Innovative approaches to support patient decision making, improve safety, and enable large-scale clinical research

The Patient-Centered Outcomes Research Institute recently announced several funding opportunities for research focused on empowering patients to make informed decisions. The literature on patient-centered systems has been increasingly present in JAMIA, and we anticipate receiving several submissions on this topic in the upcoming year. Another topic of continued interest is patient safety: the recent IOM report on health IT and patient safety makes important recommendations regarding actions that federal agencies and the private sector should take to maximize the safety of electronic health record systems and other health IT software. It recognizes that, although one of the most impactful areas is medication safety, there are important gaps in the literature. JAMIA helps fill some of these gaps, featuring the outstanding work by the informatics community to address patient safety challenges. Finally, the ongoing discussion related to the new National Center for Advancing Translational Sciences (NCATS) at NIH illustrates the critical role translational research now plays in biomedical sciences, which would not be possible without the developments in clinical research informatics. Together with translational bioinformatics, this is another area of growth for the journal.

These three topics (patient-centered systems, patient safety, and clinical research informatics) have been featured in JAMIA before, but we decided to put together a holiday edition of the journal that features some of the best work in these areas and serves as a preamble for other exciting articles that will be published in 2012.

In terms of personal health systems, Goel (see page i8) describes some of the barriers to enrolling patients in a health portal, and North (see page i24) proposes a strategy to increase use of such portals. Osborn (see page i18) and Collins (see page i2) describe policies and procedures for patient portal development and use in their respective institutions. Haggstrom (see page i13) reports results from usability testing of personal health record systems.

Related to clinical care and patient safety, Richardson (see page i28) reports the clinical decision support needs of community-based physicians, and Linder (see page i87) studies the degree of association between primary care clinician characteristics and use of new electronic health record (EHR) functionality. De Leon (see page i94) evaluates the relationship between primary care provider delivery of prevention-oriented care and EHR adoption. Attitudes toward recommendations made by decision support systems (DSS) for medication safety are critically important for their proper use. Zacharia (see page i62) conducts a preliminary evaluation of an instrument to assess human factors in a medication-related DSS, and Strom (see page i81) quantifies the potential benefit of a DSS that detects inappropriate use of certain medications during pregnancy. Zheng (see page i54) reports on the design and evaluation of an instrument to assess a clinician’s perceptions of drug–drug interaction alerts, and Miller (see page i45) describes clinician responses to these types of alerts. Elhanan (see page i36) describes impressions and preferences regarding content and quality of a standardized clinical terminology system. Also related to medication safety, Vilar (see page i73) describes how pharmacovigilance models can use molecular structure similarity to facilitate adverse event detection.

JAMIA will feature a special focus issue on clinical research informatics in 2012, but, in this edition, we include a sample of outstanding work in this area. Sohn (see page i144) and Harkema (see page i150) describe tools that assist with data collection from unstructured sources, and Borlawsky (see page i140) reports on a system to enable distributed research data collection in a rural area. Related to infrastructure, Wade (see page i96) describes a framework for integrating clinical and research data, and Weber (see page i157) reports on interoperability among research networking platforms.

Computer-based clinical decision support is better disseminated when knowledge is shared across institutions. Boxwala (see page i32) describes a multi-layered framework to enable knowledge sharing. Kagan (see page i64) describes a system developed at NIH to integrate decision support for clinical research programs running in many different countries. Payne (see page i125) describes a project focused on knowledge synthesis. Weng (see page i116) proposes an original approach for extraction and representation of eligibility criteria, and Hripcsak (see page i109) describes strategies to deal with time series in EHRs. Related to data sharing for research, Murphy (see page i103) describes an approach for maintaining patient privacy in distributed queries.

Finally, as the year ends, we characterize trends in biomedical informatics, as reflected through the articles we publish in JAMIA. Jiang (see page i166) reports on the most frequently published topics in the past few years, as well as the degree of knowledge dissemination to other communities, as measured by how often JAMIA articles were cited. These citation rates may be influenced by a variety of factors, and we investigate the impact of free access on citation rates for our 2009 and 2010 articles. The results are important to inform our community of how JAMIA fits into the evolving landscape of scientific publishing and to promote discussion on ways to continually improve the journal.

I appreciate and continue to seek readers’ feedback and thank all readers for their continued support. As the year ends, I also take the opportunity to express my deepest gratitude to our associate editors, our editorial board members, Ms Szatkowski, and staff and colleagues from AMIA, BMJ, and UCSD who have helped make 2011 a remarkable year for the journal.