

Volume 5 / Issue 5 / 2010 - Cover Story

Megatrends in Healthcare IT

As we turn the corner towards a significant staging post (Healthcare Information Technology Management's fifth year of publication), we thought it worthwhile to attempt a snapshot of the key drivers of healthcare IT, as seen by experts, for the next 5-10 years.

Opinions on the fine points vary. However, a meta-analysis of several leading sources yields an impressively-convergent list of 10 megatrends which seem to be shaping the look and feel of healthcare (and healthcare IT). The sources, from which we derived our final list, are:

1. Stephen C. Schimpff M.D, *The Future of Medicine: Megatrends in healthcare That Will Improve Your Quality of Life*, Thomas Nelson, August 2007.
2. *Megatrends in Global healthcare*, Harvard Business Review, April 2010.
3. Sampling of reports and articles from consulting firms such as
 - a. The Gartner Group
 - b. McKinsey & Co.
 - c. Frost & Sullivan
 - d. IDC

On our part, we have organised our Top 10 Trends into three groups – medicine, politics and society, and technology. The following section provides a look back at our own commentaries and insights into each of the above.

Telemonitoring of Patients

Our study identified significant benefits for both patients and healthcare providers in several key areas. These included delivering improved patient services by enabling cardiologists, GPs and nurses to identify changes in conditions and providing a prompt and appropriate medical response, a reduction in cardiology-related GP visits by as much as 90 percent, a reduction in hospital in-patient admissions of 35 percent and a reduction in out-patient visits of 12 percent.

'Cost-Benefit Of Telecardiology', HITM interview with Dean Westcott, Member of the Board, Association of Chartered Certified Accountants, Issue 1 HIT, 2007.

Personalised Medicine

Indeed, even as e-health programmes seemingly flourish across the globe, they may simply be concealing a more powerful and pervasive phenomenon.

This concerns the emerging era of personal and individual healthcare, or what can be termed i-health. It will be driven digitally for you, me and everyone else....

The differences between e-health and i-health are significant. While e-health is largely about concepts, policy and infrastructure, i-health will be about use. The first is pushed on the technology supply side, while i-health is going to be demanded, pulled by need and finessed by experience. Most crucially (if subtly), i-health is more about patients than physicians.

'From e-health to i-health: Traversing Tomorrow's Healthcare Frontier' Editors, Issue 1 HIT, 2009.

Customising Clinical Research with EHRs

There is no question that e-health systems including the EHR could and will be an important data source for clinical research, supporting clinical studies, testing clinical hypotheses and, even more important, generating hypotheses (e.g. about possible causes for diseases or different responses to treatments) from a linked analysis of so far unrelated data in particular including genomics and proteomics.

On a small scale, EHRs could mean an alert to a physician that patient data suggests a contraindication to a prescribed drug or on a national or even international scale an alert to health authorities.

'e-health / EHR and Clinical Research' Prof. em. Günther Gell, Medical University of Graz, Austria, Issue 5 HIT, 2009.

Aging Populations in the West

Predictions that information technology would become a critical element in the elderly health and homecare setting of the future have proven to be true as healthcare systems grapple with the challenges of implementing and expanding IT-based services for an aging population. There are great expectations about how IT can and will provide benefits in this area.

'Elderly Health, Homecare and Information Technology' Vivian Vimarlund, Linköping University, Sweden, Issue 3 HIT, 2008.

Rising Costs: The Need for Embedding Value

The complexity of today's healthcare systems is increasing with large numbers of specialised actors cooperating in novel organisational forms and networks. At the same time, stakeholders in healthcare need to innovate in order to manage changes in social attitudes, economic conditions and the potential of medical technologies. In order to meet the challenges of complexity and innovation, healthcare organisations need to design new forms of collaboration as well as novel service offerings.

'Value Based Service Innovation in healthcare' Prof. Paul Johannesson and Dr. Martin Henkel, Royal Institute of Technology, Stockholm, Sweden, Issue 3 HIT, 2009.

Medical Tourism, Innovation and Globalisation

Several Indian firms have focused on niche technologies, especially those which adapt Western state-of-the-art technologies to rural India and to the challenges of the wider developing world....

Some Indian firms (develop and test) health sector applications in India and sell them to the US (an early case here was the WebMD portal, via its Indian-developed predecessor Healthon). Michael Nerlich, President of the International Society for Telemedicine and eHealth, noted in March 2007 that low-cost, Indian-designed e-health products could transform the future of the industry...

In today's India, hundreds of gleaming private hospitals, equipped with state-of-the-art technologies and manned by top physicians, cater to affluent Indians and tens of thousands of so-called 'medical tourists', many of them British and Americans - faced with growing waiting lists back home. Consultants McKinsey & Co. estimate medical tourism in India as a two billion dollar business by 2012.

'Healthcare IT in India' Editors, Issue 2 HIT, 2009.

Cloud computing

It has been more than 40 years since the Internet was invented. Over the years there has been an exponential increase in the amount of information and complexity of IT infrastructure. This is the era of supercomputing with usage widespread from universities and healthcare organisations to life sciences companies and governments worldwide. There has been constant pursuance across the globe to use computing powers to the fullest. A product of those efforts is the concept of cloud computing....

Cloud computing could be seen as a boon to healthcare IT services as a number of hospitals could share infrastructure with vast number of systems linked together and reduce operational costs but increase efficiency. This also means real-time availability of patient information for doctors, nursing staff and other support services not within the country but possibly across various countries as medical professionals can access patient information from any internet enabled device without installing any software.

'Cloud Computing: Will It Rain Benefits for Healthcare Organisations?' E.Sujith, Frost & Sullivan, Issue 4 HIT, 2009.

Medicine 2.0

The Internet's impact on healthcare is ever more evident, with over 80 percent of US citizens searching online for health matters, and 33 percent of EU citizens using internet health sources every three months. Medicine 2.0 partly drives this increasing use, providing new sources of information and new access models for various healthcare stakeholders. The simplest interpretation of Medicine 2.0, or the closely related term Health 2.0, is the use of Web 2.0 for Medicine and Health....

For the healthcare IT manager, two main opportunities present themselves. Firstly, Medicine 2.0 enables improved external collaboration, either with patients, through shared clinical knowledge management, or with specific external organisations. Secondly, Web 2.0 may be applied to internal processes, to create new sources of information or improve collaboration.

'Health 2.0 and Medicine 2.0: Promises and Challenges' Benjamin Hughes, Researcher, ESADE Business School and Consultant Healthcare Practice, McKinsey & Co., Issue 2, 2010.

Mobility in Healthcare Service Provision

The promise of mobile solutions for healthcare has some parallels to the US Bill of Rights; its truths are self-evident. They are also the result of three convergent trends. The first is the explosion of hospital data. The second is the increasing requirement for specialist advice and care. Last but not least is the demand that healthcare intervention be delivered as close to a hospitalised patient as feasible.

Taken together, it is clear that there is now a growing mobility of specialist physicians within a modern hospital, alongside a need to remotely access data at all times, from anywhere.

'Mobile Healthcare and Information Technology: Gathering speed, slowly but surely' Editors, Issue 2 HIT, 2008.

Robotics and Nanotechnology

In spite of a variety of implementations since the 1980s, the field of healthcare robotics remains experimental and largely nascent. However, the long-term promise that it holds are acknowledged to be immense. This means that not only researchers and healthcare practitioners, but policy makers, too, are involved in bridging the gap between potential and reality....

Down the horizon is an inevitable increase in the spectrum of applications for healthcare robotics, galvanised by synergies and cross-fertilisation with other fast-emerging (and in some cases, related) disciplines, such as nano-technology and artificial intelligence.

Healthcare and Robotics: Miles to Go Before it Sleeps Editors, Issue 3 HIT, 2010

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