Report on the

Fifth regional conference on e-health and related applications

Cairo, Egypt
27–29 June 2006
1. INTRODUCTION

The World Health Organization (WHO) Regional Office for the Eastern Mediterranean (EMRO) organized the fifth regional conference on e-health and related applications at the Regional Office, Cairo, Egypt, from 27–29 June 2006. The conference was organized as part of a series of conferences on the use of information and communication technologies (ICT) in health. Previous conferences were held in the Islamic Republic of Iran and focused on electronic health records. Participants included the President of the Arab Telemedicine Association, the General Manager of the Arab Medical Union and representatives from medical informatics associations and private sector companies including Intel, Taiba and LIMS. The objectives of the conference were to:

- review activities and achievements of Member States in the Region in the area of e-health;
- discuss implications, potential benefits and project development based on the WHO World Health Assembly resolution (WHA58.28) on e-health;
- discuss health data security and confidentiality issues and update participants on new practices and technologies;
- review developments of the use of ICT in emergencies, disasters, epidemics and disease outbreaks;
- review health applications in e-government and e-commerce;
- review progress and activities in e-learning and human resources development in health;
- discuss the proposed structure of electronic health records;
- review e-health standards and localization needs.

The expected outcomes of the conference were to:

- share knowledge on country and regional activities in e-health implementation, research and education;
- develop a set of recommendations and plan of action to work with countries in support of e-health in countries;
- agree on terms of reference for national e-health observatories and identify focal points in countries;
- secure commitment by participants to develop an e-health network and community of practice for sustain collaboration and exchange of experiential knowledge, software and applications.

The conference was inaugurated by Dr Hussein A. Gezairy WHO Regional Director for the Eastern Mediterranean. Dr Gezairy noted that WHO had formally recognized e-health as an area of work that had a great potential to support health technical programmes and the management of health services. At national level, the WHA resolution had requested Member States to formulate cost-effective e-health strategies reflecting principles of transparency, ethics, and equity. The resolution also recognized that Member States would need to ensure that e-health for citizens, patients and health professionals met quality, safety and ethical standards. The resolution further stated that, the best use should be made of e-health for sharing health information between health care professionals, for collecting data, including
from sentinel systems, controlling quality and identifying best practices for prevention. Dr Gezairy explained some of the aspects of WHO Regional Office’s plan of action for 2006–2007 which had included a specific plan for e-health activities and projects in the Region.

The Chairmanship was shared on a rotating basis. The programme and list of participants are included as Annexes 1 and 2, respectively.

2. TECHNICAL PRESENTATIONS AND DISCUSSION

2.1 WHO Regional Office’s approach to support e-health activities in the Region

_Dr Najeel Al-Shorbaji, EMRO_

E-health, as a generic term, is used to cover the use of computer and communication applications and technologies in health and medical care. The areas of application of e-health and the inherited benefit of each include: management; epidemiological surveillance; computer-based medical records; access to literature and information services; knowledge-based services; and geographic information systems (GIS) and telemedicine. Impediments for e-health development in the Region include: lack of awareness of the value and role of medical informatics; lack of policies and strategies; unaffordability of costs; limited medical informatics expertise; whether among computer specialists or medical professionals, weakness of the information infrastructure which includes manpower, telecommunications, laws and private sector role and the absence of legal, legislative, ethical, and constitutional framework. The Regional Office’s approach for supporting e-health in the Region has been dynamic and diversified, based on country needs. The integrated approach for supporting e-health in the Region has included: policy setting; awareness and working with decision-makers; human resources development; planning, monitoring and evaluation; networking and communication; infrastructure development; consulting and advisory services; electronic publishing; development and maintenance of systems; the Regional Office virtual health sciences library; e-learning and health academy; telemedicine; and support to HINARI.

2.2 Endorsement of e-health by the World Health Assembly: Implications for WHO activities and Member States

_Ms Diana Zandi, WHO/HQ_

Today, e-health—the use of information and communication technologies, locally and at a distance, presents a unique opportunity for the development and improvement of public health. The strengthening of health systems through e-health reinforces fundamental human rights by improving equity, solidarity, quality of life and quality of care.

WHO drafted an e-health strategy which was submitted to the One hundred and fifteenth session of its Executive Board in January 2005 (EB115/39). The WHA e-health resolution (WHA58.28) is the outcome of the proposed e-health strategy to the Fifty-eighth session of the World Health Assembly. WHA58.28 urges Member States to:
develop a national e-health strategy, including legal and infrastructure frameworks, and public-private partnerships; mobilize multisectoral collaboration; establish national e-health centres and networks of excellence;

requests the WHO Director-General to promote international collaboration; provide technical support; facilitate integration of e-health in the health systems; continue to promote health awareness and healthy lifestyle through e-learning services, such as the health academy; support interregional initiatives among groups of countries that speak a common language, document the best practices and report on them.

WHO drafted an action plan to take forward the above resolution in line with its commitment to its Member States. It was presented to the One hundred and seventeenth session of its Executive Board in January 2006 (EB117/15).

Under this action plan the following e-health tools and services were proposed: ethical and legal committee; e-health global observatory; e-health for citizen's education and health promotion; e-health for health care delivery; ICT in support for human resources for health; public–private partnership in e-health.

E-health for citizen's education, health promotion and the health academy are WHO initiatives to create a global health and technology alliance. The initiatives provide guidance in terms which are easily understood by people from all walks of life and all age groups, taking into consideration their individual cultural sensitivities. Information is prepared and then translated into the local language of the country in a culturally acceptable form.

A pilot phase of the health academy was completed and evaluated in Egypt and Jordan. It involved a total of 6785 students between the ages of 12 and 17 years in 45 schools. The students' evaluation of the courses was very positive. It demonstrated that the health academy e-learning approach is an effective tool to learning which can impact attitudes and behaviour. The health academy is currently being expanded to other countries in the Eastern Mediterranean and other regions.

2.3 Telecommunications support for WHO in emergencies

Mr Khaled Shams, EMRO

An emergency might be a natural disaster, war/conflict or technological hazard, and in all cases, there are possible effects on local telecom services, such as total (or partial) destruction for local telecom infrastructure, and consequently, insufficient capacity to meet telecommunication requirements for emergency relief operations and disaster management.

In the case of WHO, the need for telecoms in emergencies is mainly to achieve the connectivity between WHO staff in emergency locations and WHO operational hubs/suboffices in emergency locations; WHO emergency coordination centre (that is usually in the capital); WHO Regional Office; and WHO headquarters.

Emergency telecommunications services are used in emergency relief operations for disaster management, staff security and information sharing. As local landlines are less likely
to be functional or sufficient for emergency relief operations, mainly satellite and radio (HF and VHF) communication systems are used in emergencies to provide voice, data and video communication facilities. For WHO in headquarters and the Regional Office, strategic health operation centres are used to coordinate incident information and resources for disaster management.

There are various challenges for emergency telecoms support such as the availability of equipment and licensing for use of equipment as well as the logistics of obtaining the equipment. Also, other challenges related to staff such as availability of qualified staff as well as staff security and accommodation in emergency locations.

Regarding the use of ICT for emergency preparedness and response in countries, in the press report for the world telecommunication development conference in Doha (7–15 March 2006), it has been stated that “emergency telecoms are an essential prerequisite for sustainable development, especially in fragile economies whose populations are most vulnerable”. To this end, the world telecommunication development conference adopted a comprehensive package that can deliver end-to-end solutions to prevent and mitigate disasters and to carry out relief operations effectively. The focus will be to promote technical cooperation and to enhance the capacity of least developed countries and small island developing states in utilizing ICT tools for disaster early warning, preparedness, response and relief.

2.4 Health informatics education: How to promote e-health understanding among practitioners and decision-makers

Dr Hesham Kozou

Health informatics is one of the most challenging and most promising fields. It has significant benefits and consequences for health care research, education and practice. The rapid change of health informatics necessitates the need for well-trained or even specialized health care professionals to systematically process information in health care. Thus, health informatics education is necessary for the full use of clinical ICTs to improve health care service, delivery and outcomes, known collectively as e-health. Promoting e-health understanding among health care professionals and decision-makers is based primarily on two main approaches. Firstly, explaining how health informatics and e-health can help in dealing with the major challenges facing health-care around the globe, and secondly, in initiating health informatics educational courses and programmes.

2.5 The role of professional and nongovernmental societies in the promotion of e-health: the case of Syrian Medical Informatics Association

Dr Ghassan Shahrour, Founder and President of SMIA

Syrian Medical Informatics Association (SMIA) was founded as part of the scientific associations of the Syrian Medical Association Syndicate. Its main objectives are to:

- provide physicians with knowledge and skills on how to make the best use of ICT in order to promote their medical and health career;
- assist health policy-makers to formulate national e-health policy and strategies;
• to assist paramedical workers, medical students as well as the public on the needs, as well as potential, of e-health and its related applications;
• play a catalyst role at regional and international levels in order to promote e-health and its applications.

SMIA activities during the last 3 years have included: training activities for medical doctors on computer skills; E-updates: production of newsletters; super course CD project; international PPP on prevention as well as public health issues; teaching aids at low cost; provision of available e-resources for the scientific programme of the medical syndicate; establishment of website; training and awareness on the potential of digital library and digital health records as well as ICT security; regional and international participation on related events.

Future plans include to: produce an international computer driving license for medical doctors; conduct public awareness campaigns on the hazards of unhealthy use of computers; produce e- and hard copies of training materials for health workers on PCs as well as Internet searching skills; include medical informatics curriculum in medical schools; promote Internet-based health education in Arabic; network regionally and globally on e-health.

2.6 Short messaging services (SMS) alert system
Mr Amr El-Sheikh, WHO/EMRO

I) System requirements for the short messaging services alert system include the following: GSM modem; mobile data SIM card; alphanumeric service subscription (through the network provider); dedicated Windows 2000 Server; Microsoft SQL server 2000; web server with Microsoft IIS 4.0 or higher installed (optionally, in case the web interface will be implemented); and the application software. An OCX control is used to interface with the GSM modem. The control is part of message Master SMS SDK, the GSM/PCs component version 2.0, developed by DERDACK (http://www.derdack.com/products/developer.html).

System technical capabilities and specifications allow authorized users to send SMS to predefined groups/users through two ways: web interface and SMS message sent to the system server (through the GSM modem). They also: can send a notification report to the initiator of the message to provide status details; can be programmed to send periodic/scheduled fixed messages to specific groups/users; can be programmed to send periodic/scheduled messages based on a database record to specific groups/users; can be programmed to receive inquiries in predefined formats from authorized mobile numbers, query the database for the information needed, and then reply to the sender. The speed ranges from 6 to 10 messages per minute.

2.7 Mobile phones to stop tuberculosis and save lives
Ms Samar Ibrahim, EMRO

Mobile phones are a practical and user-friendly solution that can help patients complete a long and demanding treatment course, like that of tuberculosis. Tuberculosis is a killer infectious disease that has many socioeconomic implications, not only for the individual
infected, but also for their immediate family, the community and the country as a whole. Tuberculosis is an important public health problem in Egypt and in the world. Tuberculosis affects thousands of Egyptians and tens of thousands of families in Egypt every year.

In 2004, an estimated number of 20,233 Egyptians suffered from tuberculosis, and an estimated 2,350 Egyptians died from tuberculosis. Tuberculosis affects the most productive age group in society (18 and 35 years of age), thus tuberculosis induces poverty. Tuberculosis patients in Egypt, however, are still in great need of additional support. Completing the long treatment duration (from 6 to 8 months) is not an easy task.

- patients must take their medicines everyday without fail for the whole period of treatment;
- patients start feeling better after only 2 weeks from the initiation of treatment, so some patients stop taking their medicine;
- patients’ non-compliance to tuberculosis treatment can have disastrous consequences. They may become resistant to medicines. Their cure becomes more costly (US$ 2000 versus US$ 20 per patient/per treatment course) which can result in a patients’ unfortunate death;
- one untreated case of tuberculosis can infect up to 20 people a year;
- infectious tuberculosis cases put other people’s lives at great risk;
- at present, only 88% of all detected tuberculosis cases are being treated successfully in Egypt;
- the remaining 12% (i.e. 1,432 tuberculosis patients every year) do not complete their treatment course.

Tuberculosis patients, once provided with mobile phones, can receive daily supportive, encouraging and treatment reminder messages through SMS and voice mail. Mobile phones can strengthen the relationship between the patient and his treatment supporter and can also make it more interactive, and can help track down defaulters and assist in putting them back on treatment. Offering a free mobile phone as an incentive to those who complete the treatment successfully can be a great motive for patients to complete treatment.

The target population of the project are the population of Cairo and Giza (13 million people). The estimated number of tuberculosis patients in Cairo and Giza per year is 2000. The project will: save the lives of all 2000 tuberculosis patients diagnosed in the campaign area by making sure they are all completing their treatment successfully; protect at least 40,000 people from becoming infected with tuberculosis; secure a healthy future for tens of thousands of families; increase the tuberculosis treatment success rate; establish a new public–private partnership that could be expanded nationwide.

Some of the challenges were identified as the following:

- Who will hand out the mobile set to the patient and what happens if the phone is lost, stolen or sold? Will it be replaced and how?
- What happens if the patient moves out from his original district or permanently changes his governorate of residency?
Which type of message would be more effective, personal and interesting to the patients?

How to make the message understandable to all patients given the fact that approximately 35%-55% of patients may be illiterate.

Another significant proportion of patients, even if literate, some may not be familiar with mobile phone functions such as messages.

The expected benefits of the project are: 2000 lives saved; thousands of families relieved from suffering and saved from poverty; the general public's knowledge and awareness of tuberculosis improved; innovative communication between the tuberculosis patient and the treatment supporter established; and new partnerships with the private sector developed.

2.8 Health care reform through the shift to mobile computing

*Engineer Ossama Abbas, Electronic Business Solutions Canada Inc.*

TAIBACARE™ is a comprehensive mobile electronic health care reform solution, classified as a ubiquitous health solution. TAIBACARE™ is to be implemented on an extra large scale for all the health care industry nationwide, using revenue share computing on demand business model.

Revenue share mobile computing on demand business model has emerged in the communication industry for multi partners, each operating separately from other partners, however, each collecting their agreed-upon share of a transaction revenue based on the investment made in the whole business process e.g. in downloading a melody, the transaction value paid by mobile subscriber is distributed among the mobile company, communication authority, melody hosting partner, melody composer, etc.

TAIBACARE™ materializes the revenue share of mobile computing on a demand business model in health care following partners: ministries of health; staff of the ministries of health; national banking system; mobile telephone providers and major data centres.

As optimized resource utilization and enhanced health care quality contribute to poverty reduction in developing countries, TAIBACARE™ is in full accord with the Millennium Development Goals (MDGs) and the results of the World Summit on Sustainable Development, Johannesburg 2002, with a vision of public–private partnerships as an important instrument in working towards sustainable development in developing countries.

According to World Bank recommendations for output-based health care TAIBACARE™ found causal feedback electronic links between health care outcomes and the utilization of resources, bringing about both activity-based management and costing and generating a paradigm shift from push-type of sourcing chains regardless of outcome metrics towards pull-type by objective (in other words, fuelling the vehicle by kilometres rather than by litres). The implementation cost of these key remedies and more of TAIBACARE™ features in health care were prohibitive in the stationary computing era.
2.9 Health-care transformation: Policy and standards

Mr Mario Ronzao, Intel Corporation, Europe, Middle East and Africa

Many countries are looking into e-health as a tool to streamline health care procedures, to supply better care to remote regions and to increase the quality of health care delivery. The reality is that any e-health large-scale transformational process is challenged by political, economic and organizational factors. Increasing the probabilities of success on operational and financial sustainability terms across time becomes a major requisite.

One might consider that any e-health transformation process should offer political support, that the available budget matches its ambitions, that collective engagement of stakeholders is ensured and that a clear roadmap for implementation is designed. If one of these four requisites is missing or is weak then the transformation project should be reconsidered.

From the implementation point of view the adherence to standards-based interoperability benefits all stakeholders in the ecosystem and helps to lower cost, reduce errors and improve quality of care. Standards-compliant products and solutions are the best way to promote scalability, interoperability across products of multiple vendors and secure the future evolution of health IT implementations.

Interoperable electronic health records allow for the exchange of patient information within and across health care institutions; interoperable personal health systems unlock the potential for the continuity of care; and interoperable health care networks allow for nationwide deployments. Supportive policies and compliance to interoperable standards are key success factors for any e-health transformation initiative.

2.10 The role of the Arab Telemedicine Society in support of e-health

Professor Aziz El Matri, President Arab Telemedicine Society, Tunisia

The Arab Telemedicine Society was founded under the umbrella of the Arab Medical Union in October 1999 after the recommendations of the First International Telemedicine Symposium for the Arab World Africa and Europe held in Tunis, Tunisia, one year earlier. Founding members were representatives of six Arab countries (Algeria, Egypt, Jordan, Kuwait, Morocco and Tunisia). Its goal is to promote the development of telemedicine, telecare and tele-health as part of e-health.

The statutes and by-laws have main components which are:

- The general assembly: including all members of affiliated Arab associations/societies, meeting every year with an elective general assembly every 4 years;
- The Higher Council comprising two delegates from each Arab country member of Arab Medical Union;
- The Executive Board comprising seven members elected among and by the Higher Council members, for 4 years.
National and international partners of the Society are the International Society for Telemedicine and e-Health, the European Telemedicine Society, the Greek Telemedicine Society, the Tunisian Telemedicine Society, national medical associations and international institutions, such as WHO, International Telecommunication Union (ITU), UNO, European Council (EC).

The main activities over the last few years have consisted of co-organizing or participating in regional or international meetings such as: the World Conference on Telemedicine, Arab Telemedicine Congress, European Telemedicine Society scientific meetings, Seventh International Conference on Telemedicine and the World Summit of the Information Society (WSIS).

The role and purposes of the Society are to:

- promote the creation of national associations in the Arab World and scientific exchange between them;
- support cooperation between Arab nongovernmental organizations and dialogue and cooperation between governmental and nongovernmental institutions;
- bring together e-health users (scientists, researchers, sponsors, manufacturers and distributors);
- support activities relating to the establishment of appropriate legal outline conditions for telemedicine applications.

In conclusion, the Arab Telemedicine Society is a nongovernmental organization playing a complementary role to that of public offices, the private sector and international institutions. It acts as an "enzyme" to activate interaction between different operators. All representatives of Arab countries and regional and international institutions are invited to help in order to reach this goal.

2.11 Electronic access to medical literature through Regional Office’s dedicated server

Mr Hatem Nour El-Din, WHO/EMRO and Mr Mahmoud Hussein, LIMS, Egypt

Electronic access to peer reviewed online full text journals through the Regional Office’s dedicated portal is available through print subscription of your organization and Member States. Most printed journal subscriptions are not accompanied with online access available free-of-charge on the Internet. Links to PDF articles are not activated through Regional Office e-resources due to a lack of technology applied to the dedicated local server. The availability of online access previously was accompanied with web edition online access only, rather than 5-10 years of back files. Eventually, end users will have to spend a lot of time searching for full text articles from many different publishers’ websites.

Among the major problems identified were: scattered electronic resources; local, regional and international e-resources; remote users whom are available within the Region using many web interfaces to reach their ultimate results; and lack of technology to accommodate all such resources in one state-of-the-art interface.
Over the past 24 months, hard work has been undertaken to obtain solutions to people’s requirements and to secure certain advanced linking technology to help researchers attain better results by conducting an easy navigational procedure within one unified interface.

The enhanced Regional Office server:

- applies state-of-the-art technology to link in and link out articles, bibliographic data, citations, etc;
- upgraded most printed journals to institutional, non-profit academic subscription to allow users and researchers to access online back files of original articles;
- applies a new technology called federated search engine;
- upgrades all web edition e-resources of online journals to full archival rights and licensed back files favouring all your end users;
- upgrades of all Science Direct printed journals to medical collection of 570 peer reviewed journals with 4 years archival data licensed to libraries and respected researchers;
- applies a new remote linking technology, helping remote offices from using the same technology without depriving them of this opportunity.

Successful projects include: the Regional Office library; Egyptian universities/libraries web portal; Egyptian National Agricultural Library Portal; American University in Cairo-consortium with the Egyptian Universities Libraries; Egyptian national scientific and technical network consortium.

The Regional Office has committed itself to developing a virtual health sciences library, which comprises networks of libraries, databases, professionals, researchers and institutions. Two basic principles have been applied to contribute in bridging the knowledge gap: one; is to inventory and utilize locally-produced research; and two, to establish networking and resource-sharing mechanisms. The work of the Regional Office in collaborating with Member States to develop this library started early in the 1980s. To support the virtual health sciences library the Regional Office has been developing the following activities and initiatives.

- union list of medical journals in the Region which includes over 3000 titles;
- Index Medicus for the Eastern Mediterranean which includes the indexing of over 320 journals published in the Region since 1984;
- interlibrary loan and document delivery services;
- listservs, discussion groups and communities of practice;
- an electronic journals consortium;
- resource-sharing and regional databases;
- training of health-care professionals, researchers and information specialists;
- hosting of websites of ministries of health;
- information technology support, Internet access, provision of hardware and software.

The journal consortium includes now over 80 institutions subscribing to over 700 unique titles of printed journals. Each institution has the right to access the full text of all
these journals. This has meant in financial terms a saving of over US$ 60 million annually and ensured access to health and biomedical information to a wide range of users in the Region.

The Health InterNetwork Access to Research Initiative (HINARI) provides free or very low cost online access to the major journals in biomedical and related social sciences to local, not-for-profit institutions in developing countries. HINARI was launched in January 2002, with 1500 journals from six major commercial publishers following the principles in a statement of intent signed in July 2001. Twenty-two additional publishers joined in May 2002, bringing the total number of journals to over 2000. Since that time, the numbers of participating publishers and of journals and other full-text resources has grown continuously. Today, more than 70 publishers are offering their content in HINARI and others will soon be joining the programme. An evaluation is in progress which will determine the long-term future of HINARI.

Local, not-for-profit institutions in two groups of countries may register for access to the journals through HINARI. The country lists are based on GNP per capita (World Bank figures, 2001). Institutions in countries with GNP per capita below US$ 1000 are eligible for free access. Institutions in countries with GNP per capita between US$ 1000–US$ 3000 pay a fee of US$ 1000 per year/institution.

Eligible categories of institutions are: national universities, research institutes, professional schools (medicine, nursing, pharmacy, public health, dentistry), teaching hospitals, government offices and national medical libraries. All staff members and students are entitled to access the journals.

The following countries have full access free-of-charge: Afghanistan, Djibouti, Iraq, Somalia, Sudan and Yemen. Another set of countries have access at a reduced rate including Jordan, Morocco, Palestine and Tunisia.

The Regional Office’s support to HINARI has taken the following forms: training and orientation to register and use resources; ICT infrastructure support in the form of connectivity to the Internet and workstations; financial support to pay for the fees in countries where it is not totally free. Training has been provided to medical librarians and health professionals in most of these countries.

2.12 The global observatory e-health survey and report

Misha Kay, WHO/HQ

The global e-health survey (2005) aimed to identify and assess the status of e-health in Member States. It was carried out through focus groups in each participating country with up to 10 expert informants completing one national survey form. Thanks to the support of WHO regional coordinators and national offices, the response rate to the survey was high, almost 60% of Member States covering 78% of the world’s population. The African Region displayed the highest response rate of any WHO Region. The results are encouraging in that they reveal strong progress in e-health since 2000 and project an ambitious agenda of development by 2008. A consistent pattern emerged showing that industrialized countries are
more advanced in the adoption of e-health than developing countries. It was pointed out that we must be careful to not perpetuate another digital divide—the e-health divide. The e-health development model was introduced as a way of considering the results of the survey and future strategic directions. It consists of three layers: the foundation layer of policies and strategies on which e-health is built; the enabling layer of actions which facilitate and enable e-health applications to be developed; and e-health applications—the products and services that support health systems and services. It was noted that good progress is being made in the foundation layer, as well as the e-health applications layer. However, the enabling actions are not well developed and will need further attention from WHO and its partners.

The report is to be published in December 2006 and consists of 100 pages of analysis and 240 pages of country profiles of 112 responding countries. It will be available in hard copy, CD-ROM and online on the new global observatory website. The executive summary will be translated into all UN languages, as well as into Portuguese.

2.13 Geographic information systems: digital mapping for public health
Mr Hany Farouk, EMRO

The Regional Office has been supporting GIS activities in the Region through a number of means and methods, including:

- development of a regional policy and plan for GIS implementation;
- capacity-building at the Regional Office and Member States;
- building of the digital maps collection based on aerial images, mapping and global positioning and digitization;
- a series of national training courses conducted for staff from most of the countries of the Region to use the HealthMapper software and to collect data;
- capacity-building at country level, including hardware and software;
- software development and localization including updating the HealthMapper package, development of Arabic and Farsi versions and the development of training materials.

2.14 Electronic health records: What to look for?
Dr Najeeb Al-Shorbaji, EMRO

A definition of the electronic health record states that it has three purposes: the primary purpose, to benefit the patient through support of current and future health care needs, a secondary purpose, to provide a medico-legal record of the care provided, and hence, support and demonstrate the competence of clinicians, and a tertiary purpose for education, research, public health and health service management.

The need to go for application and deployment of electronic health records was emphasized as:

- electronic health records have finally made full use of technological advances;
- all clinical practices are covered by electronic health recording systems;
there is enough evidence that electronic health records improve care, patient safety and
documentation;
the return on investment has shown a consistent pattern in saving costs and even making
a profit.

The features to look for in the electronic health records including some core capabilities
which included: clinical data repository; interoperation; support for privacy; a controlled
medical vocabulary; clinical workflow; clinical decision support; clinical documentation and
data capture; clinical display (including clinical dashboards) and order management
(including physician order entry).

The functionality features of the systems should have: quick searching and navigating;
quick links to the Internet; intuitive user interface requiring minimal training; automatic alerts
and reminders (for example, for medicine interactions or test scheduling); clinical dashboards
that consolidate information for the provider, including messages, test results and patient
records; template editor tools to help physicians easily create their own progress notes
templates; outcomes reporting; clinical decision-support tools and information; support for
multiple data input modalities, such as tablet PCs, keyboard, digital ink, and voice; support
for open standards, such as extensible markup language, to support interoperability; mobile
and wireless technologies to enable integration with tablet PCs, personal digital assistants and
phones; and electronic prescription support.

Communicating with electronic health records vendors is considered one of the main
factors of success of implementation. To do that the health care unit should:

• prepare and submit clear requirements;
• ensure clarity of questions and issues and timely responses to them;
• ensure timely and correct level of involvement and project commitment;
• commit human resources for implementation and testing at all stages of the project;
• reach mutual agreement and consensus on the delivery time-frame and realistic
expectations;
• ensure a mutual understanding of contracts.

Differences between vendors of electronic health records system can be demonstrated
through:

• Proven Record. Over the last few years what signs of strength or weakness has the
vendor demonstrated:
• Financial reputation. Signs of stability; size of annual profit; listing among top
companies of the same genre;
• Customer base to give a profile of which customers are loyal to the vendor over how
many years;
• References of those clients and customers who have used the vendor;
• Product maturity and release schedules showing the release dates, versions, integration;
• Staff size to give an idea of number of staff in research and development, technical
support, marketing, development, etc;
• Extent of support (24 x 7, incident cost, third party, etc.);
• User group of the product as a community of practice who share experience, support each other, dialogue with vendor;
• Possibility of leasing software as an alternative to purchase;
• Third party relationships to present an opportunity of receiving the benefit from the best choices on the market;
• Other traits which include: ability to listen closely to your needs; a desire to understand those needs, which is exhibited by asking questions; openness to different ideas and options to solve your problems; shared concern, enthusiasm and caring.

There are certain internal (human) success factors which have to be considered in the selection process, which include:

• Seek stakeholder engagement and buy-in. Ensure that each person affected by the new technology understands why it is being adopted and their role in deploying it.
• Assess organizational impact. Examine how the new technology could impact current processes and procedures, employee roles, skill sets, competencies and desired behaviours. Include your vendors in the analysis. If technology will change the way things are done, the organization must ensure its vendors can meet the new criteria.
• Create communication and training plans. Develop detailed plans, based on the results of an organizational impact assessment, to cultivate the skills and competencies needed by all stakeholders.

3. COUNTRY PRESENTATIONS

3.1 Afghanistan

Mohammad Omer Alokzie, Ministry of Public Health

The situation with regards to e-health in Afghanistan highlights the following achievements:

• conducting telemedicine training in India;
• establishing telemedicine in one hospital as a pilot;
• Internet access;
• LAN system for the Ministry;
• WAN system for the Ministry;
• Radio Barrett connectivity with 33 provincial directorate (voice and data);
• 7 servers;
• website for the Ministry (www.moph.gov.af);
• computerized attendance sheet for the central staff of the Ministry;
• over 250 computers at central and provincial level.

The challenges facing the country in implementing e-health activities include: problems related to audio and video conferencing; lack of electronic record keeping of patients; lack of professional ICT staff; the need for technical assistance; lack of ICT infrastructure; problems related to electricity system.
Future plans for the development of e-health in Afghanistan include:

- establishment of the first telemedicine centre in Kabul in the Indra Gandi hospital with the support of experts from the Indian Space Research Organization (ISRO) India;
- the selection of other hospitals to initiate telemedicine, at both provincial and central levels;
- conducting national needs assessment;
- developing policy for e-health/ICT;
- conducting fund-raising;
- piloting in some hospitals at both central and provincial levels (in the short term);
- implementation of a national plan (long term).

3.2 Health care IT services in Bahrain

*Mr Ibrahim Al Nawakhza, Ministry of Health*

The constitution of Bahrain states that “All residents enjoy the right to free comprehensive health care”. The health care network is provided in partnership with the private sector. The Ministry of Health is performing different roles including policy-maker, regulator, health service provider and health care promoter. The vision of the Ministry is to work in partnership with stakeholders to improve the health of the population of Bahrain and to ensure that everyone has access to a high quality, responsive health service throughout their lifetime. One of the strategic goals of the Ministry is to use information and communications technology which is stated as “Develop an ITC strategy that gives the right information to the right people at the right time to enable sound decision-making”. The IT project aims at building the following components: infrastructure; applications; information; information management; and decision-making. The health IT strategy has three elements: technology to provide an information communication technology infrastructure; systems to implement an application architecture and people/process-to-process reengineering and human resource development. The challenges faced include: allocation of resources, commitment by top management, scope while working on the project based on changes in priorities, approvals cycles, integration and outsourcing.

3.3 Djibouti

*Dr Ammar Abdo*

SENTIDJIB, is a network for epidemiological surveillance in Djibouti. The objectives of the network are to: conduct follow-up of the evolution of pathology through time and place; detect and alert any regional or international epidemic; search and study disease patterns determinants. The advantages of SENTIDJIB are that it allows: secure access to databases through the Internet; regular sharing of medical information at the national level; improvements to the epidemic alert system; clear representation of geographic morbidity and mortality; access to sanitary information even in the worst situations.
The disadvantages of SENTIDJIB are: problems with Internet access; the dilapidation of informatics stations; conflicts in informatics tools; diversion; lack of control of informatics programmes; and data security.

The methodology of the system of work is based on weekly notification of cases as seen by general doctors and a description of cases through a questionnaire available online. Medical doctors have to fill in the data related to each disease, including age, sex, vaccination status, hospitalizations, etc. The reporting of cases includes the following information: number of cases, previous case, personal level, regional level.

The step-by-step approach that is being applied includes:

- evaluation of the epidemiological system to ensure meeting requirements;
- conserve hard copy version for back-up and eventually eliminate paper except for some back-up purposes;
- prepare for the transition from paper to electronic (training, develop competencies among staff);
- ensure an Internet connection in all locations to allow online reporting;
- build consensus on the technology with partners and operators;
- full deployment by the end of 2007;
- regular maintenance and support.

3.4 Islamic Republic of Iran

Dr Abbas Najari

TAKFAB is a national project for the systematic and planned introduction of information and communication technology in government services. The project is implemented through the direct support and supervision of the Office of the President. A high-level committee has been formed to manage the project of which the Ministry of Health and Medical Education is represented, as health was selected as one of the priority areas to use ICT in the country. A number of projects have been implemented under the umbrella of TAKFAB, including the national trauma registry which is a web-based system developed to register trauma cases in emergency departments in hospitals. A special diseases information system is a web-based system that has been developed to register four diseases that have been identified as representing a national health issue. The student health identification profile is a web-based system developed to allow the registration of the health status of students on an annual basis. A national system for office automation was initiated to register different resources, human, materials and facilities.

The Emam Khomeini Hospital is one of the largest and oldest hospitals in the country. It extends over several buildings. The hospital has over 1300 beds and covers all medical specialties. As part of the TAKFAB project, work has started to assess needs, define requirements, train staff and introduce a change in management. The steps that have been taken indicate that a systematic approach is being followed for both computerization and changes in management. The commitment of the hospital's staff and top management...
represent the cornerstone of the project. Work will start in the emergency department to fully computerize its work based on the model electronic health record system that is being considered.

3.5 Iraq

*Dr Ali A Lazim*

The current situation of Iraq does not permit the development of an e-health system or services. During the period prior to 2003, sanctions against the country did not allow computer systems to be imported or installed. WHO has been providing support to manage medicine distribution. The Ministry of Health has made attempts to build the computer and telecommunications infrastructure although, since March 2003, very little progress has been made. The Ministry of Health has a project to develop a health information system for primary health care centres. The system is envisaged to install a central database in the Ministry of Health and the 19 governorates. This would allow the creation of health records and the generation of e-health statistics and their reporting to the centre at the Ministry. Many medical libraries in Iraq have access to the Internet. HINARI is available free-of-charge in Iraq which makes access to health and biomedical information more possible.

3.6 Jordan

*Dr Fares Dababneh*

The national health information centre is part of the Ministry of Health and is responsible for ICT support and development in the Ministry. The Ministry in collaboration with the Ministry of Education and WHO implemented the health academy’s pilot project in 2004, and plans to expand it to the national level. The Ministry has developed and maintained a number of websites to cover different health topics and activities, including: http://www.moh.gov.jo/, http://www.healthcomm.gov.jo/ http://www.schetna.com/ http://www.jfda.jo/. The centre has developed and maintained a number of business applications for health insurance, personnel and finance, inventory, medical equipment, medical institutions and health professions and disease control. Special emphasis was put on building capacity in geographic information systems, which has been utilized by the Disease Control Directorate, the Maternal and Child Care Directorate and the Information and Studies Directorate. The development of infrastructure and information systems for hospitals has taken a major part of the activities including:

- six hospitals provided with small (LANs) and applications working on ADT and morbidity coding (ICD10), human resources and inpatient accounting;
- automated cancer registry;
- automated mortality coding system;
- health directorates (20 LANs) working on general practitioners and maternal and child health statistical information;
- 200 PCs for 200 health centres working on general practitioner statistical information.
Royal Medical Services (RMS) represents the second largest health service provider in Jordan. It has its own information management activities and resources. RMS has developed: an integrated hospital information system in five hospitals, RIS and PACs; centralized financial, inventory and procurement system; teleconferencing and teleconsultation with the Mayo clinic; and a website (http://www.jrms.gov.jo).

The health service providers in Jordan are public university hospitals including the King Abdullah the First Hospital (JUST), which has installed an integrated hospital information system (http://www.kauh.jo), and the Jordan University Hospital (JUH) which has developed the appointment, accounting and pharmacy systems to serve its own needs.

The private sector also plays a major role and has developed an ICT infrastructure. Only two hospitals are using an integrated hospital information system while the others are using a type of electronic processing for billing purposes. Other developments include the creation of an e-pharmacy and medicine reference system.

The international and charitable sector have also maintained systems including: the King Hussein Center for Cancer Tele-synergy, which is a centre well equipped for telemedicine purposes and the National Center for Diabetes.

The Ministry of Health has proposed plans for the development of a hospital information system in Prince Hamza Hospital with HIS, RIS, picture archiving and common system (PACS), video conferencing, telemedicine, and connecting Jamil Tutanjy Hospital. The system will include the following modules: master patient index, admission, discharge, transfer; inpatient management, outpatient management; medical record, doctor and nurse workbench; ward management; archiving, health insurance; appointment and scheduling; delivery and maternity; emergency, pharmacy and prescription management; radiology, laboratory system; blood bank; CSSD (sterilization); operating theatre; financial (patient billing, general accounting, fixed assets, purchasing); and diet and nutrition.

3.7 Lebanon

Mr Riad Al Shami

The Ministry of Public Health has a local area network (LAN) infrastructure with 124 outlets connected using one central hub and four floor hubs, and serviced by a group of six servers. The central LAN is connected to regional offices, hospitals and partners through dedicated and leased phone lines. The major systems and services that are available through the network to the Ministry’s central and regional users are:

- hospitalization registration and control (VISA) systems;
- health map GIS project;
- epidemiological surveillance system;
- national database system (NDS);
- the new Ministry website (http://www.public-health.gov.lb);
- medicine warehouse and medicine distribution centre databases.
The Rafik Hariri University Hospital (RHUH) is equipped with state-of-the-art medical equipment and is aiming at being the first fully digitized, paperless hospital in the Region, if not in the world, with plans to turn telemedicine from a vision into a reality. Now, that the ICT infrastructure is almost complete and the suite of custom applications has been tested and accepted, RHUH is already functioning as a paperless and filmless hospital.

An extensive single-site campus network based on fibre optic cabling provides very high speed Ethernet connectivity of up to 5 Gbps, incorporating two switches that have been implemented at two physically separate data centres on the campus for redundancy purposes. The network provides support for existing high-technology medical systems (such as Ethernet-enabled X-ray systems) and multiple complex medical applications and data, and for tight security.

There is wireless access by doctors and nurses to the central hospital database from almost any location in the hospital using tablet PCs, to view or add new patient information, filmless X-rays machines to store, transfer and display X-rays and other sorts of medical images digitally. A patient registration system which is used to record and access patient information to view on-line medical records, to produce medical reports and an enterprise resource planning system to provide business functions that enable hospital managers to get an instant snapshot of what is happening in any aspect of the hospital from one screen, anywhere in the hospital.

Two future projects that are being studied by the Ministry of Public Health are the national health care card and the national referral system. The national health care card would be used as the standard medical identification for citizens to get Ministry financed medical and health services. The card would store important medical details in addition to personal details to facilitate, standardize and eliminate errors from the process of providing health services.

The idea behind the referral system is to build a national network of medical establishments. The patient would start his/her way to health services by visiting a primary health care centre in his/her local area. Then, he/she might, if required, be referred to the district (caza) Hospital. The referral process can further continue to the national level (national hospital) passing through hospitals at the governorate (mouhafaza) level along the way. Finally, the Ministry pays a great deal of attention to ITC in health (e-health), and so far has implemented and improved some essential and very useful IT projects.

3.8 Morocco

Mr Ismail Alaoui Ismaili

Morocco has developed an e-government strategy and an action plan called e-Morocco 2010. The main objective is to reduce the digital divide and bring Morocco to the international level of the information society. The strategy covers aspects of: contents, infrastructure; access; formation (training), ICT industry and teleservices.
Projects which are under development or are being developed cover the textile sector and clothing sector, e-Parliament–Health (Gate of the offers of care and the indicators of health); e-education (project GENIE); e-elimination of illiteracy in addition to networks, such as the network of the medical community. The Prime Minister’s Office works closely with the Ministry of Health to identify needs and implement projects based on international collaboration.

3.9 Oman

Mr Nasser Al-Shimly, Ministry of Health, Oman

Computerization in the Ministry of Health started in 1987 in a national referral hospital called the Royal Hospital, which was the first hospital in Oman opened with computerization. In 1990, a specialized dedicated unit for IT was created in the Ministry. In 1997, the first computerized health centre was built after the decision to build an indoor system was considered. In 2004, the computer department was upgraded to the level of Directorate General with four departments and 15 sections, known as the Directorate General of Information Technology (DGIT).

The Ministry has a comprehensive computer system automating all the processes of health care delivery institutions to almost making them paperless. There are over 140 health institutions computerized across the country. All the major institutions are already covered.

The electronic system covers all parts of the patient file. All processes in health institutions have been computerized, including PACS system in some hospitals. MicroMedix, is a software used to assist doctors in medicine identification and review side-effects and interactions with other medicine, and has been integrated to the clinical system. The system is integrated with SMS to inform and remind patients about appointments, and to remind people to denote blood. Research, statistics and administrative reports are automatically created by the system. The system also has modules to handle asset management and medical stores.

The problem of manual medical records is quite complex. A distinguished American physician commented “The (paper) medical record is an abomination, it is a disgrace to the profession that created it. More often than not the chart is thick, tattered, disorganized and illegible; progress notes, consultant’s note, radiology reports and nurses notes are all co-mingled in accession sequence. The charts confuse rather than enlighten; they provide a forbidding challenge to anyone who tries to understand what is happening to the patient.” (Bleich H. Computing Volume 10 no. 2, p. 70, 1993).

The strategy states that the usage of ICT, in all processes of the health care delivery system streamlines them and makes them cost effective. It ensures that ICT applications are tailored to all requirements of health institutions, and also provides necessary information for planning and other research purposes. There have been two objectives behind this strategy: to improve the health care delivery system to increase efficiency levels and to reduce health care cost.
The Fifty-eighth World Health Assembly endorsed a resolution on e-health requesting ministries of health to build a national e-health strategy and to create a national e-health committee, including all concerned governmental and private sectors.

3.10 Saudi Arabia

*Mr Fahad Ben Saud Al Otaiby*

King Faisal Specialist Hospital and Research Centre (KFSK and RC) is at the centre of e-health in the country. The centre is part of the department of health outreach services (HOS) which has developed and established partnerships with referral regional hospitals of the Ministry of Health. This cooperation has led to significant improvements in health care by enhancing quality clinical practices, promoting educational, training and standardizing management of specific disease conditions.

E-health services are the main two sections of the HOS department, in addition to the national programme and health outreach regional centres. The overall activities of these programmes smoothly facilitate the delivery of KFSH and RC’s outreach medical services to the citizens of Saudi Arabia, irrespective of their geographical location. Clinical visits are conducted at Ministry of Health regional hospitals with patients seen and medical lectures given. The national programme provides financial sponsorship, education and the establishment of health facilities for the advancement of health care. Due to the prominent achievements of e-health services of KFSH and RC at the local, regional and international level, the centre is being considered as a WHO collaborating centre for in the field of e-health. Other players exist in Saudi Arabia mainly the MEDUNET (Prince Sultan Bin Abdul Aziz Foundation). MEDUNET’s services and support are concentrated within a single unique facility. Health professionals now have one central location for comprehensive technical support and for the validation of new equipment and system concepts. The e-health centre provides: a second medical opinion, both at national and international level between KFSH and RC and regional hospitals, as well as between KFSH and RC and global specialized medical centres; broadcast national activities; telemedicine medical education programme.

3.11 Syrian Arab Republic

*Eng Fadwa Murad*

The Ministry of Health understands e-health as an umbrella term encompassing a broad range of ICT activities related to health care delivery and management. ICT usage in the Ministry of Health started more than 10 years ago, but the Ministry still considers its e-health experience as in its early phases. During the last 10 years of ICT history, the Ministry has focused basically on information systems, training, e-health education, and building capacity for research and development. The Ministry is in the process of:

- developing a strategy to build a national health information system, including all sector stakeholders;
- upgrading the current network infrastructure to be based over the public data network established in the country;
- training staff abroad in information management, telemedicine (Master, PhD Degrees);
- applying hospital management information systems (in three pilot hospitals) and modular system, electronic medical records is one of its components;
- developing an interactive Ministry of Health website (with a focus on education and services).

A number of obstacles have been identified including: resistance to change; a great need for legislative updates and developments, to be compatible with new technologies; migration of trained staff to the private sector (inside and outside the country); missed methodology for system sustainability.

3.12 Yemen

Mr Adel El Mahyoub Al Sameie

The telemedicine project at Al-Thawra Hospital has established itself as a successful example of an e-health project responding to the needs of the country. It also represents a collaborative effort with Saudi Arabia. This collaboration between Yemen and Saudi Arabia has proved its value and quality. The number of sessions reported and the quality of services rendered justify the move to expand to cover other hospitals in the country and to provide other types of applications. Plans have been developed to provide and install the necessary infrastructure in four more hospitals in different governorates in Yemen. Connecting medical colleges and their teaching hospitals in Sana’a, Aden, Hadramout and Taiz should be given priority. Among the realistic and required services are second opinion and e-learning.

4. CONCLUSIONS

Participants of the conference expressed their appreciation to the Regional Office for the timely organization of this important event in response to the needs of Member States. The country presentations provided an opportunity to share experiences and discuss the issues, challenges, achievements and lessons learned in the process of introducing e-health applications in countries of the Region. The diversity and length of country experiences enriched the discussions and formed a solid foundation for collaboration and networking among countries of the Region. The technical presentations by specialists and experts provided in-depth and up-to-date knowledge on selected and diverse areas in e-health. The presentations by nongovernmental organizations and selected private partners provided excellent examples of how public–private partnerships can be forged for the benefit of people in the Region.

5. RECOMMENDATIONS

1. WHO and Member States should develop materials and make available evidence-based studies on the value and role of e-health in improving quality of care, reducing costs and waiting times, making services available to remote areas, enhancing patient safety and supporting equity to access to health services.
2. The Regional Office should develop awareness and educational materials for the promotion of e-health among managers, planners and decision-makers in ministries of health, other relevant ministries, health care and medical education institutions, the private sector and nongovernmental organizations.

3. Countries should develop national e-health policies, strategies and long-term plans to allow them to implement a more integrated and comprehensive e-health vision taking into consideration the diversity of e-health applications.

4. Countries should institutionalize and enhance intersectoral collaboration in order to support many of the e-health applications that make use of the e-government platform, such as the patient index, geographic information systems, e-literacy programmes, health education, etc.

5. Member States should give the highest priority to the development of legislative frameworks to support e-health at both country and regional levels.

6. All e-health applications developed or implemented in the Region should comply strictly with international standards to ensure interoperability, confidentiality, security, safety and modularity. Countries with support from the Regional Office should organize campaigns and workshops on e-health standardization.

7. WHO, in general, and the Regional Office, in particular, should sustain its e-health programme and maintain it as a regular programme which should be budgeted on a regular basis and given priority for extra-budgetary funding.

8. Countries should allocate adequate resources to develop and maintain the necessary information and communication infrastructure in health care institutions to support e-health.

9. Human resources in e-health represent a prerequisite for the successful implementation of initiatives. Training programmes, continuous education and incentives should be provided and sustained.

10. Countries should develop emergency ICT plans as part of disaster prevention and management.

11. In the spirit of the Millennium Development Goals (MDG 18 in particular), countries should work with the private sector and nongovernmental organizations to develop joint initiatives and projects which can be used as models in other countries.

12. The HINARI initiative as a global project and the Regional Consortium for Electronic Journals should be supported and sustained by WHO and the publishers' consortium that supports HINARI. Countries should make full use of these initiatives through better connectivity and the training of users.
13. E-health applications that have been developed by the Regional Office represent a serious and professional effort to assist countries. Applications for language processing, digital mapping, disease surveillance, mobile health, etc. should be supported and fully shared with Member States.

14. Countries are encouraged and urged to use open access health information resources available from academic and professional institutions worldwide. The Regional Office should continue to provide an inventory of these and portal services to assist countries.

15. The private sector and nongovernmental organizations should take up initiatives in support of e-health projects in the Region. The ICT industry is particularly requested to contribute actively in the provision of infrastructure, software development and human resources development.

16. The benefits and drawbacks of use of open source software for e-health, in general, and electronic health records, in particular, should be seriously considered by comparative studies and greater sharing of experience and products among countries. The Regional Office should act as a clearing house in support of these activities.

17. E-learning should be strengthened as a method for providing continuous professional education and promoting consumer health. The health academy project should be implemented in countries based on needs assessment and local situations. Medical education institutions should start investing time and effort to introduce e-learning packages in local languages to support their academic programmes. Countries should invest in e-learning to implement their strategies for human resources in health. Countries should share e-learning materials and experience.

18. Countries should designate focal points for the global e-health observatory and establish national health observatories as part of existing structures (such as national e-health committees) to keep the national e-health profiles up to date.

19. The regional conference on e-health should be organized on a two-yearly basis. It should be rotated in countries and be announced one year before the date of the event to allow for wide participation and high-quality scientific and technical papers.
ANNEX 1

PROGRAMME

Tuesday, 27 June 2006

08:30–09:00 Registration

09:00–10:00 Opening ceremony
    Address by Dr Hussein Gezairy, WHO Regional Director for the Eastern Mediterranean
    Meeting objectives, procedures and expected outcomes
    Election of Chairman, Vice-Chairman and Rapporteur
    Approval of agenda and programme
    Group picture

10:30–11:30 WHO Regional Office’s approach to support e-health activities in the Region, Dr Najeeb Al-Shorbaji, EMRO

11:30–12:15 Endorsement of e-health by the World Health Assembly: Implications for WHO activities and Member States, Diana Zandi, WHO/HQ

12:15–13:00 Short messaging services in support of tuberculosis patients, Ms Samar Ibrahim and Eng Amr El Sheikh, EMRO

14:00–16:15 Country presentations
    • Afghanistan
    • Bahrain
    • Djibouti
    • Egypt
    • Islamic Republic of Iran
    • Iraq
    • Jordan
    • Lebanon

16:15–16:30 Wrap up and discussion

Wednesday, 28 June 2006

08:30–10:30 Country presentations
    • Morocco
    • Oman
    • Pakistan
    • Palestine
    • Qatar
    • Saudi Arabia
WHO-EM/HIT/005/E
Page 26

- Sudan
- Syrian Arab Republic
- Tunisia
- United Arab Emirates
- Yemen

11:00–11:45 Telecommunication support in emergency and crisis situations, Eng Khaled Shams, EMRO

11:45–12:15 E-health services and outreach programme at King Faisal Specialist Hospital (Video Conference), Dr Ali Mshari, KFSH&RC, Saudi Arabia

12:15–12:45 The role of the Arab Telemedicine Society in support of e-health, Professor Aziz El-Matiri, President, Arab Telemedicine Society

12:45–13:15 Role of the Syrian Medical Informatics Association in support of e-health in the Syrian Arab Republic, Dr Ghassan Sharoul, President, Syrian Medical Informatics Association

14:00–14:45 Health care reform through the shift to mobile computing, Engineer Ossama Abbas, Total Administration of Information in Business Applications, Canada

14:45–15:30 Tele-radiology services: a live demonstration from Tunisia

15:30–16:15 Geographic information systems: Digital mapping for public health, Eng Hany Farouk, EMRO

16:15–16:30 Wrap up and discussion

Thursday, 29 June 2006

08:30–09:15 Electronic access to medical literature through EMRO Journals Consortium and HINARI, Mr Mahmoud Hussein, LIMS, Egypt and Mr Hatem Nour, EMRO

09:15–10:00 Computerized language processing: Arabic as a model, Dr Adnan Idan, Ata Soft, UK

10:00–10:30 Health informatics education: how to promote e-health understanding among practitioners and decision-makers, Dr Hisham Kuzo, Alexandria College of Medicine

11:00–11:45 E-health thinking: Egyptian experience: problems and prospects, Dr Mohamed Sultan, Nasser Institute, Cairo

11:45–12:30 E-health global survey and e-health observatory, Dr Misha Kay, WHO/HQ
12:30–13:00 Establishment and functions of national e-health observatories, Dr Misha Kay, WHO/HQ and Dr Najeeb Al-Shorbaji, EMRO

14:00–14:45 Electronic health records standards, Chris Bailey, HQ (Videoconference)

14:45–15:30 Electronic health records: What and where to look for, Dr Najeeb Al-Shorbaji, EMRO

15:30–16:15 Health care transformation: Policy and standards, Dr Mário Romão, Digital Health Policy Manager, Intel Corporation, Europe, Middle East & Africa, Belgium

16:15–17:00 Conclusion and recommendations

17:00 Closing session
Annex 2

LIST OF PARTICIPANTS

AFGHANISTAN
Mr Omer Alkozai
IT Officer
Ministry of Public Health
Kabul

BAHRAIN
Mr Ibrahim Al Nawakhza
Director Health Information Department
Ministry of Health
PO BOX 12
Manama

DJIBOUTI
Dr Ammar Abdo
Epidemiologist
Ministry of Health
Djibouti

ISLAMIC REPUBLIC OF IRAN
Mr Abbas Najari
Director General of Health and Biomedical Information
Ministry of Health and Medical Education
Tehran

PAKISTAN
Dr Shahid Ansari
Assistant Director General
Ministry of Health
Islamabad

PALESTINE
Eng A'ala Al Shurfa
Director of MIS
Gaza European Hospital
Gaza
QATAR
Mr Jean Claude Ghazi
Acting Director
Foreign Health Relations Department
National Health Authority
PO Box 42
Doha

SAUDI ARABIA
Dr Fahad Ben Saud Al Otaiby
Director General
Computer Division
the Ministry of Health
Riyadh

UNITED ARAB EMIRATES
Dr Said Abdullah Ben Ishak
Director
Quality Management and Development Department
PO Box 848 AD
Abu Dhabi

YEMEN
Mr Adek El Mahyoub Al Sameie
Director
Information Center
Ministry of Health
Sanaa

Mr Abdul Qawi Al Khorasani
Ministry of Communication
Sanaa

OTHER ORGANIZATIONS
Dr Osama Raslan, General Manager, Arab Medical Union, Cairo
Dr Aziz El Matri, President, Arab Telemedicine Association, Tunisia
Mr Mahmoud Hussein, LIMS Egypt
Library Information for Marketing and Services- Egypt, Cairo
Mr Mohamed Sultan, Director, Telemedicine
Nasser Institute Hospital, Cairo
Mr Hesham Kozou, Lecturer of Audiology
Alexandria Faculty of Medicine, Alexandria
Colonel Dr Menwer Kharabsheh  
The Royal Medical Services, Al Hussein Medical Center, Jordan  
Mr Mário Romão, Digital Health Policy Manager, Intel Corporation, Europe, Middle East & Africa, Brussels  
Dr Adnan Idan, Director, Ata Soft, UK  
Engineer Ossama Abbas, Director, Total Administration of Information in Business Applications, Canada  
Dr Sahar Yassin Ibrahim, Lecturer of public Health, PHD, Computerized HIS, Faculty of Medicine  
Engineer Abou El Ela Moustafa, Marketing, Product Manager, Vodafone  
Engineer Mohamed Nazmy, President, IDM, Int’l Inc. Canada  
Dr Atef Badran, Executive Director, Arab institute for Continued Professional Development  
Dr Sophie A. Moussa, General Manager, Sofipharma, Scientific Office

**WHO SECRETARIAT**

Mr Misha Kay, Knowledge Management and Sharing, Global e-Health Observatory, WHO/HQ  
Ms Diana Zandi, Knowledge Management and Sharing, Health Academy, WHO/HQ  
Dr Najeeb Al-Shorbaji, Coordinator, Knowledge Management and Sharing, WHO/EMRO  
Mr Hatem Nour El Din, National Professional Officer, Library, WHO/EMRO  
Eng Hani Farouk, Technical Assistant, GIS Programmer, WHO/EMRO  
Eng Khaled Shams, Technical Assistant, Communications Administrator, WHO/EMRO  
Eng Amr El Sheikh, Technical Assistant, Computer Programmer, WHO/EMRO  
Ms Samar Ibrahim, Advocacy and Communication Assistant, WHO/EMRO  
Mrs Mona El Zomor, Administrative Assistant, WHO/EMRO  
Mrs Nada Zahra, Secretary, WHO/EMRO  
Mrs May El Sayed, Secretary, WHO/EMRO