

How mobile phones are transforming healthcare

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New research highlights examples of medical care transformed by mobile networks.

New research explores how <u>mobile networks</u> are revolutionising multiple aspects of healthcare in both developing and developed countries. The report also highlights how mobile network operators are well placed to help overcome existing gaps in <u>medical care</u>.

Working with China Mobile, the largest mobile network provider in the world, University of Cambridge researchers found that mobile health ("mHealth") applications are being used in all aspects of healthcare – including diagnosis, patient administration, drug delivery assurance, aftercare, chronic monitoring and health education – in China and around the world.



Professor Ian Leslie, lead author of the report from the University of Cambridge's Computer Laboratory, said: "We saw an enormous range of existing mHealth applications in the course of our research, and our work with academics identified even more ideas for an even greater range. Of particular interest is the use of social networking techniques to track epidemics.

"However, there were two things of note that we didn't find deployed other than in limited trials: the use of information gathered by mobile applications to inform public health, and the evaluation of the effectiveness of applications. These are missed opportunities."

Having been granted exclusive access to case studies in China, the researchers were provided with unique opportunities to assess the potential of mobile networks to enhance healthcare and health promotion there. Capitalising on the University's expertise in communications, healthcare and business, the study also examined other emerging as well as developed markets for mHealth worldwide.

The study found significant differences in deployment. Where healthcare systems have been long established, it is difficult to deploy applications that interact strongly with the healthcare system. Innovation in mHealth applications is likely to come from those economies where there is a rapidly evolving healthcare system – China being the most notable example. There are other mHealth applications that interact only loosely with healthcare systems, such as those that monitor well-being, and innovations in these areas are most likely to occur in developed economies.

The report also examines the implications of mHealth for the developing world. The smallest global infrastructure gap – the difference between the richest and poorest nations – is in mobile communications. Many healthcare applications that are based on mobile communications,



therefore, will transfer readily to regions with unserved or underserved populations.

Simon Sherrington, research co-author, said: "mHealth is revolutionising how we can provide universal access to safe, effective healthcare. In lowincome economies, mobile communications will be able to deliver training to clinicians and remote decision support using either automated analysis of data or real-time contact with specialists.

"Additionally, medical staff will be enabled to diagnose and treat conditions locally without patients needing to travel large distances to specialist centres, and disease outbreaks will be handled more efficiently through better communication."

For these low-income economies, mHealth can improve access to services in areas that are hard to reach through conventional means of health delivery; disseminate information on medical advances and public health to professionals and the public; facilitate data gathering from remote areas during disease outbreaks, enabling better research and response planning; help secure the supply chain for drugs; and increase the effectiveness of treatments by supporting adherence to medication regimes.

In developed economies, mHealth can also address the challenges of ageing populations by replacing expensive resources with automated processes; provide support for carers outside the health system; improve the take-up of testing for socially stigmatised diseases; and support monitoring and self-help responses relevant to long-term conditions.

The report also considers the role of mobile operators in mHealth innovation and, in particular, whether mobile operators should be the suppliers of mHealth applications or simply enablers. It illustrates that there are viable business models, and that mobile operators have a lot to



gain from, and offer to, mHealth applications.

The report – which will be formally published today (21 April), alongside China Mobile's 2010 Sustainability Report, in Beijing– is available to download at <u>www.csap.cam.ac.uk/media/uploa</u> ... formedical-care.pdf .

Provided by University of Cambridge

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