

# Telepsychiatry in Africa – A Way Forward?

The burden of disease in Africa is great, its people are poor and there is an extreme shortage of health professionals. Over half of sub-Saharan Africans live on less than US\$1.00 (purchasing power parity) a day, and in rural areas.<sup>1</sup> As a result, the tax base in most countries is small and government spending on healthcare provision is low. Access to, and the standard of, medical care is largely dependent on income and geographic location. Furthermore, it is forecast that the population of Africa will double over the next forty years, exacerbating the problem.<sup>2</sup>

Like most specialties, there is a shortage of psychiatrists in sub-Saharan Africa and those requiring mental health services, especially in rural areas, are underserved. One solution is to increase the number of psychiatrists and psychiatric nurses but it is often forgotten that when there is a shortage of doctors there is also a shortage of doctors to train doctors. Another possible solution is the adoption of telemedicine.

Telemedicine is the use of information and communication technologies (ICT) for healthcare provision and education. It can be provided live and interactively using videoconferencing, with or without the use of ancillary devices such as electronic stethoscopes, otoscopes, dermoscopes etc, so called synchronous telemedicine. "Store and forward telemedicine", as the name implies, involves saving information and transmitting it via the Internet, by encrypted email or secure Web site to a colleague who will in time reply with an opinion or diagnosis. The concept of telemedicine is appealing to policy makers. It offers the opportunity to overcome the "tyranny of distance" by affording rural patients access to services - especially scarce specialist skills. This reduces the patients' need to travel for care, and supports doctors and nurses in rural communities. It is unlikely that there is a doctor who has not practised telemedicine, albeit it unknowingly, as the use of the telephone to seek or give medical advice meets the definition of telemedicine.

Telemedicine is not new. The first report in the *Lancet* of the use of the telephone for diagnosis and management was in 1879, three years after Bell invented the telephone.<sup>3</sup> Willem Einthoven transmitted electrocardiograms by telephone in 1905.<sup>4</sup> Psychiatrists were early adopters of telemedicine. Telepsychiatry, the practice of psychiatry over distance using information and communication technologies began in 1953 when Tucker used closed circuit television (CCTV) for mass therapy in California because of, "the increasingly difficult situation of overcrowding and understaffing faced by most mental hospitals." Wittson used CCTV for psychiatry education in Nebraska in 1955 and psychiatry consultations between general practitioners and specialists at two centres 180 km apart were taking place by 1964.<sup>5</sup> Psychiatrists were also early adopters of the next wave of videoconferenced telepsychiatry which began in the early '90s and telepsychiatry is one of the most widely used forms of telemedicine after teleradiology.

The promise of telemedicine in Africa has yet to be realised. While there are a few successful telemedicine implementations in both the private and public sectors these are the exceptions. There are many reasons for this. Telemedicine by definition requires relatively sophisticated information and communication infrastructure which is costly and does not always reach the rural areas where it is required. Electricity supply is unreliable in many places and power fluctuations damage electronic equipment. Even relatively simple email based "store and forward telemedicine" is not always easy in rural areas. Fixed telephone penetration in sub-Saharan Africa is less than 1.5% and without fixed phone lines internet access is difficult. It is not surprising that Internet penetration in Africa is low at approximately 13% of the population.<sup>6</sup> Another reason is that the costs of telephony, internet and broadband access are also high. Despite the new undersea cables that have been laid down, both on the East and West coasts of Africa, bringing substantial bandwidth to the continent the cost of bandwidth remains out of the reach of most people.

Mobile telephone penetration is growing rapidly and is now in the region of 45%, although this figure is inflated as some people have more than one mobile phone and or more than one SIM card. mHealth or mobile health is the new buzz word, with mHealth seen as the new way of facilitating provision of telemedicine services. The widespread use of smart phones and applications is some way off for Africa. There are however a number of examples of mobile phone use in Africa for data collection and improving antiretroviral and TB medication compliance through text messaging and automated phone calls. Call costs are relatively high and currently there is reluctance among rural patients to use mobile phones for non-emergency medical services.

Telemedicine can assist in overcoming the shortage of doctors but it should be remembered that most telemedicine activities add additional steps to the normal work flow which adds burden to already overworked doctors at both the send and receive sites. It is not unusual for doctors to say, "it's a nice a idea but I am not going to do it", and "it's too much work". Africa is and will be dependent on international support for telemedicine and cross border, international, telemedicine will assist in overcoming the shortage of doctors. While acting locally, countries need to think globally, to harness the capacity of among others, the African Diaspora. Governments and regulators need to formulate legislation and ethical guidelines that enable both local and international telemedicine and do not impede it, while at the same time protecting both patients and the professionals. What is needed is an International eHealth Convention on international cross border telemedicine and work on this has commenced.

The six papers on telepsychiatry in this edition cover a range of issues and describe some of the steps taken to plan and implement telepsychiatry at the University of KwaZulu-Natal. Chipps and colleagues begin by conducting a systematic review of systematic reviews and show that videoconferenced patient assessments are equivalent to face to face consultations but are

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dependent on bandwidth. They go on to describe the implementation of videoconferencing in the registrar training programme at the University of KwaZulu-Natal. Their third paper describes an action research programme that began with a benchtop study evaluating psychiatrists' satisfaction with videoconferencing at different bandwidths for clinical services, the development of clinical guidelines, and the introduction of videoconferenced teaching on the postgraduate registrar training programme and outreach education programme to rural hospitals. This then led to the creation, use and evaluation of lectures recorded to DVDs for the outreach programme and the implementation of a pilot clinical telepsychiatry service. The fourth paper outlines a model for the implementation of telepsychiatry in a resource constrained setting. Mars and colleagues review the literature on the use videoconferencing-based forensic telepsychiatry to reduce the waiting time of offenders requiring assessment of adjudicative competence and discuss the related legal and ethical issues. A set of guidelines for the practice of videoconference-based telemental health completes the set of papers.

Africa needs more psychiatric services. It is hoped that these

papers will raise awareness and stimulate interest in the implementation of clinical telepsychiatry and videoconference-based tele-education for psychiatry training in Africa. The need is great.

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#### References

1. World Health Organization: *World Health Statistics 2011*. Geneva, WHO Press, 2011:1-171.
2. United Nations De: *World population prospects, the 2010 revision*. [http://esa.un.org/wpp/unpp/panel\\_population.htm](http://esa.un.org/wpp/unpp/panel_population.htm)
3. Aronson SH. *The Lancet on the telephone*. *Med Hist* 1977;21(1): 69-87.
4. Einthoven W. *Het telecardiogram [The tele-cardiogram]*. *Ned T Geneesk* 1906;50:1517-1547.
5. Bashshur RL, Shannon GW. *History of Telemedicine : evolution context and transformation*. New Rochelle, NY, Mary Ann Liebert Inc, 2009: 1-413.
6. Minwatts Marketing Group: *Internet usage statistics for Africa*. <http://www.internetworldstats.com/stats1.htm>