

eHealth can help you make the right decisions through support systems

Yunkap Kwankam keeps pace with health information



The World Health Organization African Region, with 46 countries, has about 25% of the global burden of disease but only around 3% of the global health workforce. The *World Health Report 2006* goes on to say that there is a critical shortage of certain categories of health professionals in some 33 African countries. This is another area where judicious use of ICT can help. Whereas traditional educational systems cannot make up the shortfall, eLearning can help produce quality health workers in the appropriate numbers. But that is another article. What can be done to make our health workers more productive?

Information explosion

Health professionals need to know exactly what to do at each step of the care-giving process. But that is not always the case, as the volume and complexity of knowledge and information have outstripped the ability of health professionals to function optimally without the support of information management tools. In the area of health research, for instance, the sheer volume of new information is enough to stretch even ICT-assisted decision making systems. On an average day, in the middle of the last decade, there were 55 new clinical trials, 1260 articles indexed in MEDLINE, and 5000 papers published in the biomedical sciences. How can we expect to keep pace with this exponential growth in health information and knowledge without the support of eHealth tools?

A knowledge paradigm for eHealth

Decision support systems for diagnostic purposes have evolved through expert systems such as MYCIN in the 1970s, which held the promise of capturing and preserving for posterity, the knowledge of an expert, thus endowing such knowledge with a life of its own. Today such systems use the collective wisdom garnered from a body of scientific evidence, to support the diagnosis of diseases, or to identify potentially harmful associations of medications even before there are reported cases. Healthcare would appear to be evolving towards an information infrastructure which efficiently connects those who produce and archive health knowledge to those who apply the knowledge. Weed¹ suggests that

knowledge should preferably be stored in reservoirs that are easy to update and to use as opposed to storage in human brains that are expensive to load.¹ In the knowledge economy, the role of ICT may be cast in the form of a knowledge paradigm for eHealth. Decision-making in health systems is supported by the availability of the right knowledge, at the right place, at the right time and in the right format, through an ICT-based knowledge-coupling system which ensures three aspects:

- all relevant options are readily available for consideration;
- unique features of the situation at hand that have a bearing on the discrimination among these options are appropriately evaluated;
- appropriate associations are made between the unique features of the situation and the options. In the African context, one would add a fourth requirement;
- the right technology is deployed and local capacity is developed, to facilitate access to the knowledge and its translation into action.

Help is available

Two useful decision support tools for health professionals are Meddoctor (www.meddoctor.com) and the Map of Medicine (www.mapofmedicine.com). The former is a scientifically robust web-based platform for differential diagnosis. It is based on the latest scientific evidence, on 830 diseases and conditions – all conditions likely to be seen in primary care practice – and is available in five languages, including English, French, and Spanish. The Meddoctor system can improve productivity in the clinic in terms of improved diagnosis, increased diagnostic capability among users, and better transfer of know-how from specialists to other professionals.

Armed with a differential diagnosis, the Map of Medicine walks the care giver through the right steps required to manage the case, based on the latest approved clinical guidelines. The web-based system contains nearly 400 clinical pathways and is deployed in the NHS in the UK. Its owners are willing to support healthcare institutions in Africa by providing free access to the platform. A trial in 11 teaching hospitals in six African countries in 2007 showed that it influenced decision-making in clinical practice. Interested? Let's hear from you.

Reference

1. Weed, LL. New connections between medical knowledge and patient care. *BMJ* 1997; 315: 231–5.

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