

An Insight into the Use of Information Technology and Electronics in Today's Healthcare Landscape

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Introduction

Health and medical informatics involves wide range of subjects including basic bioinformatics representing cellular and molecular level of information, medical informatics dealing with patient or hospital level of information and public health informatics at population level. Large volume of health and medical information is being generated across the world. The digital resources of information include nursing, imaging, pharmacy, diagnostics, hospital information, general consumer health and social science. In order to translate such multidimensional knowledge into improved health outcomes, data acquisition, integration, processing and analysis is essential and fundamental for development of computer-aided decision support systems, educational computer-based programs, and similar applications in health care. Journal of Health & Medical Informatics publishes articles on experimental research outcomes, current trends, prevailing competencies and health sector related applied research by leading researchers worldwide. The current issue of the journal comprises of articles pertaining to the application of game theory model for the safety and privacy of human genomic data; a review on the extent of incorporation and current trends of machine learning and deep learning in the development of clinical decision support systems and biomedical research; exploration of functional interconnectivity between the electronic health record and the laboratory information system in ambulatory care as well as development and application of generalized linear mixed model for evaluation of clinical information application impact on the patient services. Sharing of the genomic information is important for the progress of biomedical research. The motion to publish these data and make them broadly accessible is widely supported. Due to the numerous potential uses of genomic data, ethical use requires oversight. There is a risk of re-identification of de-identified data from patients. Studies have demonstrated that a person can be identified even from the DNA sequence of a distant relative. One of the solutions is to partial suppression of genomic data but it may hinder the scientific utility of data. Alese and Adebayo [1] used a game theory approach to develop quantifiable framework of protections for genomic data sharing which estimates the risk and likelihood of inclusion of name individual genotype in de-identified data. In another study based on a total of 283 studies, Kim [2] systematically reviewed literature on the use of machine learning and deep learning or neural networks in developing clinical decision support systems which revealed that the most common methodology used was that of deep learning or neural networks, followed by machine learning with support vector being the most common type of machine learning algorithms used. The most commonly represented specialities were: cardiology, critical care, oncology, radiology, and surgery. However, only a small percentage of the articles reported the effect on the patient care or patient outcomes. Therefore, the study emphasized on clinically

relevant studies for effective translation of artificial intelligence research. Medical laboratory information has the potential to maximize the effective delivery of care by helping the healthcare professionals make appropriate diagnostic and therapeutic decisions. In a statistical study based on more than forty thousand physician responses originating from a national ambulatory medical survey data, Hyacinthe and Mathieson [3] explored the use of electronic laboratory services to get access to patient laboratory data in order to evaluate the association between practice characteristics and use of laboratory functionalities. The study revealed that majority of physicians used the information system and health records meaningfully. Strong positive correlations were identified between practice type, electronic reviewing, and sharing of test results with ambulatory physicians in the practice group. Conversely, ownership status and practice region negatively influenced the electronic sharing of tests results with physicians. Big data analytics in healthcare sector is gaining increased attention. Efforts to reduce comorbidity and mortality among seriously mentally ill patients are related to application design and user friendliness. In order to improve community care, Uttaro et al. [4], developed a statistical model for evaluating the association between the use of Medicaid utilization application and changes in the use of publicly aided medical services among patients which indicated that the use of Medicaid application, along with other clinical informatics applications correlated with a significant decrease in the use of both inpatient and emergency services and was ascribed to improved care coordination, clinical interventions, disease management, health status, and reduction in costs. Combining detailed claims and electronic health record data, facilitated self-service reporting along with high usability. The current issue is of significance in the development of quantifiable protection measures with regard to safe sharing of human genomic data; estimating the extent of machine learning and deep learning use in developing clinical decision support systems; assessing integrated use of electronic health record-laboratory information systems in ambulatory care, and in evaluating the impact of Medicaid along with clinical informatics applications on the utilization of inpatient and emergency services.

References

1. Alese BK, Adebayo OT (2018) Privacy-preservation framework for sharing genomic data: a game theoretic approach. J Health Med Informat 9: 320.
1. Kim JT (2018) Application of machine and deep learning algorithms in intelligent clinical decision support systems in healthcare. J Health Med Informat 9: 321.
2. Hyacinthe GN, Mathieson K (2018) Laboratory information system- electronic health record interconnection, usage and functionality in ambulatory care settings. J Health Med Informat 9: 322.
3. Uttaro T, Rybak B, Wagner K (2018) Implementation of behavioural and medical health management applications: reducing high intensity medicaid services utilization for individuals with serious mental illness. J Health Med Informat 9: 323.