

Grid Technology for Supporting Health Education

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ABSTRACT

Health education that encourages self-management of wellness program is a critical component of preventive medicine. Illinois school health providers¹ routinely offer health education to school age children on a variety of topics ranging from obesity intervention to prevention of sexually transmitted diseases. Operation Samahan², a community health organization operating in San Diego, on the other hand, provides similar health education to both adults and school age children. In addition, training is provided to the nurses and other allied health professionals. These educational and training materials require relatively large digital storage space and should be available to the participants through the web at their will. Additionally, these materials should be accessible using multiple computing devices including Smartphones and tablets. National University Community Research Institute (NUCRI) is engaged in developing health-IT solution [1] to these challenges encountered by our partnering community health organizations. A mobile application, based on mCHOIS [2], has been developed for collecting demographics and related data for these educational and training events often organized in the field and save those in the CHOIS database [3]. We have also developed C-Grid as a solution to store, manage and share large amounts of these instruction materials [4, 5]. Remote management of this data grid is performed using iRODS, the Integrated Rule-Oriented Data System, a middleware. A PHP wrapper, termed ez-iRODS, has been created for C-Grid to interact with iRODS located in the data grid machine. C-Grid, developed as a portlet of CI-supported CHOIS web portal, helps the users to create and manage “virtual data collection” that can be stored in heterogeneous data resources across distributed network. In addition, we have deployed a PHR for patients that can wirelessly collect body sensor physiological data via a mobile application to monitor health outcome while promoting self-management of a wellness program. Combination of these systems will be used to measure the impact of providing health education to an individual. These systems are now deployed for both of our partner organizations.

Keywords

Health education, mobile technology, iRODS, SRB, Cyberinfrastructure, Data grid, XSEDE, community health, Virtual Data, Portal

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¹ <http://www.dhs.state.il.us/page.aspx?item=44031>

² <http://www.operationsamahan.org/>