HIR Collaborating with the CODATA Conference

Hyejung Chang, PhD¹, William T. F. Goossen, PhD²

¹Co-Editor of Healthcare Informatics Research, Kyung Hee University, Seoul, Korea; ²Editorial Board Member of Healthcare Informatics Research, Results-4Care B.V., Amersfoort, The Netherlands

After being indexed in the National Library of Medicine (NLM) Catalog and PubMed Central in 2012, Healthcare Informatics Research (HIR) took another step forward in 2013 with its new position as a listed journal in Scopus. We also finished our application for Science Citation Index (SCI) at the beginning of this year and are now in the process of being evaluated. We are also happy to announce that HIR was recognized as one of the best academic journals in Korea by The Korean Federation of Science and Technology Societies, as it was in previous years.

At last, Issue 4 of Volume 19 is now officially published, ready to be read. The collaboration of this issue with the International CODATA Conference marks another move forward in our development. In April 2013, Dr. William T. F. Goossen, an Editorial Board member of HIR, suggested publishing a set of papers presented in the CODATA Conference held in Taipei, Taiwan in 2012. The CODATA is a conference organized by the Committee on Data for Science and Technology of the International Council for Science, and the focus of the conference is dealing with the topic and methods used for the preservation of data in the Electronic Health Record (EHR).

The HIR Editorial Committee decided to publish this special issue with a focus on aspects of the preservation of data in EHR, because electronic health-related data and information is vital for clinical care as well as healthcare research, but systems interoperability for preservation, storage, and

accessibility of such health data have not yet been established for EHR. If preservation of healthcare information is not addressed, valuable and irreplaceable information will become inaccessible or even disappear over time with disastrous consequences for patient care and research. Thus the challenge is to preserve and provide access to electronic clinical data as EHR for a sufficiently long period of time to maximize value to patients, caregivers, and scientists.

Healthcare informatics is a data-intensive scientific field, and HIR can highlight the role that data-intensive science plays in transforming raw observations into applicable, intelligible results and discoveries. For health care, such discoveries will be increasingly based on observational data that come from EHR and clinical data warehouses. Of course, this development implies the storage of petabytes, exabytes, zettabytes and even more of patient related data. This data must be stored for the lifetimes of individuals and grouped into meaningful datamarts for population research. An additional issue is the need to integrate diverse health records that have been captured in different settings and different EHR systems and data from various source systems and in recent smartphone apps and other e-Health applications. Hence the question regarding the permanence of clinical data becomes obvious. Consequently, the hardware on which data is stored and the software used become less significant compared to the informational structures and meta-data about clinical data. Hence for health care, the preservation of EHR and other health-related data is a very important theme.

To publish this special issue, the papers that we accepted fell under two categories. For articles from the CODATA Conference, authors were requested to rewrite their article following the HIR author guideline in the format of either

their original article or case report and submit it through the on-line submission system. In the other category, a public invitation was put out to send in articles covering the theme of the preservation of data in EHR. All manuscripts submitted from both categories underwent the standard HIR peer-review procedure by three anonymous reviewers in order to guarantee the quality and originality of the research and its clinical and scientific significance. Therefore, only three of the seven recommended articles from the CODATA Conference were included.

This issue consists of twelve unique contributions on the topic EHR data preservation: One review article, five original research papers, five case reports, and one book review. The review article by Schultz, et al. clarifies challenges in biomedical knowledge representation research and describes how the focus of research has moved from “medical concept representation” to “medical ontologies.” The first original paper by Singh, et al. uses Medical Subject Heading (MeSH) terms to find expert systems required for specific IT healthcare related projects, and the paper by Kobayashi, et al. discusses the use of Ruby programming language in the implementation of OpenEHR specifications and archetypes. The other three original articles deal with the topics of reusability of EHR data, the use of health insurance claim data, and

smartphone applications. The remaining five case reports discuss EHR interoperability through ISO 13606, health information exchange connectivity with legacy systems, semantic interoperability in electronic nursing record systems, mobile EHR applications, and Web-based integrated public healthcare information systems. These contributions state that besides the overall structure of the EHR, close attention must be paid to data definitions and data semantics in order to obtain sustainable EHR and improve the quality of healthcare and research. The methods described here can be applicable to many areas of expertise.

This issue is the result of collaborating with the CODATA Conference on the topic of “the preservation of data in EHR.” To ascertain current practices for preservation and management of EHR, further studies should be conducted to establish an interoperability framework that supports a wide variety of data types, formats, records, and data delivery mechanisms, and to provide technology-independent infrastructures that acquire, store, search, retrieve, migrate, replicate, and distribute EHRs over time. It is our hope that we can continue to collaborate with conferences, workshops, colloquiums, and other academic dialogues in order to realize these goals.