

AMERICAN INTERNATIONAL HEALTH ALLIANCE (AIHA) Partnership Learning Resource Center Project

Project Description

I. Project Philosophy

Information technology holds great potential for the countries of Central and Eastern Europe (CEE) and the New Independent States (NIS) of the former Soviet Union, where the majority of health care professionals have been working in a climate in which they find themselves virtually isolated from current health and medical information. This has in many instances contributed to the rapid deterioration of health conditions in the region.

For health care institutions worldwide, the “Information Age” has ushered in a variety of technological innovations that are fundamentally changing the quality of health care delivery and medical education. Information has become an essential commodity within the modern health care system—as important as medical equipment or pharmaceuticals.

One example of the changing role of information in health care is its current impact on medical education and practice. As part of their continuing medical education, physicians, nurses, and other health care professionals are increasingly reliant on the Internet and other on-line resources to keep up-to-date with current medical literature. According to the American Academy of Family Physicians (AAFP), family physicians in the US are confronted with an average of seven “clinically important, unanswered questions” every day. To meet this demand, the AAFP adapted its “Recommended Core Educational Guidelines for Family Practice Residents” to include not only print sources of information, but also computer-based resources, including e-mail, the Internet, CD-ROMs, and other telecommunications technologies. Such technologies can put a virtual library of information at a physician’s fingertips. Physicians and other health professionals in all corners of the world no longer have to be constrained by the oftentimes-limited resources available in the nearest medical library. With access to the Internet, these health professionals can now obtain the most up-to-date medical literature.

A second area of impact has been the transformation of the consultative and training environment. In addition to accessing current medical information, many health professionals, including those in rural or remote areas, now have the capability to use the Internet, videoconferencing, and other communications technologies to receive training or consultations from their colleagues in a neighboring city or another country. These technologies allow physicians to transmit images (such as X-rays, CT-scans, and MRIs), video, audio, and text information and then communicate with each other—often in real-time. For example, AIHA partners in Kyrgyzstan have used scanned digital images sent via e-mail to solicit consultations from physicians in Kansas, Moscow, Almaty, and Orlando. Similarly, when a physician in Stavropol, Russia encountered a surgical problem he had never dealt with before, colleagues in Boston were able to provide him with an electronic manual along with practical treatment advice that saved the patient’s life.

As these examples illustrate, information technology has come to play an increasingly prominent role in the delivery of health care. It also provides health care professionals from all over the world with sustainable and more cost-effective opportunities to build new learning and research capacities for themselves and their institutions.

II. Project Approach

Since 1992, the American International Health Alliance (AIHA) has been encouraging the exchange of knowledge, experience, and information among its CEE/NIS health care partnerships not only by providing opportunities for trip exchanges, conferences, and regional seminars, but also by promoting the effective use of available technologies. Over the past decade, AIHA has invested in the technological infrastructure of each of its CEE and NIS partnership institutions by providing them with computers, modems, printers, and access to the Internet. In seeking to maximize the potential of these investments, AIHA has promoted the development of a Learning Resource Center (LRC) at these institutions. The LRC project involves a three-year program of training and activities that AIHA has already implemented for more than 100 health care institutions in CEE and the NIS, and which has proven to be an effective strategy for encouraging these institutions to adopt quality improvement and evidence-based approaches to care, treatment, education, and policy.

One of the objectives of the LRC project is to help partners create a source of information and communications for all staff at their institutions. By providing access to the Internet and other computer-based resources, the LRC represents a free-flowing channel that any physician, nurse, researcher, or educator can use on a daily basis to obtain the information that he or she needs. The goal of the LRC project is not, however, merely to create a complement to a medical or health sciences library. Rather, the project incorporates several activities intended to change the way that staff think about using information and to teach them to begin using this information more routinely and more effectively.

Through the LRC project, AIHA has 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 are designed to give health professionals access at the point of care and thereby improve the convenience of using information. Another element of the project involves active staff outreach and education. To accomplish this, AIHA has 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, are charged with the task of getting their colleagues to begin using information and communication integrally in their day-to-day practice. While AIHA provides regular training and programmatic support, LRC staff salaries are entirely supported by their own institutions.

III. Program Implementation

The LRC project is executed as a two- to three-year program that includes periodic training workshops and ongoing project activities. A series of training workshops, held during the first year of the program, 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 (building support for the LRC, budgeting, and grant proposal writing)
- Presentation skills, marketing and promotion
- Web site development and design
- Basic database design, computer networking, and information systems planning

LRC Setup and Staff Training

During the first phase of the project, AIHA equips each partnership LRC with the following components:

1. Computers (typically three or more) and other equipment determined by a needs assessment (e.g., printer, scanner, LCD projector)
2. Access to e-mail and the Internet
3. Various on-line and CD-ROM databases and educational resources

In many cases, AIHA also invests in the telecommunications infrastructure of the health care institution by providing higher-quality phone lines or other equipment that give the LRC a more reliable and higher-speed connection to the Internet.

In establishing each LRC, AIHA's approach is grounded in the belief that CEE/NIS partners must be prepared to commit their own resources to the project. This commitment is formalized through the signing of a project agreement that outlines the responsibilities of AIHA and the CEE/NIS partner institution. In exchange for the above-mentioned resources, each institution is required to establish a separate, secure room for the center that must be open and accessible to all staff. The institution also has to designate an Information Coordinator to maintain this center and to devote a minimum of 15 hours per week to various project activities. This person must be someone who is comfortable using computers and e-mail, who is in regular contact with other staff members, and who has the ability to communicate and read in English. Information Coordinators that have been designated by the partnership institutions have typically been medical librarians, physicians, or nurses..

In addition to the Information Coordinator, the institutions also assign an Evidence-Based Practice (EBP) Specialist and an Information Technology (IT) Specialist who are responsible for managing these particular components of the project. (See "LRC Staffing Roles, Responsibilities and Qualifications" for a detailed list of LRC staff responsibilities.)

During the first year, AIHA conducts training workshops for all three LRC staff. These

workshops cover each of the skills modules listed above. The workshops also serve as a forum to provide an orientation for LRC staff relating to their roles and responsibilities and provides an opportunity for AIHA staff to meet individually with each participant to discuss issues and problems specific to their institution.

Following the workshop, LRC Staff undertake 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.

LRC Program Activities

Staff Outreach and Training

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

Evidence-based Practice

Evidence-based practice (EBP), which aims to ensure effective integration of research evidence with clinical practice, provides a set of principles for objective evaluation of clinical information. Knowledge of these principles not only provides a powerful tool for LRC staff to use in their own searches, but also represents an important subject for their outreach and educational efforts at the LRC. After receiving formal instruction on EBP, including search methodologies and critical appraisal skills, LRC Staff are 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. As part of the annual project workplan, LRC staff also periodically work with groups of staff to review and appraise the literature on various topics identified as important to the institution.

LRCs receive a variety of EBP guides and reference materials as well access to the Cochrane Database of Systematic Reviews. Armed with these tools, LRC staff can begin to point their colleagues toward resources that can help them to make more informed clinical and health policy decisions. This approach to using information becomes not only important for the treatment of individual patients, but also for improving the efficiency of health care providers. In previous partnerships, several Information Coordinators have provided examples of how the application of EBP has resulted in significant changes in clinical practice, thereby improving the effectiveness of treatments as well as helping their institutions to reduce costs. For example, one physician learned about a new method for performing Caesarian sections, and since its introduction, his hospital has been able to reduce operating time and save on the costs of suture material.

Communications and Information Exchange

During training workshops, LRC staff learn 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 are 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. These types of applications enable CEE/NIS health professionals to communicate not only with their Western counterparts, but also with other physicians in their region.

Building Support and Sustainability for the LRC

Throughout the life of the program, Information Coordinators are 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 is intended to provide built-in sustainability by investing in the core equipment, information/communications infrastructure and 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 discuss various methods for building sources of support within the institution and ensuring that the LRC becomes an integral resource for health professionals. AIHA also provides 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 is 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 are 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.). During the workshop for IT Specialists, AIHA staff provide basic instruction in Web site design and content planning. LRC Staff then return to their institutions to begin working with their colleagues on developing content for their Web sites.

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 learn 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 receive 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 learn some basic computer network management skills to help them expand the reach of LRC resources within the institution.

Reaching Out to Local Communities

Once a health care institution has successfully established its LRC as a central hub for information access, training, and communications, many LRCs become involved in activities that extend outside of the boundaries of their institution--for example, by creating regional or region-wide networks that aim to improve the impacts of the LRCs across the health care system. AIHA has already witnessed the development of one such regional health communications network that ties all of the partnership institutions together through their LRCs. This informal network supports an ongoing educational exchange not only between US and CEE/NIS partners, but also among partners in the region. Another model for a regional network is provided by the example of Kyrgyzstan, where the Ministry of Health and AIHA have initiated a project that aims to establish electronic links among all of the nation's oblast health departments in order to improve the collection and dissemination of epidemiological and medical information. AIHA's three existing LRCs in Bishkek have served as models for the creation of information centers within each of the oblast health departments, and the Bishkek Information Coordinators have participated as trainers in a workshop for all of the information center staff. The health ministry plans to utilize this network in order to prepare and disseminate morbidity and mortality reports as well as to create a national cancer registry.

These examples demonstrate how the LRCs can serve as a starting point for changing practice standards across the country. Over the first ten years of experience with the LRC project, AIHA has found that 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.

IV. Program Assessment

LRC staff work closely with AIHA Information and Communication Technology (ICT) staff in Washington and with AIHA Regional Office representatives. LRC staff are required to complete a variety of reports regarding activities at the Learning Resource Center. These reports are described in detail in the LRC Project Workplan. LRC achievement is measured by a series of indicators and qualitative assessments, as described in the LRC Monitoring and Evaluation Results Framework. AIHA collects this information in order to demonstrate that LRCs are achieving the strategic health care improvement goals and objectives for each region, as identified by AIHA's sponsoring organizations (e.g., USAID).

V. Integration with AIHA Partnership Program Goals

In establishing the Learning Resource Centers, it is AIHA's expectation that each institution will tailor the resource center model to fit its particular needs. . The capability of the Learning Resource Center is intended as a basis for partnership communication, information sharing, and ideally, distance learning. More specifically, AIHA envisions that partnership representatives will become involved in the following activities associated with the Learning Resource Centers:

*** Plan partnership activities that incorporate use of the resource center** -- One of the functions of the Learning Resource Center is to serve as a library and education center. Inasmuch as possible, partners should begin working to fill these libraries with information resources related to the activities of the partnership. This can include educational or reference materials (translated or in English), computer-based educational software programs, videotapes, Internet-based instruction (via the World Wide Web), or any other medium of distance learning. For example, when developing training seminars or workshops within the scope of the partnership, partners should try to incorporate one or more of these elements so that the education process can continue after the workshop is completed.

*** Encourage e-mail communications between partnership coordinators and others involved in partnership activities** -- Nearly all of the AIHA partnerships are equipped with electronic communications capabilities on both sides of the ocean. E-mail should be used for more than just administration and planning by partnership coordinators; partners should encourage staff who are involved in partnership activities to continue communicating in between trips by using e-mail. If the partnership personnel from the CEE/NIS do not have individual e-mail accounts, they can use the e-mail account maintained by the Information Coordinator at the Learning Resource Center. The Information Coordinator is responsible for sending and delivering messages on behalf of everyone at the partnership institution.

*** Develop proposals for projects that expand on the scope of the Learning Resource Center Project.** AIHA is prepared to provide support to proposals from individual partnerships that jointly support the goals of the partnership and the LRC project. For example, a partnership institution may be interested in developing capabilities for teleconferencing or telemedicine applications or in developing a computer-based or Web-based training course. These types of activities can be incorporated into partnership workplans. Partnerships also may wish to develop proposals to improve the technological infrastructure at the partnership institution (e.g., installation of local area networks [LANs]). Partners should plan on including appropriate information systems personnel in future trips to facilitate any necessary technical training.

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