

Virtual Campus (in cooperation with the Pan American Health Organization).

More recently, in a joint venture with the Ministry of Health and universities, the Federal Nucleus of the School of Government was set-up. Under the coordination of the National School of Public Health (ENSP), it will develop advanced courses directed to the upper echelons of government, with a view to enabling various sectors to take a stronger role in the social construction of health. ■

Setting-up in a transitional country

Maksut Kulzhanov^a

Kazakhstan is a new independent country formed after the dissolution of the Soviet Union. The health-care system of the Kazakh Republic has been reformed dramatically. The results of this reform process show that the national health-care system needs new types of public health specialists. In 1997, the Kazakhstan School of Public Health (KSPH) was established with the support of WHO, the United States Agency for International Development (USAID) and other international agencies. During the 10 years of its history, the KSPH has had a partnership programme with the Virginia Commonwealth University in Richmond, Virginia, United States of America, and collaborates with many other institutions that provide public health education in Europe and in the Americas. We have now created and adopted in our legislation a two-year master's programme in public health (MPH), as well as a one-year certificate programme and more than 30 short-term programmes for existing managerial staff of health facilities.

In the past five years, more than 100 MPH students have graduated from the KSPH and most of them returned back to their "oblast" (province) health-care system. Some of our MPH graduates have taken up high-level administrative positions and influenced the regional health-care reform process.

Research

We are building research capacity in the KSPH with projects from the Ministry of Health and collaboration with other universities. From the research done at the school, the students learn issues and challenges in global health. The students choose a topic from among the many health reform plan activities in Kazakhstan for their final end-of-course thesis.

To support public health research in central Asia, the KSPH created the *Central Asian Health Services Research* journal (<http://journal.ksph.kz/indexe.htm>), which is published quarterly in two languages – English and Russian. The annual scientific conference organized by the KSPH every September is now the platform for health professionals from central Asia to present and share their experiences.

Training

A short training course started in 1999 and the first master's degree course began in 2001. The faculty has grown by re-

cruiting from the school's own graduates. The KSPH now has five departments with 40 full-time professors. To overcome staff shortage and to bring diversity, we have adjunct faculty from partner institutions who also train our faculty in good teaching practices.

Curriculum development is an ongoing process and we constantly review it for further improvement and relevance. A priority is to introduce distance-learning. The KSPH promotes a field- and problem-based learning approach.

The summer school network for central Asia is an important KSPH activity and supports close collaboration with neighbouring countries, including Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. ■

Lessons, challenges and future plans from Kerala, India

K R Thankappan^b

The Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), an institute in Kerala established by an act of the Indian parliament in 1980, introduced India's first master's programme in public health (MPH) in January 1997, and so far, nine batches of students have graduated. Today, it remains the only MPH programme recognized by the Medical Council of India, the accrediting body for medical degrees in India.¹ It was implemented when the MPH was not a required qualification for any job position in India. Despite this, the course has gained demand and recognition, and all the graduates have been able to find gainful and meaningful employment. Several institutions in India are now planning to start an MPH programme and the demand for guidance from the SCTIMST for such initiatives is increasing. Demand for the MPH programme is also increasing from the student community, as is evident from the increase in the number of applications for the entrance test at SCTIMST since 2006.

Over 40% of our graduates work with the various Indian state government health departments, 21% with nongovernmental organizations, 16% with academic institutions, 10% with WHO/United Nations Children's Fund (UNICEF), 8% work outside India, while the remainder are enrolled for advanced (PhD) studies. Obtaining employment for our graduates is easy, as the demand for qualified public health professionals in India is huge. It has been estimated that more than 10 000 public health professionals at different levels are required by the Indian government health system alone every year and the current availability is less than 400.² In addition, there are several opportunities for short-term appointments with the WHO-supported polio eradication programme, revised national tuberculosis control programme and several other vertical programmes.

The major challenge for the programme is recruiting and retaining good faculty; this is consistent with the expected challenge for a developing country, even in an innovative educational setting. Ours is a multidisciplinary programme

^a Kazakhstan School of Public Health, Almaty, Kazakhstan. Correspondence to Maksut Kulzhanov (e-mail: kulzhanov@ksph.kz).

^b Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, 695011, India. Correspondence to K R Thankappan (e-mail: kavumpurathu@yahoo.com).

that requires faculty in health economics, health policy, gender issues in health, anthropology, health management, epidemiology and biostatistics. There are reports claiming that health economics are neglected in the south Asia region.³ There are also severe shortages of good faculty in other public health disciplines. Human resources for health in general, and for public health in particular, are facing major challenges in developing countries and there is an urgent need for national governments to invest in human resources.⁴ It has also been argued that investment in human resources must be considered as part of a strategy to achieve the Millennium Development Goals.⁵ Another challenge is to create career paths for public health professionals, in order to enhance the quality of the public health system.

Future plans for the programme are: (i) to increase both student and faculty strength; (ii) to network with other public health institutions, such as the public health foundation of India and the Indian Council of Medical Research schools of public health; and (iii) to develop a plan to pool faculty and other resources for teaching and research in public health. ■

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The role of information and communications technology

James A Merchant,^a Thomas M Cook^b
& Cliff C Missen^c

Although each of the questions posed by the authors of the base paper deserves extensive discussion and decisive action, we will limit our comments to the issue of “scaling up public health education and training in low- and middle-income countries”. In particular, we would like to comment briefly on our experiences in using information and communications technology (ICT) to address this issue.

Many public health institutions in developed countries take state-of-the-art ICT for granted and assume that institutions in other countries have, or should have, a high level of

ICT “literacy”. They also often assume the same level of access to the vast amount of information on the Internet. Both of these assumptions are incorrect about institutions in the majority of developing countries. Indeed, 80–85% of the world’s population has no access to the Internet, and, consequently, has no access to, or use of, educational materials as configured in developed-country institutions, assuming those materials are even appropriate for their needs.

Institutions in developing countries need ICT that is low-cost, requires a minimal level of training and experience, and has been proven to be both dependable and effective under conditions in developing countries. After much trial and error, we are currently devoting our efforts to a combination of two proven technologies that are now in use in more than 50 developing countries. These technologies are used to augment and support, but not supplant, ongoing health education programmes for multiple levels of health workers, policy-makers and the public. Although the specific configuration at each location is determined by local training needs and existing resources, each site has two core components. The first is an on-site digital library that provides (multiple) users with instantaneous, off-line access to millions of documents, web sites and educational/curricular materials. Materials in these digital libraries are instantly available 24 hours a day, every day, at virtually no cost to the users. These libraries not only serve as a source of current, comprehensive health information, even in remote “unconnected” locations, but an update mechanism allows dissemination (“publishing”) of locally produced materials to other institutions in the global network.

The second technology is the use of online, real-time connections to outside resources by means of web-conferencing designed specifically to work even over slow, low-quality internet connections, where available. This technology provides live connections to courses, teachers, and consultants from partnering and twinning institutions in developing and developed countries. Using this system, institutions can interact on the basis of specific topics (e.g. malaria, HIV/AIDS, emergency preparedness), specific health disciplines (e.g. nursing, community health work) and/or countries/regions (e.g. east Africa, Indonesia) to meet identified local needs for health information and education. Because of its readily adaptable technology, the network of institutions can be easily expanded to include as-yet-unidentified professional organizations, governmental bodies, policy-makers, nongovernmental organizations (NGOs) and others.

Together these technologies provide the information infrastructure for sharing knowledge and resources on a regional, national and global basis. In the end, the focus is not about technology, but about what technology can help accomplish. ■

^a College of Public Health, University of Iowa, Iowa City, IA, USA.

^b Centre for International Rural & Environmental Health, 158 IREH Oakdale Campus, University of Iowa, Iowa City, IA 52242, USA. Correspondence to Thomas M Cook (e-mail: thomas-cook@uiowa.edu).

^c Widernet Project, School of Library and Information Science, University of Iowa, Iowa City, IA, USA.