

WORKSHOP 8

Workshop 8

Tuesday, 20 September

STRENGTHENING HEALTH SYSTEMS IN DEVELOPING COUNTRIES: HUMAN RESOURCES DEVELOPMENT VIA ELEARNINGAlena Petrakova, petrakovaa@who.int, WHO, Switzerland

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Purpose

Human resources for health (HRH) are increasingly recognized as a crucial element in improving health systems and health services, and attaining the Millennium Development Goals (MDGs). The HRH crisis presents strong political challenges at national, regional and international levels. Unfortunately, insufficiencies in the health workforce are becoming a major constrain to achieving the MDGs in many developing countries. Overall shortage is commonly aggravated by skewed distribution within countries and a movement of health workers from rural-to-urban, from public-to-private, and from employment-to-unemployment or jobs outside the health sector. The situation is exacerbated by insufficient training opportunities, unemployment in the health labor market, the increasing death toll from HIV/AIDS and the effect of migration.

Furthermore, it is widely recognized that traditional methods of education delivery are inadequate to produce the health workforce needed in these countries; there is an urgent need to train more than 1 million of health professionals in the countries of Sub-Saharan Africa in next 10 years to strengthen their health systems and to stop dramatic decline in their health outcomes.

Training is a key mechanism through which WHO implements its health strategies, influences national health policies and health care practices as well as shapes health service delivery. Training needs to be of the highest quality together with its cost-effectiveness. eLearning may be the most appropriate training method for health workers in developing countries because it can be:

- Personalized: eLearning allows a program of study to be customized for a region, a country, a district, or a small group of learners.
- Interactive: eLearning can engage the learner in a “give-and-take” type of learning that involves depiction of real-world events and sophisticated collaborations with other learners and instructors throughout the world.
- Just-in-time: eLearning can be easily modified to be adapted to each learner’s or group of learners’ rate and level of progress.
- Current: eLearning allows rapid and easy adaptation of educational materials to evolving health issues.
- User-centric: eLearning focuses primarily on the needs of the learner, instead of on the abilities of the instructor.

Most HRH strategies require long-term vision and thus high level commitment and involvement. The combined Global Public Health Campus (The University of Iowa College of Public Health) of WiderNet, Virtual Hospital, Elluminate, and Polycom provides a comprehensive scheme for using information and communication technology for meeting the global training needs for increased numbers of health workers. Close collaboration with the University of Iowa College of Public Health is important for developing and implementing this eLearning programme.

Objectives:

- To brief participants on new WHO eHealth resolution adopted by the 58th World Health Assembly in May 2005;

- To discuss the importance of HRH challenges for strengthening health systems and achieving Millennium Development Goals;
- To highlight the importance of ICT for HRH development with special focus on developing countries.

Strengthening health systems in developing countries:

A strategy for human resources development via eLearning

Alena PETRAKOVA & Yunkap KWANKAM

World Health Organization, Knowledge Management and Sharing

Thomas COOK & Cliff MISSEN

College of Public Health, The University of Iowa, USA



Definition

- **E-learning**...“instruction delivered on a computer” using CD-ROM, Internet, or Intranet.

Includes:

- content
- instructional methods
- media elements (text, narration, music, still graphics, photographs, animation, etc.)

Perspectives on e-Learning

- Student
 - Traditional (full-time, on-campus)
 - Non-traditional (part-time, off-campus)
- Practicing Professional (continuing ed.)
- Faculty
- University
- Public
- World

Does e-Learning Work?

Computer-based training has been around for 30+ years and has indicated that “greater complexity does not necessarily ensure more learning.”

“With few exceptions, the hundreds of media comparison studies have shown no differences in learning.”

(Clark & Mayer, 2003)

Is e-Learning better?

“What we have learned from all the media comparison research is that it’s not the medium, but rather the instructional methods that cause learning. When the instructional methods remain essentially the same, so does the learning, no matter how the instruction is delivered.”

(Clark & Mayer, 2003)

Proposed Advantages of e-learning

- **It can be Personalized:** eLearning allows a program of study to be customized for a region, a country, a district, or a small group of learners.
- **Interactive:** eLearning can engage the learner in a “give-and-take” type of learning that involves depiction of real-world events and sophisticated collaborations with other learners and instructors throughout the world.
- **Just-in-time:** eLearning can be easily modified to be adapted to each learner’s or group of learners’ rate and level of progress.
- **Current:** eLearning allows rapid and easy adaptation of educational materials to evolving health issues.
- **User-centric:** eLearning focuses primarily on the needs of the learner, instead of on the abilities of the instructor.

Proposed Practical Advantages of e-learning

- flexibility of the sites of learning,
- can use expertise from multiple institutions,
- use multiple modalities to reinforce traditional classroom-type activities,
- economies of scale, and
- replicability/consistency.

-SAFE WORK in the 21ST CENTURY
(Institute of Medicine, 2000)

Proposed Disadvantages of e-learning

- infrastructure costs,
- absence of hands-on skill instruction,
- potential isolation of students,
- faculty resistance and the need to train faculty,
- lack of capability for informal consultation, and
- potential high direct costs.

"Connected" World

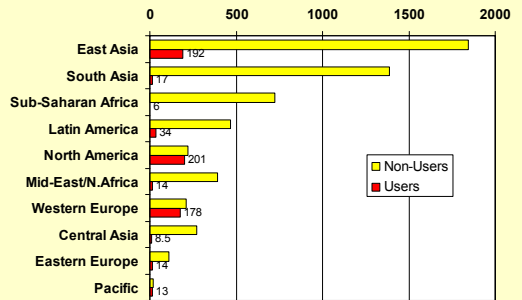
Health

Information/Communications Technology

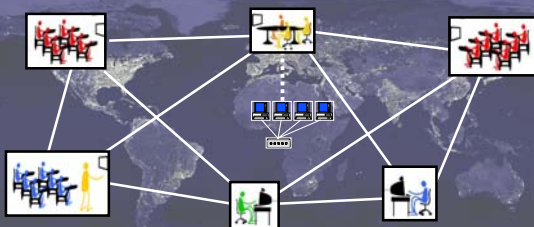
- \$1 trillion Internet investment since 1996
- Internet used by 1/8th of world's population
- Great geographic differences in access

Internet Users/Non-Users by Region – 2003

(millions)



Global Public Health Campus



Information/Communications Technology

- as appropriate for each location's level of internet connectivity

Four Levels



Global Public Health Campus

Four Levels of Connectivity

- I. Enhanced Local Area Networks
0 bits/sec

WiderNet
Creating a Wider Net
.Org



Global Public Health Campus

Four Levels of Connectivity

- I. Enhanced Local Area Networks
0 bits/sec
- II Web-Based Resources
= "slow" and/or intermittent



Global Public Health Campus

Four Levels of Connectivity

- I. Enhanced Local Area Networks
0 bits/sec
- II Web-Based Resources
= "slow" and/or intermittent
- III Graphics-Plus-Audio
=> "reliable" 28 Kb/sec



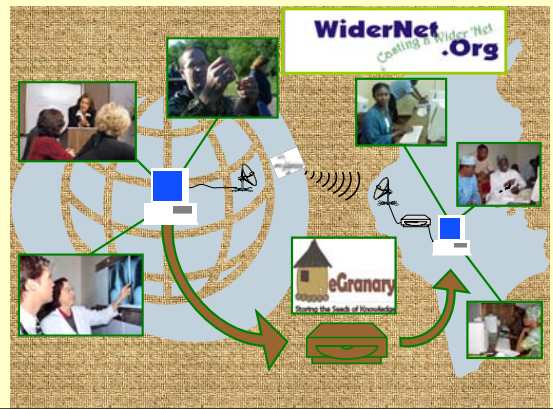
Global Public Health Campus

Four Levels of Connectivity

- I. Enhanced Local Area Networks
0 bits/sec
- II Web-Based Resources
= "slow" and/or intermittent
- III Graphics-Plus-Audio
=> "reliable" 28 Kb/sec
- IV Interactive Video
=> 156 Kb/sec



Level I. Enhanced Local Area Networks



Level II. Web-Based Courses and Resources

The screenshot shows the 'Academics' page of the University of Iowa College of Public Health. It lists 'Distance Education Resources' and 'Resources For Learners'. A 'Virtual Hospital' logo is visible, along with a sidebar containing 'Resources For Educators' and 'Types of Media Used in Distance Education'.

Level III. Graphics-Plus-Audio

The screenshot shows the 'Eliminate Live!' interface. It displays a chat window with a list of participants and a 'Send' button. The interface is annotated with red lines and labels pointing to various UI elements such as 'Default window layout', 'Disconnected from session', 'Participant list and privileges', 'Emotion indicators', 'Click to raise your hand', 'Use the Show drop-down menu to filter messages', 'Show or Hide Message', 'Click to speak', and 'Click Path to speak'. A 'Note' section at the bottom provides instructions for users.

Level IV. Interactive Video (video conferencing)

Polycorn Worldwide U.S. 1.800.768.9286 Outside U.S. 1.929.924.800

POLYCOM
Connect. Any Way You Want.

Choose Region: [Map] Contact Search

Company Info Products & Services eSupport Partners Investor Relations Store

Polycorn.
Connecting the world.
any time. any way. any where.

Dean Merchant, on the Iowa Oakdale campus, presents a lecture on Rural Health to participants at a workshop in Trnava, Slovakia, using internet-based videoconferencing. -June, 2003

Level III

(Example = Elluminate Live)

- Important Features
- Demonstration
- Examples

THE UNIVERSITY OF IOWA

Elluminate
Where Bright Ideas Meet.
LIVE

- High resolution graphics
- Two-way audio communication
- Interactive features & tools
- Slower-speed internet connection
- Recordable

Conclusion

THE UNIVERSITY OF IOWA

Elluminate
Where Bright Ideas Meet.
LIVE

Demonstration

Conclusion

CDC **NIOSH** National Institute for Occupational Safety and Health

Search NIOSH | NIOSH Home | NIOSH Topics | Site Index | Databases and Information Resources | NIOSH Products | Contact Us

NIOSH Agricultural Centers

Level III Example

Summer Institute for Rural and Environmental Health
June, 2004 and June, 2005, Trnava, Slovak Republic

THE UNIVERSITY OF IOWA

The University of Medicine and Pharmacy
Cluj-Napoca, Romania

Southern Denmark University
Esbjerg, Denmark

University of Trnava
Slovak Republic

Level III Example



Association of Schools of Public Health in the European Region

Welcome to the Association of Schools of Public Health in The European Region

ASPHER is the key independent organisation in Europe dedicated to strengthening the role of public health through the training of public health professionals for both practice and research.

Founded in 1968, ASPHER has over 65 institutional members. These are located throughout the Member States of the European Union (EU), the Council of Europe (CE) and the European Region of the World Health Organisation (WHO).



**Faculty Development
Pedagogic Institute,**
Dubrovnik, Croatia
May 27-31, 2005
ASPHER-OSI-NIH

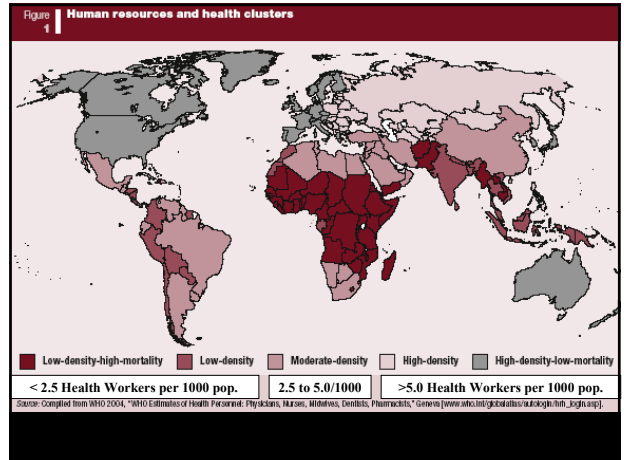
Level III Examples



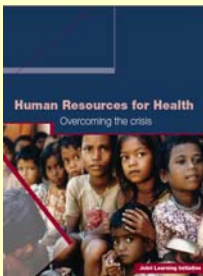
Level III Example

Level I (Example = Widernet)

- Need for Level I
- Demonstration



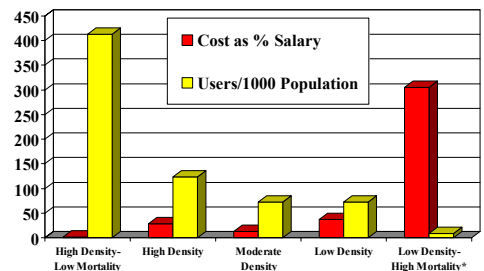
"JLI" Report: November 2004



**More than 1,000,000
New Health Workers
are needed in next 6
years for the
countries in the Sub-
Saharan Africa to
deliver the basic
services.**

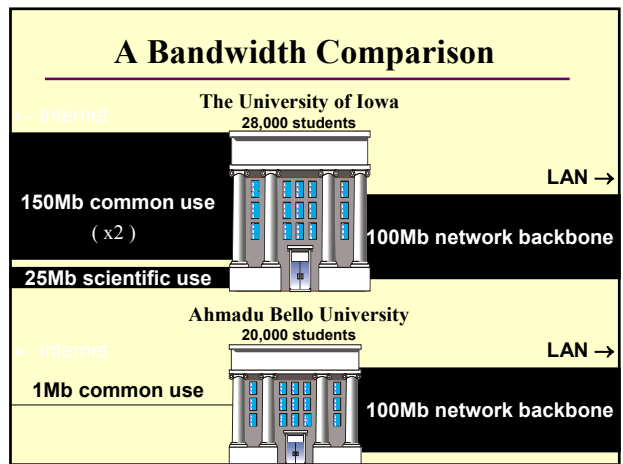
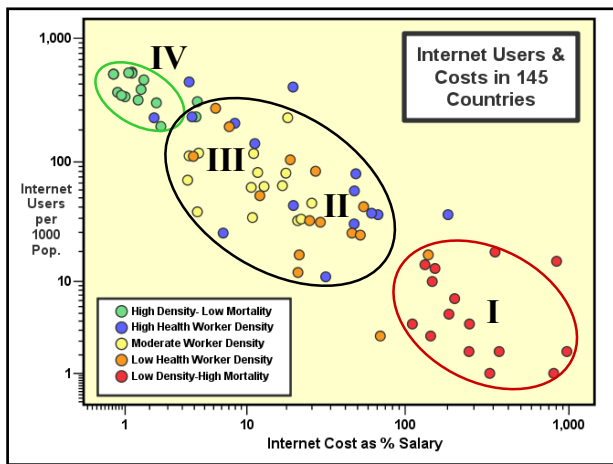
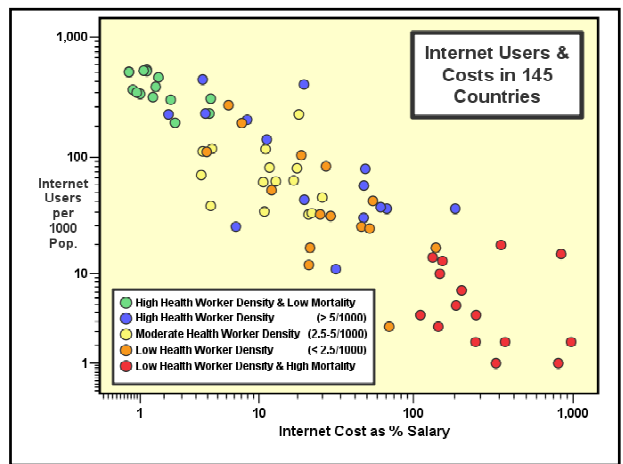
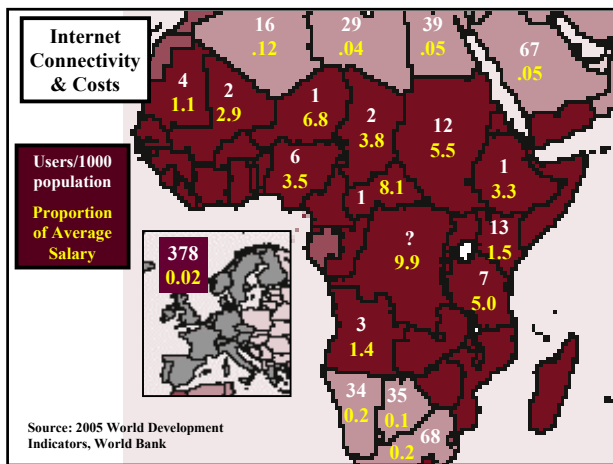
<http://www.globalhealthtrust.org>

Internet Costs and Use



Countries Grouped by WHO Clusters
(based on health worker density & mortality)

* 35/45 of these countries are in Africa.
Sources: Cost and user data from World Bank, 2005; country groupings from WHO, 2004



The Bandwidth Conundrum

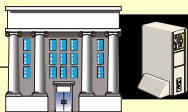
The **cost** of bandwidth influences who and how many can participate.

Type of Connection	Annual Fees	Initial Set-up	Simultaneous Web users
56Kb modem	\$800	\$400	2-4
128Kb sat.	\$28,000	\$60,000	6-12
1Mb satellite	\$110,000	\$60,000	30-70
10Mb LAN	Negligible	\$60,000	800+ (offline)

- ### The Reliability of the Internet Connection
- Very rarely 24 x 7
 - Many institutions hard pressed to deliver 6 hours a day
 - Frequent lapses of a day or more
 - Occasional lapses of a week or more
 - Many points of failure, the external connection to blame about 50%

Replacing Bandwidth with Storewidth

- 250+ GB information store inside LAN
- Millions of educational documents
- Collection created and maintained by librarians
- Multimedia, audio, video at full network speeds
- No bandwidth costs
- Can augment a conventional Internet connection

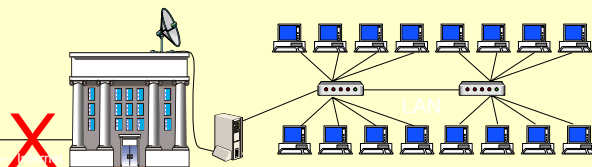


← Internet ??????

LAN →

... giving every computer high-speed access to hundreds of thousands of documents and multimedia files.

Even when the Internet connection is broken!

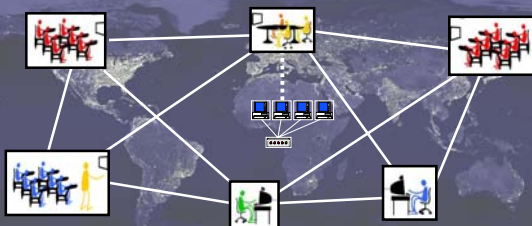


WiderNet .Org

Demonstration



Global Public Health Campus



Information/Communications Technology

- as appropriate for each location's level of internet connectivity

Four Levels

More Information

<http://globalcampus.uiowa.edu>

<http://www.widernet.org>

<http://www.vh.org>

<http://www.public-health.uiowa.edu>

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Geographic Distribution of Visits to MIT Website Containing 500+ Open Course Ware Items

