



The 8th International Conference on Mobile Web Information Systems (MobiWIS)

mCHOIS: An Application of Mobile Technology for Childhood Obesity Surveillance

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Abstract

New mobile computing devices including smartphones and tablet computers have emerged to facilitate data collection in real-time at the point-of-care. Earlier, we developed a web based Childhood Obesity Informatics System (CHOIS) and deployed it for obesity surveillance by the Illinois Department of Public Health (IDPH). In the process, a school nurse collects data on an individual's height and weight for determining Body-Mass-Index (BMI), which is conventionally used for determining at-risk and obese patients. However, this process is often limited by the internet access at the site. This paper describes a solution by demonstrating a smartphone-based mobile application, mCHOIS. The application developed in this project enables a field worker to input or modify the data and store it locally in the phone. Once internet connection is available either through the broadband or through the built-in wifi, data can be sent to the remote database of CHOIS. Updating the data and visualization of the report are also available through the phone's browser. This application has been successfully field tested and is now under deployment for use by the Illinois Department of Human Services (IDHS) for its School Health Program.

Keywords: Mobile Technology; Android; Smartphone; Body-Mass-Index (BMI); Obesity; Point-of-Care (POC); HTML5.

1. Introduction

Advances in the area of mobile and wireless communication coupled with more robust software development for delivery of contents allow the design and development of new patient-centric models [1, 2] for better personalized healthcare services. Mobile devices, such as smartphones and tablets, overcome the limitation of stationary computer systems and are enabling the healthcare field workers to access the data anytime, anywhere. Wide adoption of mobile computing technologies has potentially improved information access for healthcare, enhanced the workflow, improved the quality through better access to relevant data and has promoted evidence-based practice to make informed and effective decisions at the point-of-care [3]. The use of mobile technology in healthcare affords numerous methodological advantages over traditional methods, including the ability to capture time-intensive longitudinal data, date- and time-stamped data, and the potential for personalizing information in

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