Editorial

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It has been said that, "The internet changes everything". Certainly there have been plenty of claims that the new internet-based information and communication technologies (ICTs) that underpin the e-commerce revolution offer significant opportunities to provide better service at lower costs. It is therefore understandable that healthcare providers and funders worldwide have been looking to apply these technologies to healthcare (often referred to as 'e-health') to achieve improvements in clinical as well as administrative areas.

Whilst these new technologies represent great opportunities, they can also present major challenges. Healthcare organisations operate in environments that are typically dynamic and complex, involving a multiplicity of stakeholders. They can be affected by a broad range of economic, technological, socio-cultural and political factors. Implementing internet-based ICTs requires considerable financial investment, not only in ICT but also in changing processes and people. Such use of what may be a hard-pressed capital budget requires the presentation of a convincing economic justification. Integrating internet-based ICTs with existing legacy systems may be a considerable technological challenge. The adoption of internet-based systems is likely to change the nature of communications and relationships within the network of interdependent professionals and organisations through which healthcare is often delivered. The interplay of all these factors only serves to heighten the challenges to healthcare technologists and managers.

The aim of this special issue is to investigate the changes being brought by the application of internet-based information and communication technologies on healthcare delivery and management. Leading researchers in the field were invited to submit papers reflecting the current state-of-the-art. A total of nine papers made it through the reviewing process to publication – less than half of those papers originally submitted. The papers are extremely diverse in scope, tackling issues of concern to patients, physicians and other healthcare professionals, suppliers, healthcare funders and other stakeholders. The papers also display a diversity of national origin, including Australia, the USA, Italy, the Netherlands, Greece and Spain, illustrating the global impact of internet technologies.

We open the special issue with a paper that examines e-health practice in Italy. In 'How healthcare organisations actually use the internet's virtual space: a field study', Stefano Baraldi and Massimo Memmola conclude that practice in that country is still in something of a pioneering stage and like other parts of Europe, lags that in the USA and Canada.

One widely heralded e-health application is electronic health records. In her paper 'Web-based personal health record systems evaluation', Khin Than Win explores the role of patient health records within a web-based electronic health records system. She concludes that PHRs have the ability to store health information and organise them in such a way that they can become a useful part of a continuous healthcare decision-making process. They can assist in enhancing patient safety and could become an integral part of a comprehensive network connecting all relevant parties in the health industry.

Yet, as Lotus Kam and William Chismar discuss in their paper, 'Online self-disclosure: model for the use of internet-based technologies in collecting sensitive health information', healthcare can be undermined if patient information is incomplete or inaccurate. This can be a particular problem when it comes to the collection of socially sensitive health information (*e.g.*, about illegal and potentially embarrassing information, such as, drug use and sexual behaviours). Internet-based technologies seem to offer the means of gathering such information more accurately through self-reporting by patients. However, they argue that use of these technologies must address the patient's motivating factors if the quality of patient information is to be improved.

In their paper 'Physician interaction with mobile and wireless handheld devices: data entry and retrieval challenges', Mihail Cocosila and Norm Archer tackle the issue of internet-based ICTs from the physician's perspective. Like many in healthcare, doctors are mobile workers. The paper discusses the handheld device interaction issues and challenges associated with satisfying the mobile data entry and retrieval needs of physicians.

An initiative to improve physician-patient interaction via the internet is reported in the paper 'Full of promise, failed in practice: a discussion of barriers encountered during an attempt to integrate physician-patient e-mail communication in the care process at a Dutch eye hospital' by Samantha Adams, Roland Bal, Jitske de Jong and Frans Hiddema. This paper serves as a timely reminder of the difficulties that can be encountered even when implementing a fairly simple application using the most basic internet ICT of e-mail.

The paper by Latif Hakim, 'Web-based information system for managing operating theatre waiting list' points the way in which the internet could be used to improve healthcare management. His aim is to enhance customer satisfaction and communication between staff involved in construction of waiting lists by recognising the existence of multi-criteria objectives when scheduling operating theatre waiting lists, which in turn are subject to multiple alterations and modifications.

Healthcare managers have always sought to realise value through the use of technology. The paper by Nilmini Wickramasinghe, Eliezer Geisler and Jonathan L. Schaffer, 'Realising the value proposition for healthcare by incorporating KM strategies and data mining techniques with the use of information and communication technologies', considers this issue with respect to e-health. They argue that, although internet-based ICTs are not a panacea, the use of data mining and knowledge management can support key quality aims in healthcare.

The paper by Yiannis Koumpouros, Gian Luigi Nicolosi, Manuel Martínez-Sellés and Juan Fernández, 'Critical success factors for establishing a multi-disciplinary health community knowledge management system using internet-based ICT: the cardiology paradigm', reports one such attempt – a collaboration across three countries, Greece, Spain and Italy. They note the importance of socio-cultural and political factors in the successful implementation of technology-based systems.

In their paper 'Measuring the value and sustainability of internet-based ICTs in healthcare organisations' Emanuele Lettieri and Cristina Masella also examine the issue of realising value from ICT investments in healthcare. Using a case study that considers investments in RIS-PACS technologies in a radiology department, they develop an assessment framework based on the potential value and the level of sustainability of the ICT investment.

Compiling this special edition was not an easy task, but it was both an interesting and ultimately rewarding challenge. I did not, of course, do this on my own. I would therefore like to thank all those involved. I would especially like to express my appreciation to all those who reviewed the papers. Academic publishing relies heavily on its referees who give their time so freely and generously. The production of this special edition of *IJHTM* would simply not have been possible without all the hard work of the following colleagues who acted as referees:

Raza Abidi (Dalhousie University)

Norm Archer (McMaster University)

Yair Babad (University of Illinois)

James Barlow (Imperial College, London)

Deborah Biggerstaff (University of Warwick)

David Chadwick (Salford University)

Willaim Chismar (University of Hawaii)

Jyoti Choudrie (Brunel University)

Jim Cimino (University of Columbia)

Carol Davies (University of Warwick)

Guisseppi Forgionne (University of Maryland)

Jens Gammelgaard (University of Copenhagen)

Elie Geisler (Illinois Institute of Technology)

Martin Gersch (Ruhr University Bochum)

Latif Hakim (University of Southern Queensland)

Matt Hinton (Open University)

Jacky Holloway (Open University)

Koos Krabbendam (University of Twente)

Des Laffey (University of Kent)

Feng Li (University of Newcastle)

Darren Mundy (University of Hull)

Niki Panteli (University of Bath)

Andreas Pitsillides (University of Cyprus)

Bill Ryan (Royal Holloway, University of London)

Ton Spil (University of Twente)

Bob Sugden (University of Newcastle)

Reima Suomi (University of Turku)

Jarmo Tähkäpää (University of Turku)

Lilian Tang (University of Surrey)

Paul Walley (University of Warwick)

Nilmini Wickramasinghe (Cleveland State University)

Rob Wilson (University of Newcastle)

Khin Than Win (University of Wollongong)

Tuan Yu (University of Kent)

I hope that readers will find something to reward and challenge them amongst the papers presented here.