Online Journal of Public Health Informatics

Contents

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

Objectives: The pineal gland completes cell differentiation and growth during infancy, with the secretory capacity for melatonin also determined during this time. Notably, melatonin secretion may be involved in the association between cardiovascular disease risk and birth month. Here, we investigated the association between atrial fibrillation in cardiovascular disease and birth month. This association might present valuable information on the environment during infancy that can reduce future disease risk. Methods: We retrospectively extracted birth date data from 6,016 patients with atrial fibrillation (3,876 males; 2,140 females) from our electronic medical records. The number of live births in Japan fluctuates seasonally. Therefore, we corrected the number of patients for each birth month based on a Japanese population survey report. Then a test of the significance of the association between atrial fibrillation and birth month was performed using a chi-square test. In addition, we compared the results of an analysis of patient data with that of simulated data that showed no association with birth month. Results: The deviations of birth month were not significant (overall: $p = 0.631$, males: $p = 0.842$, females: $p = 0.333$). The number of female patients born in the first quarter of the year was slightly higher than those born in the other quarters of the year ($p = 0.030$). However, by comparing the magnitudes of dispersion in the simulated data, it seems that this finding was mere coincidence. Conclusion: An association between atrial fibrillation and birth month could not be confirmed in our Japanese study. This might be due to differences in ethnicity.

XSL•FO
RenderX

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

This paper will discuss the integration of electronic Case Report Forms (e-CRFs) into an already existing Android-based Audio Computer-Assisted Self-Interview (ACASI) software solution that was developed for a public health project in Kampala, Uganda, the technical outcome results, and lessons learned that may be useful to other projects requiring or considering such a technology solution. The developed product can function without a connection to the Internet and allows for synchronizing collected data once connectivity is possible. Previously, only paper-based CRFs were utilized at the Uganda project site. A subset or select group of CRFs were targeted for integration with ACASI in order to test feasibility and success. Survey volume, error rate, and acceptance of the system, as well as the operational and technical design of the solution, will be discussed.

XSL•FO
RenderX

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

Objectives: To measure and interactively visualize female breast cancer (FBC) incidence rates in Missouri by age, race, stage and grade, and senate district of residence at diagnosis from 2008 to 2012. Methods: An observational epidemiological study. The FBC cases in counties split by senate districts were geocoded. Population database was created. A database was created within SEER*Stat. The incidence rates and the 95% Confidence Interval (CI) were age standardized using US 2000 Standard Population. The Census Bureau's Cartographic Boundary Files were used to create maps showing Missouri senate districts. Incidence results were loaded along with the maps into InstantAtlas™ software to produce interactive reports. Results: Cancer profiles were created for all 34 Missouri senate districts. An area profile and a double map that included interactive maps, graphs, and tables for the 34 Missouri senate districts were built. Conclusion: The results may provide an estimation of social inequality within the state and could provide clues about the impact of level of coverage and accessibility to screening and health care services on disease prevention and early diagnosis. Key Words: Female Breast Cancer, Incidence, Interactive Mapping, Missouri, Senate Districts.

XSL•FO
RenderX

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

Maryland Department of Health (MDH) has been preparing for alignment of its population health initiatives with Maryland's unique All-Payer hospital global budget program. In order to operationalize population health initiatives, it is required to identify a starter set of measures addressing community level health interventions and to collect interoperable data for those measures. The broad adoption of electronic health records (EHRs) with ongoing data collection on almost all patients in the state, combined with hospital participation in health information exchange (HIE) initiatives, provides an unprecedented opportunity for near real-time assessment of the health of the communities. MDH's EHR-based monitoring complements, and perhaps replaces, ad-hoc assessments based on limited surveys, billing, and other administrative data. This article explores the potential expansion of health IT capacity as a method to improve population health across Maryland. First, we propose a progression plan for four selected community-wide population health measures: body mass index, blood pressure, smoking status, and falls-related injuries. We then present an assessment of the current and near real-time availability of digital data in Maryland including the geographic granularity on which each measure can be assessed statewide. Finally, we provide general recommendations to improve interoperable data collection for selected measures over time via the Maryland HIE. This paper is intended to serve as a high- level guiding framework for communities across the US that are undergoing healthcare transformation toward integrated models of care using universal interoperable EHRs.

XSL•FO
RenderX

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

Objectives: Subsequent dosing errors after implementing an Electronic Medical Record (EMR) at a pediatric hospital in Sweden led to the development, in close collaboration with the clinical profession, of a Clinical Decision Support System (CDSS) with Dose Range Check and Weight Based Dose Calculation integrated directly in the EMR. The aim of this study was to explore the understanding and experiences of the CDSS among Swedish pediatricians after one year of practice. Methods: Semi-structured interviews with physicians at different levels of the health care system were performed with seventeen pediatricians working at three different pediatrics wards in Stockholm County Council. The interviews were analysed with a thematic analysis without pre-determined categories. Results: Six categories and fourteen subcategories emerged from the analysis. The categories included the use, the benefit, the confidence, the situations of disregards, the misgivings/risks and finally the development potential of the implemented CDSS with Weight Based Dose Calculation and Dose Range Check. Conclusions: A need for CDSS in the prescribing for children is evident but also the need for further development based on the practical knowledge of the clinical profession.

XSL•FO
RenderX

Roles of Health Literacy in Relation to Social Determinants of Health and Recommendations for Informatics-Based Interventions: Systematic Review

Abstract

Objectives: To explore the challenges Health Information Technology (HIT) vendors face to satisfy the requirements for Meaningful Use (MU) and Electronic Laboratory Reporting (ELR) of reportable diseases to the public health departments in Kentucky. Methodology: A survey was conducted of Health Information Exchange (HIE) vendors in Kentucky through the Kentucky Health Information Exchange (KHIE). The survey was cross-sectional. Data were collected between February and March 2014. Participants were recruited from KHIE vendors. Participants received online survey link and by email and asked to submit their responses. Vendors' feedback were summarized and analyzed to identify their challenges. Out of the 55 vendors who received the survey, 35(63.64%) responded. Results: Of the seven transport protocol options for ELR, vendors selected virtual private network (VPN) as the most difficult to implement (31.7%). Secure File Transfer Protocol (SFTP) was selected as preferred ELR transport protocol (31.4%). Most of the respondents, 80% responded that they do not have any challenge with the Health Level 7 (HL7) standard implementation guide required by MU for 2014 ELR certification. Conclusion: The study found that the most difficult transport protocol to implement for ELR is VPN and if vendors have preference, they would use SFTP for ELR over KHIE choice of VPN and Simple Object Access Protocol (SOAP). KHIE vendors do not see any variability in what is reportable by different jurisdiction and also it is not difficult for them to detect what is reportable from one jurisdiction verse the other

XSL•FO
RenderX