

**Guest Editors' Column**

**Practice and Outlook in e-Health: Guest Editors' Introduction to the Special Issue**

For e-health developers and administrators, the times are both exciting and frustrating. While e-health is seen as having great potential to expand services and reduce costs of service delivery, there is great uncertainty in the healthcare sector regarding such aspects as establishing a business case for e-health, assuring compliance with governmental regulations, and deciding which of the many alternative directions for e-health should be given priority. Now is the time for developing plans, processes, and applications that can assist healthcare organizations in creating effective e-health solutions.

Practical development is needed in many areas. Several positive developments were recently profiled at the 2006 Kay-CGU Symposium, which addressed the topic of "Pacific Edge E-Health Innovations: Linking Research, Practice and Policy to Benefit Consumers & Communities" (see <http://kaycenter.cgu.edu>). Presenters described e-health applications ranging from futuristic systems to support aging patients, enhanced personal health records and electronic disability records, and Internet support for emergency medical care. A number of e-health initiatives were analyzed, with special attention directed toward identifying best practices and developing workable business cases. Other presenters addressed rationales and strategies for involving patients and consumers in the e-health development process.

Yet along with these positive developments, presenters also noted a number of problems facing e-health. Foremost among these is the need for training in the practice of e-health and general health informatics. Some presenters focused on areas where progress is being made, such as the American Medical Informatics Association's initiative to train 10,000 medical professionals in basic health informatics by 2010 (10x10 initiative). Others addressed areas where training does not currently exist, including patient-centered development methods. One clear outcome of the 2006 Kay-CGU Symposium is the need for comprehensive planning and refinement of e-health processes to accompany the ongoing advancement in e-health applications.

We are fortunate in this special issue on practice and outlook in e-health to present three papers that take up the unique challenges of planning and process development. Brian Dixon addresses the complex issue of e-health planning, proposing that several basic requirements are essential in order to ensure successful diffusion of e-health applications. He argues that an effective e-health business case for healthcare providers is a necessity and that this will require greater dissemination of best practices in e-health implementation, increased workforce development, and sustainable resources for e-health adopters including initial financial support and ongoing technical assistance.

Two further papers address development of specialized e-health processes. Nelson King, Tasso Christie, and Khalil Alami direct their attention toward e-prescribing. These authors present a detailed analysis of manual prescribing and e-prescribing trends in the U.S. and then contrast these with an e-prescribing process under development in the Middle East that centers around a cyber-mediary. The cyber-mediary concept has potential to reduce workload, expenses, and uncertainty for physicians and pharmacies and increase availability of generalized patient information to pharmaceutical firms, while simultaneously preserving patient confidentiality.

Wullianallur ("RP") Raghupathi and Someswar Kesh direct their focus toward improving interoperability of electronic health records through a service-oriented architecture (SOA). SOA models are increasingly used in delivering e-services. As these authors point out, however, automation of health information presents a number of formidable obstacles not typically encountered, including incomplete standards and limited development and modeling tools. In response to this challenge, Raghupathi and Kesh present a detailed framework defining the components of an SOA architecture, identifying the necessary development and operational tools, and applying SOA methods to a health clinic setting.

The next several years promise to be exciting times as e-health developers strive to align the range of possible e-health services with the realities of the marketplace. While no one is sure when the "tipping point" for such services will be reached, everyone agrees that widespread use is dependent upon sound business propositions, interoperable systems, and near-term service benefits. The papers in this edition touch on precisely these elements and, as such, represent a solid contribution toward the development of e-health systems that can be implemented to provide demonstrable benefits to consumers.

The guest editors wish to thank Editor-in-Chief Ilze Zigurs for her support and editorial assistance in creating this special issue. In addition, we wish to thank the organizers and participants in the 2006 Kay-CGU Symposium whose continuing focus on innovation in e-health practice served to prompt our development of this special issue.

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