify them to fit the needs in the region. Medicine is a wonderful and unique fraternity…everyone who has come to Kazakhstan and other countries in the region to help with the project wants us to succeed and will help us do so."
—Kathleen Conaboy, associate vice-president for organizational development at the University of South Florida Health Sciences Center and US coordinator of the Central Asia Regional Medical Education Partnership.

BACKGROUND

According to the World Health Organization, training and supply of healthcare professionals are key constraints to the reform of the healthcare delivery system. The delivery of quality primary care largely depends on the capacity of medical education systems to produce qualified health professionals who have effectively acquired a set of knowledge, skills, and attitudes to address the healthcare needs of their populations.

Since the collapse of the Soviet system and its infrastructure, the medical education system in post-Soviet countries has been buffeted by cataclysmic political, financial, and social changes. In Central Asia, decentralization of the medical education system led to the development of nation-based models for the structure, content, language, and duration of instruction in both undergraduate and post-graduate programs. Over time, development and application of different standards in medical education affected the quality assurance and the comparability of medical school diplomas across borders.

PROGRAM STRATEGY

Since it began to facilitate health systems reform in Central Europe and the former Soviet Union in 1992, AIHA has operated under the premise that improvements in the quality of medical care could not be sustained without dramatic changes in medical education. AIHA has supported reforms in medical education through many of its partnerships, often involving leading medical schools in CAR and in the US. Under the original CA (1992-1998), AIHA supported a partnership between the University of Illinois at Chicago and the Second Tashkent State Medical Institute, which actively worked on the development of assessment tools to evaluate knowledge and skills of medical students and a curriculum for general practitioners—in addition to the clinical work the partners did in maternal and child health, emergency medicine, and nursing. AIHA also funded the Bishkek/Kansas partnership, through which the University of Kansas Medical Center helped to develop a family medicine curriculum for medical schools in Kyrgyzstan.

Under the 1998 CA, AIHA funded several additional partnerships where medical education was a primary area of focus. In 1999-2003, AIHA partnered the Kyrgyz State Medical Academy (KSMA) with the University of Nevada and the University of South Florida (USF) to support KSMA's efforts

to develop its training programs in family medicine, nursing, and public health education. In 2002, the Tashkent/Lexington Health Management Education (HME) partnership between the University of Kentucky and the First and Second Tashkent State Medical Institutes was initiated to improve HME at the undergraduate, graduate, and continuing education levels to positively impact health services delivery and related policy development and implementation.

In September 2000, the combination of AIHA's various partnership initiatives in medical education led toward the initial establishment of a more regional approach when AIHA and Abt Associates convened a meeting of senior educators representing various medical schools in Central Asia. One of the outcomes of this meeting was the formation of a working group, the Central Asia Region Council of Rectors (COR), committed to supporting healthcare reform through workforce development in the region. The COR's mission was to develop region-wide medical education standards ranging from admissions and licensing criteria to curriculum development and continuing education.

In 2004, AIHA went further in developing a regional approach to medical education reform with the establishment of a regional medical education partnership, which aimed to improve the quality of CAR medical education through faculty and curriculum development, support of research initiatives, and advancement of regional accreditation efforts through the development of a regional database and review of international accreditation models. AIHA established a partnership of seven Central Asian medical institutions with the University of South Florida to build regional capacity to produce high-quality medical graduates capable of meeting the healthcare needs of their populations. The partnership was constructed based on the concept of "peer networks," similar to the interest groups nurtured by the Association of American Medical Colleges (AAMC). With the rectors as a partnership steering committee, the vice rectors of the participating academies were appointed to groups on education, student affairs and admissions, research, and business and planning.

At an organizational meeting in early 2004, each group developed a three-year strategic action plan that covered regional and national accreditation procedures, research, student affairs, and curriculum development. The priorities for the partnership, defined by the rectors of the lead institutions, were to improve the process of curriculum design and implementation; improve faculty pedagogical skills; build research capacity; enhance clinical skills training; standardize the testing of knowledge and clinical skills; and develop information literacy among faculty and students.

At the policy level, the partnership complemented the efforts of the CAR Council of Rectors (COR) and the ministries of health (MOH) and education (MOE) to promote acceptance of new concepts, such as the introduction of competency-based education and quality assurance through an independent accreditation process.

The timing of the new partnership was particularly propitious, as a number of major US medical education organizations, including AAMC, the Liaison Committee on Medical Education (LCME), and the Education Commission for Foreign Medical Graduates (ECFMG), had begun taking an interest in CAR as a region, understanding the value of helping to develop regional infrastructure and talent pools as opposed to working in isolation with single institutions. These US organizations actively participated in the activities of the regional partnership and the CAR COR.

KEY RESULTS

- **Family Medicine Education**

  Through the Bishkek/Reno and Tampa partnership between KSMA and University of Nevada and University of South Florida, AIHA supported the development of a national clinical residency program in family medicine. The Kyrgyzstan program was designed to serve as a regional pilot for a single, nationally-adopted program for training residents to deliver quality healthcare within the evolving healthcare reform process. Activities in 2002 focused on the following steps: (1) developing consensus to achieve implementation of a national residency program, (2) creating a unifying vision and facilitating the stakeholder buy-in necessary for the success of the program, (3) designing a unified curriculum, (4) developing clinical training sites, (5) defining the position of residency program director, and (6) developing faculty for a medical residency program.

  In order to support the "Manas" national health reform program, which highlighted the critical role of family medicine in primary care reform, KSMA introduced its first two-year clinical residency program in 2000. The US partners provided training to improve the family medicine curriculum by emphasizing patient-centered care, introducing problem-based learning techniques, and increasing utilization and development of clinical practice guidelines. In 2000, KSMA also opened a teaching clinic at one of its medical centers to allow residents expanded opportunities for developing their practical skills. Also, AIHA facilitated a Carelift International donation of medical equipment to the teaching clinic valued at $200,000. By 2006, 120 graduates had completed their residency program at KSMA.

- **Quality Assurance and Accreditation**

  The regional partnership established in 2004 addressed the development of accreditation standards and processes as a key component for achieving medical education reform in CAR. The partners made progress on this front through a number of exchanges and conferences that involved CAR medical schools, ministries of health and education, and international organizations such as AAMC, LCME, ECFMG, the World Federation for Medical Education (WFME), the National Board of Medical Examiners (NBME), the Foundation for Advancement of International Medical Education and Research (FAIMER), and WHO. The collaboration with WHO, WFME, and ECFMG, in particular, resulted in the adoption of international quality indicators that would be able to serve as the basis for the regional accreditation process.

  In June 2004, the University of South Florida hosted seven vice-rectors and four rectors from the CAR medical universities. While in Tampa, partners addressed the development of a model medical education system with a focus on standardized testing, student and faculty evaluation, and learning resource capabilities. The rectors and vice rectors also discussed accreditation and participated in a mock accreditation site visit that provided the opportunity to observe real-life situations encompassing various stages of accreditation. Additionally, the rectors visited Washington, DC, to participate in a focused discussion with representatives of the AAMC, LCME, and others.

The involvement of leaders in the area of US and international medical education provided CAR medical education stakeholders with a wealth of valuable information and resources to facilitate their national medical education reform efforts. For example, in February 2005 AIHA, together with the University of South Florida, organized a study tour for the first vice-minister and senior staff responsible for medical education from the Kazakhstan Ministry of Health. The two-week study tour originated in Washington, DC, where the Kazakh delegates met with staff of AAMC, LCME, the National Institutes of Health, and George Washington University. The delegates then visited the USF Health Sciences Center in Tampa, where they observed first-hand the organization and operations of a medical school. The tour concluded in Philadelphia, Pennsylvania, where participants met with officials of ECFMG, FAIMER, and the American Board of Internal Medicine (ABIM).

Following the tour, the first vice-minister provided a comprehensive report to the minister of health of Kazakhstan supporting the ideas being promoted through the partnership, such as competency-based education, problem-based learning, the development of a database system to support an independent accreditation process, and the establishment of a national clinical skills training and testing center. The report was also circulated at the partnership curriculum development workshop in April 2005. Many of the report's recommendations were later incorporated into the national medical education concept paper developed by the first vice-minister. On February 21, 2006, the concept paper was presented to and approved by the Cabinet of Ministers of Kazakhstan, scheduled to take effect nationwide in 2007.

In February 2006, AIHA, in collaboration with Abt Associates, sponsored its final regional medical education accreditation meeting in Almaty. Because accreditation encompasses both political/regulatory and educational components, invitees included officials from the ministry of health, ministry of education, existing accreditation councils, and medical academy rectors. Using the internationally endorsed *WHO/WFME Guidelines for Accreditation of Basic Medical Education* and *the WFME Global Standards for Quality Improvement: Basic Medical Education* as templates, CAR participants reviewed the current accreditation process in each country and discussed the systemic and political steps needed to improve the process. While participants recognized the advantages of developing a regional accreditation system, the consensus was that individual countries would retain control of accreditation for the time being. Deliberation and discussion over a single WFME standard was used as a way to approach the review and adaptation of the international standards to individual CAR systems.

The latest developments in the Kyrgyz medical education system suggest a shift toward enforcement of national educational standards in medical education. In the fall of 2006, the evaluation of nine national medical schools and medical departments resulted in license suspension of six medical schools, which were cited for not having sufficient faculty, clinical bases, and other critical resources to produce qualified physicians. This enforcement of the national standards developed by KSMA in 2003 will most likely result in the reduction of the number of medical schools and increased enrollment at schools that offer higher quality education—notably KSMA itself.

The academies have committed to continuing to work jointly with respective ministries on the adaptation of international standards at their institutions and countries, and AIHA also received a commitment from Abt Associates to provide limited ongoing support to regional and national

accreditation efforts of CAR partners following the closeout of AIHA programs in Central Asia in July 2006.

- **Curriculum Development**

In order to achieve recognition by the international medical education community and move toward international reciprocity of diplomas, any standards designed for accreditation, licensure, and graduate qualifications must also be reflected in curriculum design and delivery. In March 2005, eight faculties from all six CAR partner schools joined to form a curriculum development task force that was assigned with developing HIV/AIDS curriculum modules that are competency-based, specific to learner levels, and based on the principles of evidence-based medicine. By summer 2005, six modules covering topic areas such as PMTCT, HIV/TB co-infection and HIV stigma had been drafted by CAR faculty.

Throughout the remainder of 2005, the modules were reviewed by USF faculty, who in February 2006 traveled to Almaty to finalize the HIV/AIDS curriculum. During the process, the CAR participants learned skills in curriculum development, including how to create learning objectives, apply proper pedagogy, and design evaluation tools, exam questions, and Objective Structured Clinical Evaluation (OSCE) cases. The group developed standardized patient (SP) cases to serve as teaching tools for the modules. In order to help refine the SP cases, ten students (five female and five male) from the Kazakhstan National Medical University were invited to join the faculty workshop and role-play as both instructors and patients.

The final version of the curriculum was presented and distributed to over 100 participants during the AIHA closeout conference in July 2006, including representatives of regional medical schools, postgraduate institutes, nursing colleges, and PHC providers. All partner institutions have already introduced the modules into their curricula. Due to varying curriculum structures, they have integrated these in diverse ways. For example, Kyrgyz State Medical Academy introduced the new modules as a complete course for sixth-year students; at Tashkent Medical Academy, they are used in a variety of courses aimed at third- through seventh-year students. In addition, based on the new information included in the curriculum, KSMA and the Medical Department of Osh State University revised their TB training modules as well.

- **The Council of Rectors**

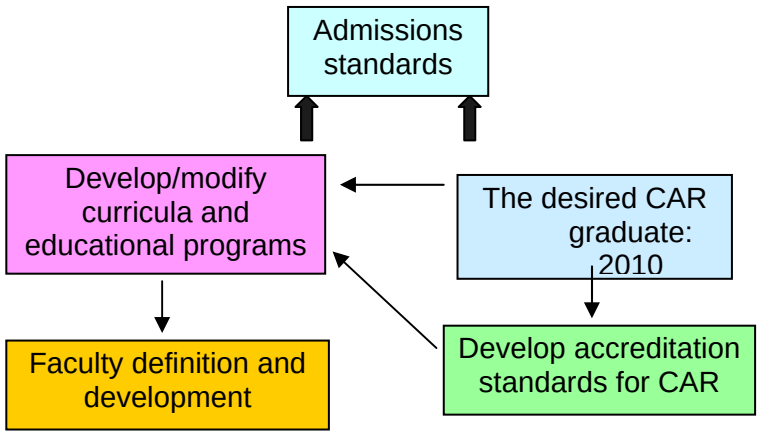
Since its creation in September 2000, the CAR Council of Rectors (COR) has included representatives from all 31 Central Asian medical schools and the medical departments of universities (ten from Kazakhstan, eight from Kyrgyz Republic, two from Tajikistan, ten from Uzbekistan, and one from Turkmenistan). Through its executive committee and a series of subcommittees, the COR has focused on developing policies and institutional reforms aimed at making medical education programs consistent with international standards as well as looking at admission standards and quotas, standardized qualifications and testing for graduates,

Meeting of the council of rectors

institutional accreditation standards, the provision of a sufficient patient base for clinical training, and stable funding for medical education.

Through a subcontract funded by Abt Associates, AIHA supported COR activities and facilitated organizational and programmatic development of the council from early 2001 through 2005. AIHA also recruited US and international faculty who volunteered considerable time to advance the council's agenda. Faculty members included representatives from the WFME, AAMC, ECFMG, the Institute for International Medical Education, the Association for Medical Education in Europe, and the American Medical Association/Accreditation Council for Graduate Medical Education.

In 2001, the COR drafted and approved its by-laws, which established the organizational structure and laid the foundation for the development of its framework, workplan, and budgets. In 2002, the council met six times in Central Asia and the US, focusing on the review and analysis of CAR and international medical education practices and standards. This intensive work resulted in the development and endorsement of the "Graduate Qualifications of CAR Medical Schools," which outlined the regionally accepted competencies of the CAR medical school graduate. This document laid out a vision for a series of regional workshops organized by AIHA in 2003-2005 that focused on faculty and curriculum development as well as the introduction of accreditation mechanisms across the region (see diagram).



The diagram illustrates the model used to conceptualize the interconnectedness among the issues to be addressed by the COR.

Beginning in 2004, COR activities were closely interrelated with and complemented the efforts of the regional medical education partnership. The COR provided a useful mechanism to help the regional partnership extend its ideas and concepts on a national scale; by inviting participation from COR members in regional partnership events and activities, the partnership was able to develop a broader consensus and expand the reach of many of its initiatives and programs beyond the seven CAR medical schools directly involved in the partnership. COR members promoted partnership concepts within their own institutions and also addressed them on the national level, often effecting medical education policy changes in the region. For example, the introduction of OSCE in CAR can largely be attributed to COR's leadership.

Inspired by US and European practices, the council initiated several meetings that promoted inclusion of OSCE as a valid tool for clinical skills evaluation. Many CAR medical schools adopted the examination as a result. .

The last AIHA-sponsored COR meeting took place in 2005; however, its members continue to communicate and participate in exchange visits on a limited basis, using internal and outside funding sources.

- **Regional Medical Education Database**

In 2004, the CAR COR and regional medical education partnership representatives agreed to the development of a standard CAR medical education database for the tracking of institutional data, curriculum information, and other quality indicators. While a lot of different types of data were already being collected at the institutional and national levels, none of this data was reported, analyzed, or shared in any meaningful way to track progress or allow institutional or regional comparisons. The partners and COR members viewed the development of a regional medical school database as one of the necessary and key components in the accreditation process.

As a first follow-up step, CAR partners focused on creating (or updating in some cases) the standardized information about their institutions listed in the ECFMG's International Medical Education Directory (IMED), an international database of medical universities. Subsequently, ECFMG invited the CAR COR to participate in piloting a broader data collection survey using the COR as a data collection vehicle. CAR had a 100 percent response rate for both projects, and as a result the ECFMG was able to use the CAR pilot survey results in a WHO/WFME quality indicators project.

US medical educators conducted several workshops in the region to develop consensus about how and why CAR data should be collected, to review confidentiality and data-sharing policies, and to determine the content of the database. In April 2005, the CAR partners finalized the set of data points that represent the key institutional and educational characteristics of their medical schools. This data set would serve as the foundation for the regional database. In June 2005, two CAR faculty members in charge of coordinating the database project had the opportunity to visit with AAMC representatives to deepen their understanding of the AAMC database functions and utilization. The exchange helped CAR educators to fine-tune the technical design and the content of the database and define the parameters for the database pilot. After FAIMER volunteered to share the platform used in storing the IMED data, AIHA technical staff created the database using the IMED platform.

The AIHA/CAR office collected data from the seven CAR medical schools for inclusion in the database, and the final version was presented and distributed for further use among CAR medical schools during the CAR closeout conference in July 2006.

- **Research Capacity**

Where feasible, AIHA has tried to support the research initiatives of its CAR and US partners. For example, as a result of the partnership between Semey Medical Academy and Baylor College

of Medicine (1995-2000), a long-lasting research collaborative relationship developed between Semey and Baylor faculty focusing on the prevalence of cancer in Semey, a former nuclear testing site in Kazakhstan. Since 1996, the partners have continued to publish several joint research papers related to cancer pathology.

The partnership between KSMA and the University of Nevada/University of South Florida (1999-2003) demonstrated how limited resources can be used to advance the research efforts of CAR faculty. In coordination with the US partners, KSMA established a grants competition program in primary health and community assessment. The first round of competition in 2001 resulted in 12 applications, four of which were awarded $500 each to support research in maternal and child health, public health education, and pharmaceutical management. Ten more applications were submitted in 2003 during the second round of awards, resulting in three $700 research projects related to child care and iodine deficiency.

The grant programs at KSMA emphasized the importance of linking research with local community needs. The partnership formed a six-member multi-disciplinary "Community Assessment Team" (CAT), which brought together KSMA faculty interested in public health and applied research projects focusing on the community's health needs. The members of the CAT received training in strategic planning as well as tools and methodologies for community assessment. With support from the US partners, the CAT conducted three research projects—a study of the effectiveness of a family group practice at the KSMA medical clinic, an assessment of the family medicine clinical residency program at KSMA, and an evaluation of the top twenty disease priorities in Kyrgyzstan. Methods used in the assessment process included focus groups, questionnaires, and data compiled by students. The findings of the research projects were published and presented to all interested parties within KSMA as well as to the MOH.

With a small grant ($8,400) from the Soros Foundation, KSMA also was able to establish an Applied Research Center at the academy, further expanding its research capabilities. One of the most recent research projects by the CAT examined HIV awareness among youth by surveying over 5,000 university students. Based on the results of the survey, KSMA developed an eight-hour training program for non-medical university faculty about HIV/AIDS, highlighting the areas of knowledge that students were lacking. The volunteer CAT members have continued their research activity on a limited scope, due to funding restraints.

Development of research capability among CAR medical schools was also a priority of the regional medical education partnership. In the summer of 2004, USF partners developed an interactive web-based survey on the research capability of CAR medical schools. Fifteen medical schools participated in this survey, allowing USF partners to make a preliminary evaluation of research capacity in CAR.

Later in the fall of 2004, USF partners arranged the participation of CAR faculty in two workshops on grantsmanship and research ethics in Almaty, co-facilitated by USF faculty and a team from the National Institute of Allergy and Infectious Diseases at the US National Institutes of Health. During these workshops, USF conducted the first working meeting of vice-rectors on research of CAR medical schools. One outcome of this meeting was the establishment of the Coordinating Council for Research (CCR), the purpose of which was to provide consultations in defining health problems, developing grant proposals, reviewing research projects, and implementing international bioethics standards in the region. Comprised of six members from

all five CAR countries, the council was chaired by a strong research advocate from KSMA who in May 2005 participated in the 12th annual workshop on "Teaching Research Ethics" at the Indiana University Center for Bioethics in Indianapolis (the visit was co-sponsored by AIHA and Indiana University). To date, the council members have trained over 20 faculty members and students using these modules and organized four grantwriting and proposal development teams at their home institutions.

The workshops also laid the foundation for the Kyrgyz State Medical Academy to establish an Institutional Review Board and obtain Federal Wide Assurance, which enabled the academy to receive funding from the US National Institutes of Health. As a result, a research proposal on "Brucellosis in Kyrgyzstan: Surveillance Strategies in a Highly Endemic Region" was submitted to the NIH in June 2005 for a collaborative research project involving Colorado State University, University of South Florida, Kyrgyz State Medical Academy, and the Research Institute for Livestock, Veterinary and Pastures in Bishkek. Based on the scientific review committee's comments on the first proposal, a revised submission is currently being prepared.

To generate collaborative applications for research funding, USF also organized a research incubation meeting in February 2006 that brought three funded US researchers in direct contact with CAR researchers. The focus areas of virology, cancer, and environmental health issues related to water were identified as the key target research topics. CAR researchers from the regional medical schools were invited to submit research ideas for collaboration with the US scientists. Fourteen CAR scientific teams responded to the call for abstracts in January, and seven teams were selected for participation in the February meeting.

As a result of the workshop, researchers from the University of Nevada and Semey State Medical Academy quickly formed a working relationship for research on the environmental and health effects of nuclear testing in the US and Kazakhstan. Since February, they have coordinated two exchange visits and have begun working on a major grant application. Furthermore, the University of Nevada researcher recently assumed the directorship of the university's Division of Hydrogeologic Sciences, and part of his recruitment package includes a $50,000/year commitment for the next three years to support his collaborative research efforts in Kazakhstan.

The CAR teams that participated in the February meeting were also surveyed about faculty who could qualify for funding from the US Civilian Research and Development Foundation (CRDF) through a joint program with the US National Institute for Allergy and Infectious Disease. These funds support redirected research by former bioweapons researchers. The survey yielded the names of five researchers who agreed to collaborate further on writing and submitting a research grant proposal to CRDF.

Another research initiative was formed between the Kazakhstan Scientific Center for Quarantine and Zoonotic Diseases, the Institute of Microbiology and Virology in Russia, and USF. Their joint research proposal focusing on the chemical nature and properties of new prospective antibiotics active against MRS (Methicillin-Resistant Staphylococci) was approved in 2006 for funding by the International Science and Technology Center. The commercial potential of the new antibiotics lies in their possible use in medicine for treating the diseases caused by MRS with multiple drug-resistances, as well as by other clinical agents.

USF also facilitated the participation of CAR researchers in the online course "Scientists and Subjects" offered by the Poynter Institute at the Indiana University in Bloomington. A total of nine researchers from CAR medical schools successfully completed the three-month course (committing 3-4 hours weekly).

- **Student Development**

  As a result of partnership efforts to promote the importance of student development activities, the faculty at the Kazakh State Medical Academy has started to involve students in the process of developing teaching modules and to encourage them to express their opinion. Based on a process observed in the US, the academy's faculty shares draft outlines of modules with a group of students who evaluate its content and provide feedback on the scope of work and expected requirements. Faculty members are also soliciting feedback from older students and have begun to follow up with alumni to learn how effectively they have been able to apply the theoretical knowledge learned in medical school into their medical practice.

CHALLENGES AND LESSONS LEARNED

The Regional Approach: The structure of a regional partnership with only one US partner institution working with multiple CAR institutions offered many unique challenges. While the regional approach was beneficial in terms of facilitating cross-country cooperation and the exchange of ideas and practices, the inclusion of seven CAR medical schools in one program also meant limited individual institutional interaction and follow up between CAR and US partners. This in turn raised the issue of ownership, which was particularly observed with respect to accreditation efforts and the management of the regional database where no regional vehicle was created to continue to maintain the database after AIHA program close-out in July 2006. The lack of individual institutional interaction also meant that the level of engagement of the CAR medical schools varied depending on the level of commitment by the institutional leadership and faculty.

Leadership Changes: The most significant challenges were political in nature—specifically related to changes in leadership at the medical schools and the health ministries. Over the three-year span of the partnership, five out of seven rectors were replaced, which weakened the institutional involvement of partner schools. For example, the appointment of a new rector to the Second Tashkent State Medical Institute in summer 2004 and his subsequent appointment as head of the Tashkent Medical Academy (formed after the merger of First and Second Tashkent State Medical Institutes in 2005) ultimately led to the institution's withdrawal from the partnership coalition.

Systemic Obstacles: Existing systemic deficiencies in medical education administration in CAR were also seen in the complex relationships between major players in the field. Since the rectors of medical schools report to multiple ministers (usually a combination of health, education, finance, and labor), simple curriculum changes required multiple approvals. For example, curriculum changes need to be approved by the ministry of education, but also often require approval from the ministry of labor, which approves job classifications (since universities cannot offer degrees for job types that do not yet exist). At the same time, as a result of poor workforce planning, medical school budgets funded by the ministry of finance were generally based on the number of students, which created incentives to encourage large class sizes, which usually resulting in poor quality education and overproduction of physicians across the region.

Sustainability: Feedback from US and CAR partners strongly suggested that given the long-term nature of the sought-after improvements in medical education that encompassed the curriculum and faculty development, as well as quality assurance and research, the timeframe for the project was too short to achieve and sustain desired outcomes, some of which still remain to be seen. Therefore, continuing support by Abt Associates is of major importance to the efforts initiated through the partnership and the Council of Rectors.

2. NURSING

"For us, our involvement with the partnership was the beginning of all the achievements we have made over the past several years. Establishing nursing schools, creating nursing management positions, organizing nursing associations, and drafting the Family Nurse Training Curriculum—to a great extent these are all fruits of our partnership collaboration." —*Rikhsinisha Salikhodzoeva, head specialist for nursing at the Ministry of Health of Uzbekistan, president of the Uzbek Nursing Association, deputy chairperson of CARNCC, member of AIHA's Tashkent/Chicago partnership, and International Nursing Leadership Institute (INLI) graduate.*

BACKGROUND

Nursing education and leadership development are critical to the production of qualified nurses and nurse leaders who can advance the quality of nursing care and become vehicles for quality improvement in nursing education and practice**.** In addition, improvement of primary healthcare largely depends on the ability of healthcare professionals, including nurses, to provide high quality care in their communities.

Nurses working in CAR face numerous challenges. Unlike their colleagues in the United States and Western Europe, nursing in CAR has not been recognized as a profession, but merely as an extension of the role of the physician. This has been reflected in a number of ways, including the lack of professional standards for nurses, the inability of nurses to engage in clinical or administrative decision-making, and the lack of independent nursing care strategies based on critical thinking. Because nurses have not been valued as legitimate healthcare professionals, very few nurses have been appointed to policy-making positions within hospitals or ministries of health. Furthermore, the low status of nurses in hospitals is commensurate with low pay and has resulted in a high turnover rate, low morale, and reduced quality of care.

These problems also have been reflected in nursing education, which has traditionally been viewed as vocational training, rather than university-based. Historically, the majority of nurse educators have been physicians, and the nursing curriculum has simply consisted of a less extensive version of the curriculum for general physicians. Baccalaureate-level and advanced practice nursing have not been available options for nurses practicing in the CAR region.

PROGRAM STRATEGY

Since 1992 AIHA and its partners have been working to address the lack of professional standards for nurses, the systemic inability of nurses to engage in clinical or administrative decision-making processes, and the lack of baccalaureate and advanced-level degree programs. The partnership between University of Illinois at Chicago and the Second Tashkent State Medical Institute (1992-

2000) made advances in improving nursing education evaluation tools, while the Kyrgyz State Medical Academy (KSMA) partnerships with the University of Kansas (1992-1999) and the University of Reno and the University of South Florida (1999-2003) helped KSMA develop and introduce a baccalaureate nursing program. In Kazakhstan the partnership between the Methodist Hospital in Houston and the Semey Medical College was instrumental in the establishment of the first nursing association in the region.

Acting as a catalyst to bring together the resources of both its partnerships and its many strategic partners, including Sigma Theta Tau International (STTI), the American Organization of Nurse Executives (AONE), the International Council of Nurses (ICN), and the nursing unit of WHO, AIHA has sought to develop a coordinated approach to meet the challenges facing the nursing profession. Through partnership exchanges, international nursing conferences, and workshops, AIHA addressed the need to enhance the professionalism of nurses and nurse administrators, to reform nursing education, and to develop and strengthen nursing associations. The development of nurse leaders at AIHA partner institutions has led to effective nursing leadership at the local, national, and regional levels. Partnerships have demonstrated that significant improvements in the quality of patient care and in health sector productivity can be achieved through upgrading and expanding the scope of nursing education, practice, and administration.

As part of its strategy in Central and Eastern Europe (CEE) and the NIS, AIHA established a total of 23 Nursing Resource Centers (NRCs) to provide nursing faculty, students, and practitioners with the resources to support evidence-based forms of learning. Each center had AIHA-trained staff and was supplied with computers, textbooks, videotapes, training models, and Internet connectivity for use by the staff in the training program and by nurses for research. A total of four NRCs were established in Central Asia.

In 1999, AIHA and its partners established the International Nursing Leadership Institute (INLI), an intensive learning experience through which NIS and CEE nurses acquire the knowledge and skills necessary to become exceptional leaders and mentors on behalf of their profession. Three Central Asian nurses completed this year-long program.

Since 1999, AIHA has been also supporting the Central Asia Nursing Coordinating Council (NCC), a representative body that unites nursing leaders from four Central Asian countries. The goal of the CAR NCC is to advance the collaboration of Central Asian countries in nursing education, practice, research, and management of nursing services, as well as supporting national nursing associations and NGOs.

In 2004 AIHA established the regional partnership between the University of Minnesota School of Nursing and six nursing schools in Kazakhstan, Kyrgyzstan and Uzbekistan. The partnership was established to improve the quality of nursing education in Central Asia through faculty and curriculum development and to support emerging leaders in nursing education in order to bring about policy changes that will positively affect the quality of nursing care. As part of the partnership, AIHA engaged in a collaborative project on nursing leadership with the Susan G. Komen Breast Cancer Foundation. This AIHA-administered program focused on breast health awareness as a strategy for developing the **nursing and leadership skills among CAR nurses.**

KEY RESULTS

- **Curriculum Development**

  One of the primary foci of AIHA's nursing initiative in CAR has been the revision and the development of nursing curricula that uphold modern nursing concepts and practice. Through the partnership between Second Tashkent State Medical Institute and University of Illinois at Chicago (1992-2000), the Uzbek nursing partners established nursing performance standards at the Institute along with a requirement that nurses pass clinical performance reviews in their specialty as a quality assurance measure. They developed retraining programs to improve the clinical skills of nurses whose performance was assessed as low. These efforts have helped promote the importance of nursing in the clinical environment.

  The partnership between the University of Kansas Medical Center and a number of partner institutions in Kyrgyzstan (1992-1999) introduced a nursing administration course that was taken by several Kyrgyz nurses. The partnership also was instrumental in the development of the Higher Nursing Education Institute at Kyrgyz State Medical Academy. In 1999 KSMA entered a new partnership with the University of Nevada and the University of South Florida (1999-2003) through which a nursing baccalaureate degree was developed at KSMA. Twenty -five nursing faculty completed a month-long internship at University of Nevada School of Nursing to enable them to teach as part of the new program.

  Most recently, major advances in curriculum development were made through the CAR regional nursing education and leadership development partnership linking the University of Minnesota School of Nursing (UMSN) with six CAR nursing schools. Between April 2004 and May 2006 several exchanges to UMSN and CAR nursing schools provided partners with first-hand opportunities to observe the structure and operation of nursing schools in the US and CAR as well as to review and compare the structure and content of the nursing curriculum in each country. The partners also participated in a series of region-wide meetings to review and assess institutional curriculum materials.

  UMSN faculty teams delivered several comprehensive workshops in Almaty in 2005 and 2006 in areas of significant interest to the CAR faculty including nursing research, health assessment, family nursing, public health nursing, HIV/AIDS, and ethics. The physical assessment workshop introduced the CAR nursing faculties to the use of otoscopes and other physical examination tools that are traditionally reserved for physicians in CAR. These workshops, which were attended by nursing faculty from all Central Asian partner schools, resulted in the development of a new nursing curriculum at all partner institutions.

  The table below indicates the curriculum changes that occurred in partner nursing schools over the course of the regional partnership. The changes covered a variety of subjects including HIV/AIDS, health assessment, nursing management and administration, pedagogy, nursing research, infection diseases, and nursing care.

Total, May 2004 through June 2006						
Indicators	Basic Education		Baccalaureate Education			Total
	Bishkek	Astana	Almaty	Bishkek	Bukhara	
No. of revised curricular elements and instructional methods developed	35	14	19	30	18	**116**
No. of faculty demonstrating improved teaching knowledge and skills	70	68	38	57	72	**305**
No. of syllabi/lesson plans revised and/or developed	115	10	16	14	60	**215**
No. of faculty trained to deliver the nursing leadership course	--	--	2	7	5	**14**

In addition several new topic areas were introduced to the nursing curriculum at partner schools. KSMA introduced a course on scientific nursing research and a course on the review and analysis of scientific literature. In Astana, the State Nursing College introduced a patient-centered health assessment course and a new module focused on psychological support to patients. As a result of the partnership's investment in the development of new information technologies, the Bukhara Medical School Department of Higher Nursing Education introduced a new 60-hour IT course for its nursing students. The faculty of the department created a large library of PowerPoint-based lectures on a wide range of nursing subjects that can be used by any department faculty member. The Bukhara partners marketed these materials to other medical and nursing schools in Uzbekistan, and subsequently, all the regional nursing schools and a few medical schools, including the Tashkent Medical Academy, have been purchasing many of their nursing curriculum materials from Bukhara.

Bukhara graduate nursing students practicing clinical techniques

- **Faculty Development**

Through all of its partnerships and programs, AIHA and its partners viewed faculty development as a critical component of its nursing education reform efforts, and this emphasis consistently complemented the curriculum development efforts that AIHA and its partners supported.

The regional nursing partnership played a significant role in developing CAR nurse educators' skills. During the exchanges and workshops facilitated by UMSN partners, CAR nursing school faculty members observed a wide range of innovative teaching and learning strategies. These included lectures, discussions, case studies, role playing, group work, clinical practice, web-based instruction, and the use of computerized and non-computerized simulation models. First-hand

interaction with US peers inspired and motivated CAR faculty to use many of these interactive teaching and learning techniques. The Almaty Nursing College faculty began to teach smaller groups of students and to use multimedia presentations to more effectively deliver the course content. They now utilize more external literature and engage students more actively in the learning process by asking them to prepare presentations or seminars. Faculty now evaluate and provide constructive feedback to students about their presentations and theme papers. Based on the US model, the Almaty Nursing College also developed and introduced the position of "practical teacher"—a nurse who is both a practicing and a teaching nurse. The partners hope this will encourage practicing nurses to get more involved in the education process and use their work experiences to contribute to nursing education.

In Kyrgyzstan, the Bishkek Nursing College faculty is increasingly using Internet resources and has a strong interest in evidence-based medicine and nursing research. Faculty members applied for and won two small research grants that dealt with environmental health.
In Bukhara the Higher Nursing Department of the Medical Institute has been graduating nurses with bachelor's degrees since 1999. Currently three of the program's graduates have accepted faculty positions in the department of nursing. This is a formative step in an effort by nurse leaders in the region to replace physicians with well-prepared nurses as educators and trainers of nurses. The Bukhara Medical Institute nursing faculty have also been replacing oral examinations with more diverse evaluation tools, such as case studies and the Objective Structured Clinical Examination (OSCE) to assess the clinical skills of students. Nursing research is also widely encouraged at Bukhara Higher Nursing Department. Each third-year student is required to complete one research project that has the potential to improve nursing practice. Successful projects are incorporated in department's curriculum.

CAR partner institutions also promoted new nursing roles and concepts at the national policy levels. The director of the Bishkek Nursing College, who also serves as head of the educational council at the MOH of Kyrgyzstan, incorporated the changes in the nursing curriculum that were introduced through the partnership into the national educational standards for the entire country. In Kazakhstan the Almaty Nursing College gained the support of the ministries of labor and education to introduce more working roles for nursing and a compensation system for nurses based on their qualifications, thus providing graduating nurses with more possibilities for careers in nursing.

- **Professional and Leadership Development**

To support the professional and administrative growth of CAR nurses, AIHA has utilized a variety of nursing development programs that were critical to the emergence of nursing leaders in the region and to the growing recognition of nursing profession.

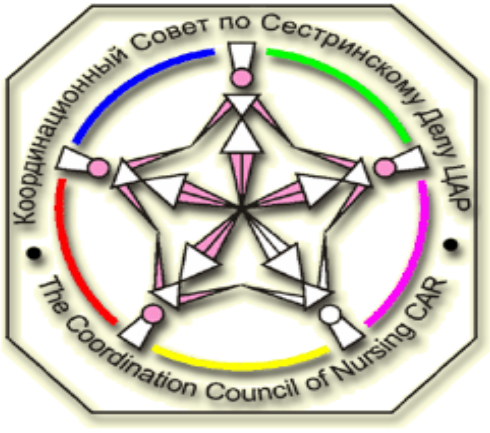
National nursing association development in Kyrgyzstan, Tajikistan, and Uzbekistan was a direct result of AIHA partnership support to nursing leaders in these countries. In Kazakhstan the Semey/Houston partnership established the Semey Nursing Association, the first nursing association in Kazakhstan and in CAR. The US partners facilitated the development effort by helping to define the mandate for the association and develop its legal and administrative regulations. They also provided training in strategic planning, teambuilding, and communications. Thirty chief nurses were invited to participate in the development effort, and

after six months of organizational development the association began conducting workshops and outreach events for nurses in the region. The association continues to provide monthly workshops on a variety of nursing topics and provides continuing education trainings for the nurses in the East Kazakhstan region. The Semey Nursing Association also received grants from other international associations to support its educational activities. In 2002, the association won $25,000 from the Counterpart Consortium to provide additional training opportunities for Semey nurses in nursing management and leadership. Additional funding opportunities have been provided through USAID. Currently, the Semey Nursing Association has over 2,000 members, and it has helped to establish similar associations in seven additional regions of Kazakhstan.

The International Nursing Leadership Institute (INLI) was established by AIHA as a vehicle for developing nursing leaders. INLI provided a year-long experience for three classes of NIS and CEE nurses between 1999 and 2002 to learn and develop useful skills for successful leaders. The INLI faculty, US nurses employed in leadership positions in US healthcare organizations, created a collegial atmosphere among the classes and through a variety of adult teaching methodologies delivered an integrated curriculum that provided a unique learning opportunity for future nurse leaders. Three CAR nurses participated in this nursing leadership and management skills training, including Rikhsinisha Salikhodzoyeva who has achieved the role of Chief Nurse in Uzbekistan. (See the *Partner Profile* at the end of this section.)

By providing alternative forms of learning together with information resources and opportunities for networking and professional collaboration, the four Nursing Resource Centers (NRCs) in CAR were also instrumental in supporting the professional development and leadership initiative of nurses. One of the most active CAR NRCs was opened in 2000 in Dushanbe, Tajikistan. This NRC organized and coordinated training events for nurses nationwide and conducted numerous outreach trainings. The Dushanbe NRC also supported the Tajik MOH in coordinating nursing development and training activities as well as in establishing a national nurse registration database for the purpose of potential licensure and certification of nurses by the NRC and other MOH-affiliated bodies in charge of nursing.

- **Nursing Coordinating Council**



AIHA has been supporting the Central Asia Nursing Coordinating Council (NCC) since its inception in 1999. The Council was established at the request of nurse administrators and educators from the region gathered in Bishkek at a conference to address issues of nursing education in CAR. Its purpose is to promote increased collaboration to advance nursing reforms in primary healthcare in Central Asia.

To better address these issues participants agreed that the NCC be charged with monitoring and implementing changes in nursing in the region. Initially, five representatives from four of the

five CAR countries were selected to serve on this body; membership has since grown to 28 members. Because of travel restrictions in Turkmenistan, nurses from that country have not been able to participate in the NCC, but they continue to be invited to each meeting.

The mission of NCC is devoted to:

- Development and implementation of nursing education standards;
- Faculty development;
- Nursing research development;
- Professional development of nurses;
- Development and support of nursing associations;
- Improvement of continuing nursing education;
- Improvement of nursing care quality assurance;
- Improvement of regulations governing nursing education;
- Development of new legislative documents regulating nursing.

The group held its first meeting in February 2000 when it developed its by-laws, goals, and activities. From 2001 to 2005, Abt Associates financially supported the council through its health reform program, while AIHA facilitated and provided the technical support of several US nursing school deans and faculty members who helped the council to identify common issues across the region and to exchange ideas and share best practices in the development of nursing in the region.

As a representative body of CAR nursing leaders, the NCC was the driving force for visible changes in nursing education, care, and practice that occurred in Central Asia in 2000-2006. One of its major achievements was the development of family nurse qualifications and a training curriculum, which were adopted by all CAR members. The qualifications (competencies) were designed in response to the expanding scope of nursing practice that was associated with the primary care reforms taking place in the region. The endorsement of the family nurse competencies and the curriculum, which were based on modern concepts of nursing care, indicated the acceptance of international nursing standards in CAR and laid groundwork for the advancement family nursing practice. Following the consensus on the qualifications, each country came up with its own curriculum for family medicine nurses reflecting local and regional workforce demands.

Since 2004 the NCC has been closely working with the AIHA regional nursing education and leadership development partnership, which has helped to expand the impact of the partnership's nursing initiatives. The NCC also became a forum for the exchange of new nursing practices and a vehicle for disseminating educational resources, such as evidence-based nursing guidelines on tuberculosis, malaria, diabetes, hypertension, breast health, and hepatitis.

The NCC has also organized courses in nursing leadership based on the INLI model and acted as an advocate for the development of nursing associations across the region. The national nursing associations from Kyrgyzstan, Tajikistan, and Uzbekistan, established with AIHA's support provided their programmatic and financial support in promoting NCC-developed documents including the "Qualifications for the Family Nurse."

Since its beginnings the NCC has addressed regional and national issues affecting nursing practice standards, quality assurance, nursing research, multi-level nursing education, and

distance learning. The results of NCC activity are seen across the region in the growing recognition and vision for improving nursing education and practice. Under its new 2005 agreement with USAID, Abt Associates is continuing to support the activities of the council.

Accomplishments in nursing leadership development are also attributed to the regional nursing education and leadership development partnership. Through each partnership event, UMSN faculty members advocated for more expanded nursing roles and provided advice and encouragement to CAR nursing leaders as they worked on improving nursing education and practice at their institutions and at the national level. CAR faculty members who are members of national nursing associations and of the CAR Nursing Council also promoted leadership development concepts among other members of these organizations.

CAR nursing faculty repeatedly indicated that involvement in the partnership has given them (and students) ideas and greater confidence to pursue efforts to improve the professional status of nurses. In Bishkek, graduate students and nursing faculty at KSMA organized a joint conference with practicing nurses on the strategy for introducing nursing research in Kyrgyzstan. Inspired by the example of their US partners, the faculty of the Bishkek Nursing College offered regular health-related lectures at neighboring high schools and arranged marketing activities to promote the college and attract future students.

In addition to facilitating direct US/CAR collaborations, AIHA also involved CAR nursing leaders in collaboration with other international organizations. In December 2005, AIHA sponsored the participation of five chief nurses from CAR to the 9th meeting of the network of Government Chief Nurses in the WHO European Region in Copenhagen, Denmark, where the CAR nurses gave presentations about the nursing education reform efforts undertaken regionally and by each country. The presentations highlighted accomplishments made through the regional nursing education partnership and the CAR NCC. Participation in the meeting provided a unique opportunity for CAR nurse leaders to network with European colleagues as well as to learn about the WHO nursing education programs.

In 2004 AIHA initiated the Central Asian Breast Health Education Project funded through the Susan G. Komen Breast Cancer Foundation to develop nurses' skills and knowledge in breast health and cancer awareness in four Central Asian countries. The project also sought to increase breast health and cancer awareness in communities and to provide trained nurses with the opportunity to implement their own small project in breast health. Ten small grants were awarded to fund thirteen projects which ranged in amounts from $700 to $1,700; the total funding awarded was $10,600. The selection of the nurses was based on their accomplishments in nursing, their demonstrated leadership and commitment to developing nursing as a profession, and a willingness to develop a long-term project to increase breast health and breast cancer awareness in their own communities. Experienced US nurse instructors and faculty from the University of Minnesota School of Nursing provided two series of trainings for a total of 56 CAR nurses. The faculty introduced clinical and psychological aspects of breast health, breast cancer early detection, and patient and community education strategies for promoting breast health. To support the small grants program, the US faculty also concentrated on project planning and feasibility, proposal writing, and breast health dissemination strategies. The small grants projects supported the provision of a total of 25 breast health workshops for 908 nurses. Also through the program, over 400 women were interviewed and educated on a one-on-one basis regarding self breast examination.

Another positive outcome of the projects funded through the small grants program was the collaboration that developed in communities where they occurred. Other healthcare providers, health clinic administrators, educators, and government officials took part in various aspects of all of the funded projects. Pharmaceutical companies collaborated with the project teams to develop needed materials, and print, television, and radio media representatives collaborated with the project teams to disseminate information about the educational projects through news stories and dissemination of materials.

CHALLENGES AND LESSONS LEARNED

Continuing Support Needed: While nursing leaders made significant steps in promoting nursing as a separate profession outside of medicine, nursing still requires further recognition and advancement. Specifically, the lack of recognition of nurses among the medical community is a major obstacle which will require more active engagement of physicians in the nursing reform dialogue and implementation. Similarly, changes in nursing education require long-term investment in the nursing leaders, faculty, and nursing education administrators. Given its short lifecycle, the regional nursing partnership was able to fully achieve its short-term goals, but further support and encouragement are needed to move nursing reform in CAR forward.

Overcoming Systemic and Political Obstacles: While the retraining opportunities for practicing nurses are quite limited, the nursing schools are faced with increasing demands to produce nurses who can adapt to new and changing workforce environments. The regional partnership driven by UMSN has made notable progress in faculty and curriculum development. However, numerous educational and health system regulations have limited nursing reform efforts in Central Asia. Rigid rules governing curriculum development and certification have been obstacles in partnership efforts to introduce new concepts and content to nursing school curricula. These require multiple layers of approval by various administrative departments that are lengthy and burdensome. The partners recognized the importance of political support in achieving partnership objectives and engaged political leaders in the process. Ministry officials were always included in exchanges and kept informed of partnership activities.

Breaking New Ground in Nursing Research: As US and CAR partners explored the opportunities for nursing research, it became apparent that in many countries such research is uncommon and not well recognized, partly due to administrative constraints related to its registration. To address it, the partnership made every effort to promote nursing research, particularly by engaging policymakers to recognize the value and importance of such research.

The Logistics of a Regional Partnership Model: Both the medical education and nursing partnerships experienced difficulty in orchestrating the logistics of a regional partnership. Because of the number of CAR institutions involved, exchanges to the US were less frequent than was typical in AIHA's one-to-one partnerships. For the same reason, during exchanges to CAR time was devoted to large workshops involving all schools leaving less time to work with individual institutions. Nonetheless, the benefits that resulted from the joint activities and collaboration among partners from all three countries may have counterbalanced the logistical problems.

Access to Evidence-Based Nursing Resources: The lack of current nursing literature and other learning resources in Russian or local languages has been a challenge for partner nursing schools.

However, since new computer infrastructure was installed and Internet connectivity established in most of the schools in summer 2005, computer-based materials have been increasingly more available. Once AIHA support for the Internet ends this may become a problem again.

The Power of Professional Associations: One of the vivid examples illustrating the power of growing nursing professional associations can be seen in the experience of the Semey Nursing Association when it was dealing with the issue of expired TB vaccines that had been procured by the Kazakhstan MOH in 2003. When the vaccines were used in Semey, many children began developing serious complications; consequently, two maternity hospital nurses were found guilty and eventually fired. However, the Semey Nursing Association initiated its own investigation that concluded that complications were not caused by any inappropriate actions on the part of the nurses and then suggested that the quality of the vaccine could be the cause. The findings of the investigation were sent to the regional health department for review. The outbreaks of complications that followed in other regions of Kazakhstan and later lab tests confirmed their assumption regarding the quality of the vaccine. The story became public and effectively led to a dismissal of Minister of Health in 2004.

Building a new generation of Nurse Leaders in Uzbekistan

For Rikhsi Salikhodzhaeva, participation in AIHA's Tashkent/Chicago partnership has opened many doors on her journey of professional development. When the Second Tashkent State Medical Academy began working with the University of Illinois Medical Center in Chicago in 1992, nursing development was one of their key objectives.

Salikhodzhaeva had already achieved a great deal of personal success in her profession, having worked her way up from a physical therapy nurse to nurse educator, senior nurse, then finally chief specialist when she was selected to participate in AIHA's International Nursing Leadership Institute, a year-long learning experience designed to help nurses from partnership institutions in Central and Eastern Europe and Central Asia develop the skills and knowledge necessary to be successful leaders in today's healthcare environment.

"Based on what I learned through the International Nursing Leadership Institute, I helped develop similar courses to empower nursing leaders throughout Uzbekistan," says Salikhodzhaeva, who has served as the head specialist for nursing at the Uzbek Ministry of Health since 1996. "Joint sessions for chief and deputy physicians, head nurses, and senior nursing staff were arranged and new teaching programs specially adapted for use in Uzbekistan were introduced at nursing colleges. For the first time, medical professionals—even nurses themselves—began to understand that we are not just a physician's assistant. Nursing is a separate and important profession unto itself," she stresses.

After these critical initial successes, other important milestones followed, according to Salikhodzhaeva. "Our partnership helped organize family nurse training and development, new processes related to nursing care and record keeping, and professional standards of nursing. Much of this work stems from the Central Asia regional Nursing Coordinating Council," she says, explaining that these efforts not only elevated nursing as a profession, but also led to new and expanded opportunities for education and advancement.

"Thanks to AIHA and our partners, we established a bachelor of science program in nursing as well as a master's program in public health nursing. We've also finalized professional job profiles for each nursing specialty and established the first nursing association in the country. We still have much work to do—strengthening the legislative framework concerning nursing, for example, and building a more robust regional network of cooperation," Salikhodzhaeva acknowledges, noting that things are certainly moving in the right direction.

3. HEALTH MANAGEMENT EDUCATION

"With health systems reform leaning toward decentralization of decision-making—either through privatization or the initiation of health insurance funds, health management education can be seen as a critical tool for the provision of cost-effective, evidence-based public health programs and services." —*Ravshan Azimov, head of the Department of Public Health and Health Management at the Second Tashkent State Medical Institute in Tashkent, Uzbekistan.*

BACKGROUND

The years following the breakup of the Soviet Union have witnessed significant changes in the healthcare delivery systems of Central Asia, including new financial and provider payment systems, decentralized management structures, and computerized information systems. One factor contributing to the success or failure of many of these healthcare reforms has been the availability of skilled administrators who can manage the delivery of health services in a rapidly evolving social, political, and economic environment. This has necessitated an equally dramatic reformation of health professions education—for both current and future managers. While it was crucial to begin developing graduate and postgraduate educational programs to develop a cadre of skilled health administrators, the existing clinical and non-clinical staff in CAR hospitals and clinics also needed to learn important management skills and leadership concepts to meet the changing healthcare needs of their communities and to successfully adjust to rapid health reform.

Since the inception of its first hospital-based partnerships in 1992, AIHA partners have conducted programs designed to strengthen health administration in the NIS and CEE, including introductory and advanced training in management skills, financing, and leadership conducted with the assistance of the Association of University Programs in Health Administration (AUPHA). Beginning in 1995, AIHA determined that the hospital partnership model could be used with institutions of higher education working to develop educational programs to train health management professionals.

Partnership efforts focused on curriculum design and the development for undergraduate, graduate, and management education as well as health policy analysis. Five model programs were developed in the counties of Central and Eastern Europe. The Health Management Education (HME) program extended to Central Asia in 1999 with the creation of two HME partnerships—one between the Kazakhstan School of Public Health (KSPH) and Virginia Commonwealth University (VCU) and another between the Kyrgyz State Medical Academy (KSMA) and the University of Reno. In 2002, an additional HME partnership was established between the University of Kentucky College of Public Health and the First Tashkent State Medical Institute (later merged into the Tashkent Medical Academy). And in 2004, AIHA and the Turkmenistan Ministry of Health and Medical Industry signed a memorandum of understanding that included a program to develop a HME program at the Turkmen State Medical Institute. The MOHMI was eager to develop its capacity in health management as it worked to develop a health insurance system in Turkmenistan by 2006.

PROGRAM STRATEGY

During the initial AIHA hospital-based partnerships program (1992-1998), representatives from CAR healthcare institutions participated in the AUPHA health management workshops organized

by AIHA to strengthen health administration and management. These programs included a strong "training-of-trainers" component whereby CAR workshop participants were given a solid foundation in selected topics and in adult learning principles in order to be able to share their knowledge with other managers in their respective countries. Through the collaboration between AIHA and AUPHA, three different types of workshops were provided to CAR partners: "Introduction to Management" (also referred to as the "101" course), a training-of-trainers (TOT) seminar, and "Budgeting and Financial Management."

Beginning in 1999 as part of USAID/CAR's agenda for advancing health sector reform and developing the primary healthcare system, AIHA initiated the HME partnerships in CAR in order to build capacity within educational institutions to train future healthcare managers and providers of primary care services. The goal of the program was to improve healthcare management education and practices and to strengthen healthcare policy development. The program's objectives were to:

- Increase capacity for education and research in health management and policy development.
- Improve knowledge, skills, and competencies in healthcare management among healthcare professionals, administrators, and policymakers.
- Increase recognition of and international collaboration among healthcare management professionals.
- Increase the availability and use of information resources in healthcare management and policy.

Through its partnership between KSPH and VCU (1999-2003), AIHA developed one of the first health management education programs in Central Asia. KSPH had been established in Almaty in 1997 through an agreement between the Kazakhstan Ministry of Health and the World Health Organization. The partnership's first activity was a study tour to introduce representatives of KSPH and the Kyrgyz State Medical Academy to AIHA's successful HME programs in CEE and to begin planning the new academic programs in Central Asia. Throughout the course of the partnership, a total of 15 workshops were conducted at KSPH, attended by over 30 KSPH faculty members. The content of the workshops was varied each time and included topics in health management, health policy, health economics, financial management, decision making, strategic planning, and environmental hygiene. The partnership with VCU also provided an opportunity for KSPH to be exposed to modern approaches in curriculum and faculty development. KSPH faculty received training in numerous content areas related to the school's curricula and in participatory teaching techniques and other methodologies. The partnership supported the development of programs in health services management and health policy development and administration at KSPH and established a continuing education certificate program and a Master of Science in these program areas.

The partnership between the Kyrgyz State Medical Academy, the University of Nevada School of Medicine, and the University of South Florida (1999-2003) included health management education as one component of its overall program to enhance the quality of medical education in Kyrgyzstan. The partnership was developed to support of the Kyrgyz Republic's "Manas" health reform program, which was initiated in 1996 as part of the MOH/World Bank health management and public health program.

The health management education program in Uzbekistan was initiated in 2002 through the partnership between the First and Second Tashkent State Medical Institutes and the University of

Kentucky College of Public Health. The first year of activities under the new Tashkent/Lexington partnership focused heavily on the assessment of existing health management curricula at TashMI I and TashMI II as well as the teaching skills of the faculty. In addition, the Uzbek educators observed the HME program developed at the Romanian Institute of Health Services Management though their previous partnership with the University of Kentucky. The expectation was that the successful Romanian program could be a model for developing the program in Uzbekistan.

In developing an HME program at the Turkmen State Medical Institute, AIHA first organized a study tour to Canada and the United States for five Turkmen government policymakers to observe the health insurance systems in these countries. In September 2004, AIHA, in collaboration with Abt Associates, organized numerous meetings at the Canadian national and provincial ministries of health, the University of Toronto, and several major hospitals for a delegation representing the ministries of health and finance, the cabinet of ministers, the state tax service, and the National Institute of Statistics. In the United States the group spent several days at Temple University's College of Business and Management to learn about the healthcare financing system in the US.

AIHA then helped to establish the Health Management Training Center (HMTC) at the Turkmen State Medical Institute. The center was designed to serve as a national training center for healthcare management and as a resource in the development of qualified faculty who could adapt and develop modern courses in healthcare management and public health. It also serves as a resource for ministry officials working to incorporate best practices in health reform. The center's communications capacity was further enhanced with the addition of ten networked computers connected to the Internet under the NATO Silk Road project, which provides unlimited high-speed Internet access to scientific and research organizations in Central Asia.

For the Turkmenistan project, AIHA utilized its former US and NIS partners, including the Kazakh School of Public Health, the School of Health Care Management of the American University of Armenia, Virginia Commonwealth University, the University of Central Florida, and the University of Kentucky, for faculty and curriculum development. Over the course of two years, AIHA and its partners organized eight week-long workshops in health management and related subjects for the five Turkmen faculty members representing the Department of Healthcare Organization at the Turkmen State Medical Institute. This group became the faculty of the center. An additional highlight of the program was an exchange to the University of Central Florida in the summer 2005. The faculty representing the HMTC participated in classes and gained first-hand knowledge on the operation of a health management education program in the United States.

Faculty from HMTC teaching more health management theory, Ashgabat

As part of its regional cross-partnership program support activities, AIHA also provided numerous health management workshops across the NIS, many of which included health managers from Central Asia. These workshops, facilitated by US faculty, primarily focused on faculty development and modern instructional techniques as essential elements to HME quality improvement. These included:

- Training-of-Trainers Workshop in Management and Leadership (April 2000) – This workshop, involving twenty-two representatives from AIHA's HME partnerships in the NIS, was organized to provide participants with the skills and knowledge to serve as faculty for future training programs within their respective partnership institutions and regions. The participants were oriented in the management and leadership concepts and skills contained in AIHA's Health Administration Module Series as well as the specific skills needed for organizing and facilitating workshops, including presentation skills, adult learning theories, participatory training techniques, and group process.
- The Case Method as a Teaching Tool (May 2000 and May 2001) – During these workshops, instructors trained the faculty of the HME partner institutions how to integrate cases into the management education curriculum. The participants also developed cases based on their own actual management experience.
- Competencies for Health Service Managers (April 2002) – During this conference of international experts, the CAR HME partners were exposed to new concepts in health management from presentations of on a variety management topics.

KEY RESULTS

- **Enhanced Educational Capacity**

In 1999, KSPH introduced its first graduate-level health management program, adapted from VCU's health management curriculum. The program eventually expanded to include a 26-course Master of Health Administration/Master of Public Health program. As of 2006, over 40 graduate students had completed the two master's programs and 40 more were scheduled to graduate in 2007. There were 37 applications for the graduate programs in 2006.

The partnership began planning for the development of a PhD program in health services research early in the project. Their hope was to develop a program that was adapted to international standards and that would increase the school's recognition abroad. By the second year they had begun to design the curriculum, and an initial draft of the program was approved by the Kazakhstan Ministry of Health early in 2001. However, its design and content have required additional and ongoing revision. In the summer of 2006, KSPH officially announced enrollment to its first PhD program in public health.

In Kyrgyzstan, a new MOH-approved five-year bachelor's degree program in health management was introduced at KSMA in 2002. The US partners supported the development of the management program by training KSMA faculty on essential public health functions and core competencies, leadership and strategic planning, resource development and grant-writing, problem-oriented teaching, and the case study methodology. Following its introduction, the program underwent several significant revisions to improve the quality and broaden its appeal. Unfortunately, the program was not widely supported by the MOH or by the KSMA administration (which underwent frequent leadership changes during the life of the partnership). Graduates of the program had difficulties finding employment as healthcare managers because they lacked practical experience and advanced education in management, neither of which were provided through the program. As a result, the program closed in 2006.

At the First Tashkent State Medical Institute in Uzbekistan, the faculty development strategies employed by the partnership resulted in a move toward collaborative and case-based learning approaches and incorporation of information technology in the instructional design and delivery of courses. Over the course of the partnership, over 250 Uzbek-specific case studies were developed by the Tashkent partners.

By the summer of 2004, the University of Kentucky and Tashkent partners were working jointly to develop a 36-hour undergraduate course in healthcare management and marketing. The Kentucky partners trained 21 faculty members from the Tashkent institutes to deliver the new course content using updated instructional technologies and Web-based resources**.** Although the course was developed by the partners representing TashMI I, the course was piloted among the undergraduate medical students at both Tashkent medical institutes. The course was revised based on feedback from students and faculty and was then finalized and included in the public health curriculum in 2005. The course was integrated into the curriculum for sixth- and seventh-year students at the Tashkent Medical Academy, and 1,825 medical students have taken the new course to date.

The process of introducing a new course into the curriculum required meeting national educational requirements for medical graduates. By being added to the official curriculum, the course also became a required part of the curriculum at all other medical schools in Uzbekistan. Throughout 2005 and 2006, the Academy distributed copies of the curriculum among several regional medical schools and provided orientation sessions about the course to the regional medical school representatives during the annual certification tests administered at the Academy. The partners introduced the course to the schools as part of a national partnership conference in May 2006. This provided an opportunity for the partners to emphasize the new teaching methods and course design.

The Lexington and Tashkent partners also addressed health management education at the graduate level. University of Kentucky faculty reviewed and provided initial feedback on TashMI II's Master's-level program in public health. However, the plan to develop a graduate course in health management at TashMI II to complement the undergraduate course developed at TashMI I was thwarted when there was a change in administration at TashMI II. The new rector provided only limited support to the partner ship program. When the two institutes were then merged in 2005 the rector of TashMI II was named to head the newly-named Tashkent Medical Academy, and the School of Public Health was closed. The undergraduate management course continued to be taught as a part of the undergraduate medical curriculum.

In Turkmenistan, there has been a gradual but marked improvement in the knowledge and teaching skills of the faculty at TSMI resulting from AIHA-sponsored workshops on topics in health management, administration, and finance. Faculty development also remained one of the focuses of the program. Each of the eight workshops, taught by expert faculty from the US, Kazakhstan, and Armenia, promoted modern, interactive teaching techniques and the development and use of case studies. These innovative instructional strategies have been adopted by HMTC trainers and are increasing utilized in their everyday teaching practices.

As a result of a series of intensive trainings, the HMTC introduced a new undergraduate 36-hour course in economics and management in healthcare in 2006 for students of the dental and pharmaceutical departments. A total of 32 students took the course during the 2006 academic

year, and the students of the pediatric, adult medicine, and sanitary-hygiene departments are scheduled to enroll in the new course in early 2007.

Throughout this cycle of trainings, the HMTC faculty also updated four existing four-week postgraduate courses (in health economics and management, disability expertise, PHC management, and health statistics) and developed and introduced a new 72-hour training program on modern health management concepts and data for senior level administrators. The curriculum for the new course was successfully piloted in May 2006 and is currently under review by the MOHMI.

- **Enhanced Research Capacity**

With the support of VCU faculty in its developmental stages, KSPH has actively engaged in providing research services for domestic and international clients in Kazakhstan. At the beginning of its research efforts in 2000, KSPH was contracted by the Kazakhstan Ministry of Health to conduct an analysis of its health reform efforts. The MOH sponsored two research projects: "Monitoring and Evaluation of the Reform Process in Kazakhstan" and "Health Economic Problems of Designing and Implementing Compulsory Health Insurance." The school continues to perform both short-and long-term research projects for the MOH, primarily on population health data. KSPH also works with the MOH to provide expertise and support in drafting national healthcare policy documents. By the end of 2002, eight research projects had been submitted for funding, including two joint projects with other universities. Six of the eight received funding. KSPH partners have sought continued funding for research projects from governmental and international organizations, including a health survey and a food safety project for WHO.

In Kyrgyzstan, the partners developed a research infrastructure to support applications for available grants. To develop the Bishkek partners' experience with grant writing, the US partners developed a request for proposals and awarded small grants to the faculty of the KSMA School of Management. The faculty also developed and submitted a proposal to the US National Institutes of Health on "The Social and Structural Impact of HIV/AIDS in Kyrgyzstan."

- **Management Skills**

The VCU and KSPH faculties worked collaboratively to develop a variety of short courses for practicing health managers. Because of the limited availability of advanced degree courses in management in Kazakhstan, the short courses offered by KSPH have been in high demand nationwide and continue to be a major revenue-generating activity for the school. The courses are taught throughout the year, and nearly thirty staff members are assigned to delivering them. Currently, KSPH offers 34 courses, each of which are from two-to-four weeks long and which are designed for healthcare managers of various levels and backgrounds, from senior MOH officials to district hospital administrators. Funding for the courses frequently comes through the MOH or the regional health departments. Since 1999 over 9,000 healthcare professionals from different parts of Kazakhstan have been trained in health policy and management, epidemiology in public health, health economics and finance, disease prevention, healthy lifestyles and health promotion, and child and adolescent hygiene. The Soros Foundation also provided support for some of the faculty and curriculum development programs developed at KSPH.

In its continuing effort to serve practicing managers, the KSPH also introduced a one-year certificate program in management designed for mid- and senior-level managers in 2005. Since its inception, the Ministry of Health assigns one participant, a physician or an economist from each of the 16 Kazakhstan regions, to participate in the course each year. In its first year 18 regional students completed the course while 18 more have been enrolled in 2006.

VCU partners also recognized the need and saw potential for the development of distance learning programs at KSPH. By observing and participating in VCU's distance learning program in health administration, the faculty at KSPH gained knowledge in the relevant classroom and Internet applications for the development of online courses. Initiated through the partnership and subsequently supported by the Soros Foundation, KSPH piloted its first distance learning program in the fall of 2004 with an online, month-long management course taken by ten students, including the then deputy minister of health. KSPH continues to develop and design courses for its distance learning programs, focusing primarily on short courses and its graduate programs.

In Uzbekistan, there was a pressing need to train healthcare managers as many healthcare institutions, particularly dental health facilities, were being privatized. While the introductory undergraduate management course was introduced into the medical education curriculum at the national level in 2005, few opportunities existed for current health managers, most of whom were physicians with little formal training and knowledge in management. Under the continuing medical education system, Uzbek physicians are required to take 288 hours in postgraduate courses every five years to qualify for practice. However, there are limited opportunities for the 7,000 healthcare managers in the country to receive specialized management training. The National Postgraduate Institute, the primary provider of management training, has the capacity to retrain only 200 physicians per year, and these courses are open only to senior-level managers. Mid-level managers must instead enroll in clinical postgraduate training courses to meet their continuing education requirements. In 2005 the Tashkent partners conducted a national survey of 108 healthcare managers, and the findings confirmed the need for advanced training in information technology, medical marketing, and management. Based on the results of the survey, the Tashkent partners drafted a 144-hour postgraduate course that also included 40 hours of management. In 2006, the Academy piloted the new course among 20 department heads at a hospital in Tashkent. Currently, the course is under review by the MOH; it is anticipated to begin as a pilot course in the 2007 academic year.

On June 1, 2005, the Uzbekistan Ministry of Health issued a decree establishing a health management center focused on the development of short courses for graduate and postgraduate health management education at the Tashkent Medical Academy. However, due to the restructuring of undergraduate medical education at the Academy in 2005-2006, the development of short courses and their introduction through the center has been postponed. Currently, the center is delivering the undergraduate 36-hour course that was developed through the partnership.

- **Increased Recognition/International Collaboration**

Inspired by the partnership, particularly through participation in several annual meetings of the Association of University Programs in Health Administration (AUPHA), the leadership of the

KSPH initiated the Kazakhstan Public Health Specialists Association in 2001. Its mission is to promote inter-agency cooperation in healthcare and the continuing education of healthcare specialists in public health. Although it has no international affiliation, the association currently has over 1,000 members and has held association conferences annually since 2001.

In addition to its domestic collaborative activities, KSPH has been active internationally through its efforts to develop its consulting capabilities. The development of a health management consulting service at KSPH began initially through small projects done with VCU as part of the partnership. KSPH was contracted by various international organizations to provide training from 2000 to 2003. With the British Council, KSPH organized a series of workshops in management, economics, and epidemiology in healthcare, primarily for national and regional PHC managers. In 2002-2003, KSPH collaborated with WHO to present five workshops on food safety. With UNFPA, KSPH has been engaged in designing programs in reproductive health for ob/gyns and midwifes. KSPH has also now been accepted as an equal collaborator with a number of international educational and research organizations, and faculty and students regularly participate in international student and research exchanges in both European and US educational institutions.

- **Information Resources**

In 2001, KSPH created the Central Asian Health Services Research Journal, a quarterly publication issued in English and Russian in print and electronic versions. Developed with the support of the VCU partners, the journal is officially registered in Kazakhstan and endorsed by all Central Asian Republics. It covers healthcare research, public health, and health professions education developments across Central Asia. The journal regularly features articles on topics such as healthcare financing, measuring efficiencies in healthcare systems, examination of healthcare expenditures, and the impact of training and retraining of healthcare professionals in the Central Asian Republics.

CHALLENGES AND LESSONS LEARNED

Political support: Because the health management partnerships were developed to enhance CAR healthcare reform programs, support from the rectors of the universities and the health ministries was crucial. To garner this support, AIHA staff and partners met with key political and institutional leaders to convey the value and goals of the partnership program and the importance of having their backing. This support was often tenuous as both institutional and government leadership changed frequently during the course of the partnerships, requiring renewed efforts to build relationships. AIHA's regional staff worked to maintain contacts with local leaders, assuring their participation in events such center openings, regional and national conferences, and other activities to keep them informed and involved in partnership activities. In spite of these efforts, wavering support sometimes resulted in the delay of program implementation, as in Uzbekistan where uncertainty about the new rector's commitment to the partnership's goals contributed to problems in the development of a graduate degree program and the health management training center. In Kyrgyzstan, the health management program developed at KSMA, initially with health ministry and institutional support, ultimately closed, because of leadership changes and lack of support by the new leadership. On the other hand, KSPH's efforts to support the MOH by helping the ministry to draft health policy documents resulted in increased recognition of the school and additional funding.

Sustainability: While the demand continues to be high for health management education, especially for short courses designed for practicing managers, further development of the scope and reach of such programs requires additional efforts by most governments in the region. One cause of this demand is the lack of quality management training for physicians at the undergraduate level. This is where partnership efforts have been particularly successful, especially in Turkmenistan and Uzbekistan. However, funding for faculty and facilities has been meager. At KSPH many of the staff work at the school part-time while maintaining other full-time jobs elsewhere. The leadership, however, has been determined and resourceful, seeking financial resources to keep the institution afloat. Tuition for training health professionals in certificate courses is becoming a significant source of revenue. The development of graduate education in health management has challenges as well. Very few of the master's degree graduates in Kazakhstan and Uzbekistan end up as practicing healthcare managers. This is due to a number of reasons, including low pay, lack of practical experience, and the non-transparent appointment of health administrators. Many of the graduates stay at medical schools as junior faculty or find employment with international organizations.

4. SKILLS-BASED TRAINING

"I am very proud that our work clearly illustrates that family medicine is the foundation upon which a healthy future can be built for every family. What's more, all of our partnership's initiatives were highly rated at the national level. In fact, the success of the Primary Care Training Center's program for retraining family medicine specialists helped government officials decide to replicate our model in other regions of the country." *—Myakhri Nedirova, director of the Ashgabat Primary Care Training Center in Turkmenistan.*

BACKGROUND

After decades of neglect in a healthcare system that placed the greater part of its emphasis and limited resources on specialization and hospital-based acute care medicine, the value of primary care is now being recognized in Central Asia. In the 1990s, national governments in these countries began seeking to strengthen primary care through long-term health reform initiatives. As part of these reforms, medical and nursing schools began developing curricula to train a new generation of family physicians and nurses while seeking solutions to the daunting task of retraining tens of thousands of specialists to meet primary care needs.

While pursuing changes in medical and nursing education at the undergraduate, graduate, and postgraduate levels, AIHA also recognized the profound need to provide retraining opportunities that emphasized skills acquisition for practicing health professionals. AIHA's Family Medicine Training Centers (FMTC) have been at the vanguard of the effort to refashion primary care delivery systems in the region, while its Infection Control Training Centers (ICTCs) and Neonatal Resuscitation Training Centers (NRTCs) served to train various health professionals in modern, evidence-based approaches to infection control and neonatal resuscitation.

Turkmen faculty practicing neonatal resuscitation.

With regards to infection control, recent years have seen the emergence of dangerous strains of viruses previously held in check or virtually eliminated through antibiotics. One potential breeding ground for infectious disease is in hospitals, where patients often transfer the microbes they are carrying to others. Discovering how hospital-acquired (nosocomial) infections are perpetuated by existing hospital procedures and obtaining support for implementing evidence-based infection control measures are the first steps to reducing such infections. AIHA's ICTCs work with national and local ministries of health as well as individual healthcare facilities to develop local and nation-wide infection control practices.

The health of women and children has gained increased global recognition as an important strategic focus for improving the health status of a population. In response to high infant and maternal mortality rates in CAR, AIHA partnerships initiated training in neonatal resuscitation techniques, a cost-effective clinical approach with great life-saving potential. Proper and effective neonatal resuscitation skills in delivery rooms and birth houses serve to not only decrease infant mortality rates, but also reduce the number of developmental disabilities that can occur as a result of blood and oxygen deprivation in the first minutes of life.

PROGRAM STRATEGY

To enable primary care professionals to carry out their role as effective caregivers, AIHA Family Medicine Training Centers establish training programs utilizing a patient-centered care model and evidence-based clinical practice guidelines, while placing an emphasis on practical skills development. Health promotion, disease prevention, and the treatment of chronic diseases are key elements of the training curricula. The FMTCs, which are usually associated with or part of a larger healthcare delivery facility, are designed to combine classroom training with a clinical practice setting where newly acquired skills can be tested and developed.

To address critical issues of infection control and lessen the spread of nosocomial infections, AIHA facilitated the inclusion of infection control programs in CAR and established a network of Infection Control Training Centers in the NIS (including one in Almaty, Kazakhstan) to expand human resources and training capacity and to disseminate infection control reform policies and procedures. Infection control experts from CDC, WHO, Harvard Medical International, the Society for Healthcare Epidemiology of America (SHEA), and the Association for Professionals in Infection Control (APIC) worked with ICTCs to establish centers of expertise that can advise national and regional health authorities and epidemiological agencies. The ICTCs developed and introduced standardized protocols for conducting active hospital surveillance and effective infection prevention practices.

Training in neonatal resuscitation techniques is at the core of AIHA's neonatal resuscitation cross-partnership program and the NRTC model. These programs, developed jointly by partners, provide cost-effective clinical training using evidence-based protocols and reproducible curricula from the American Hospital Association/American Academy of Pediatrics (AHA/AAP) that are easily adapted to local needs. At each NRTC ob/gyns, neonatalogists, pediatricians, nurses, midwives, and anesthesiologists learn how to assist infants who experience difficulty breathing on their own. Medical teams are taught procedures such as thermal management, infant positioning, suctioning, and stimulation, as well as more specialized skills such as ventilation, intubation, and the use of medications and volume. Many of these techniques can be implemented using minimal equipment and at little additional cost. After completing the training course, practitioners may implement their

newly acquired skills in their home institutions with minimal additional equipment, thereby decreasing infant mortality rates and developmental disabilities that may result from blood and oxygen deprivation during the first minutes of life.

KEY RESULTS

- **Family Medicine**

The first Family Medicine Training Center (FMTC) in Central Asia was established in 1999 in Dushanbe, Tajikistan, through the partnership between Boulder Community Hospital and the Republican Training Center for Family Medicine, operating under the auspices of the ministry of health (1999-2001). The center, originally established at the National Postgraduate Institute, trains family physicians and nurses through a six-month course that was developed in collaboration with the US partners. The FMTC also supported the Tajikistan government's efforts to expand family medicine throughout the country by helping to establish and train the faculty at several regional training centers, which were established in 2000.

Working with patient at the FMTC in Dushanbe, Tajikistan

Several exchanges to Boulder helped the FMTC faculty to expand their training capabilities in EMS, eventually allowing the FMTC to offer EMS training courses, including a two-day introductory course for students and a two-week training for family physicians and nurses. To date, 1,833 physicians, nurses, and medical students have taken EMS courses at the FMTC.

In 2004, the FMTC expanded its facilities, adding a family practice clinic that serves 7,200 local residents. This addition helped the FMTC to increase its clinical training for the students, who typically focus on developing practical skills at the clinic in the morning and attend classroom lessons in the afternoon. Also in 2004, the FMTC updated and certified its six-month curriculum, which is also being taught at the department of family medicine of the National Postgraduate Institute. The FMTC's faculty of ten has the capacity to train about 100 physicians and nurses annually.

In Turkmenistan, AIHA supported family medicine training though the partnership between the University of North Dakota and the Ministry of Health and Medical Industry (1999-2003). Upon the termination of this partnership in 2003, AIHA continued to support the family medicine training programs with the ministry from 2004 to 2006.

Educating patients about newborn care, Ashgabat FMTC

The original FMTC was established in Ashgabat at Health House No. 1 in 2001. The center offers a month-long family medicine training curriculum that was developed by the North Dakota partners. The course emphasizes skills development and is taught by a multidisciplinary faculty that trains physician-nurse teams using

modern adult learning techniques. With its seven faculty members, the FMTC has trained 757 family medicine specialists who now work in primary care settings throughout the capital. FMTC trainees also include the faculty from the Ashgabat Nursing College who utilize FMTC curricular materials at the nursing college.

Health House No. 1, a policlinic serving the city of Ashgabat, has developed an innovative care model where physicians and nurses trained at the FMTC work in teams and have one of the FTMC faculty as a mentor. In this way, the polyclinic serves as a "clinical base" for the application of new concepts of family care taught at the FMTC and allows the faculty to receive feedback from the center's graduates to further improve the quality of training.
Based on observational site visits to clinics where the physicians practice, the MOHMI reports that the training provided at the FMTC has led to improved practices among family physicians, including a stronger focus on prevention and early detection. The ministry also indicated that the number of preventive visits to clinics has increased, although specific data was not made available. Course evaluation reports based on pre-and post-tests conducted by the FMTC demonstrate a 40-50 percent average increase in the knowledge and skills of the healthcare teams that have undergone training.

Practicing how to take and record blood pressure in Ashgabat FMTC

In 2004, MOHMI expressed interest in opening a second FMTC at the Physiology Center (the former railroad hospital), which is now responsible for family medicine training to medical providers from all over Turkmenistan. The three faculty of the center were trained in teaching methodologies/adult learning, various clinical subjects, and management training on human resources and communications skills. The second FMTC was eventually opened in December 2005 with equipment and renovations provided by AIHA. Currently, the second FMTC teaches a month-long, MOH-certified course in family medicine, which has been adapted from the original course developed by the North Dakota partners. The course also includes a week-long EMS component, which is taught at the Ashgabat EMS Training Center that was established by AIHA in 1997. Being part of the hospital, the center also makes use of its clinical facilities to integrate hands-on clinical training with classroom instruction. The second FMTC has trained 133 physicians, nurses, and feldshers since its opening. To support the focus on the skills-based nature of the trainings, AIHA procured and delivered clinical and educational equipment worth over $27,000 to both FMTCs.

From 2004 to 2006, the following series of training events were organized by AIHA for the staff of both FMTCs and representatives of the Ashgabat City Health Department and MOHMI:

- Nine Turkmen health administrators and physicians visited the Almaty Women's Health Center and the "Demeu" Community Health Center in Astana in November 2004, as part of a study tour to Kazakhstan. The study tour resulted in the development of additional lectures on cardiac and respiratory diseases and patient communication that were incorporated into the FMTC curriculum.

- In July 2005, six Turkmen trainers participated in a women's health training in Georgia, organized by AIHA for Women's Wellness Centers in the Caucasus. In April and August 2005, six Turkmen health professionals completed an intensive two-week training in evidence-based medicine at the Almaty Postgraduate Institute. As a result, the participants incorporated new evidence-based approaches to the treatment of ulcer, gastritis and COPD (chronic obstructive pulmonary disease) into the FMTC curriculum.
- In March 2006, four family medicine instructors from the two FMTCs participated in an educational exchange to a primary healthcare clinic in Kiev. During the week-long series of workshops and practical skills sessions, the Turkmen FMTC faculty received training in cardiovascular and gastrointestinal diseases, women's health, and breast cancer and cervical cancer screening. Kiev PHC training center faculty also provided guidance on depression counseling and how to deal with victims of domestic violence. As a result, the curriculum of both FMTCs in Turkmenistan have expanded to include a more comprehensive overview and practical training in patient communication, management of chronic diseases, and the integration of mental health into primary care.

Given the current requirement that all Turkmen family medicine caregivers must complete family medicine training every three years, AIHA took steps to update the original curriculum to avoid redundancy in training for returning students. Based on its September 2004 assessment of the month-long curriculum, AIHA engaged local and international consultants in enhancing the women's health module. In March 2006, AIHA finalized the development of the new women's health module, after it was reviewed and endorsed by the March of Dimes. To build the skills of FMTC faculty in teaching the new module, AIHA organized several TOT workshops conducted by its authors. In April 2006, the instructors from both FMTCs piloted the nine-module skills-based women's health module to their students, after which the new module was integrated into the original FMTC curriculum. The ability of the FMTCs to update their curricula and integrate new diagnostic and treatment approaches demonstrates the centers' expertise in high-quality family medicine training.

- **<u>Infection Control</u>**

Many AIHA partnerships in Central Asia, especially the hospital-based partnerships established in the early 1990s, have addressed infection control issues. Several CAR partner hospitals introduced new infection control practices that emphasized the quality of surveillance and safe patient care practices. The partnerships in CAR developed and adopted new infection control guidelines and protocols that led to significant reductions in nosocomial infection rates in participating hospitals. One of the tools for implementing new infection control practices was the establishment of hospital infection control committees, which were charged with active infection control surveillance, monitoring, and training. In Ferghana, Uzbekistan, an infection control committee was established in 2002 at the Regional Center for Emergency Medicine, which was partnered with the Grady Health System in Atlanta, Georgia (2000-2003). In addition to introducing a variety of active surveillance and preventive measures, the committee initiated an ongoing training program for current and newly hired personnel, primarily nurses. Between 2002 and 2005, over 700 nurses have completed the training programs conducted by the committee.

Through its cross-partnership infection control initiative, AIHA provided extensive training opportunities for hospital administrators, epidemiologists, and nurses in Central Asia. These trainings were generally delivered by US faculty, though some NIS partners began to deliver these courses as well. For example, faculty from Mechnikov Academy in St. Petersburg, Russia, provided several trainings for their Central Asian colleagues, sharing their experience in the advancement of new infection control programs in Russia. The impact of these trainings was particularly strong at the Almaty Postgraduate Institute where AIHA-trained faculty developed and introduced a two-week, MOH-certified course on the epidemiology and prevention of nosocomial infections. The course was designed for Kazakhstan hospital epidemiologists as part of their continuing education.

In 2001, the coordinators of the infection control initiative focused on establishing an Infection Control Training Center at the Republican Sanitary Epidemiological Station (SES) in Almaty, Kazakhstan. During the first years of its operation, the center was active in providing short courses that focused on prevention of nosocomial infections. ICTC faculty taught the courses, many of which were sponsored by AIHA, at the center as well as in the field. Unfortunately, because of the inability of the ICTC to get certified as a licensed educational institution (and therefore become eligible to receive government funding), the center's activities have gradually declined, though it has continued to operate on a limited scale.

The impact of the infection control initiative was sometimes made at the national policy level. In Kazakhstan, for example, AIHA and its partners engaged the MOH in infection control practice and policy reform during the late 1990s. In 1999, the MOH, together with the US partners from Tucson, Arizona, conducted a national conference and training program in surveillance-focused infection control. Participants of the conference adopted a resolution recommending that the MOH review the existing regulations, standards, and practices regarding infection control. As a result, the MOH approved the nationwide implementation of a new policy on infection control, through government order No.476, issued in October 1999. The new order is based on input from the US partners and upholds modern infection control concepts and provisions. The introduction of the order and better infection control practices are seen as the determining factors that have led to a reduction in nosocomial infection cases in Kazakhstan, down from 765 in 1998 to 590 in 2005.

- **Neonatal Resuscitation**

The first programmatic activity related to neonatal resuscitation in Central Asia was initiated in 1995 through the partnership between Second Tashkent State Medical Institute (TashMI II) and the University of Illinois at Chicago (UIC) Medical Center (1992-2000). As part of their program, the partnership equipped a new neonatal intensive care unit (NICU) within the Tashkent Children's Hospital. The unit was staffed with physicians who had participated in a two-month intensive training session at UIC. In addition to operating the NICU, the Uzbek trainees subsequently instituted their own training sessions at TashMI II for nurses and physicians, utilizing lecture materials and videos developed in Chicago. Since TashMI II was a teaching facility, the instructors used the hospital's model NICU to provide training for medical and nursing students.

In April 1997, the partners officially opened a Neonatal Resuscitation Training Center at TashMI II at the site of the specially equipped NICU. Through 2002, the center trained

physicians, nurses, and midwives from both the institute and other health institutions in the region through MOH-certified monthly courses in neonatal resuscitation.

In May 1998 the partners officially opened a second NRTC at the maternity house of Khorezm Oblast Hospital in the city of Urgench. Instructors at the Urgench center were prepared through training programs held in both Chicago and in Tashkent.

As a result of the partnership program, the following treatments and procedures were introduced into neonatology clinical practice at TashMI II: infusion therapy, monitoring of critically ill newborns, patient assessment using blood-gas indicators, application of state-of-the-art resuscitation techniques, use of the "Butterfly" needle, and endoscopic and bronchoscopic examinations. Tashkent partners mastered intubation and extubation techniques, umbilical vein catheterization techniques, and other skills associated with resuscitation. Nurses improved their central and peripheral vein catheterization techniques and skills associated with respiratory equipment, cardiac monitors and defibrillators, and care of premature and critically ill newborns.

The Tashkent/Chicago partnership also helped to bring about national policy-level changes. The recommendations on the organization of resuscitation departments of maternity hospitals, developed jointly by UIC and the MOH were institutionalized in 2001 by MOH decree No. 25. Also, the partnership-developed course on neonatal resuscitation is now part of the Tashkent Medical Academy undergraduate curriculum.

Since their openings in 1997 and 1998 through 2002, the Tashkent and Urgench NRTCs have provided training to 1,190 and 298 health professionals, respectively.

In Kazakhstan, the partners from Tucson/Almaty Healthcare Coalition facilitated the development of a neonatal resuscitation training program in 1999. The Chief of Neonatology at the Almaty Postgraduate Institute became the lead trainer for the program and delivered the course at various sites throughout the country. Within the first year, over 100 Kazakh neonatologists received training. The course has now been officially certified.

The most recent neonatal resuscitation program activities in Central Asia were initiated in late 2005 in Turkmenistan. Given the limited training opportunities for neonatologists in Turkmenistan, AIHA organized several trainings for Turkmen specialists at the Kiev Neonatal Resuscitation Training Center, established by AIHA in 1997 at Kiev Clinical Hospital No. 7. After participating in the March 2006 training in Ukraine, the staff of the National Maternal and Child Health Center in Ashgabat changed their approach to treatment of newborns with severe hypotension and rash blanching at pressure syndrome. As a result, the center reported saving the lives of three newborns in April 2006 who otherwise faced a historically significantly lower chance of survival.

In May 2006, AIHA opened a NRTC at the National Maternal and Child Health Center in Ashgabat. The center provides cost-effective clinical training using evidence-based protocols and a standardized curriculum that is being adapted to local needs. Neonatologists, obstetricians, midwives, and delivery room attendants from around the country will be trained at the center.

CHALLENGES AND LESSONS LEARNED

The skills-building training programs have proved to be one of the most successful AIHA initiatives in the region. They have, however, faced their share of challenges.

Need for Opportunities/Modern Facilities to Put Training into Practice: In Tajikistan, the poorest country of Central Asia, the Dushanbe FMTC has been successful in training family physicians and nurses from the pilot sites in which family medicine was supported by other donors, thus increasing the chances of FMTC graduates to find proper employment and apply their new knowledge and skills. Still, given that over 70 percent of the Tajik population live in rural areas that are heavily underfunded, PHC facilities in the regions where FMTC graduates return require major upgrades to ensure basic conditions for care delivery.

Restrictions on Travel and Access to Information: In Turkmenistan, the instructors at the FMTC and many other health professionals have had limited opportunities for training and access to modern medical and nursing literature. This situation was compounded by travel restrictions, which prevented many Turkmen specialists from participating in AIHA training events outside Turkmenistan. Thanks to MOHMI support, however, such restrictions were often eased in 2004-2006, providing opportunities for intensive training in family medicine and neonatal resuscitation for Turkmen instructors in other parts of CAR and the NIS.

Need for Continued Support and Expansion of Successful Models: Introduction of new infection control practices remains a vital issue across the region. While AIHA made progress in pushing forward policy and practice changes through collaboration with ministries of health and the establishment of infection control committees at select hospitals, additional training is required to make such changes widespread and sustainable. For example, only 143 (29 percent) out of 489 hospital epidemiologists in Kazakhstan have received training at the Almaty Postgraduate Institute, the only national institution that offers certified infection control programs. While AIHA introduced new training opportunities in infection control through its Almaty training center, it has not been able to expand its activity due to licensing restrictions.

NOTE: The tragic outbreak of nosocomial based HIV infection among infants in Shymkent, Kazakhstan in the summer of 2006 once again underscored the urgency of introducing effective infection control practices in health care facilities in CAR. Immediately following the Shymkent incident, AIHA's Regional and Executive Directors made personal pleas to the MOH to fulfill its stalled commitment to effective infection control and PMTCT training and capacity building. In December 2006, the new Minister of Health formally approved (MOH Order #592) and certified postgraduate education courses based upon the AIHA developed training modules. Courses were approved for (a) infection control – 156 hours, (b) infection control in OB/GYN hospitals – 72 hours, and (c) infection control in surgical hospitals – 72 hours. Courses in PMTCT and Neonatal Resuscitation were also approved and certified for use in post-graduate education. Although the approval/certification process is an important step in system wide dissemination of these vital capacity building tools, it will be incumbent upon the MOH and the donor community to promote and support their wide-scale utilization. Only through this continued support will future horrific outbreaks such as that which occurred in Shymkent, be avoided.

SUCCESS STORY: Primary Care Initiatives Help Strengthen Turkmenistan's Health System

As healthcare costs continue to skyrocket, preventive services have become an increasingly critical component of cost-effective, patient-centered health systems the world over. Periodic check-ups, early screening for a variety of ailments, proactive management of chronic conditions, and targeted patient education programs play such an important role in the provision of healthcare in most Western countries that these types of disease prevention and health promotion activities have virtually become second nature.

The healthcare system in Turkmenistan, like most of the nations of the former Soviet Union, didn't make it easy for people to access preventive services. For the 5 million people living in this Central Asian country, the old system's bureaucracy and red tape made seeking medical attention a long, arduous task. First, a patient had to sign up to see a general practitioner whose responsibility was to screen the individual and send him or her to an appropriate specialist. The patient would then move to a new line outside the specialist's office, sometimes waiting hours to be seen. Frequently, that clinician would send the patient to yet another specialist and the whole cycle would begin anew.

Instead of getting the care they needed, many patients simply could not or would not take the time to make their way through the unwieldy system. People who opted to ignore their symptoms rather than navigate through the requisite channels often developed chronic illnesses or came to be diagnosed when their disease was in an advanced stage with little hope for a positive outcome. The result was both devastating and financially draining for individuals and the nation alike.

In the early 1990s when the former Soviet Union fell, Turkmenistan and other countries in the region marked their independence by launching much-needed healthcare reforms. At that time, the American International Health Alliance (AIHA) began working in Central and Eastern Europe and Central Asia to help build health system capacity through volunteer-driven partnerships that linked US health institutions with their counterparts overseas. Partners collaborate with each other and with AIHA staff and other experts to address healthcare concerns in the host communities. By 1998, primary healthcare and family medicine had emerged as key priorities throughout much of the region because both concepts represent cost-effective ways of delivering high-quality care and prevention services to broad segments of the population.

In 1999, AIHA established a partnership that linked the Turkmen Ministry of Health and Medical Industry and Health House No. 1 in the nation's capital of Ashgabat with the University of North Dakota, the North Dakota State Health Department, and a consortium of other healthcare provider organizations. The Ashgabat/North Dakota partnership opened a Family Medicine Training Center at the Health House in May 2001. Since then, nearly all primary care professionals and medical school faculty in the capital have undergone training at the center and new education topics are constantly being added to the program.

The Family Medicine Training Center has six instructors, including three nurses. All of them were trained in North Dakota and received on-going instruction at numerous family medicine workshops and conferences conducted by AIHA. Primarily, the center works with former general practitioners and pediatricians who, after training, return to their medical institutions ready to provide a broad range of healthcare services to people of all backgrounds.

"Our center has the latest equipment, all kinds of mannequins, and visual training aids that help us show our students the changes that occur in the body with different diseases and how to detect them during clinical examinations," says Aina Klychdurdyyeva, director of the center. "Development of practical skills is the most important aspect of training for healthcare professionals. All of our courses devote 70 percent of training time on the acquisition of hands-on clinical skills, which is a unique approach in Turkmenistan."

The standard training course at the center lasts four weeks and one-week training modules cover otolaryngology, ophthalmology, cardiovascular diseases, and women's and children's health, Klychdurdyyeva explains, noting that the facility has been equipped with special classrooms for each of these topic areas. She is quick to point out that the instructional approach is very rigorous—and very effective. "On average, our students experience a 30 percent increase in their knowledge by the end of the course, but that is not the end of our contact with them. We're equipped with computers, Internet access, and many audiovisual aids, so they routinely come back to us for any medical information they might need. Other healthcare institutions in our country don't have this capacity," Klychdurdyyeva says.

Another unique aspect of the center is its team approach to care. The concept—which trains physician-nurse teams who work together to provide care—was new to the region and initially met with resistance. It didn't take long, though, for everyone involved to recognize the value of this methodology and start to adopt it into their systems. Now doctors and nurses study the same topics together in the same groups.

"As a result, nurses understand what the doctors are doing, so they can speak the same language," explains Maya Saryyeva, a nurse-instructor for cardiovascular diseases. According to Saryyeva, the training is designed to enable doctors and nurses to complement one another in their daily work, with the nurse's role focusing primarily on disease prevention.

"We provide a lot of information on proper nutrition for diabetics and preventive measures against asthma, hypertension, and other cardiovascular diseases," Saryyeva continues. "It all looks simple, but we have found that most patients don't know these little things that can keep them healthy. The family doctors and nurses we train go on to spread this knowledge to the population, which promotes the timely detection of diseases and prevention of more serious conditions."

During training, women's health issues are studied in detail with an emphasis on detecting common pathologies, such as breast cancer and cervical cancer, as well as the prevention and treatment of sexually transmitted infections. In clinical training exercises, physicians practice taking smears for analysis, learn about laboratory diagnostics, and receive hands-on instruction on the use of microscopes and other medical equipment. Everything the center does is rooted in the belief that a family doctor should be the first to know about a patient's problems and how to treat them. Training courses are designed to impart the knowledge and skills these practitioners need to be able to provide quality primary care services to any member of the family, including newborns, children, and adults of all ages.

Although Kulrakhan Rakhmanova, a general practitioner at Ashgabat Health House No. 9, has 30 years of professional experience, he readily admits that the continuing education course he took at the Family Medicine training Center was better than all of the previous courses she had taken.

"Never before did we receive so much practical knowledge," Rakhmanova says. "The lessons here were aimed at developing our skills. We watched educational films and practiced various procedures on mannequins. We were also delighted with the teachers—both their kind attitude and the teaching methods they used. It was easy for us to learn, to share experiences, and to solve the case studies."

Rakhmanova is one of approximately 1,000 healthcare professionals and medical school instructors from Ashgabat who have earned diplomas from the center. Among them is a team of instructors for a second Family Medicine Training Center, which opened in December 2005 at Scientific Center of Physiology with AIHA's support.

"We'd never seen a training center with such state-of-the-art resources," says Guljahan Annamamedova, director of the second center. "Moreover, we never attended such comprehensive, hands-on training sessions as we did at Health House No. 1." The new center—which was established to train physicians and nurses from five regions spanning Turkmenistan, as well as nurse practitioners from rural areas—now possesses similar modern educational and audiovisual equipment, as well as a fully equipped Learning Resource Center and a library.

"Just as we had been when we first visited the center at Health House No. 1, our trainees are pleasantly surprised by the possibility of accessing such a wide range of educational resources in one place. It is also really rewarding for us to see how satisfied they are with the job we do as trainers," Annamamedova says. Explaining that she and the staff are currently brainstorming more ideas for taking her center's training programs to the next level, she concludes, "Now that our initial plan to open this center has been successfully met, we all know that the most important thing is to be true to our own beliefs and aspirations. We're really grateful to the American people for providing us with the chance to do it."

B. Primary Healthcare

During the Soviet period, the government made significant investments in the healthcare infrastructure and personnel in Central Asia, creating an extensive network of healthcare institutions. The Soviet model, which emphasized access to primary healthcare (PHC), defined "catchment areas" in which geographic or economic zones were assigned to individual physicians who coordinated the medical care and education of the area's inhabitants. Over time, however, an increasing share of the system's resources was delegated to specialized healthcare facilities, and physician specialization became common as well. The primary care physician's level of competency declined so that many were no longer able to complete simple diagnostic and treatment procedures such as vision and hearing testing.

With independence in the early 1990s the situation worsened. As the Central Asian economies experienced a sharp decline, there was a severe impact on the health and social service sectors. There was no longer a safety net system in place to support the chronically ill, elderly, and disabled, and very few resources were allocated to preventive care.

Traditionally primary care in Central Asia was provided through the polyclinic system, which was staffed by staffed by internists, pediatricians, gynecologists, and other types of primary care physicians. Polyclinics were free-standing or attached to hospitals, and they were usually specialized

for different populations or services, such as adults, children, and reproductive health services for women. As a result, a single family was forced to visit several types of polyclinics in different locations in order to receive care. In the late 1990s the Central Asian governments expressed an interest in restructuring the system by taking primary care gradually out of the polyclinics and organizing it into its own service. An interest grew in the development of mixed clinics for adults and children where families could receive care and treatment at the same location from physicians that had been retrained as family physicians.

The international aid community supported Central Asian governments' efforts to initiate health reforms focused on reestablishing the primary healthcare system. Consistent with USAID's strategic objective to assist in the restructuring of healthcare in Central Asia in a manner which would assure high-quality, cost-effective services to the general population, AIHA's program focused on a reorientation toward primary healthcare. Virtually all of its partnerships and regional activities focused on improving the quality and cost-effectiveness of primary healthcare, either directly at the service delivery level or indirectly through the training and education of health professionals. The emphasis of AIHA's programs was primarily on clinical care improvement and community outreach rather than health system financing. Given the breadth and depth of clinical issues surrounding the transformation of the health system, AIHA's emphasis on clinical care was a critically needed part of the reform effort.

The model AIHA and its partners used to develop family medicine centers and Women's Wellness Centers sought to cultivate a community of healthcare providers that focused on prevention, education, and community outreach for patients of all ages. At the same time, the centers were adaptable so they could fit within the political, social, and economic contexts of the different countries.

1. COMMUNITY-ORIENTED PRIMARY CARE (COPC)

"In striving to improve healthcare in Kazakhstan, we look to model programs such as the Demeu Family Medicine Center to provide examples of viable solutions in which primary care services can be delivered in the most effective and comprehensive way." —*Yerbolat Dosayev, Minister of Health of Kazakhstan.*

PROGRAM STRATEGY

AIHA's community-oriented primary care model in Kazakhstan was initiated as part of the Astana City Health Administration/Pittsburgh Mercy Health System partnership. The "Demeu" Family Medicine Center (FMC), which was officially opened in 2000, was chosen as the site for introducing a model of integrated medical and social services. Even though the partnership initially focused on the needs of the FMC's catchment area, it later expanded its education and outreach component to other family group practices in the city of Astana.

The Demeu center and the COPC model supported USAID's emphasis on the development of civil society and democratization in the region and furthered USAID's interest in promoting sustainable, decentralized approaches to meeting social service needs as well as supporting the health reform agenda in the country. COPC services emphasize disease prevention, health promotion, and the development of evidence-based quality care in a family-centered primary care environment. They

focus on integrating health services within the larger social services context of supportive community-based non-governmental organizations (NGOs).

The COPC program's priorities included community mobilization and training or re-training of primary healthcare practitioners, including nurses and allied health personnel. In addition, the model focused on the development of effective community outreach services, integrating healthcare into the overall framework of social services and increasing opportunities to reach the broadest segment of the population. Within this framework, primary care practitioners fulfilled the critical function of ensuring that patients receive the proper combination of health services and educational information to meet their individual needs.

During the course of the partnership Demeu staff had numerous opportunities to visit the US and observe the delivery of community-based primary care and social services by faith-based organizations, community clinics, and other settings. To initiate COPC in Kazakhstan, Demeu staff worked with the Pittsburgh partners to conduct a comprehensive community assessment that identified the most common reasons for home and clinical visits, the most prevalent diseases, and other factors contributing to the health status of the community. The findings of the assessment indicated that seniors and youth were among the most vulnerable members of the community and that their needs required a more complex approach than traditional medical care services provided.

Seminar on social work for Demeu staff and volunteers conducted by VSO volunteers

Critical to the development of Demeu in the early stages of the project was its collaboration with Voluntary Service Overseas (VSO), a British social work agency, which placed volunteer social workers at Demeu for several years. Ongoing collaboration with the Pittsburgh partners and VSO volunteers provided first-hand experience for Demeu partners in community assessment and developing targeted community interventions. Building on the existing relationship between VSO and Demeu, AIHA contracted with a VSO volunteer in Astana and also supported the placement of a VSO volunteer in Semey. These volunteers played significant roles at both sites in supporting and supplementing project activities including the provision of practical training in social work, hands-on clinical mentoring, and assistance in creating the center's community clubs.

Improvements in the quality of health services available in Demeu were the impetus for USAID and AIHA's agreement to replicate the model. The replication program started in April 2004 when representatives of family group practices (FGPs)—family medicine centers established under Kazakhstan's revised primary healthcare strategy—and health administration officials from the four selected replication sites (Uralsk, Semey, Kokshetau, and Shymkent) participated in a workshop in Astana where the Pittsburgh partners and faculty from the Columbia University School of Social Work conducted a series of community planning sessions. These sessions sought to achieve consensus on identifying the major problems and priority areas and then developing and implementing solutions. Following the workshop, the participants submitted their proposals for integrating health and social services at their sites. In the summer of 2004 AIHA regional staff visited representatives of the oblast health administrations and the FGP sites to assess levels of commitment and the available infrastructure and resources. One family group practice in Uralsk and

two family group practices in Semey were chosen as replication sites in the fall of 2004. AIHA decided not to pursue replication at the Kokshetau and Shymkent sites due to the lack of commitment and resources as well as recent leadership changes. Instead, a family group practice that demonstrated a serious commitment to introducing the new model at the West Kazakhstan Medical Academy in Aktobe was added as a replication site in late 2005.

The Kazakhstan Ministry of Health and the Ministry of Labor and Social Welfare agreed to work with AIHA and signed a joint memorandum of understanding to provide support for the replications and to assign social workers employed by the government to selected replication sites in Kazakhstan. Because social work, as defined by the International Federation of Social Workers, was not a recognized profession in Kazakhstan, the COPC project began to focus on developing and advancing the profession. The idea of medical social workers employed in health institutions was a novel approach being explored in response to a need to revise the roles and responsibilities of primary health service providers. To advance Demeu's training capacity for social work, AIHA engaged Columbia University School of Social Work to provide technical assistance to Demeu faculty in designing new social work curricula. The director of Demeu was able to secure government funding for the remodeling of a portion of the center to serve as the site of the social work training center. After completion of the renovations, AIHA furnished the center and purchased computers, audiovisual equipment, and training supplies, and the training center was opened in 2006.

KEY RESULTS

- **Community Participation**

  Advisory Boards

  Since its inception the Demeu Center has distinguished itself through its outreach activities and its community-oriented approaches to addressing problems affecting the health status of residents. A unique Community Advisory Board was established early in the partnership to engage a broad range of community stakeholders, to oversee activities of the center, and to provide support and guidance to the center's activities. The board identified various risk groups, such as orphans, low-income families, tuberculosis patients, substance abusers, diabetics, and mental health patients and assisted Demeu staff in developing targeted interventions for these groups. Its activities included a school newsletter on family medicine designed for parents and children, training sessions on sexual and reproductive health, substance abuse prevention for adolescents, meetings with senior citizens, and seminars for women leaders on gender issues, domestic violence, and protection of women's rights. In 2002 the original community board was replaced with two new boards—one focusing on the issues of seniors and the other on youth. The community board for seniors included representatives from the mayor's office, local businesses, NGOs, and active retirees (pensioners). It advanced the agenda of senior residents in the catchment area through collaboration with various government agencies to ensure adequate recognition and support for senior citizens. It also raised funds for its activities from local businesses. The board focused on youth coordinated youth programs at Demeu and actively collaborated with NGOs and government agencies that deal with youth issues.

  Both boards have made significant contributions to individuals and the community as a whole. Some examples include the organization of funerals for single pensioners and social support for

individuals undergoing treatment for substance abuse. The youth board helped to find money and clothes for several teenage substance abusers to travel to complete a treatment program at the National Substance Abuse Rehabilitation Center and helped Demeu to conduct educational trainings on drug abuse among teenagers for administrators at Astana schools.

Community Clubs/Support Groups

One of the key approaches to addressing both the medical and social needs of patients has been the creation of patient and community clubs. The enrollment and operational structure of patient clubs vary based on the type of services provided. Some clubs have established membership lists and regular hours while others have flexible schedules, combining group meetings and individual consultations. The organization of these clubs is continually evolving to meet the changing needs of the community. Many of the initiatives implemented are patient-driven. Through social interaction, self-help and volunteerism, the clubs address complex issues that effectively impact the health status of the community. The clubs provide opportunities for community residents to express and share their concerns and jointly find solutions. Residents also can receive psychological, social, or legal support both from the staff and their fellow residents. The clubs also provide comprehensive educational activities for their members as well as for wider audiences during their outreach visits. Club members often become volunteers at the center. Demeu has created a training program for volunteers which to date has trained 26 active volunteers.

One of the most active clubs is the club for seniors. Prior to the program, many senior citizens would engage in frequent medical visits that were often driven more by a lack of social interaction than by any real health concern; now members of the club for seniors all have acquired skills in measuring blood pressure and modern hypertension management methods. The club, which started as a small initiative group in Demeu, now has grown into a large, well-organized self-help group in which members of the community volunteer to take care of each other and provide support, whether through a home visit to an immobile patient or by organizing funerals for a community resident.

The replication sites in Semey, Uralsk, and Aktobe also have established a variety of community clubs targeted to socially vulnerable populations. As with Demeu, these clubs are run by social workers and community volunteers and provide social, psychological, and legal support to their members.

Selected Statistics for Demeu Family Medicine Center	
No. of individuals enrolled in patient clubs and support groups (Total)	
Club for seniors (cumulative)	350
Club Drug Abusers (cumulative)	25
Support Group for Cardiovascular Disease Patients, "Zhansaya" (cumulative)	100
Club for High Risk Youth, "Eureca" (cumulative)	32

- **Capacity Building**

Social Work Training

Four faculty members from the Columbia University School of Social Work developed a five-day program in basic social work skills that they introduced in a trainer-of-trainers workshop to

the Demeu faculty in 2004. In addition, the Demeu faculty traveled to Columbia for additional training and to observe social workers practicing in a variety of clinical settings. In 2006 the Demeu faculty trained social workers from the replication sites using the curriculum. The Columbia faculty evaluated the training and identified the strengths and areas needing improvement for each of the modules and presenters. The evaluation highlighted the local knowledge and experience of the faculty within the international social work framework and identified the need for broader clinical experience among the faculty. Columbia developed the course so that it could be taught as a five-day program or as fourteen individual modules in various combinations. Demeu faculty members now use modifications of the five-day course to provide regular training workshops for different audiences including social workers, health professionals, teachers, students, community leaders, and volunteers. Demeu has developed a pool of qualified instructors with diverse expertise in social work and extensive experience in working with vulnerable communities. Since 2005 Demeu has trained over 80 PHC providers from Kazakhstan and other Central Asian countries and has the capacity to train up to 150 social workers annually. Demeu nursing staff have also introduced the integration of social programs in primary healthcare, disease prevention, medical equipment use, and family medicine to nursing students of the Astana Medical College.

- **Replication Sites**

To carry out replication within Kazakhstan, AIHA and USAID/CAR agreed to rely on assistance from Demeu as a mentoring partner. This was supported with the work of Voluntary Service Overseas, who under contract with AIHA placed volunteers at Semey and at Demeu to work with the staff of the replication sites in completing community assessments, creating report forms, organizing community clubs, and training staff and volunteers.

Semey

The city of Semey has 18 family practice centers, two of which became AIHA partners in the COPC replication program in early 2004. Both FGP No. 9 and No. 11 serve catchment areas with just over 20,000 residents. Forty-five medical and nursing practitioners and four volunteers representing the Semey replication sites were trained in social work courses under the COPC program. Both family group practices established a profile database for vulnerable populations in their catchment area. Once the databases were completed and the needs were identified, each FGP established several community clubs (listed in the table below). The clubs meet weekly to organize classes on disease management and prevention and promotion of a healthy lifestyle. Additionally they have established social and psychological support groups.

Social adaptation by disabled children is one of the priority activities at the Semey replication site. With the introduction of the COPC project, children have access to better psychological, medical, and social care both at home and at the family group practices. Disabled children, who in the past would not leave their homes or beds, are now engaged in clubs where they have the opportunity to communicate with each other, use computers and the Internet, and participate in musical performances at city events. Social workers assigned by the department of social work also visit disabled children at home to provide counseling and social interaction. Social workers and trained staff and volunteers from the Semey replication sites also offer psychological, legal, and social counseling to socially vulnerable groups such as teenagers, released convicts, and single mothers.

Based on the assessment conducted by Semey FGP No. 11, elderly people are among the most frequent clients of ambulance services and PHC providers. With the introduction of the senior club, patient visits among a group of 25 seniors who were interviewed fell to 1.2 per person in the first quarter of 2006 compared to 6.3 in the first quarter of 2005. Ambulance calls among the same group were reduced three-fold during the same period.

Community outreach to schools included workshops on smoking, alcohol abuse, HIV/AIDS, and STIs for 800 students. University student volunteers developed the content based on the results of surveys which were conducted in the schools and then conducted the workshops. The centers also have volunteer lawyers, psychologists, librarians, and English-language teachers now providing services to the clubs.

Selected Statistics for Semey Family Group Practice	
FGP No. 9	
No. of individuals enrolled in patient clubs and support groups (Total)	
Club for seniors, "Second Youth" (cumulative)	**84**
Club for disabled children, Victoria' (cumulative)	**34**
Young Mothers Club (current members)	**37**
Parents Support Club (cumulative)	**38**
Hypertension School (cumulative)	**24**
FGP No. 11	
No. of individuals enrolled in patient clubs and support groups (Total)	
Young Mothers Club(cumulative)	**100**
Children's Club, Joy(cumulative)	**75**
Club for seniors, Golden Age(cumulative)	**135**
Club for adolescents(cumulative)	**125**
Club for mothers with disabled children (cumulative)	**20**

Uralsk

The replication site in Uralsk at FGP No. 21 serves a catchment area of some 12,000 residents. The site initiated its community-oriented programs in the fall of 2005. The community served by the family practice is made up of middle- to low-income families, including 1,500 seniors and 3,000 children. Following the Demeu model experience, the Uralsk FGP conducted a comprehensive assessment of the medical needs and social status of its residents. The results of the assessment demonstrated that cardiovascular disease and asthma were the top health issues. This laid the foundation for the development of several new clubs (listed in the table below). All clubs are successfully implementing their programs and expanding coverage to new residents. Initial results from the club for overweight patients demonstrated a significant (15-23 percent) weight loss by its 27 members over a period of six months. The center actively collaborates with various NGOs, including the Diabetes Society and the Kazakhstan Association of Family Doctors. In March 2006 the Uralsk family group practice initiated a screening program for disabled children in the community to identify their psychological and physical development needs. Parents of these children are now regularly informed of rehabilitation approaches to help with social situations. In addition, several Uralsk representatives have completed a course in evidence-based medicine at the Almaty Postgraduate Institute. Since then, the participants have

conducted a number of outreach workshops on new evidence-based approaches to the treatment and management of chronic diseases such as hypertension and asthma.

Selected Statistics for Uralsk Family Group Practice	
Indicators	
FGP No. 21	
No. of individuals enrolled in patient clubs and support groups (Total)	**Total**
Club to Overcome Obesity(cumulative)	**39**
Musculoskeletal system disease prevention	**34**
Asthma/COLD Patient School(cumulative)	**43**
Seniors Club (cumulative)	**61**
School for Hypertension Patients(cumulative)	**48**
Club for disabled children	**26**

Aktobe

The newest replication site at the West Kazakhstan Medical Academy family clinic initiated its program in late 2006. AIHA provided for trainings for the staff of Aktobe in developing the model, including the assessment process and the basics of social work. Because of the late start of the program, the community programs in Aktobe have not been fully introduced and no data on specific outcomes was available when AIHA's program ended.

- **Sustainability**

At the end of its program, AIHA left behind a cadre of trained social workers and socially-oriented PHC providers as well as a set of well-equipped facilities. The directors of the project sites and the community leaders who took ownership in the program will continue to support future programming using available local resources.

The community focus that occurred at Demeu and other replication sites has changed the attitudes of health personnel who are now more actively engaged in promoting the mental and physical health of their patients. Consequently, community mobilization efforts have resulted in an emergence of new leaders who organize and sustain community initiatives, which are widely supported by local volunteers. Activities are varied and include new initiatives such as home visits by volunteers and provision of free legal consultations.

Key to the success of Demeu and the other replication sites has been the fact that the newly adopted interventions are based on the specific needs of the communities. The community members become involved to address not only their own individual problems, but also the problems affecting their community.

It is also worth noting that the community mobilization approach to addressing social and medical issues, particularly chronic diseases, has resulted in decreased utilization of medical services among the populations served by the replication sites. A significant attitude change from widespread dependence on clinicians to active management and improvement of personal lifestyles has been observed in patients, and significant decreases in ambulance calls, visits to specialists, and hospitalization rates in the project catchment areas all indicate the effectiveness of the community-oriented primary care model in Kazakhstan replication sites.

CHALLENGES AND LESSONS LEARNED

The Status of Primary Care: The main challenge that hampers the development of community-based programs in primary care is the low status of primary care among the medical community in the modern Kazakhstan healthcare system. Despite continuing emphasis on primary care in national health reforms, its quality remains below average for a number of reasons, including insufficient funding and outdated training. The country's reform efforts to improve primary care are not thoroughly supported either financially or politically, particularly at the regional level. Generally the primary care physician's job remains unattractive in comparison to hospital-based work.

Systemic Obstacles for Social Workers: The traditional job of social workers in Kazakhstan, typically employed by the Department of Social Protection, was limited to processing pensions paperwork with occasional home visits to clients. Limited understanding of the roles for social workers in medicine led to initial resistance from the medical community. However, the opportunity to observe social work practice in the US created an understanding of the diverse role that social work plays in heathcare and in community health. Defining a new role for social work in Kazakhstan has not been easy. Using the US experience as a model has required adjusting the model to account for the local social and healthcare environment. The fact that the Kazakhstan community-based programs were designed to be tailored to specific local needs has also required interventions and approaches that have been slightly different at every site. Given the lack of social work specialists and the limited number of existing training programs, the first implementers of the program had to learn through their own experience how to work with the community, interview and counsel patients, and develop community outreach interventions. Salaries for social workers at the COPC centers still are not always available in spite of the agreement signed by Ministers of Health and Labor and Social Welfare. Direct government funding cannot be used to cover the employment of social workers by the family group practice centers. This has meant that the centers working with the local agencies had to find other ways to hire them. In Semey, the City Center for Rehabilitation of Disabled Children arranged to have two government social workers placed at the AIHA replication sites. However, the dual assignment presented potential conflicts and concerns about accountability. This arrangement provided only a temporary solution, and they are still seeking a permanent solution.

Financial Sustainability: The future of the Demeu training center remains uncertain. While the demand for social work courses through the Demeu training center is very high and the instructors of the center continue to volunteer to offer trainings, the status of the center as a national social work training facility has yet to be recognized by the MOH. In order to ensure continuous funding from government and private sources, the Demeu training programs need to be certified by the appropriate government agencies. This would allow the center to officially enroll trainees and get reimbursed for their services, a critical component for the Demeu center's sustainability.

Leadership Changes: Changes in leadership in Uralsk, including changes at the mayor's office and at the regional health and social protection departments have affected the progress of the program. Shortly after key decision makers were introduced to the COPC program and expressed their support, they were replaced or reassigned. This required the COPC program director to start over in building support among new community leaders. Consequently, the Uralsk authorities have not been able to assign social workers from the department of social protection or fund them directly through the family practice. Still, the Uralsk family practice has managed to increasingly use volunteer students studying to be social workers.

Helping Lay the Foundation for a New Medical-Social Model of Primary Care in Kazakhstan

When Kazakhstan's president Nursultan Nazarbayev presented his state of the union address in March 2006, his comments about the importance of building a more socially oriented civilization struck a cord with Astana physician Roza Abzalova. As director of Demeu Family Medicine Center in the Kazakh capital of Astana, Abzalova has been one of the Central Asian nation's pioneers in that regard, helping design and implement an integrated, comprehensive model of delivering community-oriented primary care and social services. Her position has also showed her firsthand how effective the model is as a catalyst for positive change.

Since Demeu opened its doors in November 2000, it has been providing a broad range of clinical care and social support services, including extensive education and outreach programs tailored to the needs of vulnerable segments of the population such as young people, disabled individuals, and the elderly. The center was established through an AIHA partnership linking the Astana City Health Administration with Mercy Health System in Pittsburgh, Pennsylvania.

"What I learned through this partnership has had a powerful impact on me," Abzalova acknowledges, recounting exchanges to Pittsburgh where she was introduced to new approaches to patient care and support at the Sto-Rox Health Center, the Women's Center and Shelter, and various other community-based organizations. "I saw how healthcare providers and other groups worked with the homeless, with victims of domestic violence, and with people living with HIV/AIDS. I attended conferences and training seminars on drug addiction, women's health, and social work. And, I had many opportunities to share information and learn from other's experiences," she explains.

According to Abzalova, the medical-social model used at Demeu is fundamentally different from the fragmented, prescriptive care available at most other healthcare institutions in Kazakhstan. At Demeu, members of the community play a key role in determining what services are most needed and how they are best distributed to the individuals who need them. "This inclusive, multidisciplinary approach is just great because it looks at health in broader terms. I've learned to explore more than just the physical symptoms a patient presents. Now my staff and ask questions about a patient's social situation, economic status, and living conditions," she says, noting that understanding the person as a whole is the key to providing comprehensive, high-quality care.

"I was amazed to see the changes that resulted from this new approach, not only among healthcare workers, but also among the community at large," Abzalova asserts, saying, "Clinicians have come to realize that a positive attitude and support go a long way toward helping patients recover. For their part, patients have come to recognize that this holistic combination of medical and social care has the power to improve their quality of life."

The Kazakh government has taken note of the many successful programs implemented by Abzalova and her staff at Demeu, too. For almost two years, the community-oriented primary care model used there has been replicated at other sites throughout the country. Working with AIHA, USAID, and

experts from Columbia University School of Social Work, Demeu staff have established a Social Work Training Center that uses the clinic as a training site.

"Together, we are working to change the profession of social work in Kazakhstan," Abzalova says, explaining, "Historically social work has not been a prestigious profession under the Soviet system. Most social workers currently have only a high school education and perform tasks such as delivering pensions to housebound individuals, dropping off medicine, and performing other similar tasks." When she and her colleagues learned about the integral role social workers play in the provision of comprehensive care in the United States and other parts of the world, however, Abzalova was determined to help usher in system-wide change, starting with Demeu.

"Just like medicine, social work is a science with its own code of ethics and system of values. The more I learned about it, the more I realized that any person working in the humanities whether a physician, a teacher, or a clergyman is, in fact, a social worker because all these professionals seek to improve quality of life," Abzalova points out.

Once social support services were introduced at Demeu and word got out, demand skyrocketed. "We've approached our social support programs with a lot of creativity and an eye toward expanding the boundaries of our previous concept of social work," Abzalova explains, noting that socio-economic factors play a leading role in a person's health status. "Understanding this connection is critical and it is the people who benefit from these new initiatives. The programs are a safety net for people who usually slip through the cracks—elderly, physically or mentally disabled, drug users, children of alcoholic or abusive parents, low-income families—and they contribute greatly to building a civil society."

Although she is quick to acknowledge that there have been many successes at Demeu thanks to the USAID-funded partnership, she says that sharing what she has learned is what provides her with the greatest level of satisfaction these days. "By using Demeu as an example, we have demonstrated that our community-oriented model is one of the most effective methods of providing comprehensive primary care services. Because of the experience my staff and I have gained, we now teach chief physicians from all over the country. Even though we are not paid to do this, we consider it our duty. No one else in Kazakhstan possesses the knowledge we have and our goal is to share it as broadly as possible," she says, concluding, "I feel certain the project we have launched will not stop here."

2. WOMEN'S WELLNESS CENTERS

"The women's wellness concept is unique among healthcare models used at other facilities in Almaty. The staff have a benevolent, friendly attitude toward their patients and go out of their way to provide us with current information that can help us live healthier lives." —*Akmaral Kalmuratova, a patient at the Almaty WWC in Kazakhstan who sought care there after she experienced difficulties during pregnancy. She attended prenatal classes and later gave birth to a healthy daughter and made these comments at the opening of a satellite WWC in May 2003.*

BACKGROUND

The post-Soviet years in Eurasia saw the inadequate and fragmented healthcare services that had existed for women in the region eroded further, leaving considerable gaps in coverage. Services

addressing women's health problems outside of their reproductive needs (especially childbearing) had been underdeveloped, non-existent, or inaccessible within the public healthcare system. In Central Asia, these problems were exacerbated by a number of additional factors, including the lack of awareness among both caregivers and patients about critical topics like nutrition, breastfeeding, and self-care during pregnancy; limited access to contraception and family planning counseling as an integral part of reproductive health services; and lack of adequate screening services and preventive medical services for female diseases such as breast and cervical cancers.

PROGRAM STRATEGY

In an effort to provide accessible, comprehensive healthcare services to women throughout their lives, AIHA and its partners developed a model for and a network of Women's Wellness Centers (WWCs) in more than 30 communities throughout Eurasia. Built on existing partnership programs, the WWCs integrated and streamlined provision of services, even as they expanded services and accessibility to women. The Women's Wellness Center concept resulted from AIHA's initial involvement in hospital-based partnerships. These innovative centers were designed to offer a client-centered approach to meeting the primary care needs of women—from adolescence to post-menopause—through a combination of health promotion, education, early diagnosis, treatment, and follow-up care. The WWCs were equipped with examination tables, lamps, sterilizers, microscopes, blood pressure devices, doppler ultrasound monitors, colposcopes, and laboratory supplies. In addition, the centers received televisions, VCRs, and slide projectors for use in educational activities, along with a wide variety of printed materials pertaining to women's and children's health issues, and anatomical models used to help patients understand their bodies and the changes that can occur as a result of pregnancy, aging, or disease.

Specific objectives of AIHA's women's wellness program were:

- Increased capacity to deliver comprehensive, outpatient health services to women of all ages;
- Increased utilization of health promotion and prevention services within the WWC;
- Maintenance of a high level of patient satisfaction with the WWC and its services;
- Increased implementation of women's health clinical practice guidelines;
- Increased use of contraceptive methods among women of reproductive age who wish to avoid pregnancy (excluding women who have had hysterectomies); and
- Improved sustainability of the WWC model.

In Central Asia a total of four Women's Wellness Centers were opened with AIHA funding. In Almaty, Kazakhstan, the first of the four centers was opened in 1996 through the Almaty/Tucson partnership. This was followed in 1997 with a center opening in Tashkent at the Second Tashkent Medical Institute (TashMI II) through the Tashkent/Chicago partnership. A replication of the Tashkent Center opened in 2000 with the support of the Tashkent/Chicago partnership and was staffed with physicians from the original center. The Almaty center also opened a second location in Almay in 2003 as part of AIHA's women's health initiative. The replication site is staffed by specialists from the original WWC in Almaty who received training through the Tucson partnership. AIHA facilitated an arrangement with Carelift International to provide donated equipment and supplies to the replication site.

The initial Almaty WWC was opened under the partnership between the Kazakh Research Institute of Pediatrics, the Almaty City Health Administration, the Almaty City Perinatal Center, and a

coalition of healthcare organizations from Tucson, Arizona. Originally based at the Almaty Perinatal Center, the WWC moved to a new location in 1999, where it was able to serve a greater number of Almaty residents as part of one of the city's main reproductive health centers. The Center continues to operate with a staff of experienced clinicians who had the opportunity to observe the delivery of patient-centered care in the US. Educational programs have been an important part of the Almaty WWC's core activities; the center offers educational programs for its patients, including lectures on family planning, cervical and breast cancer prevention, and infertility. The second WWC in Almaty provides similar clinical and education services for a catchment area of 4,700 residents.

In 1997 the Tashkent/Chicago partners established a model Women's Wellness Center at the Second Tashkent State Medical Institute (TashMI II) clinic. Improving the health status of women through improved service delivery was a key component of the partnership between the University of Illinois and TashMI II. Among the comprehensive range of services provided at the center, the most utilized services were ultrasounds, pregnancy tests and family planning services, clinical breast examinations, and colposcopy. The successful operation of this center during its first three years led to its replication in 2000. Located in one of the busiest districts in the heart of Tashkent, the second WWC is an ambulatory diagnostic and treatment facility that also strives to educate women of all ages on a variety of health issues. From the start, the second WWC was established as an independent, free-standing entity; not part of a polyclinic or the medical academy. The Center is a private, fee-for-service clinic, but the fees are reasonable for most of the local population, and they provide free services to members of vulnerable groups.

KEY RESULTS

Tashkent WWC physician counseling a patient

Each of the Women's Wellness Centers provides comprehensive care to women, including obstetrical and gynecological care, cancer and STI screenings, family planning services, menopause and aging-related counseling, and primary care mental health services. A 2001 independent assessment of the WWCs in CEE and the NIS (including the centers in Tashkent and Almaty) found that the WWCs "have distinguished themselves" in four main ways: 1) being "patient-centered" and considerate of patient needs and offering patient-friendly environments; 2) the quality of care delivered and the quality and professionalism of staffs; 3) offering a comprehensive range of services to meet the needs of women of all ages and working to ensure continuity of patient care; and 4) focusing on prevention, early detection, education, and counseling, and providing services generally not available elsewhere. (The evaluation report by the University of Illinois at Chicago can be found on the AIHA Web site at www.aiha.com.)

- **Increased Knowledge and Skills of Healthcare Professionals**

  The partnerships introduced physicians, nurses, and other professionals working in the WWCs to a broad range of new knowledge and skills to enable them to provide quality, evidence-based care and services. In order to promote the practice of evidence-based medicine within the WWCs, AIHA compiled and distributed to all WWCs a *Clinical Practice Reference Manual.* AIHA

also supplemented partnership activities with training and information sharing for the network of WWCs through a series of workshops for center directors and staff. The workshops attended by CAR partners included one on quality assurance (Kiev, Ukraine, December 2001) and one on clinical practice guidelines with a focus on HIV/AIDS (Odessa, Ukraine, September 2003). A meeting for all WWC directors was also held in Washington, DC, in April 2001. Other healthcare providers in Central Asia also benefited through the conferences organized by and for the Women's Wellness Centers. The TashMI II center staff spent 50 person-days delivering family planning courses in five regions of Uzbekistan. Nurses from the WWCs in Almaty and Tashkent participated in the Central Asian Breast Health Education Project jointly funded by USAID and the Susan G. Komen Breast Cancer Foundation to develop nurses' skills and knowledge in breast health and cancer awareness in Central Asia. The nurses who attended the training not only learned to be breast health educators but through the program were able to obtain funds and train other nurses in their communities to teach breast health practices to their patients.

The WWC in Tashkent provides ongoing trainings for PHC providers in breast cancer prevention and reproductive health issues. The center has trained 146 PHC nurses and physicians, and 12 cytologists and 12 ob/gyns from different regions of Uzbekistan have been trained in cervical cancer prevention. Some 30 ob/gyns from healthcare institutions in Tajikistan and Uzbekistan participated in a training course in 2003 at TashMI II to learn evidence-based protocols for recognizing pregnancy complications and managing common delivery room emergencies. Topics included first trimester complications, vaginal bleeding in late pregnancy, assisted vaginal delivery procedures, and maternal and neonatal resuscitation techniques

Inspired by AIHA's programs to develop the role of nursing, all of the Almaty WWC nurses have completed bachelor's degree nursing programs at AIHA partner institutions in Almaty and Central Asia.

- **New and Comprehensive Services for Women**

WWCs filled a void by providing not only diagnostic screening and clinical services for both acute and chronic conditions, but also much-needed patient education programs. For the first time women in these countries can come to a single place to seek treatment and advice on health-related matters ranging from cancer and sexually transmitted diseases to family planning, maternal care, and menopause. The Almaty centers offer classes for future mothers under its Lamaze program. Their prenatal program, consisting of eight classes, covers both birth preparation and postnatal care. A total of 1,563 classes were held for 404 pregnant women since the opening of the program in 1996. The Lamaze classes were so successful that they have since been replicated at all the women's consultation centers in Almaty; the staff of the Almaty WWC has provided regular Lamaze training-of-trainers workshops for the directors and senior staff of the women's consultation centers. The Almaty centers provide advanced care to some 4,000 women monthly, over 140,000 patient visits since 2000, demonstrating its popularity with the women in Almaty. These centers also place emphasis on outreach to teenagers, focusing attention on STI prevention. A pediatric gynecologist provides free consultations for teenage girls. The WWC's focus on cervical and breast cancer prophylaxis has increased the early detection of precancerous conditions, which has resulted in more successful treatments at specialized oncology institutions. Each WWC clinician is qualified to perform clinical evaluation

for breast cancer, and every newly registered patient is screened. Also, WWC staff routinely educate their patients about breast health issues and teach them breast self-examination.

From its opening in 1997 through March 2002 (the latest date for which data is available), the center at TashMI II has provided a total of 57,000 patient visits. Of these, 9,700 were initial visits of patients coming from urban as well as rural areas. Many of the patients who came to the center did so because it offered services to the residents of districts that adjoined that of TashMI II and because the center performed pre-hospital examinations for the patients of TashMI II's clinic who are scheduled to be hospitalized. This provided an opportunity for the center to expand its service area and gave more women an opportunity to receive the more comprehensive and improved diagnostic services offered by the center—including family planning, colposcopy, and ultrasound. Because of this expanded patient base the center staff also were able to have a broader reach in their health promotion and prevention activities, which are directed at the needs of adolescents, the elderly, and other underserved women.

The second Tashkent Center currently serves an average of 80 to 90 patients daily (25,000 annually) and provides a wide range of women's health services including both preventive care and diagnosis and treatment programs. A strong laboratory facility allows the Center to offer a range of diagnostic tests, particularly for STIs.

- **Health Promotion, Disease Prevention, and Community Outreach**

Health education on-site and in their local communities has played an important part in the activities of many of AIHA's women's health programs. Thousands of women in the communities served by the WWCs established in Almaty and Tashkent have been empowered through programs that teach the value of good health and the importance of taking charge of their own well-being by adopting healthier lifestyles, performing monthly breast self-examinations, and avoiding situations that put them at greater risk of developing health problems. The Tashkent WWCs provides free educational programs for the patients using videos, slides, and other modern presentation techniques. The Tashkent WWCs provides free educational programs for the patients using videos, slides, and other modern presentation techniques. The subjects of the classes include adolescent health, family planning, contraception, STIs, planned labor, and issues linked to menopause. Every patient who visits the clinic is given a schedule of classes as well as patient education and health promotion materials. In both Almaty and Tashkent, printed materials are prominently displayed throughout the centers.

- **Quality Improvement**

The WWCs also instituted new ways of organizing outpatient services, new standards for women's healthcare, and new roles for nurses. One of the most fundamental techniques the Almaty clinicians learned from their experience at US partner sites was a respectful, patient-friendly approach in providing care for all women regardless of their status or age. This approach was quickly adopted by Almaty partners and still remains one of the distinctive features of the WWC. In both the Almaty and Tashkent centers, questionnaires were developed and distributed to patients that were used to review patient satisfaction to make sure the services and programs meet the needs of their patients. As a result of the feedback received in these

questionnaires, the WWCs introduced several innovative practices. At the second Tashkent Center, the WWC adapted its standardized pricing schedule for procedures, and prices for each procedure are now posted at the waiting area. In Almaty, routine scheduling of appointments has become common practice. The center in Tashkent established and maintains a policy of confidentiality regarding lab test results.

- **Sustainability and Replication**

  Each WWC established through AIHA's program was designed to create sustainable, replicable health facilities. The two original centers in Almaty and in Tashkent both were established through partnerships that incorporated the WWC model into their partnership objectives and plans and provided the resources and training they needed to become successful. Both replication sites were assisted through leadership support and staff training from the partnership-established centers, which helped to implement the policies and practices necessary to establish WWCs reflective of the AIHA model. While the second Tashkent WWC was established as a private pay clinic, the fees are reasonable and services are free to vulnerable groups. The laboratory established at the center not only provides a needed service but it has become a source of revenue for the center. This has allowed for greater financial flexibility in its operations and has laid a solid foundation for the center's future sustainability.

CHALLENGES AND LESSONS LEARNED

The WWCs faced some common challenges during their development and in trying to sustain themselves.

Health System Instability: Securing financial and other resources for renovations of the facility was typically the responsibility of local partners. However, in some cases the owner of these facilities, usually a city or oblast health administration or a larger healthcare institution, did not continue to maintain them or they took back the space to use it for other purposes. In Almaty, for example, the replication WWC site was closed by the city health administration so they could use the facility for another purpose.

Refocusing Toward Patient-centered Care: Changing providers' attitudes about how they provide services—for example, by following appointment schedules, ensuring patient privacy, and paying attention to patient satisfaction—was a challenge, but it did occur over time. The attitudes of the providers were very much influenced by their exposure to women's health services in the United States.

Quality of Care is Key: Securing a patient base without an assigned patient population took some time to develop. At the second center in Tashkent various marketing and advertising strategies were used, including health promotion classes in local businesses and advertising brochures. In the long run the best method for securing and maintaining patients was the provision of quality service in a safe clean environment.

Sensitivity to Cultural Context: Addressing difficult societal issues posed a significant challenge in the traditionally Muslim countries of Kazakhstan and Uzbekistan. Taboos preventing public discussion of women's health issues remain strong in Uzbekistan. For example, in presenting a story

on the center in Tashkent, the local TV channel refused to show the training mannequin of a female body or to use the word cervix in the story, citing it as indecent for broadcasting.

Importance of Prevention: The importance of screening programs is still underestimated among the medical community and the health ministries of CAR. The staffs of the WWCs in Almaty and Tashkent have provided education and training to build awareness and diagnostic skills among healthcare providers, especially at the primary care level, to focus on early detection of breast and cervical cancers. The staff members of the replication center in Tashkent have made the campaign for a cervical cancer screening program in Uzbekistan a core focus of the center's activity and mission. However, much more remains to be done.

Partner Profile — *Dilmurod Yusupov*

Providing Comprehensive Primary Care and Prevention Services to Women in Uzbekistan

Under the Soviet paradigm, women's health services focused primarily on reproductive care. In Uzbekistan and other countries in the region, the legacy of this practice means that many women still have access to only to fragmented care that doesn't always meet their changing needs.

In Tashkent, however, Dilmurod Yusupov and his staff at the Women's Wellness Center have been providing high-quality clinical care and patient education and support services since April 2000. "Many people doubted that this client-centered model of women's healthcare could be viable here in Uzbekistan, but the fact is we have survived more than six years already—during difficult times of economic transition in the country, too—and we continue to grow," the 49-year-old ob/gyn says, noting that the number of patients at the center increases nearly every day.

Established as a satellite center to the first Women's Wellness Center opened by AIHA's Tashkent/Chicago partnership in 1997, Yusupov's facility was created to provide care to women in Tashkent's Yunosabad District. "Although we cannot afford to advertise as some fee-for-service clinics do, women from all over the city and even from outlying communities come to our center even if it means bypassing closer institutions. Our many grateful patients are our best advertisements; they tell friends and family and neighbors about our work," he maintains.

Yusupov has worked hard to earn his patients' loyalty. He credits the advanced training and many opportunities for expanding his knowledge and skills afforded to him through AIHA's USAID-funded partnership program with much of his professional development. "I can spend a full three days describing how all the training I received has helped me in my day-to-day work," he says, citing courses in various aspects of clinical care, pathology, patient education, healthcare management, financing, counseling and patient education, and expanding the role of nurses in patient care. Above all, he says the partnership helped change people's mentality and attitude toward the medical profession.

"We began paying much more attention to patient rights, placing a stronger focus on counseling, informed consent, and confidentiality. We also began implementing modern, evidence-based practices thanks to improved access to clinical resources, the Internet, and colleagues in the United States and other countries around the world," Yusupov recalls.

Disease prevention and health promotion is another aspect of care that was bolstered by the partnership, according to Yusupov. "We introduced the Pap test, which—even though it is as old as the hills—was new for our center and for Uzbekistan in general. We are cooperating with the Ministry of Health and several international organizations on a pilot program to introduce the uniform international classification system for laboratory testing. Also, we pay much greater attention to educating our patients about healthy lifestyles and the importance of preserving their own health," he notes.

Stressing his belief that partnerships are a highly effective means of transferring knowledge, skills, and capacity, Yusupov concludes, "In the early stages, AIHA provided us with much-needed financial and technical support. While this was critical to our success, now we are looking to partner for other reasons—to find new opportunities for training and to share information and experiences."

C. Access to Health Information and Communications

"Our facility serves a population of 83,000, so it is extremely important for us to be able to make proper use of the information resources AIHA has provided. That way we can give high-quality advice and methodological guidance to the city's healthcare workers, thereby improving the quality of the services they offer patients" *—Maral Arjanova, information coordinator of the Ashgabat/North Dakota partnership and a family doctor at the Health House No. 1.*

BACKGROUND

In the early 1990s, health professionals in the countries of Central Asia found themselves increasingly isolated from the global body of medical literature. The transition from centrally-planned to market-based economies wreaked havoc with finances for their primarily public-funded health systems. As a result, in addition to shortages of pharmaceuticals and medical supplies, access to the latest medical research became a scarce commodity as well. In the face of funding shortages, medical libraries were unable to maintain subscriptions to international medical journals and domestic medical publishing houses were forced to cut back the number of journals they published. Because of this isolation, many CAR health professionals, educators, and policymakers were not always aware of new advances in medicine, which led to oftentimes outdated and less effective clinical practice and healthcare policy.

At the same time as CAR health professionals were facing this crisis, the international medical community was witnessing the growth of a grassroots movement in support of "evidence-based practice" (EBP), which aims to ensure effective integration of research evidence with clinical practice. This growth was prompted in part by studies by the Institute of Medicine and others, which found that medical errors were far more prevalent in patient care in the US and Europe than many had assumed. The "errors" cited not only included misdiagnoses or incorrect treatment, but also the frequent use of less effective or ineffective therapies. In other words, physicians were too often *not* prescribing the treatments that were proven to be most effective in treating a particular disease. Many adherents to the discipline of EBP therefore began working from the premise that physicians need to balance their own knowledge and experience with the most current research evidence as well as patient preference when deciding on a course of treatment. EBP provides a methodology that helps clinicians find and interpret research that will better inform their decision-making.

A third developing trend in the 1990s was the rapid growth on an international scale of the Internet, and more specifically, of the World Wide Web. As local markets for Internet access developed around the world, it was becoming more affordable for institutions and individuals to get connected. Furthermore, by the mid-to-late 1990s, it was becoming increasingly apparent that the model of medical publishing was going to be transformed as more and more journals and other sources of research became available online. Thus, for health organizations in CAR, the Internet offered an opportunity to at least partially address their information access problems.

The convergence of these three trends—the breakdown in access to health information for CAR health professionals, the rise of evidence-based practice, and the rapid growth of the Internet—presented AIHA with a unique opportunity to help address the capacity-development needs of its

CAR partnerships. It was within these contexts that the Learning Resource Center project emerged and evolved over the past ten years.

PROGRAM STRATEGY

To address the dual challenges of helping its partners access health information and then to tie standards of practice to the latest research evidence, AIHA began complementing the activities of its ongoing partnerships (e.g., trip exchanges, conferences) by investing directly in the information infrastructure of the CAR partner institutions. Between 1996 and 2004, AIHA began to routinely purchase computers, modems, Internet connectivity, and a package of medical CD-ROMs and online databases for each of its new CAR partner organizations. The unifying concept behind these investments was the Learning Resource Center (LRC). The LRC model was designed to ensure that partners saw these investments not only as improvements in their infrastructure, but also as a focal point to encourage their staff to adopt quality improvement and evidence-based approaches to care, treatment, education, and policy.

Through the LRC project, AIHA incorporated a combination of strategies to begin to overcome barriers to accessing information. One of the distinguishing features of AIHA's approach is that the LRCs were designed to give health professionals access at the point of care and thereby improve the convenience of using information. Another element of the project involved active staff outreach and education. To accomplish this, AIHA promoted the development of a cadre of staff at partnership institutions to serve as "change agents" or "opinion leaders" at their institutions. These change agents, referred to as Information Coordinator, were charged with the task of getting their colleagues to begin using information and communication integrally in their day-to-day practice. The salaries of Information Coordinators and any other LRC staff were always supported entirely by the CAR partner institutions.

In establishing each LRC, AIHA's approach was grounded in the belief that partners must be prepared to commit their own resources to the project. This commitment was formalized through the signing of a project agreement that outlined the responsibilities of AIHA and the partner institution. In exchange for the above-mentioned resources, each institution was required to establish a separate, secure room for the center that must be open and accessible to all staff. The institution also had to designate an Information Coordinator to maintain this center and to devote a minimum of 15 hours per week to various project activities. Information Coordinators that were designated by the partnership institutions were typically medical librarians, physicians, or nurses. In addition to the Information Coordinator, after 2002 the institutions also began to assign an Evidence-based Practice (EBP) Specialist and an Information Technology (IT) Specialist who were responsible for managing these specialized components of the project.

The equipment and infrastructure investments were complemented with a series of training workshops, initially delivered to the Information Coordinators over the course of 2-3 years, but later delivered to three different staff at three separate workshops during the first year of the project. These workshops were designed to introduce a range of skills and themes that help LRC staff and their colleagues to develop a more sophisticated attitude toward information. These training workshops cover the following core set of skills:

- Basic and advanced Internet tools and applications
- Medical searching techniques, including use of MEDLINE and other databases

- Principles of evidence-based practice and critical appraisal of information
- Training and outreach (training-of-trainers, presentation skills)
- Strategic planning (how to build support for the LRC, budget management, and grant proposal writing)
- Presentation skills, marketing and promotion
- Web site development and design
- Basic database design, computer networking, and information systems planning

The workshops also served as a forum to provide an orientation for LRC staff relating to their roles and responsibilities and provide an opportunity for AIHA staff to meet individually with each participant to discuss issues and problems specific to their institution.

LRC coordinator demonstrating national health statistics database software designed by AIHA, Turkmenistan

Following the workshop, LRC staff undertook the tasks of setting up the LRC, getting better acquainted with the tools and resources available, and working with AIHA regional staff on establishing (or improving) their Internet connectivity. AIHA developed annual project workplans to help guide the development of the LRCs while at the same time providing the flexibility to allow the partner institutions to adapt the LRC model to meet their needs. Project workplans addressed the following key areas:

Staff Outreach and Training: One of the primary responsibilities of LRC Staff was to educate health professionals on the benefits of using the Internet. To accomplish this, they organized outreach activities such as lectures, presentations, and training sessions. Some met with physicians during or after their morning rounds to discuss problems the physicians encountered and what information might be useful to them. Many LRCs created information bulletins, brochures, reference guides, and other printed materials to make staff aware of new resources. LRC staff were also responsible for providing assistance to health professionals in searching for information and research materials.

Evidence-based Practice: After receiving formal instruction on EBP, including search methodologies and critical appraisal skills, LRC staff were responsible for providing training on these skills to other health professionals and working with them to help them integrate the latest evidence into clinical practice, education, and policy. LRC staff also periodically worked with groups of staff to review and appraise the literature on various topics identified as important to the institution, using a template developed by AIHA called a Practice Standard Review (PSR). The PSR was intended as a tool to demonstrate the value of EBP as well as to engage a wider cross-section of staff from the partner institution into the activities of the LRC.

Communications and Information Exchange: During training workshops, LRC staff learned about a variety of Internet communications tools—including e-mail, mailing lists, chat, audio conference, and application sharing—that enable conferencing and teleconsultation with other health professionals from around the world. LRCs were thus able to serve as communications centers for health professionals within their institutions—allowing staff to solicit input on difficult patient cases

and other problems, participate in on-line international medical conferences, post their own research findings, and communicate with professional colleagues via the Web.

Building Support and Sustainability for the LRCA: Throughout the program, Information Coordinators were faced with the task of thinking about how their institution will be able to continue to support the capabilities provided by the LRC after AIHA funding ends. The LRC model was intended to provide built-in sustainability by investing in the core equipment and information/communications infrastructure as well as developing staff skills so that the recurring costs of supplies, equipment maintenance, and Internet connectivity are all that is required for an institution to sustain the LRC on its own. During training workshops, LRC staff discussed various methods for building sources of support within the institution and ensuring that the LRC becomes an integral resource for health professionals. AIHA also provided LRC staff with training on LRC budget development, cost-recovery approaches, and grant proposal writing.

Web Site Development: One of the initial tasks of the LRC was to begin developing an identity for their institutions on the World Wide Web (for those institutions that do not already have a Web site). By creating a Web site, partner institutions were able to reach out to both local and global communities in order to market their institutional and staff capabilities and to share information (including research, conference reports, etc.).

Information Systems Planning and Database Development: Building on the IT infrastructure provided through the LRC, many LRC staff become engaged in thinking about the institution-wide flow of information. LRC staff learned that in addition to impacting patient care, information affects resource utilization and costs for the institution as a whole. For example, the introduction of computerized or electronic patient record systems and databases can help physicians, nurses, and administrators to access patient information, including a patient's previous medical history, more easily. This helps physicians and nurses to make more informed decisions about treatment. It also makes it easier for physicians, nurses, and administrators to evaluate aggregate data about patient treatments and costs. LRC staff received training on basic database development and information systems planning so that they learn how to develop applications that allow health professionals and administrators alike to organize and evaluate patient and financial information. They also learned some basic computer network management skills to help them expand the reach of LRC resources within the institution.

Reaching Out to Local Communities: After each of the CAR partners successfully established its LRC as a central hub for information access, training, and communications, many LRCs became involved in activities that extended outside of the boundaries of their institution—for example, by sharing health education materials and other resources with local NGOs, community groups, and other healthcare providers. Some LRCs also served as resource centers for patients in addition to their own staff. A majority of the most successful LRCs have been actively engaged in serving their local communities by providing resources to health professionals and supporting other institutions in their efforts to establish similar capabilities.

KEY RESULTS

Through the healthcare partnership program, AIHA has supported the establishment and maintenance of a total of 36 Learning Resource Centers (LRCs) in CAR between 1998 and 2006. Of

these 26 continue to be active and functioning at the end of 2006. Altogether, this group of LRCs provided support to a community of 34,519 health professionals.

AIHA measured the achievements of the LRCs according to a set of indicators linked to four key objectives, which themselves were tied to the overall project goal of promoting improved healthcare practices through increased access to, use of, and understanding of available health and medical information resources. These four objectives were:

1. To increase access to up-to-date health and medical information resources.
2. To promote the knowledge and application of evidence-based practice.
3. To sustain access to knowledge resources independent of AIHA funding.
4. To increase CAR partners' development and use of information and communication technology tools and applications.

- **Increased Access to Up-to-date Health and Medical Information Resources**

The LRCs increased access to information in a variety of ways. First, they provided training to health professionals to enable them to use computers and the Internet to find health and medical information on their own. Altogether, the 37 CAR LRCs trained a total of 6,514 health professionals while they were being funded by AIHA.

Second, the staff of the LRCs performed information searches on behalf of their colleagues who were either too busy or reluctant to use the LRC computers to obtain the latest research evidence on their own. CAR LRCs responded to an average of 425 information requests each month, or a total of 11,388 during the period of funding.

In terms of the user base, the LRCs collectively received an average of 1,363 visitors each month.

In addition to service statistics, AIHA tried to measure trends and changes based on surveys among the target user audience for the LRCs. With the first surveys conducted in 1997 (approximately one year after many of the LRCs had been set up), about 33 percent of surveyed CAR health professionals were using the Internet to access health and medical information. By the time of the last round of staff surveys conducted in 2002/2003, this had grown to 92 percent of all health professionals surveyed. Similarly, the amount of information CAR health professionals were obtaining through the Internet and the LRC rose from 15 percent in 1997 to 36 percent in 2003.

In addition to supporting the health information needs of their primary user audience, the staff of many LRCs reached out to a wider population, bringing up-to-date health information to outside health professionals. To cite one example, the LRC at the Kazakh State Medical Academy in Astana worked with physicians and nurses from the City Children's Hospital #2 and affiliated polyclinics to provide training on basic computer literacy, Internet searching, and retrieval of full-text articles from various databases. To support these activities more systematically, the hospital administration converted an existing classroom into a satellite LRC and provided computer equipment and resources for ongoing training and information dissemination.

- **Knowledge and Application of Evidence-based Practice**

In measuring the knowledge and application of evidence-based practice, AIHA tracked CAR partner usage of EBP resources as well as their ability to demonstrate an understanding of its principles. Aside from the Internet itself, two of the most significant resources that AIHA provided to the LRCs during the scope of the project were the Cochrane Library and the Ovid Full-Text Medical Library databases. The Cochrane Library includes the well-known Database of Systematic Reviews, which provides a periodically updated synthesis of the latest research on a wide range of clinical topics. The Ovid Full-Text Medical Library (provided to partners from 1996 through 2002) included a collection of over 30 full-text major medical journals as well as an easy-to-use MEDLINE interface. Together, these resources provided partners with access to a valuable set of peer-reviewed information resources. According to annual surveys of AIHA partner institutions conducted in 2002, 33 percent of LRC staff in CAR were using the Cochrane database and 53 percent utilized the Ovid database. Prior to the LRC project, the number of partners with access to these resources was negligible.

As part of efforts to promote evidence-based practice, AIHA in 2001 began requiring each LRC to produce something called a "Practice Standard Review" (PSR). The objective was to change the way individual health professionals think about their own practice and the evidence which may or may not support it. The activity was designed to help partners to critically evaluate the literature on a particular topic related to clinical practice, health and social policy, or educational methodologies. AIHA sought to create a simple step-by-step process that would guide partners through the process of posing an appropriate query, finding and reviewing the available evidence, and determining whether the evidence is consistent with existing practice.

Although all LRCs produced at least one PSR, these were not always prepared in a manner consistent with evidence-based practice. In making this evaluation, AIHA reviewed each PSR to determine whether (a) the literature selected by the partners demonstrates that they have done a critical quality assessment, (b) the partners showed an ability to tie the evidence to an existing practice, and (c) at least one individual outside the staff of the LRC was involved in conducting the review. By 2005, around 31 percent of all LRCs in CAR (up from 10 percent in 2002) were able to demonstrate their ability to apply evidence-based methodologies using the PSR template.

In addition to evaluating the PSRs, AIHA sought to enhance its qualitative assessment of its EBP activities by contracting with two researchers from the University of Wisconsin/Eau Claire in 2002. In order to measure the impact of the LRC project on the understanding, acceptance, and implementation of EBP among partner institutions, the researchers surveyed participants at two AIHA LRC dissemination conferences and conducted individual and group interviews with information coordinators. The evaluators also performed textual analysis of documents and training curricula developed by AIHA. The evaluators were satisfied with AIHA's efforts to provide material conditions (infrastructure and information resources) and to promote "how-to knowledge" among LRCs. However, they also concluded that to achieve fully rational practice of EBP at partnership institutions, the staff need to master the "principles knowledge" of evidence-based practice. The researchers suggest that this can be accomplished through: a) additional training on EBP fundamentals and critical appraisal skills, b) the development and dissemination of an EBP guide book to partnership institutions, and c) the designation of an additional staff as an "EBP point person." The last recommendation was addressed through a new division of LRC responsibilities

that AIHA began introducing in 2003. The Information Coordinator should now have a designated EBP Specialist and a Technical Specialist who are responsible for various aspects of the LRC project requirements. AIHA staff also compiled an EBP reference manual in 2003 that included a number of information resources to aid EBP specialists in the understanding and the implementation of evidence-based practice at their institutions.

- **Sustainability**

From the beginning of the project, all partner institutions covered the costs of staffing the LRCs as well as furniture, office space, and most supplies. During the period of funding for the partnerships, AIHA provided ongoing support in the form of monthly Internet payments, office supplies (mostly just paper and printer toner), and equipment repairs. AIHA tried to support monthly Internet connections at a cost that would be affordable to CAR partners after funding ended. By the end of 2006, eight of the ten graduated LRCs (LRCs for which AIHA was no longer paying for Internet connectivity) were covering Internet expenses on their own. It is anticipated that all or most of the 16 LRCs for which AIHA was continuing to cover Internet expenses would be able to continue paying for connectivity after AIHA funding ended. With 26 of 36 total CAR LRCs still functioning at the end of 2006 even after AIHA funding had ended a year or more earlier, the project had an overall sustainability success rate of 72 percent.

Another common approach to attaining sustainability for LRCs in CAR was seeking grants from local and international foundations and other organizations. In part as a result of the grant proposal writing training modules provided by AIHA during various LRC workshops, 12 of 26 (46 percent) of partnership institutions in CAR applied for grants that would *specifically* support continued access to knowledge resources and other LRC functions, and 9 of these 12 (75 percent) of all CAR LRCs have had at least one successful grant proposal.

- **Development of ICT Tools and Applications**

The LRCs often have the effect of stimulating or supporting the adoption of other information and communication technologies that can help to improve the quality and efficiency of healthcare delivery. This includes the development of local area networks (LANs), databases, and the use of e-mail and the Internet to support telemedicine, including consultations related to the diagnosis and treatment of individual patients. Partner institutions have also been encouraged to develop an institutional Web page which, in addition to improving visibility and access for patients, can serve to promote the overall reputation and prestige of the institution. As a result of LRC efforts among CAR partnership institutions, 15 of 26 (58 percent) developed databases to manage administrative and/or healthcare information; 18 (69 percent) set up local area networks that enable expanded access to knowledge resources; 16 (62 percent) used their LRCs for telemedicine; and 16 (62 percent) established institutional Web sites.

KEY EVENTS

Through the LRC project, AIHA organized an intensive series of training workshops, study tours, and conferences. A brief description of each of these events is included below.

4th NIS Information Coordinator Workshop – St. Petersburg, Russia, July 19-24, 1999. This workshop for the original group of NIS partnership information coordinators focused on issues related to the sustainability of the Learning Resource Centers, including methods of cost recovery, grant proposal writing and information systems development. Additional training on evidence-based practice, database design and information management techniques was also provided.

Central Asia Regional Information Coordinator Workshop – Almaty, Kazakhstan, October 6-8, 1999. During the first workshop for information coordinators from AIHA's new partnerships in Central Asia, instructors provided training on (a) basic computer skills (Windows and MSOffice applications--including PowerPoint, Excel and Word), (b) using Cyrillic on computers, and (c) basic Internet skills (e-mail, Web, etc.). They also received an initial orientation into the partnreship information coordinator's roles and responsibilities in maintaining the partnership Learning Resource Center.

1st Information Coordinator Training Workshop – Almaty, Kazakhstan, October 11-16, 1999. This first regionwide workshop for new partnership information coordinators included sessions on (a) Medline and Internet Information Retrieval, (b) Web Page Design and Development, (c) Internet Tools, and (c) Computer Training Methodologies. In addition, the first year LRC project workplan was introduced.

2nd Information Coordinator Training Workshop – Washington, DC, United States, November 8-13, 1999. During the week prior to AIHA's annual conference, old and new partnership information coordinators gathered for several workshop activities. New information coordinators received additional training on Web page design as they completed initial design of Web pages for their partner institutions. They also attended a two-day course on evidence-based practice and went on a tour of the National Library of Medicine in Bethesda, Maryland. After participating in the American Medical Informatics Association conference, a delegation of information coordinators from AIHA's sustainability partnerships met with the new info coordinators to offer their advice and relay their experiences.

3rd Information Coordinator Training Workshop – Almaty, Kazakhstan, June 4-10, 2000. Training modules for this workshop included evidence-based practice, information quality assessment and grant proposal writing.

Medical Informatics Study Tour for Info Coordinators – Palo-Alto, CA and Portland, OR, United States, March 26-April 5, 2001. Information coordinators participated in a series of site visits to US healthcare institutions (Stanford University; Oregon Health Sciences University,Portland) that demonstrated the growing importance of technology in healthcare, and provide various models with which to compare their own institution's needs and future development.

4th Training Workshop for Information Coordinators – Almaty, Kazakhstan, June 10-16, 2001. This workshop focused on health information systems and LRC Sustainability. Information Coordinators also received training on database design and other topics such as digital videos, scanning, practice standards reviews and presentation skills.

CAR Regional LRC Dissemination Conference and Site Visit – Bishkek, Kyrgyzstan, April 29-May 2, 2002. The purpose of this conference was to allow representatives from partnerships in the CAR region to present models, best practices and lessons learned related to the success of their LRCs. The

conference featured site visits to local healthcare institutions, which demonstrate successful models of the application of information technology to improve the quality of care, for example through electronic patient records, telemedicine, and evidence-based practice. The dissemination conference also featured presentations and discussions on successful sustainability strategies that are being employed by LRCs throughout the region. The conference included representatives from both current and graduated partnership LRCs as well as chief administrators from current partnership institutions.

Information Coordinator Training Workshop for Tashkent LRCs – Tashkent, Uzbekistan, June 23-27, 2003. The workshop covered IT applications, antivirus protection, local area network management, Practice Standard Review (PSR) requirements overview, information resource marketing, MEDLINE using PubMed and HINARI systems, software applications, Web design, training-of-trainers techniques, sustainability and other topics.

LRC Training Workshop for Information Coordinators and Evidence-based Practice Specialists – Tashkent, Uzbekistan, May 17-22, 2004. AIHA ICT Programs staff provided training and orientation for representatives from new AIHA partnership Learning Resource Centers (LRCs) from the Central Asia and Caucasus regions. During the workshop, LRC Information Coordinators and Evidence-based Practice Specialists participated in two separate training tracks—one on LRC management and operations, the second on the principles of evidence-based practice. LRC staff were joined during the first two days of the workshop by partnership administrators who participated in an overall introduction and orientation on the LRC project workplan, objectives, and planning.

LRC Training Workshop for Information Technology Specialists – Tbilisi, Georgia, July 5-9, 2004. AIHA ICT Programs staff provided training and orientation for representatives from new AIHA partnership Learning Resource Centers (LRCs) in the Caucasus and Central Asia regions. During the workshop, LRC Information Technology Specialists participated in training modules covering various information technologies such as Web page and database design and local area network development.

LRC Training Workshop for Nursing Education Resource Centers – Almaty, Kazakhstan, February 7-12, 2005. AIHA ICT Programs staff provided training and orientation for representatives from the new AIHA partnership Learning Resource Centers (LRCs) associated with the regional Central Asia nursing education partnership. The workshop was presented in three separate tracks for the three types of LRC staff who participated. Evidence-based Practice (EBP) Specialists participated in a four-day module on EBP with a special emphasis on nursing information resources. Information Coordinators received training on LRC management and sustainability as well as participating in several of the EBP modules. Information Technology Specialists received training on Web design, information systems planning, LAN management, and other IT applications. In addition, all groups participated in a training-of-trainers module and received an in-depth orientation on the LRC model and the objectives and requirements of the program.

NIS Regional LRC Dissemination Conference and Advanced Topics Training Workshop – Almaty, Kazakhstan, September 12-17, 2005. The event began with a two-day conference on *Use of Information and Communication Technologies in Healthcare: Models of Best Practice from AIHA Partnerships in the NIS and CEE*, which also included participation from chief administrators from partner institutions in the Caucasus and Central Asia. During the conference, representatives from each LRC presented on their achievements in one or more of the five key conference themes: Improving

Access to Information, Improving Healthcare Quality, Healthcare Information Systems, Distance Learning and Telemedicine, and Sustainability. The conference also featured breakout sessions grouping together LRCs by specialized topics, including medical education, nursing, and HIV/AIDS. The conference was followed by a four-day workshop, which introduced new topics and skills in the areas of distance education, grant-writing, information systems planning, Web design, evidence-based practice (EBP), and health information retrieval.

D. Emergency Medical Services

"I think the training offered by AIHA within the framework of our partnership with Atlanta was the key to preparing many Uzbek participants for this drill and for any actual disaster they may face in the future." *—Faizulla Yuldashev, director of the Ferghana Affiliate of the Republican Center for Urgent Care and member of AIHA's Tashkent-Ferghana/Atlanta partnership, speaking at the close of "Ferghana 2003," the first NATO disaster preparedness drill ever held in Central Asia. Yuldashev was one of more than 160 staff members of AIHA's Emergency Medical Services Training Center in Ferghana who took part in the event. All in all, Uzbekistan was represented by some 1,000 participants, including 25 first-responders who were trained at the Center.*

BACKGROUND

After the dissolution of the Soviet Union, death rates in the region for accidents and cardiac incidents were nearly three times the rate in the United States. One of the factors contributing to the high death rates was the relatively weak emergency response infrastructure, typified by a lack of well-trained first responders. This reduced the ability of the health system to successfully respond to unexpected illnesses, accidents, and disasters. In the process of reforming their health systems, the governments in CAR, particularly in Uzbekistan, were concerned about improving pre-hospital and hospital emergency care.

PROGRAM STRATEGY

In order to create sustainable capacity to effectively respond to emergencies ranging from routine medical cases to disasters involving mass casualties, AIHA and its partners developed the EMS Training Center (EMSTC) model. Altogether, the partnerships established a network of 16 EMSTCs in 12 countries in Eurasia. AIHA's EMS Training Centers provided the ideal platform to expand educational programs in the area of emergency medical services by presenting a standardized, reproducible curriculum adaptable to local needs. At the centers healthcare professionals receive hands-on training in emergency techniques including CPR, emergency obstetrics, intubation, spinal immobilization, disaster response, and triaging practices that can be performed at the accident site, in transit, and in the hospital setting. EMS training centers have played a critical role in upgrading urgent care skills necessary for primary healthcare personnel to manage medical emergencies. The centers also teach life-saving skills to non-medical professionals such as flight attendants, firefighters, traffic police, and rescuers who may be called upon to provide emergency care or may become the first responders at accident sites.

Practicing intubation

Each center is furnished with training equipment and supplies, computers, and Internet connectivity. A standard training curriculum was developed by a core group of US partners with expertise in the area of emergency medicine and then adopted by each EMSTC. AIHA later commissioned a group of partners in Boston to update the original pre-hospital curriculum to take into account current international standards and, at the request of the EMSTCs, to prepare a new first responder curriculum based on the US Department of Transportation's "First Responder National Standard Curriculum." Nearly all EMSTCs have subsequently modified the core courses and developed both long and short courses to meet the growing demands for training from a variety of medical and non-medical groups, ranging from first responders to the general population. EMSTC courses emphasize acquisition of practical skills and are composed of learning modules, computer presentations, slides, overheads, and handouts as well as hands-on training through the use of mannequins. Center staff also received training to help them to monitor and evaluate the quality of their own training courses and their impact on local practitioners. Many EMSTCs have also assisted medical schools in improving the training of medical students.

From 1994 to 2000, AIHA and its partners established five EMS Training Centers (EMSTCs) in Central Asia in Kazakhstan, Uzbekistan (2), Tajikistan and Turkmenistan. The centers were initially established in response to a clear demand for practical, hands-on training both for health professionals (particularly ambulance physicians and feldshers) and non-medical personnel, such as firefighters, police, and rescue workers. Each of the centers developed a program strategy based on its individual circumstances and/or the priorities of the country for emergency services.

The **Almaty EMSTC**—the first to be set up in CAR—was established in October 1994 at the Almaty City Emergency Care Hospital through the Almaty/Tucson hospital partnership under AIHA's initial cooperative agreement. The Tucson partners introduced a two-week, 72-hour course designed specifically for first responders. The demand for this new type of skills-based training was so strong that in its first five years the course was fully subscribed and staff did not have the opportunity to develop other, more specialized courses. When the Almaty/Tucson partnership graduated in 1999, the center's activity initially declined, and faced with financial challenges, the management of the center started to seek new opportunities for sustainability. One of the opportunities they found was through a long-term agreement with an oil company to provide its two-week course for the company's employees based at the Caspian Sea shore in West Kazakhstan. The EMSTC also agreed to train four staff members from Almay's urgent care hospital each year in exchange for free space for the training center. The center eventually signed an agreement with the Almaty State Postgraduate Institute that recognized the center as one of its "branches." This allowed the Almaty EMSTC to provide certified courses on behalf of the Institute. The center also responded to a request from the urgent care hospital to develop a more advanced course for ambulance physicians. Using international standards the staff of the center developed and adopted the new curriculum, which was certified by the MOH in 2003. Certification of its programs by the MOH has provided new opportunities for the center and expanded the scope of its service to the entire country. Over time, the center has expanded its certified training programs to include ACLS (Advanced Cardiac Life Support) and ATLS (Advanced Trauma Life Support), in addition to the standard AIHA EMSTC training curriculum.

The **Ashgabat EMSTC**, the second in Central Asia, was opened in 1999. In response to the priorities established by the Turkmenistan Ministry of Health, the sole focus of the Ashgabat/Richmond partnership was on improving the organization and training for emergency medical services (EMS). The partnership was established between the Tiz Komek Medical Center, an urgent care hospital in Ashgabat, and the Richmond Ambulance Authority in Virginia. The Ashgabat Training Center utilized

the standard AIHA EMSTC curriculum for first responders, a course that has continued to be one of the most popular training programs offered by this center. The curriculum eventually became a certified postgraduate education course for medical personnel in Turkmenistan. The center currently focuses its training on non-medical personnel such as oil company employees, traffic police, and flight attendants.

The **Tashkent EMSTC** opened in 1999 as part of AIHA's EMS cross-partnership initiative in the NIS. Through this initiative, AIHA collaborated with the Richmond Ambulance Authority, the City of Richmond, Virginia, and the Ministry of Health of Uzbekistan to establish the center in Tashkent at the Second Tashkent Medical Institute (TashMI II). The support from the Richmond Ambulance Authority, a US partner that was previously involved in developing the Ashgabat center, was limited to a one-year agreement to provide technical support. Affiliation with the Tashkent Medical Institute allowed the center to develop courses that would be readily certified by the Ministry of Health. The Tashkent center has become one of the busiest EMSTCs in CAR, where on average 30 trainees go through the training every day. In addition to maintaining an intensive training schedule at the primary teaching site, the instructors of the center also provide outreach courses in the regions of Uzbekistan so that they are able to reach a larger audience. Over 8,000 trainees have completed courses from the Tashkent EMS Training Center since 1999.

The **Ferghana EMSTC**, the second center in Uzbekistan, was established in 2000 at the emergency hospital that served as the Ferghana affiliate of the Regional Center for Emergency Medicine (F-RCEM**)**. The center was conceived as one of twelve regional affiliate centers the government of Uzbekistan planned to develop throughout the country. These regional centers were affiliates of the Republican Center for Emergency Medicine (RCEM), based in Tashkent, which was responsible for establishing national training standards for urgent medical care. The center was established as part of the partnership between the RCEM, F-RCEM, and Grady Health System in Atlanta, which was more broadly focused on the development of an emergency medicine program. In 2001, the Atlanta and Ferghana partners conducted a joint assessment of traffic trauma cases in the city of Ferghana. Following the recommendations made in the assessment, the Ferghana partners installed new traffic lights and signs at various intersections in the city. In addition to the standard package of training mannequins and aids, the Atlanta partners managed to deliver five ambulances to Ferghana, four of which are still being used by the hospital. The partnership also developed a 19-hour first aid course for the ambulance drivers, and this course has been part of the training program since 2001.

The **Dushanbe EMSTC** was established as part of the partnership between the Ministry of Health of Tajikistan and the Boulder Community Hospital in Colorado. In April 2000 the partnership opened the center as part of the National Primary Health Care Training Center (NPHCTC). The partnership gave first priority to developing the faculty and curriculum for the EMS component because the MOH anticipated that this would represent about 40 percent of the course offerings at the NPHCTC during its first two years of operation. These courses included basic and intermediate training to enhance the knowledge and practical skills of emergency medical personnel as well as urgent care training to primary care providers.

AIHA's strategy in CAR during the 1998-2006 cooperative agreement also involved re-supplying the above-listed EMSTCs annually with a limited number of much-needed basic training supplies to support the centers in their training activities. AIHA also supported Internet connectivity in order to ensure that each of the centers was able to stay connected to the network of AIHA EMSTCs and other partner organizations as well as to allow the centers to access current health and medical information

online. This support gradually decreased over the years as each of the centers achieved greater sustainability.

KEY RESULTS

The overall goal of the AIHA cross-partnership initiative in emergency and disaster medicine was to create sustainable capacity within Central Asia to effectively respond to different types of emergencies, ranging from routine medical traumas to disasters involving mass causalities. The program's objectives were:

- Increased capacity to provide quality training and education in emergency and disaster medicine.
- Improved knowledge and skills in first aid and emergency care among first responders, medical providers, and other targeted groups trained through AIHA's EMS Training Centers.
- Increased sustainability of CAR partner efforts in emergency and disaster medicine.

➢ Increased Capacity for Training and Education in Emergency Care

Partnership training and exchanges and AIHA's program support activities that linked the EMSTC centers within CAR and throughout the region strengthened both the human and organizational capacity of the centers. Various methods were utilized to achieve the results. These include:

- Training of Trainers**:** Initially, all instructors at EMS Training Centers participated in training-of-trainers (TOT) courses. In order to promote quality and consistent presentation of the educational material after the initial TOT courses, each US partner sent physicians, nurses, and/or paramedics to serve as course monitors at the EMSTC during the first several course presentations. These monitors assisted with faculty development, served as expert resources, and occasionally delivered lectures. This mentoring and TOT effort helped to develop the qualifications and capacity of the faculty at each EMSTC. In some cases, trainers from one center have served in a consulting role to train future faculty for other centers.

- Skills-Based Training: Critical to each center's success was the hands-on training provided by the US partner institutions for the selected EMSTC instructors. This skills-based training introduced EMSTC staff to standard protocols for emergency care and demonstrated the effective use of an instructional program based on these protocols. The training program incorporated new interactive teaching technologies with built-in feedback mechanisms that let instructors know how the information was being received and understood. The use of computer-based learning also improved receptivity to the new material.

- Curriculum Development**:** Once they had implemented the standard EMS training course, all five EMSTCs in CAR expanded their course offerings, independently developing courses in response to community needs. The Almaty center provides several MOH-certified courses, including a 144-hour emergency medicine course for ambulance physicians, a 72- hour course for paramedics, a 312-hour course for ambulance and PHC physicians, 40-hour Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS) courses, and several non-certified courses for non-medical personnel. The Tashkent center, in addition to the above listed courses implemented a 100-hour basic EMS course for medical personnel, and a two-week advanced training-of-trainers course for EMS instructors. The center in Dushanbe, the

primary purpose of which was to improve the emergency care skills of primary care providers, developed curricula specifically for physicians, nurses, and other staff working in primary care.

- Conferences and Workshops: As the centers became more sophisticated and the faculty more experienced, the US partners and AIHA provided more advanced EMS training. In many cases, a center's participation in these workshops enhanced their role in emergency disaster preparedness planning for their community. Such workshops included the International Workshop for Earthquake Response, sponsored by the Partnership for Peace program of the US Departments of Defense and State, and the Nuclear Disaster Preparedness and Response conference, sponsored by the International Atomic Energy Agency (IAEA), Boston University and the US Department of Energy's Oak Ridge National Laboratory.

- Networking/Collaboration: On an annual basis from 2000 through 2005 AIHA organized special meetings and workshops for EMSTC directors and staff in order to encourage collaboration, enable discussion of common issues, and provide a forum for developing new training courses. Through these forums the need first emerged for an updated first responder curriculum that was based on the most current international standards. AIHA, in collaboration with a group of US partners, developed the revised curriculum. At the EMSTC directors meeting in 2005 the new curriculum was introduced in a TOT workshop for the EMSTC faculty from all the centers in the region. During the meeting, EMSTC directors and faculty also discussed ongoing collaboration and experiences in trying to sustain the centers. Through support for Internet connectivity, AIHA enabled the centers to communicate and collaborate not only among themselves but with colleagues around the world.

➢ **Improved Knowledge and Skills in Emergency Care**

The CAR EMSTCs have been instrumental in developing the urgent care skills of healthcare and emergency services personnel in countries where developing an emergency care system was a priority. The significance of the EMSTCs in increasing the skills and abilities of both medical and non-medical personnel in providing care in emergency situations can be ascertained from the sheer number and types of people they have trained. On average an EMSTC conducts 20 training courses annually for classes of approximately thirty students, thus training over 600 students every year. The Almaty EMSTC, from its opening in 1994 through August 2006 conducted 242 training courses and trained 5,556 pre-hospital and hospital-level health professionals as well as ambulance drivers, firemen, and flight attendants. The Tashkent center, in which an average of 30 trainees go through training every day and over 8,000 trainees have completed courses since 1999, has been the most active EMSTC in CAR.

Training community nurses, Ferghana

The Ferghana EMSTC continually retrains physicians and nurses from the emergency center to ensure that their knowledge and skills are regularly updated. The center also provides training to the Ferghana city traffic police and conducts regular follow-up assessments of their skills and knowledge as part of their outreach visits. The instructors of both centers in Uzbekistan provide a variety of outreach courses in the regions of the country where they are able to train larger groups. They also train nurses from rural hospitals who in turn provide outreach training on trauma

prevention to schoolchildren and farmers. The Ferghana EMSTC also initiated a training course nurses who are either volunteers or employed by communities to improve the quality of urgent care in rural areas where trained emergency medical personnel are not easily accessible.

- **Improved Emergency Services**

At the emergency department established at the F-RCEM in Ferghana, the partnership created a system of "shock units" at the Ferghana Emergency Center where the most critical patients are admitted. This replaced a system in which these patients were assigned to various hospital units based on the type of trauma. The shock unit system allows patients to be stabilized before being transferred for more routine care. This innovation has been replicated throughout all the hospitals in Ferghana region. One of these units at the F-RCEM is a cardio-resuscitation unit, which is equipped with cardiac monitors, a defibrillator, and specialized beds donated from Carelift International. After the new unit was established, the percentage of effectively treated cases of acute myocardial infarction increased from 75 percent in 2000 to 90 percent in 2002.

The ambulances provided through the partnership to the F-RCEM are equipped with defibrillators, tools for trauma care, and a variety of splints. Ambulance personnel can administer intravenous fluids and perform simple surgical interventions while a patient is in transport. These ambulances have been incorporated in the regional disaster preparedness network and have been used in the response to accidents in remote areas throughout the Ferghana region, assuring timelier and better quality care.

US donated ambulance at Ferghana emergency center

Emergency dispatch services underwent significant changes through the efforts of the partnership at the EMSTC in Ashgabat. Where previously one ambulance station served the entire city of Ashgabat, there are now six smaller substations that oversee their designated districts in the city. The new system of substations has significantly reduced the ambulance response time, from 15-20 minutes in 1996 to 5-10 minutes in 2006, therefore reducing pre-hospital mortality rates.

In Tashkent, the EMSTC came to realize that in many instances the students who they trained as first responders do not have the basic tools or medications necessary to provide first aid. The staff designed a portable first aid bag that includes the items necessary for use in a variety of emergency situations. The ministries of health, emergency situations, and defense all are interested in purchasing such bags for their employees.

- **Sustainability**

The EMSTCs are all recognized by their governments, and many have been integrated into local medical education. AIHA encouraged and facilitated cooperation with national and local governmental agencies to enable the centers to evolve as loci for national emergency and disaster planning, management, and policy development. The Tashkent center currently operates under a government decree that was issued by the cabinet of ministers and designates which government ministries and

departments are required to send staff for training at the Tashkent EMSTC. The Tashkent center is able to operate from the revenue it generates from these courses and those offered to private groups.

Through its entrepreneurial activities the Almaty center has contracted with and provided emergency courses to workers of American companies such as Philip Morris as well as the American Embassy. The center has also collaborated with an international clinic to provide EMS training to corporate clients in Kazakhstan and Russia. In 2006, the Almaty Postgraduate Institute established a new chair for emergency medicine based at the Almaty EMS Training Center. This offers new and unique opportunities for emergency care physicians around the country to become certified specialists in emergency medicine.

CHALLENGES AND LESSONS LEARNED

Financial Stability: The major challenge across the centers in Central Asia is their ability to financially support themselves. Although all of them are recognized by their national governments, none of them receive direct government financial support except for waived rent and utility costs. Even though they have been successful expanding their training programs, they have had to adjust to changing government regulations in order to be able to continue to survive. For example, in some countries, they have been required to meet the same costly and burdensome regulatory requirements intended for much larger educational institutions. Despite an overwhelming demand for training, government institutions and state-owned companies often have legal and financial limitations on the fees they are able to pay for the courses. In the case of Turkmenistan, payment for services to health institutions is prohibited, and therefore the instructors continue to work as volunteers and can only provide a limited number of trainings. At the same time, the Almaty EMSTC has been able to attract private companies, seeking modern, skills-based, short-term training for its staff working in high-risk areas.

Course Certification: Another challenge relevant to all the centers has been the need to obtain MOH-certification for courses so that trainees can earn credits toward their continuing education requirements. Being able to offer certified courses also impacts the financial status of the centers because government-run health institutions may pay for training that is endorsed by the MOH. Each center has had to find its own way to achieve this certification, but in most cases they have done so by collaborating with undergraduate or postgraduate medical schools. The demand for training and retraining in emergency care remains increasingly high so the certifications are important. They are also important for attracting private customers since the certification serves as some measure of the quality of the training.

Human Capacity: Staff turnover has been an issue in maintaining the quality of the instruction. At the onset of the programs, AIHA made significant investments in the training of EMSTC instructors through the efforts of partnerships and through AIHA's regional training programs. Despite staff changes, the EMSTCs have fortunately been able to continue to attract and retain qualified trainers in large part because of the enthusiasm and commitment of the original staffs that remain the driving force of the centers. However, this may not always be the case.

Supply of Training Equipment: At the end of the program, the major challenge for the centers is regular re-supply of the training mannequins and teaching aids. AIHA provided each center with basic start-up equipment and has continued to provide additional training mannequins and supplies over the years. Currently all the centers are facing the need for new and updated equipment. In some cases it is not so much a financial problem as it is a problem of finding an available supply source that can deliver

the quality of supplies and resources they need. As the countries become more open and market-oriented and the centers continue to provide a needed service to various companies doing business in their countries, access to the needed equipment may become more readily available.

E. HIV/AIDS

"Ukraine's experience in preventing mother-to-child transmission is invaluable to us not only in terms of its clinical aspects, but also in terms of educating our patients and increasing public awareness about the problem—not to mention the fact that our Ukrainian colleagues have clearly demonstrated from their own experience that it is possible to contain vertical transmission. We are leaving Kiev equipped with enough knowledge to begin integrating the Ukrainian PMTCT model in our country." —*Sholpan Baymurzina, head physician of the AIDS Center in Temirtau, the city with the highest incidence of HIV/AIDS in Central Asia.*

BACKGROUND

The former Soviet Union, according to WHO/Europe, is facing one of the fastest growing HIV epidemics in the world. Central Asia has witnessed a dramatic increase in HIV/AIDS infection rates over the past four years. Officially reported cases jumped from about 500 in 2000 to over 12,000 in 2004. Unreported cases are thought to be much larger; the US Centers for Disease Control and Prevention estimates that in Central Asia there are some 90,000 people in the region living with HIV/AIDS. The vast majority of reported HIV infections are among young people—chiefly those who inject drugs. However, very high rates of sexually transmitted HIV infection continue to be found in Central Asia, with the most likely method of transmission being unprotected sex.

The number of HIV-infected women is increasing and transmission of HIV from infected women to their children is steadily rising. Although the official numbers of HIV-positive women and babies born to them in the Central Asian republics are low, the issue of HIV transmission from infected women to their babies is one that needs to be addressed. Regarding mother-to-child transmission, close to 360 pregnancies have been registered for HIV-positive women in Kazakhstan since 1997. Most of these cases were registered in 2003-2004. Even though the official number of HIV-positive babies infected through mother-to-child transmission (MTCT) is 15, the actual number is suspected to be much higher. According to the Kazakh National AIDS Center, the MTCT rate varied from 20.0 percent in 1997 to 42.5 percent in 2003. The highest prevalence of cases was in Karaganda and Pavlodar oblasts. In Uzbekistan, the National AIDS Center has reported that from 1998 to 2004 more than 90 registered HIV-positive women have delivered, with the highest prevalence of HIV infection in Tashkent Oblast. This number is also suspected to be much higher than reported.

PROGRAM STRATEGY

A key objective of AIHA's HIV/AIDS program strategy is focused on creating the human resource capacity necessary to provide treatment to HIV-infected individuals by developing expertise among healthcare professionals, cultivating training capacity so knowledge and skills can be passed on to others, and massing a body of evidence-based resources and informational materials that will serve as a clearinghouse for those involved in HIV/AIDS care.

In Central Asia this was accomplished by building on the foundation of strong, existing programs in disciplines that are crucial to fighting HIV/AIDS, such as infection control, primary healthcare, health professions education, and women's and maternal and child health. Although the major focus of AIHA's program was on developing the capacity in the region for the prevention of mother-to-child transmission of AIDS, many of the partnerships and projects incorporated efforts to address the burgeoning HIV/AIDS epidemic that threatens this region. For example, the regional medical education partnership developed HIV/AIDS curriculum "nuggets" as an exercise in developing curricula. The nuggets combined evidence from international documents with region-specific realities and were developed by CAR faculty. The regional nursing partnership added HIV/AIDS content to existing curricula content as well. The Turkmenistan Family Medicine Training Center's women's health curriculum included a full one-day module on HIV/AIDS, and the Almaty Infection Control Training Center included training on prevention of transmission of HIV/AIDS to providers and patients.

The overall goal of AIHA's prevention of mother-to-child transmission (PMTCT) project was to decrease mother-to-child HIV transmission in Central Asia by strengthening the national PMTCT systems in Kazakhstan and Uzbekistan and by implementing national PMTCT protocols. Prevention of mother-to-child transmission programs are fairly simple to implement and are low-cost. The transmission of HIV from mother to child can occur at three points: during pregnancy while the baby is still in the womb, during childbirth through exposure to blood and other bodily fluids, or after birth through exposure to HIV-infected breast milk. Without any treatment intervention, about 30 percent of infants become infected through one of these three routes. Most HIV-infected pregnant women in wealthy countries now receive highly active antiretroviral therapy (HAART) starting early in pregnancy along with antiretroviral (ARV) prophylaxis for the mother and child. In addition, women in these countries receive counseling on replacement feeding. In these countries, HIV transmission rates from mother to child are now between 1 and 2 percent. AIHA's successful program for PMTCT developed in Odessa, Ukraine, and introduced in CAR, implemented these protocols by (1) integrating PMTCT components into the maternal and child healthcare (MCH) system; (2) creating human and institutional capacity for implementing national PMTCT protocols; (3) developing inter-sectoral collaboration with AIDS centers, MCH systems, and relevant NGOs; (4) developing and adapting training courses and educational materials on HIV/AIDS and PMTCT for various medical and allied professionals; and (5) building local capacity for training healthcare providers on PMTCT. In addition, AIHA staff worked regularly with national and local policy makers to gain political and financial support for PMTCT programming.

In an effort to respond effectively to the problem of mother-to-child transmission of HIV in Kazakhstan, AIHA's initial action was to explore the status of MTCT and to assess the feasibility for replicating the Odessa PMTCT model. AIHA supported an evaluation by its medical advisor on PMTCT/MCH from Odessa, Ukraine, to visit Karaganda and Pavlodar oblasts. The assessment showed large gaps in the provision of prenatal and antenatal care for HIV-positive women, lack of coordination between healthcare providers and stakeholders, minimal knowledge of PMTCT treatment and care protocols by healthcare providers and policy makers, absence of medications, absence of rapid tests, and an inadequate supply of personal protective equipment and equipment for safe hemastatic Caesarean sections. The assessment also revealed poor data collection on MTCT, low knowledge levels in the community about HIV/AIDS transmission and prevention, wide-spread discrimination and stigmatization of injection drug users and sex workers, high stigmatization of HIV-positive individuals, and low utilization of voluntary counseling and testing (VCT) principles by healthcare providers. In addition, the country had an "opt-in" policy for HIV testing which required

that an individual seek out an HIV test, rather than automatically being offered the test by the provider and receiving the option to "opt-out". Because of these factors, high-risk women were reluctant to utilize prenatal services or be tested for HIV, meaning they often showed up for delivery without having ever been tested for HIV. Due to the fact that rapid tests were not available to the maternity hospitals in Kazakhstan, there was little opportunity for PMTCT interventions to be implemented, greatly increasing the risk for HIV-transmission from mother to child.

An assessment visit to Uzbekistan revealed that prevention of mother-to-child transmission of HIV was not a priority for MCH services in Uzbekistan. There was a lack of laboratory capacity for measuring viral load and for evaluating the immune system status in HIV-positive patients. The majority of health workers had not received any training in PMTCT. Testing in general for HIV was very limited. The ELIZA test was only offered for a fee in the third trimester of pregnancy to women identified as high risk. On top of that, in order for a woman to be identified as high risk, she has to be an officially registered intravenous drug user. Rapid testing during labor and delivery was not performed since the tests were not available in the country. Pre- and post-test counseling was not a routine part of HIV testing and antiretroviral prophylaxis to prevent vertical transmission of HIV was not available and hence not performed. Compounding the problem was the shortage of HIV testing reagents at the laboratories. Finally, there was no nationally-organized program for family planning or other social support (including provision of infant formula) for HIV-positive women and their infants.

USAID's strategic objective to increase the utilization of quality primary healthcare guided AIHA's program design which included the need to address HIV/AIDS as part of its program in educating, training, and retraining healthcare professionals. Skills-based practitioner training has always been a mainstay of AIHA's partnership programs and is crucial to building a network of practitioners capable of managing the complexities of HIV-related care. Through professional exchanges, workshops, seminars, and practical training courses, healthcare workers learn the skills they need to provide high-quality treatment that is rooted in evidence-based medical research. Through the Odessa PMTCT program, AIHA had developed PMTCT courses targeted for specific care teams. The courses included: "PMTCT for Policy Makers," "Pediatric PMTCT," "PMTCT for Obstetric/Gynecology Care Teams," and "Voluntary Counseling and Testing (VCT)." In CAR, AIHA provided trainings in PMTCT for pediatric care teams and ob/gyn care teams along with a training in voluntary counseling and testing. Furthermore, seven PMTCT nurses and physicians from Kazakhstan received training in infection control at the Infection Control Training Center in Almaty.

Through the PMTCT project, replication sites in Kazakhstan and Uzbekistan were provided with disposable personal protective equipment and equipment for conducting safe Caesarean sections. Prior to receiving the supplies and equipment, ob/gyn care teams received training in infection control and clinical training on how to perform an appropriate hemostatic Caesarean section. AIHA also purchased computers for each of the project sites in Kazakhstan and Uzbekistan, and a PMTCT database expert from the Odessa project installed AIHA's PMTCT database, adapted for Central Asia, on all the computers. The database expert also provided training to local database managers on collecting, storing, and analyzing data to monitor the performance of the PMTCT protocols at the project sites. After the installation and initial training in Kazakhstan, he conducted follow-up visits to the sites to monitor progress and provide additional support and training on analyzing and reporting the data. The local database managers in Kazakhstan collected the PMTCT data and submitted it quarterly to AIHA and to the national and regional AIDS centers.

AIHA provided ongoing technical support to the project sites in Kazakhstan and annually conducted site assessments. During the final assessment visits prior to the completion of the project, AIHA staff from Odessa worked with local project coordinators, healthcare providers, and database managers to develop operational plans for the continuation of program activities.

AIHA also adapted a general course on PMTCT for the NIS which was originally developed by WHO and the US Centers for Disease Control. The *Generic Training Package Course*, which was tailored to each country's policies and protocols for PMTCT, covers basic information on PMTCT and is applicable to policy makers and all healthcare professionals. The course has been delivered to policy makers and healthcare providers, including nurses, primary care physicians, social workers, ob/gyns, and pediatricians, from the Kazakhstan and Uzbekistan program sites.

In order to ensure the future sustainability of the program, AIHA has identified and trained six national PMTCT trainers and opened a PMTCT training center at the Temirtau Maternity Hospital. The national trainers have participated in training-of-trainers courses in St. Petersburg, Russia, and Odessa, Ukraine, which focused on PMTCT knowledge and clinical skills as well as on adult learning techniques. Trainers exhibited their teaching competence in a successful pilot of the Kazakhstan-adapted version of the *Generic Training Package.* Since the initial pilot, they have successfully co-taught the VCT and pediatric PMTCT courses with Odessa faculty on-site at the Temirtau training center and have independently taught the *Generic Training Package* course.

KEY RESULTS

- **Political Support for PMTCT at National and Oblast Levels**

The PMTCT project has benefited from political support at both the national and regional levels. By involving the Kazakhstan National AIDS Center and other stakeholders early in the process, AIHA assured that the PMTCT activities were a component of a coordinated national HIV/AIDS prevention and treatment program. While Kazakhstan's initial HIV/AIDS program through 2005 had done very little to address PMTCT, after a March 2005 conference co-sponsored by AIHA, WHO, and UNICEF, the PMTCT national plan was revised in light of global experience and AIHA's pilot project achievements in Ukraine. At the conference, the main challenges to implementing national PMTCT strategies and capacity-building plans were identified and approaches to address them were determined. The conference resolution, with recommendations, was submitted to the Ministry of Health for inclusion in the Kazakhstan national PMTCT strategy.

At the regional level, progress has been facilitated by the significant political support for the program from regional health officials and implementers in Pavlodar and Karaganda. Shortly after policymakers had the opportunity to observe the Odessa model, regional health departments in the two regions issued decrees laying out a strategy for implementing PMTCT programs. The decrees designated project sites and implementing agencies (AIDS centers, maternity hospitals, PHC providers, and NGOs) and outlined collaboration strategies to ensure a continuum of care and support. The decrees also included a sample PMTCT training agenda (to be provided by AIHA-trained instructors), and in the case of Pavlodar a training timetable.

Policy makers from Uzbekistan also traveled to Odessa to receive training and observe the Odessa model for PMTCT in action, and as a result they began to realize the importance of a comprehensive PMTCT program. They have since applied to the Global Fund Round 6 for PMTCT funding. The Uzbek government also requested that AIHA conduct a PMTCT country assessment and assist with writing their Global Fund proposal.

- **PMTCT Training Capacity**

National capacity now exists in Kazakhstan to provide PMTCT training in CAR. AIHA has trained six instructors from Pavlodar, Karaganda, and Almaty as master trainers. These regional experts are training an increasing number of local specialists and PHC providers in PMTCT and counseling. The course in PMTCT for ob/gyn care teams continues to be provided at the Southern Ukrainian AIDS Education Center in Odessa, as this is still the PMTCT center of clinical excellence in the region. In Temirtau, sixty ob/gyns and nurses have received training in different areas of PMTCT. In Pavlodar from 2004 to 2005, the local partners reported that instructors provided training for 444 physicians and nurses, including ob/gyns, pediatricians, and PHC providers.

The Karaganda AIDS Center organized on-site workshops at all its maternity hospitals and major oblast health facilities in 2004. Every week, they provide two patient counseling workshops, one for nurses and one for physicians. In addition to the training of practicing medical professionals, the Karaganda AIDS Center provides regular workshops for local medical students. Moreover, the Karaganda Medical Academy has approached the AIDS Center to request advanced training in PMTCT for its faculty in an effort to expand and institutionalize their training capacity.

The Temirtau Maternity Hospital opened in 2006 and has been designated as the official regional PMTCT training center. The renovated center utilizes local experts and provides a practical skills-based training for a wide range of health professionals and medical faculty from Central Asia. It offers the pediatric PMTCT, "PMTCT for Policy Makers," VCT, and Generic Training Package courses and is expected to serve as the PMTCT training center for the entire Central Asia region. To date over 80 healthcare professionals have been trained in PMTCT at the training center.

- **Support to HIV-positive Women**

A coordinated, integrated PMTCT collaboration model has been introduced at project sites in Karaganda and Pavlodar to provide a continuum of social and medical services for HIV-positive women, including access to the new labor and delivery protocols at the maternity hospitals.

In close cooperation with their oblast AIDS centers, the pilot sites have established effective networks of PMTCT participating institutions. Most pregnant women are first seen and counseled at local PHC clinics/women's consultation centers. Later they are admitted to a maternity hospital, usually at 38 weeks, for a bloodless Caesarean section and ARV treatment during delivery using new treatment and labor protocols. Otherwise, treatment is generally administered through the AIDS Center, which coordinates overall HIV treatment and prevention activities in a region. Postpartum care is provided by the district pediatrician and obstetrician. In the past, pregnant women with HIV were routinely advised to have abortions "due to medical reasons." Now HIV-positive women have the choice of either ending the pregnancy or having a safe delivery. According to the PMTCT partners in Kazakhstan, delivery is becoming an increasingly desirable option. Moreover, the

introduction of a coordinated PMTCT program has resulted in more frequent early detections of HIV infection and more effective treatment.

Another improvement at Temirtau Maternity Hospital was the establishment of a satellite clinic in June 2004. The satellite clinic serves as an entry point for HIV-positive women seeking confidential counseling and medical and social support. The clinic, which is staffed with psychologists, social workers, and volunteers, is located on the premises of the maternity hospital and the polyclinic making access to health professionals working at the two facilities very convenient. Following counseling, the clinic staff takes each woman to see the ob/gyn or other specialists at the polyclinic to make sure she gets the required care quickly and in a non-discriminatory environment. This new patient-friendly approach is attracting more HIV-positive women to the center. Most of the women are referred to the clinic from the AIDS Center or by local NGOs, which have been playing an important part in identifying and referring HIV patients. Although there are NGOs working on HIV/AIDS in Pavlodar, there is no analogous outreach and support center in Pavlodar.

The positive treatment outcomes and the potential for reducing the transmission rates seem to have contributed to the enthusiasm and commitment of staff of the AIDS centers and maternity hospitals. The Pavlodar AIDS Center reported an increase in ARV prophylactic treatment of newborns from 50 percent to 95.2 percent. In addition, the Pavlodar government provides formula free of charge to HIV-positive newborns.

- **Professional Development**

The PMTCT program has improved the skills of the staff trained at the PMTCT sites to effectively minimize the risk of HIV transmission from mother to child. In addition the stigma and discrimination that was prevalent within the medical community has diminished significantly as a result of AIHA's training programs. The long-held fears among medical professionals about getting infected are changing because of increased knowledge about disease transmission and personal protection. According to the Pavlodar and Karaganda AIDS Center directors, MCH specialists have become the most advanced in terms of their capabilities in HIV prevention and treatment. The PMTCT program has also strengthened collaboration of the AIDS centers and maternity hospitals with local NGOs, who play an important role in reaching out to high-risk groups, including HIV-positive women of reproductive age.

- **Data Collection**

AIHA's PMTCT database is an electronic patient record database that was designed to serve as a planning and management tool for the implementation of an effective PMTCT program. In Kazakhstan, AIHA's PMTCT data has been incorporated into the national HIV/AIDS database. Database coordinators were trained to input the data during each of the key clinical steps in the birth process for HIV-positive women. Data analysis has helped project implementers to identify changes that needed to be addressed in the PMTCT protocol; issues identified included the need for a change in the policy on voluntary counseling and testing and the need for a rapid test to be made available as part of the standard protocol for delivery.

The data collected from each of the replication sites is summarized in the three tables below. The data monitors the key interventions that significantly reduce transmission. A baseline group is used for comparison. The sites submitted data reports on a quarterly basis to the regional AIDS centers and to AIHA. A brief analysis of deficiencies in the system and/or external factors is discussed below each table.

PMTCT Project Clinical Results (as of Oct 1, 2006)
Karaganda City Maternity Hospital No. 2

	HIV test result available before delivery	Registration for prenatal care in first semester	ARV prophylaxis for mother	ARV prophylaxis for newborn	C-section	Episiotomy (vaginal delivery)	Birth canal cleansing (vaginal delivery)	Replacement feeding	Family planning counseling	Referral to NGO support and follow-up care	MTCT rate
Baseline group: 10 pairs (1997 – 30/04/2004)	90% n =9	30% n =3	70% n =7	70% n =7	0% n =0	0% n =0	10% N =1	100% n =10	100% n =10	10% n =1	0% n =0
PMTCT group: 10 pairs (05/01/2004 -07/01/ 2006)	80% n =8	30% n =3	90% n =9	90% n =9	40% n =4	16.67% n =1	83.3% n =5	90% n =9	100% n =10	60% n =6	0% n =0 0
PMTCT group: 13 pairs (05/01/2004 -10/01/ 2006)	84.6% N=11	38.46% n=5	92.3% n=11	84.62% n=11	38.16% n=5	12.5% n=1	87.5% N=7	92% n=12	100% n=13	69.23% n=9	0% n=0

Replacement feeding decreased from 100 percent in baseline group to 92 percent in the last PMTCT group because one baby did not receive replacement feeding. This was a personal choice made by the mother for religious reasons.

PMTCT Project Clinical Results (as of Oct 1, 2006) - Temirtau

	HIV test result available before delivery	Registra-tion for prenatal care in first semester	ARV pro-phylaxis for mother	ARV pro-phylaxis for newborn	C-section	Episio-tomy (vaginal delivery)	Birth canal cleansing (vaginal delivery)	Replace-ment feeding	Family planning counsel-ing	Refer-ral to NGO support and follow-up care	MTCT rate
Baseline group: 42 mother and 43 babies (1997 – 30/04/2004)	88.10% n =37	16.67% n =7	50% n =21	58.14% n =25	2.38% n =1	14.63% n =6	12.20% n =5	93.75% n =41	93.75% n =41	26.19% n =11	13.95% n =6
PMTCT group: 25 pairs (05/01/2004 -07/01/ 2006)	84% n =21	44% n =11	88% n =22	96% n =24	36% n =9	6.25% n =1	62.5% n =10	96% n =24	100% n =25	92% n =23	8% n =2
PMTCT group: 27 pairs (05/01/2004 -10/01/ 2006)	85.19% n =23	44.4% n=12	85.19% n=23	96.30% n=26	37.04% n=10	5.88% n=1	64.71% n=11	96.3% n=26	100% n=27	92.59% n=25	7.41% n=2

The indicator "HIV test results available before delivery" decreased from 88 percent in the baseline group to 85 percent in PMTCT last group and the indicator "ARV prophylaxis for mother" decreased from 94 percent in previous quarter PMTCT group to 85 percent in PMTCT last group because rapid tests were not available at the maternity hospital to test women who did not receive prenatal care. They were admitted with an unknown HIV status. The positive HIV results for these women were on several occasions only known 20-30 days after delivery. As a consequence, neither these women nor their infants received ARV prophylaxis. Another consequence of test results being unavailable before delivery was the decrease in referral to NGO support and follow-up care.

The data for Temirtau shows that birth canal cleansing decreased from 70 percent in the previous quarter to 65 percent in PMTCT final data set. During the November 2006 site assessment visit, Odessa experts noticed that even when birth canal cleansing was performed, the procedure was not reflected in the patient chart and therefore was not entered in the PMTCT database. Odessa experts made the recommendation to Temirtau staff to record all clinical information in the patient charts and to keep a detailed record of all procedures provided to women at the maternity hospital.

PMTCT Project Clinical Results (as of Oct 1, 2006) - Pavlodar

	HIV test result available before delivery	Registra-tion for prenatal care in first semester	ARV pro-phylaxis for mother	ARV pro-phylaxis for newborn	C-section	Episio-tomy (vaginal delivery)	Birth canal cleansing (vaginal delivery)	Replace-ment feeding	Family planning counsel-ing	Refer-ral to NGO support and follow-up care	MTCT rate
Baseline group: 14 pairs (1997 – 30/04/2004)	100% n =14	42.86% n =6	85.76% n =12	50% n =7	92.86% n =13	100% n =1	100% n =1	100% n =14	100% n =14	0% n =0	7.14% n =1
PMTCT group: 19 pairs (05/01/2004 -04/01/ 2006)	94.74% n =18	26.32% n =5	94.74% n =18	94.74% n =18	100% n =19	- % n =-	-% n = -	94.74% n =18	100% n =19	31.58% n =6	10.53% n =2
PMTCT group: 22 pairs (05/01/2004 -10/01/ 2006)	95.45% n=21	36.36% n=8	95.2% n=21	95.2% n=21	100% N=22	- -	- -	95.2% n=21	100% n=22	40.91% n=9	9.1% n=2

The data shows that replacement feeding decreased from 100 percent in the baseline group to 95 percent in the final data group. A possible explanation is that women from vulnerable groups did not provide replacement feeding to their babies on a regular basis. This question requires further investigation.

For two cases of confirmed transmission of HIV/AIDS from mother-to-child, the first resulted from the mother refusing to receive ARV prophylaxis. In the second case, the mother did not receive ARV therapy on a regular basis.

CHALLENGES AND LESSONS LEARNED

PMTCT Program Expansion and Replication: Prevention of mother-to-child transmission depends on timely identification of positive mothers and provision of ARV prophylaxis prior to delivery and shortly thereafter. The window of opportunity for appropriate treatment is extremely short. For this reason, maternity hospitals need to be adequately prepared and equipped at all times. As the rate of HIV infection grows, sites all over the country will need to be well-trained and prepared to implement PMTCT protocols. This project was limited to a few selected sites. Although AIHA has made significant progress with increasing the capacity of maternity hospitals and PHC providers at the project sites to provide PMTCT interventions, the project ended before the new concepts and protocols could be fully integrated into the daily practices of providers. Additionally, the project ended at a time when testing supplies, ARV medication, and personal protective equipment were still relatively difficult for maternity hospital staff to access.

Certification and Licensing: The ability of the PMTCT training center in Temirtau to become a sustainable center is hampered by issues with certification and licensing. While qualified local trainers now exist, they cannot begin offering trainings at the center until the center and its program is officially certified by the MOH. This is dependent on the center obtaining a license from the ministry of education. Delays in the licensing process have, in turn, delayed the provision of training

for the larger audience of health professionals, including PHC providers and maternity hospital staff from distant rural areas. It is expected that as the local training capacity expands and improves so will the dissemination of knowledge and skills to a broader geographic area. A possible solution under discussion is to contract with Karaganda Medical Academy to establish the training center as one of its branches, therefore eliminating the need to apply for a separate license. At the end of this project, the Temirtau center and the Karaganda Medical Academy were still in the discussion phase with no commitment established.

NOTE: As described earlier in this report, the tragic outbreak of nosocomial based HIV infection among infants in Shymkent, Kazakhstan in the summer of 2006 once again underscored the urgency of introducing training in PMTCT as well as effective infection control practices in health care facilities in CAR. In the wake of the Shymkent tragedy, AIHA urged the MOH move forward more aggressively in certifying the PMTCT training course adapted and piloted by AIHA in 2005 on the basis of the generic USG-WHO PMTCT training program. In December 2006, the new Minister of Health formally approved (MOH Order #592) and certified postgraduate education courses in PMTCT based upon the AIHA developed training modules. Although the approval/certification process is an important step in system wide dissemination of effective PMTCT practice, it will be incumbent upon the MOH and the donor community to promote and support their urgent and wide-scale utilization. Only through this continued support will future horrific outbreaks such as that which occurred in Shymkent, be avoided.

Political Support: The Almaty replication site made little progress towards implementing a comprehensive PMTCT program, largely due to a lack of sufficient political support for the project, as transmission rates in Almaty are considered to be low. However, the accuracy of these low figures are suspect due to the lack of reporting, and it is unclear whether pregnant women are regularly counseled and tested for HIV.

Data Collection: Implementation of the PMTCT database and reporting system was not fully implemented. Frequent personnel turnover, low computer literacy among staff, and a demanding workload were challenges to timely and accurate data collection. Data reporting was often delayed and analysis at the sites incomplete. In spite of these problems, AIHA staff was able to use the data to identify key problems that prevented implementation of the PMTCT protocols. One example was the voluntary HIV/AIDS testing policy in Karaganda that resulted in too few pregnant women receiving an HIV test. Because of the reporting system, AIHA was able to work with the site to change the policy.

Basic Preconditions and Infrastructure: Progress in expanding the PMTCT project to sites in Uzbekistan was hampered by the lack of readiness in the country to support a PMTCT program. AIHA's initial assessment in 2004 revealed that antiretroviral medications and resources to perform HIV testing were unavailable in the country. After a second assessment visit to Uzbekistan, however, conditions began to fall into place. The ministry had approved national protocols for HIV/AIDS care and treatment and had developed concrete plans for the procurement and purchase of ARV drugs. Because of the delay, the PMTCT program implementation was limited to equipment purchase and staff training at the implementation sites.

Pre-test Counseling: Offering pregnant women counseling on HIV testing is one of the most effective ways to guarantee proper treatment and care during the prenatal and postpartum periods. At the end

of the project, provision of quality pre-test counseling was still a challenge in Kazakhstan. Many providers did not have adequate knowledge and skills to offer women quality counseling. For this reason, few pregnant women take the HIV test. The opt-in national policy on HIV testing served as an added challenge. Successful pre-test counseling is generally performed by ob/gyns at primary care clinics and involves substantial training efforts on the part of the AIDS center and other collaborators. Even though providers report a high level of counseling provision, AIHA's midterm assessment in Kazakhstan revealed significant differences between the project sites in the percentage of women who agree to take an HIV test. In Karaganda, only 25 percent take the test after the initial counseling (though this is still higher than the 5-7 percent they had just a few years ago).

Availability of Rapid Tests: Another key challenge to a successful PMTCT program was the lack of rapid tests for HIV. While major improvements were made in integrating PHC and MCH services to track and serve HIV-positive women of reproductive age, maternity hospitals continue to find themselves in situations where a woman presents at the hospital late in labor with no previous contact with the MCH system. The tests have finally been registered in Kazakhstan and will be made widely available to maternity hospitals in the near future.

SUCCESS STORY: Preventing Mother-to-Child Transmission of HIV in Kazakhstan

New Training Center Helps Ensure a Healthier Future for Central Asia's Children

Looking at Lena and Aleksandr playing contentedly with their three young children, you would never suspect that their story is any different from that of any other happy, healthy family. In most respects, it is not—they share the same joys and sorrows … face the same challenges … dream of a bright future for themselves and their children. What sets the family from Temirtau, Kazakhstan, apart is the fact that while Lena and Aleksandr are both HIV-positive, none of their children are.

Describing how terrified she was when she learned she was pregnant with her first child—a 3-year-old girl named Nastya—Lena recalls how her doctor at the Karaganda Oblast AIDS Center in Temirtau calmed her fears about passing HIV along to the baby she carried. "I was told about antiretroviral therapy and how it is used to prevent transmission of the virus from mother to child," she says. The happy outcome, of course, was a healthy baby free from HIV. "I was only afraid that first time," Lena admits, first beaming at Nastya then 2-year-old Daniil and tiny Masha, who is not quite one yet. Just four or five years ago, things could have been much different—Lena's chances of transmitting HIV to her children would have been 30 percent or greater.

Located in central Kazakhstan, Temirtau is a focal point of the country's HIV/AIDS epidemic. After the collapse of the Soviet Union, the large metallurgical plant there was closed and, as a result, the majority of residents in this city of 150,000 lost their jobs. Poverty and unemployment served as catalysts for the emergence of a booming drug trade for cheap heroin from neighboring Afghanistan. Young people between the ages of 17 and 35 have borne the brunt of addiction and, consequently, the country's burgeoning HIV/AIDS epidemic. As Lena's story reflects, women in their reproductive years now account for more than 35 percent of all new HIV infections in Karaganda Oblast, making a comprehensive strategy for the prevention of mother-to-child transmission (PMTCT) of HIV more urgent that ever before.

With one of the highest HIV infection rates in the country, Temirtau was selected as a pilot site for replication in Kazakhstan of AIHA's highly successful PMTCT program first launched in 2000 in

Odessa, Ukraine. With funding from USAID, experts from Odessa worked closely with their colleagues from Karaganda Oblast AIDS Center and the Municipal Maternity Hospital in Temirtau to enhance the knowledge and skills of the Kazakh practitioners and develop a core faculty capable of training others to prevent vertical transmission of HIV. As result of this collaboration, a regional PMTCT training center was opened in February 2006 at the Maternity Hospital.

Relying on the skill and experience of local specialists, this training center is helping build capacity among healthcare professionals in Kazakhstan and other nations in Central Asia to prevent vertical transmission of HIV. Training includes instruction in the WHO/CDC PMTCT Generic Training Package, which has been adapted by AIHA to reflect national policies, country-specific epidemiological data on HIV/AIDS, and Kazakhstan's national protocols on HIV prevention, care, and treatment. Specialized curricula focus on PMTCT training for obstetricians and gynecologists and voluntary counseling and testing. And, because HIV/AIDS is a complex illness, training activities focus not only on obstetricians and gynecologists, but also midwives, pediatricians, neonatologists, anesthesiologists, general practitioners, and specialists from women's consultations to better ensure access to a continuum of high-quality care and services.

The PMTCT Training Center plays a critical role in Kazakhstan's efforts to stem the spread of HIV by educating clinicians about the virus, prevention methods, and the importance of voluntary counseling and testing, particularly among pregnant women and those of reproductive age. This, in turn, helps reduce late detection of HIV infection among pregnant women and new cases of pediatric HIV—both significant problems in Kazakhstan, according to Olga Orlova, a pediatrician at the Karaganda Oblast AIDS Center.

Explaining that Kazakh legislation previously encouraged only that pregnant women from high-risk groups be tested for HIV, Orlova—who is also an instructor at the PMTCT Training Center in Temirtau—says, "HIV transcended high-risk groups such as injecting drug users and commercial sex workers long ago. The epidemic is now well established throughout our society, even among socially prosperous people." The sad result, she acknowledges, is an increase in the number of children whose HIV is detected by their pediatricians.

"The law was amended in July 2005 to allow HIV testing of all women provided they consent to it, which means the clinician's role must adapt accordingly. We must have the knowledge, skills, and attitude necessary to broach this sensitive, frightening subject and persuade women to undergo testing. The PMTCT training courses emphasize this and are playing a decisive role in preventing vertical transmission in our country," Orlova stresses.

During its first months in operation, the PMTCT Training Center in Temirtau hosted four training courses for senior faculty from the neonatology, anesthesiology, obstetrics, gynecology, and pediatrics departments of medical schools throughout Kazakhstan, as well as for obstetrician/gynecologists from maternity hospitals and specialists from primary healthcare institutions in Kazakhstan and Uzbekistan, according to Natalya Petrova, assistant professor of infectious diseases at the Almaty Postgraduate Medical Institute and one of Kazakhstan's leading experts on HIV/AIDS.

"Thanks to this program, we train more practitioners in HIV/AIDS prevention and treatment each month," says Petrova, who is also an instructor at the PMTCT Training Center in Temirtau. "Even though each trainee is working in his or her own field of expertise and therefore needs specialized

training, they are all links in a single chain that can assure effective measures against mother-to-child transmission of HIV. We try to meet the needs of each participant while also providing the basic knowledge about HIV infection that all medical professionals should possess, including issues of tolerance and sensitivity toward people living with HIV/AIDS," she stresses.

Lena gave birth to all three of her children at the Municipal Maternity Hospital in Temirtau. Thanks to AIHA's comprehensive, skills-based training program, staff there have the knowledge and experience necessary to provide compassionate, high-quality treatment, care, and support to HIV-positive pregnant women and their families. Aleksandr even got to take part in the birth of Masha, the couple's youngest daughter, last year. Calling the experience one of the most memorable he has ever had, he concludes, "The people who work at the maternity hospital are true professionals. They are not afraid of patients like us and they do everything they can to ensure that children in our city are born healthy."

IV. BEST PRACTICES AND LESSONS LEARNED

Lessons learned and resulting best practices from AIHA's program in Central Asia from 1998 to 2006 can be grouped into three broad categories—the first relates to lessons about the partnership methodology and approach, and the second to lessons about program implementation, and the third to lessons about the key ingredients or factors that contributed to successful programs.

PARTNERSHIP METHODOLOGY

➢ Two-way Exchanges

American and CAR experts traveled in both directions (US to CAR and CAR to the US) while participating in AIHA partnerships. This two-way exchange of expert partners was a crucial element of the AIHA partnership program in CAR. It played an important role in fostering a sense of true partnership between the partners and was instrumental to the partnership process and the success of the program. Americans traveling to CAR were able to learn first-hand the situation on the ground that the CAR partner institutions faced. Exchanges to Central Asia were also important since the CAR institutions were the ones implementing the programs. In-country training provided by the American partners enabled a higher number of participants and better dissemination of information.

Exchange visits to the US were imperative because they allowed the CAR partners to see American procedures and approaches to healthcare with their own eyes. One common example was the case of nurses who observed their US colleagues in daily practice and gained a much better understanding about what the nursing profession could be like. Matching CAR partner needs to US partner ability to address them was important in the development of realistic and appropriate partnership workplans. Experiences in the US also exposed the CAR partners to American styles of community involvement that would have been hard to grasp otherwise.

On the other hand exchange visits to the US were limited in their scope because most of the trips consisted of short-term exchanges and informal training, rather than longer-term, intensive training courses. Because of the distance and time needed to travel to CAR, the short exchanges were often also further limited by time zone adjustments. Additionally, because travel to the US was considered a perk, sometimes politics and favoritism drove the selection of participants, limiting the effectiveness of the delegation to utilize what they learned upon their return.

➢ Demand-driven and Flexible Process

Another important element of the AIHA partnership methodology is its demand-driven partnership process. Any partnership interventions implemented would be successful only if they reflected the needs of the CAR partner institutions. Instead of imposing solutions, US partners shared ideas and worked together with their CAR colleagues to implement appropriate and effective programs. The partners were also empowered to address more than one health concern in the same project, unlike many other international programs that focused only on one targeted area.

AIHA managed the partnerships with a rigorous approach to process, developing policies, procedures, and tools to help facilitate the work of the partnerships, while fostering partner-driven results. However, the demand-driven nature of the partnerships required a certain degree of flexibility in allowing partners to adjust to changing situations and priorities, resulting in changes in workplan objectives and outcomes. For example, when the two Tashkent State Medical Institutes merged, the Tashkent partners refocused their efforts from working on the graduate curriculum that was to be developed at TashMI II to developing short courses for postgraduate education.

The use of a cooperative agreement helped AIHA have the flexibility to fund partnership activities based on individual partnership needs assessments. This allowed for flexible planning and allowed partners to set and modify objectives as needed to meet the goal of the program. This flexibility, while beneficial to the programs, made mapping to USAID indicators difficult.

- **Peer-to-Peer Relationships**

By focusing on the development of relationships between CAR and US partners as peers and colleagues, the AIHA partnerships were able to foster a sense of teamwork among partners. The US partners were experts in their field, but the CAR partners were involved as equal partners in the process. While the Americans could share their expertise and experience, this peer-to-peer approach empowered CAR partners to become change agents in their institutions and to take ownership of the programs being implemented. Rather than simply describing organizations whose models and systems were applicable in CAR, US partners made a concerted effort to include representatives of these organizations in partnership exchanges. In this way, CAR faculty had direct access to real people representing some of the best ideas in medical, nursing, and public health education internationally.

Involving the CAR partners as equals to their American counterparts in the assessment and planning phases of the program helped to ensure that the partnership workplans developed addressed local needs and that the interventions suggested would be appropriate to the local context. It also enabled the US partners to learn from the CAR partners and understand why certain things could not work The partners on both sides have noted that one of the lasting impacts of the program has been the personal relationships that they've established through the program. They stress that while work was the main purpose of the exchanges, developing personal relationships through which they were able to share their personal lives and see their shared values greatly strengthened the program. Daniel Vandure from the Bishkek/Reno partnership expressed a common feeling among the US partners when he said, "I learned a great deal about how to negotiate and reach across very dissimilar cultures for a common cause."

- **Voluntarism**

A crucial element of the AIHA program is the voluntary aspect of the partnerships. US partners donated their expertise by volunteering their time during professional exchanges to CAR and the US and in hosting CAR partners in their US institutions. US partner institutions also donated equipment and supplies in support of the work of the partnerships in CAR. By galvanizing US institutions and American experts to participate in the partnership program, AIHA has been able to leverage substantial amounts of in-kind donations. AIHA's partners generated a total of $13,886,401 in in-

kind contributions to the partnership program balanced against $18,699,998 of funding from USAID.

The idea of volunteerism was new in the CAR countries during the partnership program. The Astana/Pittsburgh partners introduced the concept in developing the primary care partnerships with its focus on community involvement. The idea has become very well developed at Demeu and the replication sites in Semey and Uralsk now recruit and train volunteers for their community clubs and support groups.

A drawback of the use of volunteers was that the US partners had full-time jobs and the partnership work was above and beyond their usual work obligations. This made scheduling exchanges dependent on the schedules of the US partners and on occasion shortened the exchange time. The US partners were also constrained by the varying levels of organizational support. The fact that many had not traveled internationally or worked on international assistance programs did not pose a barrier to the success of the program, but the Americans did find that communication through interpreters often was a challenge to their work.

PROGRAM IMPLEMENTATION LESSONS

➢ Language/Communication Barriers

One of the ongoing challenges in supporting the partnership program was bridging the language barrier between US and CAR partners. Interpreters were used during exchanges and to translate written documents and educational resources. However, partners found when working with interpreters, the value of the program was often dependent on the quality of the interpretation. Partners had difficulty finding translators who could understand the program, had appropriate medical or social work backgrounds or knowledge of medical terminology, and could deliver the meaning of the words being translated.

For this reason, the Bishkek/Reno partners provided English-language instruction to key partners, and some programs, including the International Nursing Leadership Institute (INLI), required that the CAR partners who participated had at least a workable knowledge of English. The Bishkek/Reno and Tampa partners and the partner intuitions that participated in the region medical education partnership became very aware of the importance of speaking and writing English in pursuing opportunities for research grants. The research grants between US and CAR medical schools initiated through the partnerships needed to be completed in English, a fact which narrowed the field of prospective collaborators to the limited number of English-speakers among the partners.

The US partners found that the telephone and Internet connections within CAR were often unreliable, especially in those cases where the partnership sites were outside the capital cities. Over time, Internet communication became more readily available and more efficient. However, long distance communication via email and telephone could not be established without a common language. The CAR partners often depended on the ability of one member of the partnership group who spoke English to maintain this communication. The AIHA regional office staff played an important role in facilitating partnership communications by serving as a liaison between the US and CAR partners.

Another issue was the dearth of medical, nursing, and health management text books in Russian and their virtual non-existence in any of the CAR languages. In addition, many of the key reference documents and Web sites for medical and nursing education were available only in English. The US partners translated many documents into Russian, and the University of Minnesota partners purchased as many Russian-language nursing texts and journals as they could find for each of the CAR partnership nursing schools. The US and Kazakh health management faculty working in Turkmenistan identified and made available to the Medical Institute in Ashgabat the most up-to-date management materials available in Russian.

- **Selection of Exchange Participants**

One very important aspect of the partnership was the involvement in its activities of people of different professions and levels of experience. It created an opportunity for them to work together in a neutral environment outside of work. For many nurses, the partnership gave them the very first occasion to work with physicians as a team. This nurse-physician teamwork helped to improve the perception of nurses among physicians. Including key government officials and heads of the partner institutions in the exchanges was often required by CAR governments themselves. However, the participation of government representatives was in many cases a critical factor in bringing about institutional change. For example, the participation of MOH staff responsible for nursing education reform in Kazakhstan to in exchanges to the University of Minnesota School of Nursing was one of the key factors which led to policy changes in nursing education in Kazakhstan.

Many partners also found that a higher number of participants in the exchange trips to the US meant better odds for success. Partners who returned to their country with new ideas and knowledge very often meet with resentment and skepticism among their colleagues. A group of professionals from the same institution, or even from the same department, who are exposed to international practices, could rely on each other for support in implementing changes at their home institution. The regional medical education and the nursing partnership exchanges included people that represented analogous positions in each of their respective partner institutions. The medical education partnership on occasion expanded the exchange to include all members of the Council of Rectors and all department heads from the participating institutions.

- **Training methods and settings**

Exposure to new teaching methodologies in many ways helped to teach CAR partners to think differently, which turned out to be just as important as the content being taught. The partners were not only introduced to important theoretical concepts, but also learned practical skills for teaching students.

The partners utilized a variety of different methods and settings for the training that took place during partnership exchanges. Depending on the subject matter, partners designed hands-on as well as didactic training courses, and they organized both small-group and one-on-one sessions. Generally, partners found that hands-on training worked better for skills-based clinical training, while training courses using adult learning methodologies worked better for faculty and management training. Each of the training centers AIHA established in CAR was equipped with practice mannequins and equipment to be used in teaching and practicing skills. A training-of-trainers approach was used to teach the faculty in the training centers established through the partnerships.

In addition to adult learning techniques, the faculty training included case study development as a major element of course design.

- **Inter-partnership Conferences and Other Regional Activities**

In order to foster a "partnership of partnerships," AIHA sponsored activities that brought together partnerships from different countries in the region to foster collaboration and dissemination of knowledge. Task forces not only helped steer partnership directions in topic areas, but also became a useful tool for building long-lasting relationships and sharing experiences. Regional conferences and workshops enabled partners to share experiences in common program areas and make connections with their colleagues who were going through a similar process.

One challenge to the success of the regional activities was the varying levels of economic and social status of the various countries in the region. This made the content of the meetings more general than some of the partners would have liked. Another downside to the use of the regional meetings was that it was costly to convene them.

- **Regional Partnerships**

The idea for the regional undergraduate medical education and regional nursing partnerships was based on the view among regional health educators that regional cooperation would lead to improvements in the education system and a unified standard for medical and nursing education that would benefit all countries. While AIHA had supported partnership activities directed at developing medical and nursing education at the institutional level, in 2004 AIHA and USAID agreed that broader multi-institutional regional partnerships focused on undergraduate medical education and nursing education would be an appropriate means to stimulate change and implement educational reform within medical and nursing institutions. In addition AIHA had worked with both the Central Asian Council of Rectors and the Nursing Coordinating Council. There was receptivity among the members of both of these groups to replicate the changes introduced among the partner institutions. The regional partnerships presented the opportunity for CAR educators to engage with one another on issues of mutual professional interest and concern and to discuss their ideas for reform, provide advice, and present best practices.

Implementing the regional partnerships presented multiple challenges, the first of which was that not all countries in the region were able to participate. Funding was not available to support the participation of the nursing schools in Tajikistan, and the restrictions applied by the government of Turkmenistan were a barrier limiting their participation in the regional conferences and the council meetings. Representatives from both countries were invited to regional meetings; however, Turkmenistan participation was never an option. Tajik nurse leaders were able to participate on the CAR Nursing Coordinating Council.

Most Central Asian countries have adopted an improved basic nursing curriculum, but implementation was uneven within and among the countries. Although all CAR partners expressed the desire for advanced education at the baccalaureate and master's levels many of the programs remained focused on basic nursing education. The US partners developed two tracks for implementing the program—one for basic education and one for advanced nursing preparation. Of

the six CAR partner institutions, only two were able to focus on developing advanced nursing programs.

Because of the nature of the regional partnerships, yhe US partner institutions for both the nursing and the medical education partnerships had to determine the most efficient way to share partnership training resources equitably in implementing the program. The University of South Florida partners initially focused on reaching large numbers of CAR faculty with information that all educators could use. After a series of workshops they recognized that sustainable results could be achieved only if they moved from this broad, generalized approach with abstract activities (e.g., workshops on grant-writing) to a targeted approach with applied activities (e.g., a research incubation meeting that paired potential collaborators to work on actual grant applications). This resulted in more targeted learning, specific skills development, and inter-country peer interaction and networking. The University of Minnesota partners used various teams of nurses who worked to target the developmental needs of each CAR institution. The nursing partnership also used partnership workshops to address general skills that all nurse educators could use in developing curricula or teaching methods. Both partnerships used their respective councils to support region-wide dissemination.

Under the multi-institution regional model no single institution in CAR "owned" the partnership or felt responsible for outcomes. This led to the development of fewer "champions" and less investment by individuals in the overall results. The partners did, however, identify several key change agents and continually invited them to participate in exchanges and workshops. Implementation of institutional changes was uneven with some of the partners making changes more rapidly than others. The institutional variations often coincided with the uneven efforts by the countries in implementing broader reform measures. Kazakhstan, for example, has moved more quickly then any of the other countries to move toward international standards in both nursing and medical education.

Finally, a challenge that faced both regional partnerships was the lack of a regional governing organization with the authority to mandate or enforce regional standards for education, accreditation, and licensure. Regional initiatives and standards developed by the partners were only able to be implemented voluntarily.

- **External Pressures on the Program**

Despite the best efforts of the partnerships to plan their programs, they were often hindered by challenges that were beyond their control. Many partnerships faced changes in leadership. Sometimes partnership coordinators or key personnel left the partnership organization, causing changes in direction with new leadership. In other cases, partnerships faced political changes on the local, regional, or national level that affected the progress of the partnership by shifting healthcare priorities. In two cases, US partners withdrew before the partnership was completed.

Additional challenges occurred when healthcare reforms had not yet caught up to the progress of the partners. For example, when nurses learned about the roles of their American counterparts and wanted to take on new responsibilities within their own systems, they frequently encountered resistance when they went back home. Similarly, graduates of the CAR partner institutions' newly created healthcare management programs were often unable to find positions as healthcare managers since these positions were still being politically appointed.

The partners also faced financial constraints when trying to implement their programs. Because the national ministries of health were underfunded and the healthcare institutions were working with very sparse resources, the partners had to work hard to solicit funding for their new programs and bring in external funding though grants or by instituting fee-for-service.

KEY FACTORS FOR SUCCESS

➢ CAR Change Agent/Champion

In many cases, the success of the program was at least partially attributable to the single contributions of a key leader, who served as a champion of the project and an agent for change. Partners with magnetic personalities, important political connections, or simply intense dedication were able to sway reluctant decision-makers and clinicians to support the program. Some partners also found that the encouragement and moral support provided during interactions with their American partners helped them to grow more confident and discover the leadership potential in themselves. The success of Demeu in Astana and KSPH are examples of such leadership.

The US partnership coordinator was also a key element contributing to the overall success of the partnership. As volunteers, many partnership coordinators worked on the project above and beyond their daily job responsibilities and did so because they believed in the work they were doing. Many of them worked in multiple partnerships so that over time their impact has been tremendous. Dynamic and dedicated partnership coordinators were able to garner the support they needed from their institutions, recruit a wide variety of volunteers, and help their CAR partners lobby for political change.

➢ Local Ownership

By being involved in true peer-to-peer relationships with their American counterparts and involving them in a demand-driven process, the CAR partners took ownership of the partnership and the changes being implemented in their institutions. For example, in Turkmenistan the US partners from University of North Dakota Medical School relied on their counterparts in Ashgabat to implement the primary care training center program. The US partners provided key technical assistance and mentoring, but the actual training was managed and provided by the Turkmen partners. The US partners had ended their partnership before the second training center was established with AIHA support. By placing ultimate responsibility for the success of the interventions squarely on the shoulders of the CAR partners, they became owners of the process, helping ensure its sustainability well after the partnerships graduated.

➢ Political Support

Support from national and local governments in Central Asia was integral to the eventual success of the partnership programs. AIHA partners were encouraged to keep the ministries of health updated on the partnership's progress, and funding limitations made securing the financial support of the MOH imperative. Because AIHA's subgrants would generally only fund training and a limited amount of supplies, AIHA and CAR partners had to gain the support of their health ministries to fund salaries, renovations, and most equipment. Many of the issues addressed by the education

partnerships in CAR had policy implications that are beyond the authority of the medical and nursing school leadership. Therefore, a vital component of the partnerships' activities was to educate ministers of health and of education about methods to address the challenges facing medical education. The partners used the opportunity of partnership exchanges, regional conferences, and the regional councils to collaborate with the ministries on the development of policy for medical education and to participate in reform planning and implementation.

In CAR political instability and/or presidential elections sometimes distracted ministry and medical academy leadership from focusing on partnership activities. During the three-year medical education partnership between 2004 and 2006, the rectors at five of the seven participating academies had changed. There were also several changes in the nursing department heads. The hope is that the CAR partnership leaders will be able to gain the support of the new institutional leadership.

AIHA's Health Partnership Program in CAR contributed in myriad ways to strengthening healthcare reform efforts in the region. As the country summaries, program area summaries, success stories, and partner profiles illustrate, the program has had an impact that goes far beyond the immediate individuals and institutions involved. Not only were a wide range of new, improved, and sustainable solutions to healthcare problems introduced, but as a result of deep and significant shifts in thinking and new paradigms for approaching problems, a legacy of enduring and ongoing changes remains throughout the region. After the funding, the exchanges, and the technical assistance have ended, partners are left with professional skills and with a network of peers to sustain reform efforts in the region

The partnership program also greatly benefited participating American healthcare institutions and health professionals by providing them with a global perspective, an opportunity to build bridges within their own communities around an international service project, and critical insights into the solution of healthcare issues back home. The personal, professional, and institutional impact of the program on the US participants, while not fully anticipated when the program was initiated, has been rewarding and life-altering.

APPENDICES

Appendix A
List of Key Health Partnership Program Events in CAR
1999-2006

1999

- **Emergency Medical Services Training Center Opening, Tashkent, May**
  The opening ceremony coincided with the beginning of the second EMS training course offered at the center.

- **The National Infection Control Conference, Almaty, June**
  The conference included over 100 health leaders from every oblast in Kazakhstan.
  A resolution on the new infection control practices and policies was developed to present to the Health Committee of the Ministry of Health, Education and Sports in Kazakhstan.

- **Nursing and Primary Health Care: Educational Tools for the Realization of Reform Strategies Conference, Bishkek, September**
  One hundred and twenty nurses from five Central Asian countries and the United States attended. Participants adopted a Bishkek Declaration, which called for a coordinating body to regulate nursing activities in the region.

- **WHO Laboratory Training Course, Tallinn, Estonia, September**
  The training was part of a NIS/CEE Infection Control Initiative to combat the emergence of antimicrobial resistance. Participants received training in the use of the WHONET database.

- **AIHA 1999 Annual Partnership Conference, Arlington, VA, November**
  Representatives from Central Asia participated in "Partnering for Healthier Communities" which focused on past successes of partnerships as well as future directions in primary health care and community health for the NIS partnerships. Selected partners also participated in pre and post conference meetings addressing health management education, infection control, women's health and emergency medical services.

- **International Nursing Leadership Institute, Louisville, KY, November**
  Three nurses from Kazakhstan and Uzbekistan, members of AIHA's International Nursing Leadership Institute, participated in the Institute's second training session. During the week and a half session, nurses discussed progress made on their individual projects and learned skills in such areas as negotiation, teamwork, and project management. The nurses also participated in a special session organized by Sigma Theta Tau International, the international nursing honor society.

2000

- **Almaty Women's Wellness Center Opening Celebration, Almaty, January**
  The opening ceremony for the Center's new location included several educational classes conducted by center staff, including classes for adolescents on menstruation and contraception, on menopause for older women and on preparing for childbirth.

- **Central Asia Nursing Coordinating Council, Almaty, February.**
  During the meeting, the Council developed by-laws, rules of membership, and formulated goals and future projects for the membership.

- **American Organization of Nurse Executives (AONE) Study Tour, Chicago, Indianapolis, and Nashville, March**
  Nurse leaders from Kazakhstan and Uzbekistan participated in the study tour and received training in the role and functions of nurse executives and association building, and provided an opportunity to discuss establishing nursing leadership organizations in each of the Central Asian countries.

- **WHONET Quality Assurance Workshop, Almaty, April**
  This workshop, taught by the initiator of WHONET, was based partly in the laboratory for skills training in susceptibility testing and quality control strains testing. The workshop also provided technical database training and was a forum for discussing the creation of a microbiology network in the region.

- **Ferghana and Tashkent/Atlanta Partnership Memorandum of Understanding Signing Ceremony and EMS Training Center Opening, Ferghana, June.**
  The Emergency Medical Services Training Center, located at the Ferghana Regional Emergency Center was created to be part of AIHA's network of Emergency Medical Services Training Centers.

- **TashMI II Women's Wellness Center Satellite Center Opening Ceremony, Tashkent, April**
  US Secretary of State Madeline Albright attended this event and addressed the importance of the availability of family planning and reproductive health services for women.

- **AIHA's NIS/CEE International Nursing Conference on "Primary Health Care: Methods, Models and Practice," Tbilisi, Georgia, April**
  The conference focused on the emerging role of the primary health care nursing in the NIS. Faculty included graduates of AIHA's International Nursing Leadership Institute. Nurses from West NIS, the Caucasus, Central Asia and the Russian Federation discussed issues pertinent to their particular regions and planned future activities in primary care nursing.

- **Training-of-Trainers Workshop in Management and Leadership, Almaty, April**
  The training focused on specific skills needed to organize and facilitate workshops; including presentation skills, applying adult learning theories, using participatory training techniques and group process, and leading a faculty team.

- **AIHA's Neonatal Dissemination Conference, L'viv, Ukraine, April**
  The eleven participants from CAR included neonatal trainers and practitioners from AIHA's Neonatal Resuscitation Training Centers. The conference addressed resuscitation of newborns, neuro-developmental follow-up for high-risk infants, and ethical and moral issues encountered in the care of newborns. Participants also discussed strategies for sustainability and continued dissemination of the neonatal resuscitation program.

- **Central Asia Management Workshop, Almaty, April**
  Participants learned the basic functions of management; the application of the management framework to their roles as managers; understanding the systems view of health services management; how to utilize leadership; problem-solving and communication skills. Faculty from the Kazakhstan School of Public Health teamed with US faculty to teach the workshop.

- **Conference on Substance Abuse Prevention for Primary Health Care Partnerships, Sarov, Russia, April**
  CAR primary care representatives attended the AIHA conference held in conjunction with the US Government's Substance Abuse and Mental Health Services Administration (SAMHSA) and the US Department of Energy (DOE). The conference provided education on drug abuse including the role of the physician, family, and community in prevention and intervention and as treatment options.

- **Women's Wellness Center Director's Meeting, Kiev, Ukraine, April.**
  Directors developed guidelines on screening and treatment of cervical cancer, prevention and prenatal care for high-risk pregnancies, and hormonal therapy. They discussed the implementation of women's health clinical practice guidelines and formed working groups to review them for recommended use in the Women's Wellness Centers and PHC clinics.

- **Case Method Workshop, Almaty, May**
  Following a series of group and individual activities facilitated by US faculty and the HME partnerships from CEE, participants spent the week developing case studies. Participants used the networking opportunity to share curricula and other instructional materials.

- **Breast Health Community Outreach Workshop, Kiev, Ukraine, April**
  Participants learned the components of breast health and an early cancer detection program, how to identify local resources to promote breast health, and how to develop strategies to promote breast health awareness and advocacy. Participants were required to develop an action plan for follow-up in their communities.

- **Annual Meeting of the Regional WHO Office for Europe , Copenhagen, September**
  The Rector of the Kazakhstan School of Public Health was elected to serve on the Executive Committee of WHO, the first such high-level representation within the WHO for the CAR region.

- **International Nursing Leadership Institute, St. Petersburg, Russia, July**
  The workshop themes included conflict management and negotiation, conference and meeting planning, presentation skills, leadership and mentoring. The participants worked on individual leadership projects that they are to implement over the course of the institute year.

- **AIHA Partnership Conference, Developing Common Strategies for Improving Primary Care and Community Health, Budapest, Hungary, July**
  CAR representatives participated in the meeting that focused on community mobilization, health promotion strategies, and practical skills-building for primary care providers. CAR partnerships also met in sub-regional sessions to share best practices and facilitate coordination on issues related to workplan implementation, primary health care clinical practice guidelines and performance indicators and outcomes.

- **The Primary Health Care Professional for the Year 2010: Collaborating to Develop Education and Workforce Planning Strategies for Central Asia Conference, Almaty, October**
  Over 50 CAR health professionals and ministry officials representing health, education and finance met to discuss issues related to the education of primary care physicians and nurses to support health sector reform in the region.

2001

- **Occupational Health and Infection Control for Primary Health Care Providers Workshop, Almaty, January**
  The workshop provided participants with training in evidence-based practices related to occupational health hazards and prevention strategies in a primary care setting. a Carelift International presented a session on safe management of waste from healthcare activities.

- **The Primary Health Care Nurse for the Year 2010: Collaborating to Develop Education and Workforce Planning Strategies for Central Asia Conference, Tashkent, January**
  Over 40 nurses, nursing collage administrators, Ministry of Health officials including three US nursing experts discussed the role of nursing, particularly in primary care in supporting and enhancing the reform of the health care system in Central Asia.

- **The Central Asia Infection Control Training Center (ICTC) Opening Ceremony, Almaty, January**
  The Center at the Republican Sanitary Epidemiological Station in Almaty was established as the sole center in Central Asia.

- **Nursing Resource Center Opening, Dushanbe, March**
  The NRC serves as the center for education and training of nurses, including in primary care nursing in Tajikistan.

- **The Family Medicine Training Center (FMTC) at Health House #1 Opening Ceremony, Ashgabat, May**
  Seventy people, including the US Ambassador to Turkmenistan, USAID and AIHA representatives, US partners from North Dakota, government officials and local healthcare practitioners participated in the ceremony.

- **2001 Annual Partnership Conference "Primary and Community-based Healthcare Solutions: Building on Models of Change," Washington DC, April**
  The conference focused on AIHA's programmatic emphasis on developing community-based approaches to improving the quality of primary health care in the Central Asia.

- **EMS Training Center Refresher Course, Tashkent, May**
  The workshop reinforced topics covered in the basic EMS curriculum and added a component on adult learning concepts and techniques that will make it possible for new instructors to more effective teachers.

- **Nursing Management Workshop, Almaty, December**
  This six-day workshop for nurses was a collaborative effort with of the Kazakhstan School of Public Health and and *ZdravPlus*.

2002

- **Family Medicine Center Opening Ceremony, Astana, February**
  The Demeu Center is notable for integrating social services with medical services and for its substantial outreach to the community.

- **Conference on Primary Care Nursing Reform in Central Asia: Core Competencies and Educational Standards, Almaty, April**
  The meeting was held in conjunction with the CAR Nursing Council.

- **All-Members Meeting of the Central Asian Region Council of Rectors (COR), Almaty, May**
  Seventy participants including rectors, vice rectors and deans from the US, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan established standard qualifications for CAR medical school graduates. The rectors discussed faculty development strategies and established working groups within the council.

- **AIHA 2002 Annual Partnership Conference, Celebrating Ten Years of Partnership Success, Washington, DC, July-August**
  All currently active partnerships in the Central Asia Region (CAR) participated and CAR partners from Almaty, Astana, and Bishkek gave conference presentations on the ten years of partnerships in CAR.

2003

- **Third International Conference of the Kazakhstan School of Public Health, Almaty, June**
  The focus of the conference was healthcare strategy and was attended by the US partner from the Virginia Commonwealth University. The conference was also the graduation event for Almaty/Richmond partnership.

- **Women's Wellness Center Opening Ceremony, Almaty, May**
  The ceremony marked the opening of the second WWC in Almaty.

- **North Atlantic Treaty Organization (NATO) Disaster Preparedness Drill, Ferghana, April**
  The Ferghana Emergency Medical Services Training Center (EMSTC) participated in training for first responders and triage.

- **First National Conference on Health Management and Public Health, Tashkent, June**
  Sponsored by TashMI II) the conference provided an opportunity CAR partners to exchange knowledge and information with national representatives, agency administrators, international health management consultants.

- **CAR Regional Partnership Meeting, Astana, May**
  The conference included presentations by Ministry of Health representatives from four CAR countries (Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) and provided an opportunity for CAR partners to present findings from the recently completed self-assessment survey.

- **Refresher Training-of-Trainer Advanced Life Support in Obstetrics (ALSO Course, Tashkent, June**
  Three obstetrician/gynecologists from Tashkent were taught by a certified North Dakota trainer and subsequently conducted the ALSO course for 30 physicians under the mentorship of the North Dakota physicians.

- **KSPH Central Asian Regional Health Promotion Conference, Almaty, September**
  A collaborative effort between AIHA and the Technical Assistance to the Commonwealth of Independent States(TACIS), the conference was planned for health care administrators and practitioners from the Central Asian Republics.

2004

- **Health Insurance Study Tour, Canada and US, September**
  At the request of the Turkmen government AIHA coordinated the study tour to the US and Canada for five Turkmenistan government policymakers to help them prepare for the introduction of obligatory health insurance in Turkmenistan.

- **Health Management Workshop, Ashgabat, September**
  The workshop presented by faculty from the Virginia Commonwealth University and KSPH, laid the groundwork for the health management training center at the Ashgabat Medical Institute in Turkmenistan.

- **Research Ethics and Grantsmanship Workshop, Almaty, September**
  AIHA and the University of South Florida partners collaborated with representatives from the National Institutes of Health (NIH) to conduct a Research Ethics and Grantsmanship workshop for vice rectors for research from medical schools, academic researchers, heads of ethics committees and officials from the Ministries of Health and Education. More than eighty participants were in attendance.

- **First Congress of Social Workers, Almaty, October**
  Members of the Demeu staff participated in the meeting hosted by the Kazakh State University giving two presentations on their experience of integrating social services into family group practice.

- **Memorandum of Understanding signing of family medicine and social service program, Astana, December**
  The event and the signing of a Memorandum of Understanding among the Kazakh Ministry of Health, the Kazakh Ministry of Labor and Social Welfare, and AIHA formalized the collaborative relationship among the three parties in strengthening family medicine and social service programs in Kazakhstan.

- **Conference on Reforming the Medical Curriculum: Competency-Based Education and Progressive Evaluation to Support Life-Long Learning, Astana, October**
  Nearly 60 senior medical educators from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan attended the meeting organized by the University of South Florida to discuss reform of medical school curricula in CAR.

- **USAID's Second Annual Regional Public Health and Health Management Conference, Charvak, Uzbekistan, November**
  USAID's implementing partners participated in the conference held jointly by TashMI II, the Ministry of Health of Uzbekistan and WHO to gain a better understanding of modern health management principles that could be incorporated into their current and future health projects. Partner representatives from the University of South Florida and the University of Kentucky shared the partnerships' experiences in curriculum and faculty development in health management and public health education with health educators and health officials from the Central Asian Republics.

2005

- **US National Tuberculosis Curriculum Consortium (NTCC), San Diego, CA, February**
  An expert of the Kazakhstan National Curriculum Development Department attended the meeting of the NTCC to learn about the work of the Consortium for use in developing TB/HIV curricula for Kazakhstan medical schools.

- **PMTCT Kazakhstan Replication Site Meeting, Almaty, January**
  The meeting provided a forum for an open productive discussion of technical and organizational issues related to implementing PMTCT in Kazakhstan. The participants unanimously adopted a resolution that provided recommendations to the Ministry of Health for implementing a PMTCT program country-wide.

- **CAR Regional Conference on PMTCT, Almaty, March**
  The conference was held as part of the process to develop a comprehensive approach to the prevention of HIV infection among infants in Central Asia consistent with WHO PMTCT protocols. Country-specific PMTCT national plans were revised in view of global experience and AIHA pilot-project achievements. The main challenges in implementing a national PMTCT strategies and capacity-building plans were identified and approaches to address them were determined.

- **Facilitator Orientation and Pilot Training Workshop for the WHO HHS-CDC PMTCT Generic Training Package (GDP) Adaptation for NIS, St. Petersburg, Russia, March**
  The workshop was organized to test the newly-adapted Russian version of the training package on the prevention of mother-to-child transmission (PMTCT) of HIV for its appropriateness in

the NIS. The Russian training package is based on the PMTCT Generic Training Package, a collaborative project of the World Health Organization (WHO) and the US Department of Health and Human Services – Centers for Disease Control and Prevention (HHS-CDC). The workshop consisted of an orientation and a pilot training of the material. Representatives from the Kazakhstan PMTCT sites selected as trainers participated in the workshop.

- **Annual CAR Nursing Coordinating Council Conference, Almaty, May**
  Over 80 leading CAR nursing specialists joined with US partners from the University of Minnesota School of Nursing in a discussion of nursing education systems, nursing research development, and nursing legislation in CAR. Participants reached consensus on common approaches to these issues. The conference resolution addressed governmental and international organizations support for nursing reform in CAR.

- **Pilot Training for the Kazakhstan-adapted Version of the WHO/CDC PMTCT Generic Training Package, Karaganda, Kazakhstan, July**
  National Kazakh PMTCT trainers demonstrated their ability to conduct PMTCT training. The eight trainers who conducted the training currently serve as faculty of the Temirtau PMTCT Training Center.

- **Study tour to the University of Central Florida, Orlando, FL, August**
  AIHA organized a two-week training exchange to the University of Central Florida for the four Turkmen State Medical Institute faculty members to gain first-hand knowledge about curricular components and the organization of health management education, including teaching techniques.

- **The Ninth Meeting of the Network of Government Chief Nurses of the WHO/European Region, Copenhagen, Denmark, December**
  Five chief government nurses from CAR had the opportunity to learn about the nursing and midwifery education programs in Europe and to participate in discussions about possibilities for adopting basic education standards throughout the European region. Contributing to the meeting's objective, representatives of Kazakhstan and Kyrgyzstan gave presentations highlighting the accomplishments of the regional nursing education partnership and the CAR Nursing Coordinating Council.

- **Family Medicine Training Center and the Health Management Training Center Opening Ceremonies, Ashgabat, December**
  The opening of the centers highlighted the emergence and development of new training capacity in family medicine and health management within Turkmenistan that complements efforts of the MOHMI to improve the quality of education for primary healthcare providers and health managers nationwide.

- **Working Group Meeting on Prevention of HIV Infection in Infants, Almaty, December**
  Participants developed and made recommendations for the national plan for PMTCT in Kazakhstan.

2006

- **Regional PMTCT Training Center Opening Ceremony, Temirtau, February**
  The official opening ceremony of the facility at Temirtau Maternity Hospital in Kazakhstan was held in conjunction with a successful launch of the WHO/CDC PMTCT Generic Training Package course for Kazakhstan. The course was taught by training center faculty. The training participants were faculty representing all the medical schools in Kazakhstan. The participants received materials to upgrade relevant curricula used at their medical schools.

- **University of Kentucky School of Public Health and Tashkent Medical Academy Partnership Conference, Tashkent, June**
  The partners used the conference as a venue to disseminate the undergraduate health management curriculum they developed among the other 8 medical schools in Uzbekistan. Through a series of group exercises, the conference participants reviewed the content and design of the post graduate short courses in management developed through the partnership and being taught at the Tashkent Medical Academy.

- **Neonatal Resuscitation Training Center Opening Ceremony, Ashgabat, May**
  The center is located at the National Maternal and Child Health Center in Ashgabat. Following the opening, faculty from the Kiev Neonatal Resuscitation Training Center conducted a week-long training of trainers (TOT) in neonatal resuscitation for the instructors of the new center.

- **Partnerships as a Strategy in Health Professions Development - Partnership Graduation Conference, Astana, July**
  The concluding event for AIHA's partnership program in Central Asia provided an opportunity for the graduating partners to present the successes of their collaborations and to discuss common solutions to issues in the education and training of health care professionals and implications for regional collaboration and national policy. Partners discussed strategies for moving forward with reform efforts through increased commitment, expanded involvement of NGOs, and the involvement of new stakeholders in their work. Seventy-six representatives from current partnerships, representatives from the Ministries of Health and Education, USAID, collaborating organizations, and AIHA staff participated in the conference.

Appendix B
List of CAR Health Partnership Program Products

Product	Program	Year
CAR Medical School Graduate Competencies	Medical Education	
HIV/AIDS Module for Undergraduate Medical Edcuation	Medical Education	2006
Social work theory and social work practice principles	COPC	2005
Undergraduate course in health management and marketing	Health Management, Lexington-Tashkent	2004
Curriculum on Women's Health	Family Medicine, Turkmenistan	2006
Generic Training Package Course adapted for NIS	PMTCT	2005
AIHA Neonatal Resuscitation Module	Neonatal Resuscitation	
AIHA Infection Control Manual, second edition	Infection Control	2003
Family Practice Nurse in CAR Professional Qualifications	CAR Council of Nurses	2002
CAR Nursing Coordinating Council	CAR Council of Nurses	2003
CAR Nursing Coordinating Council Information Bulletin, 2004	CAR Council of Nurses	2004
Nursing in CAR Countries: Priorities, Achievements, and Perspectives	CAR Council of Nurses	2004
Training Curriculum for Family Practice Nurse in CAR Countries	CAR Council of Nurses	2003
The PHC professional for 2010: collaborating to develop education and workforce planning strategies for CAR, conference proceedings	CAR Council of Rectors	2000
The Central Asian Republics as a Case Study for Medical Education Reform	Medical Education, article	2005

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