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E-health in Africa: Beyond the Hype (Part II)

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In this concluding section of his article (the first part was published in our previous issue), Prof. Mars continues his reality check on e-health in Africa – its potential and the challenges ahead.

Lack of Capacity Development

Ignorance about telemedicine has been cited as a reason for poor uptake of telemedicine in developing countries. The same holds true for medical informatics.

There is a shortage of medical informaticians in the developed world. The situation in the developing world is worse. Organisations like the Fogarty International Centre and the American Medical Informatics Association have provided funding and assistance, while, on their part, African academics have formed the African Academic Public Health Informatics Association (AAPHIA).

What has emerged is the lack of capacity within universities to offer education and training in medical informatics. AAPHIA exemplifies this, with academics from 10 African institutions wanting to offer some form of medical informatics education and training, but few having the capacity or expertise to do so.

Capacity will develop over time, but where do these trained people then work? Few sub-Saharan African governments have created posts and career paths for medical informaticians.

There is, for some reason, an expectation that doctors and nurses will use telemedicine without training. In time, telemedicine will become an integral part of the practice of medicine, as have the telephone and fax, and there will then be no need for specific training. Until this point is reached, there is a need for training, especially in the developing world where Internet penetration and computer literacy is low. The International Society for Telemedicine and e-health has developed a basic introductory telemedicine training programme to introduce health professionals to telemedicine and various vendors offer training in the use of their product. Turnover of medical staff in rural Africa is high and ongoing training is required.

Ideally, telemedicine training should be part of medical student education and nurse training with students exposed to its routine use. Until there are enough active telemedicine services in place this will not occur and telemedicine training for doctors and nurses will have to continue. There are few formal academic telemedicine qualifications in the world and only one in Africa.

Continuing medical education using information and communications technologies offers promise. It is well documented that doctors in rural settings feel isolated from their colleagues and the provision of continuing medical education over distance is a way of overcoming this.

Policy and Legal and Ethical Considerations

Policy or rather its lack, and policy that is parochial, is seen as a potential obstacle to the growth of e-health in the developing world. It is estimated that approximately half the countries in the world have or are working on an e-health policy, strategy or roadmap. e-health policy is also linked to other policies like IT, Telecommunications, eGovernment, Science and Technology and Education, and included in these are often policies on privacy, confidentiality and data security. In budget-constrained countries some form of government policy on e-health is required if

pilot projects or programme specific projects are to become sustainable and integrated into the health system. It is unfortunate that none of the Africa Union, NEPAD or African Health Ministers published policies and strategies mention e-health, Tele-health or Telemedicine. e-health is mentioned as a spin-off of the NEPAD eSchools policy.

Legal and ethical guidelines need to be formulated that enable the use of e-health and not impede it, while at the same time protecting both patients and the professionals. Africa is, and will be, dependent on international support for telemedicine and cross-border telemedicine practice. While acting locally, countries need to think globally, to harness the capacity of among others, the African Diaspora. The European Community is developing guidelines and legislation for cross border telemedicine among its members and care is needed that this takes into account the need for telemedicine practice outside of the community. What is needed is an International e-health Convention on international cross border telemedicine and work on this has commenced.

E-health in Sub-Saharan Africa

In spite of the major obstacles, there are several successful examples of e-health in sub-Saharan Africa. In health information systems the BEANISH project (Building Europe Africa Collaborative Network for Applying IST in Health Care Sector) builds on the HISP project and provides an adaptable open source District Health Information System used by 11 African countries.

The Open MRS movement, led by the Riekenstrief Institute and Partners in Health provides a customisable open source medical record system for developing countries. It is active in eight African countries. The OASIS project (Open Architecture Standards and Information Systems) aims to develop an interoperable system that moves away from silos of information organised vertically by disease and design and assess interoperable e-health systems for resource constrained settings.

The Réseau en Afrique Francophone pour la Télémédecine (RAFT) based at the Hôpitaux Universitaires de Genève is active in 15 African countries and has been running since 2001. Largely focussing on webcast tele-education it has been used for telemedicine. Weekly teaching sessions are broadcast at relatively low bandwidth (30 kbps) to up to 42 sites.

iPath, run by the association TeleMed Basel is an international open source web based platform for store and forward clinical telemedicine, discussion groups and education. Information is not available on the number of cases submitted by doctors in Africa. Doctors in nine countries in sub-Saharan Africa have formed 36 discussion groups on the iPath platform. Activity within these groups is not available.

The African Teledermatology Project has offered free store and forward services through the web based teleder.org platform since 2007. Again use has been very low. In the first 2 years, doctors in 13 sub-Saharan African countries submitted 345 cases, which is one case per country per month. The Mali IKON project is a store and forward teleradiology project that overcomes the problem of all the radiologists in the country living in the capital, by linking six regional hospitals to the capital.

The Pan African e-health Network is a project of the Indian Government, supported by the African Union, that aims to eventually provide VSAT based telemedicine and tele-education facilities to one hospital in every African country with links to 5 regional super specialty hospitals, 7 universities in Africa and 12 super specialty hospitals in India. One hour of synchronous telemedicine and five store and forward consultations are offered free for the first five years. Continuing medical education is also being offered but uptake is apparently low. To date infrastructure has been installed in one hospital in 22 countries.

Other services include Medical Missions for Children, active in 13 countries, Remote Access for Health Professionals providing Internet-based support for Ismaili health professionals in Tanzania, the Orbis cyber sight programme, the Children's National Medical Centre in Washington's paediatric echocardiography service to a hospital in Uganda, Johns Hopkins' medical training programme in Ethiopia and the Evangelical Lutheran Church's activities in Tanzania. AMREF has embarked on an eLearning programme aimed at raising the qualifications of 40,000 nurses in Kenya. Rwanda is looking at a similar project. The University of KwaZulu-Natal has been active in setting up videoconference-based medical education and continuing medical education programmes in South Africa and several Central African Countries and offers postgraduate qualifications in Telemedicine and Medical Informatics.

Nevertheless, few services are fully integrated into any country's health system.

Conclusion

So what do you as the Minister of Health make of all of this? The need to have realistic expectations based on limited budgets is apparent, as is the need to develop a plan, be it a policy, strategy or roadmap. Clearly the infrastructure issues are beyond the budget and the control of the Ministry of Health. It is time to call for an inter-ministerial meeting of Health Telecommunications, Science and Technology, Education, and Law and Order, to find common solutions.

While seemingly obvious, the ministries have in the past tended to act as individual fiefdoms and collaboration has not been the norm. There is need to share scarce resources and address expensive connectivity.

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The possibility that clinical telemedicine services may improve patient management is appealing but doctors are already overworked and under-paid, so advice is needed on the development of legislation that will enable international telemedicine. At the same time if the medical school could be supported through international tele-education, there is the opportunity to improve services in the country and produce more specialists. Doctors and nurses at the medical school must look at ways of implementing continuing medical education in rural areas.

But within a limited budget what are your priorities to be? A functional district health information system providing timely and accurate data which is automatically analysed will probably benefit the most people and assist planning and budgeting. The current paper based system only produces reports three to six months after data collection. An open source solution needs to be investigated and is, you think, the highest priority. A hospital information system would be nice to have but is not essential. Neither is an electronic patient record or an electronic medical record. Ongoing education will improve both the standard of care and raise the morale of the health professionals, so that will be the second priority. At the same time there is need to develop an e-health strategy, legislation and guidelines, a change management plan, and local capacity.

There is much to be done.

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