The HI life

Mike Olson and Roderick Neame, authors of online education site www.health-informatics.co, discuss the critical role of information technology in delivering healthcare

Health informatics – or HI – is a discipline of central importance to healthcare as we embrace IT and systems and deploy software applications to deliver smarter healthcare services. The discipline goes much further than just computing and networks. Health informatics is the merger of IT and systems, biomedicine, law, information management and change.

HI governance has an emphasis on the more strategic level and exploring how best to formulate policies, manage risk and deploy solutions effectively and efficiently, enabling an organisation to enhance its operations and avoid risks.

The familiar ground for health informatics concerns the common framework for information development, sharing and knowledge exchange. This might be the means by which we extract a diabetic register from primary care using coding and application standards and transmit it to a hospital screening service for incorporation into its system using messaging standards and an interface engine.

The less familiar HI ground concerns the impact technology has on our workplace and environment. As technological advances give us the ability to store hundreds of thousands of patient records on a USB stick and to transmit them via email in minutes, we also see $50 appearing as the black market value of a stolen medical record – a useful insight into the challenges ahead.

Stolen patient records, privacy and confidentiality issues are a real concern. In addition to outright theft, the more common breaches of health data privacy and confidentiality include:
- Snooping by technicians and authorised system users
- Over-the-shoulder information grazing
- Inadvertent slips – emails and blogs
- Not releasing information that should be released to patients by law.

Management tool

HI is also about managing the healthcare service. Year on year, not just in terms of the services available but also in terms of costs, healthcare services have grown rapidly. These systems are undergoing a process of radical reform in which evidence (of cost-effectiveness) is being used to guide care choices and minimise wasted resources.

Information is driving the healthcare services reform – prior to, during and following the patient encounter. The key driver of the reform process is based on gathering, analysing and using information – information as to the best and most cost-effective care plans and interventions; information on patient numbers, diagnoses, treatments and outcomes; information on availability of providers, plant and services.

This use of information is having a direct impact on patient care and on the dynamics of the provider-patient relationship.

The sweeping reforms rolling through the care system relate less to the actual processes of providing care and the interactions that take place during the encounter between provider and patient, and more to the management of information prior to, during and following these encounters and to guiding the choice of services that comprise best-quality care for individual patients.

Determining what is likely to be effective in terms of care services for an individual is increasingly evidence-based, with the evidence derived both from formal research studies and from routinely collected data from thousands of patient encounters.

If we compare the situation now with that of, say, 50 years ago, the encounter then between doctor and patient would often have begun and ended in the surgery. Now the care of that patient often involves several care providers pulling together data from multiple sources and services. And afterwards data relating to this complex of care events is reported in whole or in part to many other services to be shared and processed into evidence for research, administration and service improvements.

The thrust of the overall information-driven healthcare reforms is based on the needs outlined in the box below. These needs have generated a plethora of activities, each of which address one or more parts of this programme of change.

The changes are already having a fundamental impact on the way the healthcare system operates, and on the roles of the various professionals who interact with patients.

All the changes are informed by information and hence the drive towards rapid computerisation of the healthcare environment and introduction of new technologies to capture more data as close as possible to the point at which it is generated.

The successful management of these initiatives lies in the effective and efficient gathering, sharing and exchange of high-quality, relevant and timely information. The consequence of an increasing dependence on information is the need to remain up to date and aware of the variety and complexity of its use, the risks of inappropriate use, and the impact of emerging trends. ∎

INFORMATION IN ACTION

Information-driven healthcare reform is based on the need to:
- Organise care services delivery in a patient-centric way, placing the patient firmly at the centre of the care process, and providing joined-up care services in a framework that is accessible, convenient and acceptable to patients
- Ensure the provision of best-quality care services to patients, based on the best available current evidence, and gather evidence continuously from care encounters for further analysis and evidence generation
- Ensure the care provided constitutes value for money (regardless of whether that money comes from the public or private purse)
- Implement a proper level of respect for patients as well as the privacy and confidentiality of personal information consistent not only with the law but also with best ethical practice
- Ensure personal accountability at all levels and to promote a culture of self-searching for excellence through audit