This issue of the journal focuses on an important but often underpublished area of biomedical informatics: the cost-effectiveness of informatics interventions in healthcare. The adoption of electronic health records (EHR) across the USA has been accelerated in response to legislation, but there is still much uncertainty regarding costs as well as short and long-term effects, given the many different ways in which systems are implemented and the high diversity of institutions served. A systematic review by O’Reilly (see page 423) covers economic evaluations of medication management systems, and the author also describes the cost-effectiveness of a clinical decision support system (CDSS) for diabetes in another article (see page 341). Frisse (see page 328) reports on the financial impact of EHR in an emergency department, and Subramanian (see page 439) analyzes the financial impact of a CDSS for renal dose adjustments.

The financial aspects are not sufficient to assess the full impact of information systems and informatics interventions. Several articles relate to the impact of systems in the quality of care. Connelly (see page 334) describes how patients with congestive heart failure benefit from EHR when they visit emergency departments. Kennebeck (see page 433) reports on how EHR impact workflows in a pediatric emergency department, and Lanham (see page 382) associates communication patterns among healthcare providers with EHR use in an ambulatory setting. Zandieh (see page 401) describes the impact of transitions between EHR systems in the same setting, and Herwehe (see page 448) reports on the impact of an EHR system for public health information exchange in HIV/AIDS.

CDSS have the potential to improve the quality of care via EHR. However, not all CDSS are created equal, and their utilization is highly variable. Predicting the usage of CDSS embedded in EHR is not an easy task, but McCoy (see page 346) proposes a framework to study CDSS alerts and responses. A review by Yen (see page 413) discusses some of the key methodologies that are used to study the usability of health information systems, and Lindblom (see page 407) describes how the usability of a CDSS is related to user characteristics such as computer anxiety. Unertl (see page 392) discusses patterns of use and impact on workflows from the viewpoint of health information exchange, and Grossmann (see page 353) quantifies the diversity of experiences of physician practices and pharmacies in transmitting and processing electronic prescriptions. Also related to electronic prescriptions and barriers, Thomas (see page 375) describes prescribers’ expectations for the electronic prescription of controlled substances, Stenner (see page 368) describes a text message system designed to assist patients with medication management, and Appari (see page 360) reports on a national study of US hospitals to determine associations between information technology and the quality of medication administration.

From all the work mentioned above, it is clear that informatics and health information technology are in different stages of development in different settings, and in different countries. Perspectives from Canadian experts and from the AMIA Policy Committee on the future of health information systems in the USA are provided by Zimlichman (see page 453) and McGowan, (see page 460) respectively. Bates and Edmonds (see page 495) describe what AMIA has been doing to prepare for this future. To prepare for the present, and for a near future in which we can realize the full potential of all the biomedical data that are currently being collected, we will need to train a new generation of informaticians who will help push the limits of the present technology into uncharted territory. The boundaries between clinical informatics, bioinformatics, and consumer health informatics will no longer matter, as these skilled professionals will develop integrative approaches to create a seamless flow of data to actionable knowledge.

Training in biomedical informatics thus involves analyses of several types of information. Processing information found in the biomedical literature, for example, continues to be an important area of research, and the combination of skills from biomedical librarians and computer scientists helps the development of faster, targeted retrieval algorithms. The papers by Van de Glind (see page 468) and Petrova (see page 479) describe filter strategies for article retrieval, and Goodwin (see page 473) reports on an approach to predict biomedical document access based on past use. The need for informatics professionals is currently so high that, in addition to programmes for long-term research training, such as those sponsored by the National Library of Medicine, new modalities of short programmes are constantly being proposed, creating a need for continuous evaluation. Tian (see page 489) describes one method to evaluate web-based instructional modules using Markov chain models.

Disseminating informatics beyond our community and bringing new talent to our field is certainly something we care much about in JAMIA. Our editorial team has now completed reviews of more than 1500 manuscripts since our start in January 2011, and our sample size is almost large enough to enable the exploration of new trends in the field. I already notice an increased effort on the part of our authors to make their articles openly accessible to the world. I trust that this effort is reflective of the authors’ desire to fulfill a societal responsibility as scientists and engineers—openly share work that has an immediate impact in the lives of others.