

The very word "digital" hospital brings images of an impersonal facility, where patients may think they will consult a machine or a robot. But the reality is just the opposite. Digital hospitals - where information, images and clinical know-how all exist and are all connected wirelessly, where the interpersonal interactions and quality of care are much superior. It is the hospital of the future.

The skyrocketing costs, reports of medical errors, consumers demand for better care, and the ever-growing need to move away from paper, files, charts are all slowly leading to a restructuring of the health system. The shifting from paper to paper less, from wire to wire less, from big shelf full of record rooms to space saving electronic recording has already begun in many hospitals in USA & Europe¹ and to a lesser extent even in Bangladesh. By the end of 2010, the European Commission predicts that five percent of national health budgets will be invested in e-health systems and services.²

In digital hospitals expensive, hard-to-share and easily lost traditional films (X-rays, for example) are replaced with digital images. It means moving from scribbled notes and paperwork to wireless networked software that accurately registers and quickly transmits patient records. Everything is linked into the system, from the automated pharmacy to the X-ray room, to laboratory to doctors office eliminating the need for most faxes, phone calls, and other administrative hassles. According to a 2005 study by PriceWaterhouse Coopers approximately 90 percent of the more than 30 billion healthcare communications that occur in the US each year are currently by fax, paper, mail or phone.

With a few clicks of index finger, doctors and nurses will have immediate access to high-resolution digital images, laboratory results and medication histories and an automated system of warning of medicine interactions and abuses or overuses through wireless networking system. Doctors moving around the hospital will receive new data about their patients. Trauma calls, alarms and ordinary messages - all go via the wireless IP network to a single handheld device.

Doctors can access updated health records instantaneously and make more informed decisions about diagnoses and treatment, it saves time, money and most importantly, lives.

Internet access will be available in each patient bed. The hospital's Nurse Call system will operate through the patient's bedside terminal and connects the patient to a call handler. The system is built with a predetermined order of call routing, sending the call to a preassigned nurse. If the nurse does not respond within a certain time, the call is routed to an alternative nurse and onwards until the call has been responded to. For the patient, it leads to more responsive care from the right person at the right time.

One of the barriers may be reluctance on the part of doctors, nurses and others to use computers, to type rather than write, to look at monitors rather than reading in black and white. The other may be concerns about the security of computer systems. Wireless networks use shared radio frequencies to move data, so security concerns about this method of information transmission have always been high. Hospitals have already made patient records available to doctors and patients via the Internet on the HealthSouth website and hasn't had any security or privacy problems.

Technology suppliers must not only be state of the art, but state of the future art. The hospital ICT infrastructure is going to be tuned to unlock the benefits of modern healthcare communication for the coming decades.

Finally, I would like to emphasize that to be a top hospital it may not be sufficient to recruit top doctors, nurses, administrators and other personnel, the hospital will have to be also top in technology use as well. I would end the editorial with a quote from Swaid N. Swaid, a neurosurgeon working as a consultant to HealthSouth, "To marry technology with medicine is exciting,..... it's going to be a tremendous way to provide patient care that is superior to anything we have seen."

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Reference:

1. http://h41131.www4.hp.com/uk/en/stories/HP_Feature_Story_Digital_Hospital_August_2006.html (accessed on 8th August, 2010)
2. EU - European Health Strategy: "e-Health - making healthcare better for European citizens: An action plan for a European e-Health Care," April 30, 2004.