

# XV International AIDS Conference, Bangkok, July 2004

## Applying a Twinning Methodology to Successfully Prevent MTCT in Resource-limited Settings in Eurasia

J. Smith,<sup>1</sup> K. Schecter,<sup>1</sup> Z. Shabarova,<sup>1</sup> S. Posekhova,<sup>2</sup> N. Gozhenko,<sup>2</sup> N. Nizova,<sup>1</sup> G. Tyapkin<sup>2</sup>  
<sup>1</sup>American International Health Alliance (AIHA), Washington, DC, USA; <sup>2</sup>Odessa Oblast Hospital, Odessa, Ukraine

With the support of USAID, AIHA's twinning methodology has been successfully applied to a regional pilot program to address the prevention of mother-to-child transmission (PMTCT) of HIV in Odessa, Ukraine. To date, this project has resulted in a 75% decrease in the rate of vertical transmission. Drawing on lessons learned, others can successfully apply this approach to similar resource-limited settings.

### BACKGROUND

Since 1992, a series of cooperative agreements from the US Agency for International Development's (USAID) Bureau for Europe and Eurasia (E&E), have enabled the American International Health Alliance (AIHA) to advance global health through volunteer-driven, "twinning" partnerships that mobilize communities to better address healthcare priorities, while at the same time improving productivity and quality of care. During this time, AIHA has established and managed more than 105 partnerships between US healthcare providers and their counterparts in Central and Eastern Europe and the countries of the former Soviet Union through formalized agreements (Memoranda of Understanding) and detailed workplans. These partnerships have involved hundreds of hospitals, health systems, educational institutions, and communities, as well as thousands of healthcare providers and allied professionals in the United States and overseas.

With activities focusing on community-based primary care, maternal and child health, nursing, infection control, emergency and disaster preparedness, and healthcare management, among other topics,<sup>1</sup> twinning partnerships facilitate the exchange of ideas and instill a strong sense of ownership within the host community by encouraging strategic planning processes that focus on appropriate and sustainable solutions to healthcare problems. The success of AIHA's partnership programs is the result of:

- the extraordinary commitment and expertise of participating partner institutions and volunteers;
- a unique collaborative model for sustainable change; and
- a dynamic network of knowledge and information services that provides a strong foundation for programmatic endeavors.

AIHA builds a framework for these three crucial elements through a host of activities, support services, and management systems that foster the exchange of knowledge and ensure the success of the development process. In addition, the organization interacts closely with funding agencies and ministries of health in the countries in which it has partnerships, fostering a unique public-private twinning model that keeps all parties and stakeholders involved in the decision-making process and apprised of progress.

### THE AIHA PARTNERSHIP MODEL

The AIHA twinning partnership model focuses on continuous, peer-to-peer collaboration to attain specific, measurable goals. Partnerships fuel the desire—and the ability—of professionals to improve the quality and breadth of available health services by not only introducing new programs, but by teaching colleagues to approach healthcare in a new and more integrated manner. As agents of change, these individuals share the common purpose of challenging the way the medical establishment and the general public think about wellness issues. In turn, this new awareness helps healthcare institutions connect with the communities they serve to develop effective, appropriate programs and services.

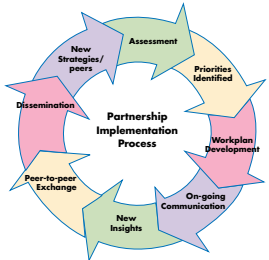


Diagram 1: The dynamic, interactive nature of the twinning partnership process fosters continuous monitoring and [re]evaluation.

It is important to understand that partnerships are based on peer-to-peer relationships rather than hierarchical interactions. The host community—with assistance from the US partners who have ample experience dealing with the same types of issues in their own communities—assesses its own needs and determines an appropriate course of action.

After the initial assessment of local conditions and identification of key priorities, partners develop a workplan that includes concrete steps and deadlines for implementing new programs/services (see Diagram 1). Many of these activities/steps revolve around the education and mentoring of allied healthcare professionals, often through adult learning and train-the-trainer

approaches. The workplan is continually monitored by AIHA partners and staff; as results are achieved, new goals are identified, or adjustments made. At times, new programmatic activities may mean bringing additional partners into the relationship as the workplan continues to evolve toward its ultimate goal(s).

### PROJECT DESCRIPTION

HIV infection is growing rapidly in Ukraine (pop. 48.4 million in 2001); by 2010 it is predicted that 1.44 million people (3% of the total population) will be infected with the virus.<sup>2</sup> Currently Ukraine has the highest HIV prevalence rate in the region, estimated at 1% of the adult population.<sup>3</sup> From 1998 to 2002, the number of new HIV cases reported in pregnant women rose from 686 to 2,022.<sup>4</sup>



In Ukraine, the Odessa Oblast (pop. 2.4 million in 2001) and its principal city of Odessa (pop. 1.1 million in 2001) have the highest HIV prevalence rates (361.3 per 100,000) in the country.<sup>5</sup> During the past three years, the number of children infected with HIV through vertical transmission has increased dramatically.<sup>6</sup>

AIHA's partnership model has been operating in Odessa since 1992, working in the areas of hospital management, continuous quality improvement (CQI), neonatal resuscitation, infection control, women's health, and primary care.<sup>7</sup> Recognizing that this port city on the Black Sea has been particularly hard-hit by the HIV/AIDS pandemic, and building on the extensive network of institutional relationships already established through its partnerships there, AIHA joined forces with the Odessa Oblast Hospital (OOH) in 2001 to establish a partnership in support of the city's efforts to address the prevention of mother-to-child transmission (PMTCT) of HIV.<sup>8</sup>

This PMTCT partnership pairs Boulder Community Hospital (BCH) and various collaborating institutions in Colorado—including the University of Colorado's Health Sciences Center and Children's Hospital of Denver—with OOH, the Odessa Oblast Health Administration (OOHA), and Odessa State Medical University. The goal of the partnership is to provide medical training and related human and organizational capacity-building assistance in support of a comprehensive +PMTCT+ approach.<sup>9</sup> Partners have worked to help reorganize the healthcare delivery system in the Odessa Oblast to better prevent vertical transmission and to create a model adaptable to other resource-limited settings throughout Eurasia. Specifically, the objectives of the collaboration are to:

- Improve the system of primary HIV prevention using the existing women's health model established by AIHA and employed by the Odessa Women's Wellness Center (WWC),<sup>10</sup>
- Improve the early identification of HIV+ pregnant women to ensure 100% case management and program participation.
- Decrease the risk of MTCT using internationally recognized protocols adapted to healthcare settings with limited resources.
- Develop consecutive and interactive +PMTCT+ management models for primary prevention; delivery; and prenatal, post-natal, and infant care and monitoring, including follow-up care for families using a family practice model.
- Develop clinical practice guidelines for preventing MTCT and introduce them into the larger medical education system.
- Develop guidelines, curricula, and other materials for regional healthcare providers and policymakers who are increasingly facing a "second wave" HIV/AIDS crisis.

### APPLYING THE PARTNERSHIP MODEL TO PMTCT

As noted earlier, an essential element of the partnership model is the training and mentoring of healthcare workers by peers drawn from the local community and/or abroad. In the case of the PMTCT partnership, key Odessa health professionals ranging from obstetrician/gynecologists, neonatologists, and pediatricians to nurses, midwives, and family physicians received extensive training—both in Colorado and locally—



Clinicians participating in a SUAEC training workshop review a patient's X-rays and medical history to determine if he is a good candidate for ART.

from their US counterparts who traveled to Ukraine to collaboratively develop the skills necessary to implement new practices. These Odessans, in turn, are training colleagues in what they have learned. As the scope of the Odessa Project broadened to include all components of a +PMTCT+ program, including pre- and post-test counseling, follow-up medical/nursing care, and psychosocial support for mothers and their infants, local NGOs and behavioral health providers were brought into the partnership to educate physicians and nurses about effective provision of these services. Table 1 outlines the timetable for partnership activities to date.

When/Where	Who/What
February 2001 8th Conference on Retroviruses and Other Opportunistic Infections, Chicago, IL	<b>7 Odessa physicians and nurses trained in:</b> <ul style="list-style-type: none"> <li>• Current HIV/AIDS research and treatment</li> <li>• Antiretroviral therapy</li> <li>• Progress in AIDS vaccine development</li> <li>• Drug resistance</li> <li>• Viral reservoirs</li> <li>• Ongoing virus replications</li> <li>• Pathogenesis and treatment of HIV neuropathy</li> <li>• Haemostatic C reactions</li> </ul> In addition, the physicians toured the PMTCT program at Cook County Hospital, Chicago, Illinois.
April 2001 International Infection Control Institute Training, The University of Minnesota, MN	<b>1 Odessa epidemiologist and the Head of Obstetrics, OOH trained in:</b> <ul style="list-style-type: none"> <li>• Patient care practices</li> <li>• Definitions and surveillance of nosocomial infections</li> <li>• Environmental health</li> <li>• Role of microbiology laboratories</li> <li>• Occupational health</li> <li>• Infectious diseases</li> </ul>
July 2001 Odessa, Ukraine	<b>Memorandum of Understanding signed</b> <ul style="list-style-type: none"> <li>• Analysis of the HIV/AIDS situation in Ukraine and the Odessa Oblast based on the results of a study by the Ministry of Health and the Odessa Oblast AIDS Center</li> </ul>
April 2002 BCH, Colorado	<b>6 Odessa physicians trained in:</b> <ul style="list-style-type: none"> <li>• Incorporating mental health, substance abuse treatment, and harm reduction services into care for HIV+ patients</li> <li>• Prenatal and intrapartum care aimed at reducing MTCT, ARV management of HIV+ pregnant women</li> <li>• Delivery and C-section techniques</li> <li>• Infant formula preparation, general nutrition, and food safety for HIV-affected families</li> <li>• General pediatric care for infants exposed to HIV and infected infants</li> </ul>
August 2002 Odessa, Ukraine	<b>10 Odessa healthcare professionals, including family physicians, nurses, midwives, pediatricians, and OB/GYNs trained in:</b> <ul style="list-style-type: none"> <li>• Contraceptive counseling for HIV+ women</li> <li>• Nutrition</li> <li>• Care models for HIV+ patients with mental health and substance abuse issues</li> <li>• EUSA and Western Blot testing</li> <li>• Flow cytometry and the SUDS HIV rapid antibody test</li> </ul>
November 2002 OOH, Ukraine	<b>10 US partners, including family physicians and nurses train Odessa providers in:</b> <ul style="list-style-type: none"> <li>• Survival and birth control for HIV+ patients</li> <li>• Nutrition health workers</li> <li>• Diagnostics for ART management of HIV+ pregnant women</li> <li>• Management of HIV+ pregnant women who are IDUs and care of their neonates</li> <li>• Obstetrical management of HIV+ pregnant women and assessment of pre- and postnatal counseling skills</li> </ul>
January 2003 OOH, Ukraine	<b>4 US physicians train Odessa counterparts in:</b> <ul style="list-style-type: none"> <li>• Infection Control</li> </ul>
June 2003 BCH, Colorado	<b>6 Odessa physicians trained in:</b> <ul style="list-style-type: none"> <li>• Relationship of substance abuse to HIV/AIDS</li> <li>• Social marketing</li> </ul>
March-April 2004 OOH, Ukraine	<b>5 US partners, including OB/GYNs and nurses, train Odessa providers in:</b> <ul style="list-style-type: none"> <li>• Relationship of substance abuse to HIV/AIDS</li> <li>• Orphanage-based nursing care</li> </ul>

Table 1: Timeline of exchanges and topics covered.

Year	Destination	No. of persons	Total no. of days
2001	Chicago, Illinois	7 (Ukraine)	56
	Minneapolis, Minnesota	2 (Ukraine)	6
2002	Boulder, Colorado	6 (Ukraine)	102
	Boulder, Colorado	10 (Ukraine)	160
	Odessa, Ukraine	10 (US)	156
2003	Boulder, Colorado	6 (Ukraine)	66
	Odessa, Ukraine	4 (US)	10
2004	Odessa, Ukraine	6 (US)	30
	Odessa, Ukraine	5 (US)	30
<b>Total</b>		<b>50</b>	<b>588</b>

Table 2: Person days/trips taken during 2001-2004.

Another important component of the partnership model is its reliance on partner institutions and health professionals to provide human and other supportive resources, as well as key supplies, on a voluntary basis thereby supplementing government funding and extending the value of donor—in this case USAID—dollars. For the Odessa PMTCT Project, over the past three years, the US partners have contributed an estimated total of \$860,000 in time and in-kind donations (including equipment, supplies, and pharmaceuticals).

The US partners are not the only ones, however, who volunteer time and goods. Each side of a partnership must make a commitment to leverage available local resources in support of their programmatic goals and the Odessa partners have contributed significant time and material goods to the partnership, in addition to funding all direct patient care services related to its activities.

Admittedly the legacy of 12 years of previous partnership activities between US partners and healthcare institutions in Odessa is a key factor in the success of the Odessa +PMTCT+ Project. For example, healthcare workers were already abandoning traditional Soviet system and had begun adopting evidenced-based practices, a patient-focused approach, and the concepts of CQI. Notwithstanding, this model can be implemented in any setting where communities are willing to work collaboratively to bring about change following the structure described above.

### RESULTS AND CONCLUSIONS

The twinning methodology is an adaptable approach that can be used to implement sustainable, systemic change that produces quantifiable results. It allows communities to involve multiple stakeholders and coordinate key local and

international donors in an effort to achieve positive outcomes and improve the quality of patient care services.

The effectiveness of this model is demonstrable. Within two years, through the use of the twinning methodology, the Odessa +PMTCT+ Project has:

- been of direct assistance to the efforts of Odessa Oblast to combat vertical transmission of HIV, resulting in a 75% decrease in the MTCT rate from 2001 to 2003 (see poster #ThPeB7020).
- developed a system and infrastructure that has not only contributed directly to the achievement of dramatic reductions in MTCT rates, but has also created significant capacity within Ukraine to replicate this success elsewhere in the region as witnessed by
  - the Ministry of Health of Ukraine's adoption of the Odessa Model for the whole country, including rapid roll-out to the eight oblasts with the most urgent need of this assistance;
  - the establishment of the Southern Ukraine AIDS Education Center (SUAE) and its collaboration as an affiliated training center with the WHO-sponsored Regional Knowledge Hub for the Care and Treatment of HIV/AIDS in Eurasia; and
  - the adoption of the PMTCT case-management monitoring database (see poster #TuPeC4918) by the Ministry of Health of Ukraine for nation-wide use.
- realized significant private sector resources (approximately a 2-for-1 match for donor funds).

Year	Milestone/Accomplishment
March 2001	Developed catalog of reference documents, including practical guides, patient charts, and patient education materials
Sept. 2001	Developed training course curricula for Odessa +PMTCT+ Model
2001-2003	Delivered critical PMTCT supplies and equipment
April 2002	Initiated clinical training program
January 2002	Developed patient monitoring and evaluation database; data entered, updated, and/or reviewed regularly
January 2002	Established on-going, case-controlled study that compares and tracks the effectiveness of +PMTCT+ intervention integrated into maternal/child health and primary care services
May 2002	OOHA approved training curriculum with a strong recommendation that healthcare workers receive training
May 2002	OOHA issued order that all HIV+ pregnant women be referred to OOH for prenatal care
June 2003	Established the Southern Ukraine AIDS Education Center (SUAE)

In particular, the use of the twinning partnership model is appropriate for resource-limited settings. It makes the most of international donor funds by leveraging community resources and requiring significant volunteerism and in-kind contributions from partners on both sides. Moreover, because the PMTCT partnership model focuses on capacity-building and institutions in the host community assume responsibility for all the service costs, the program is completely sustainable once implemented.

The efficacy of the partnership paradigm has much to do with its peer-to-peer approach and exchange process. Partnerships bring healthcare professionals with significant hands-on experience together to learn from one another. Individuals often learn better from their peers than they do from more traditional consulting relationships that use a directive approach. Through partnership exchanges, practitioners get a first-hand look at how health systems in other countries work, how care is organized, and how providers—ranging from physicians and nurses to NGO staff and volunteer counselors—work together. This type of interaction and learning is both productive and effective.

Ultimately, the twinning methodology helps to ensure sustainable success because, at its core, it promotes the belief that individuals and institutions working together to address self-identified challenges are able to achieve amazing results when they are given ownership of both the problems they face and the solutions they create.

Further information about the Odessa PMTCT Project, USAID, and AIHA and its partnership programs can be found at [www.aiha.com](http://www.aiha.com).

### REFERENCES

1. See [www.aiha.com](http://www.aiha.com) for a comprehensive list of partner activities.
2. K. M. Mendenhall and S. G. Mendenhall, "Twinning of Community Drug Policies: The HIV Epidemic in Russia and Ukraine," policy report prepared by Open Society Institute for the ENI Commission on Narcotics, Drugs and National Governance, April 2002.
3. UNAIDS, "Report on the Global HIV/AIDS Epidemic," pp. 19-34 (July 2002).
4. Organization of PMTCT system in Ukraine, MCHV Review meeting (Nov. 16-18, 2001).
5. UNAIDS, HIV Case Report, 2002.
6. UNAIDS, "Report on the Global HIV/AIDS Epidemic," p. 34 (July 2002).
7. AIHA is the primary sponsor of training. The twinning methodology was developed with Cook County Hospital of New York. The partnership worked specifically in the areas of neonatology, including antibiotic use for prevention, low birth weight and sick neonates and teaching fetal resuscitation and pediatric infection control and neonatal surgery, including neonatal intubation, and the concept of a range of care and increasing the knowledge of neonatologists and operating room nursing and with regard to all aspects of preoperative, peri-operative and post-operative patient care, infection control, providing the education necessary to establish a hospital-wide infection control program, including the creation of an Infection Control Staff and development of educational resources for all hospital employees, nursing administration and women's health, establishing a comprehensive Women's Wellness Center.
8. The second partnership (PMTCT program) paired Odessa State Medical University, Odessa Region Occupational Public Health, Family Medicine Clinic, Odessa City Council, and the Odessa Oblast Health Administration with Boulder (Colorado) Community Hospital, working in collaboration with the University of Colorado School of Medicine, Boulder County Health Department, Boulder Clinic, and Boulder County Health Administration. The partners primarily worked in areas related to primary care, specifically family medicine education, women's patient control and breast health, home visiting with Odessa Oblast Hospital in addition to PMTCT Project.
9. The Odessa +PMTCT+ Project is an integral part of a larger effort to combat HIV/AIDS that involves international donors, including WHO, UNICEF, Millennium Seed Foundation, UNICEF USAID and Ukrainian government agencies and non-governmental organizations. AIDS for example, is providing critical supplies, such as antiretroviral (ARV) drugs, C-section kits, and infant formula, and is supporting closely with AIHA to provide related technical assistance and training for Odessa healthcare workers.
10. A +PMTCT+ approach is defined as case management and peer program follow-up care in addition to MTCT interventions.
11. The Odessa WWC was established in December 1998 through the efforts of AIHA, Odessa City Council and Odessa Oblast Health Administration.
12. A regional network of more than 25 WWCs, the locally owned, general, comprehensive, patient-oriented, government- and private care services to women of all ages.

