

ABSTRACT

Development of public health communication tools using open source methods

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Objective

There is an urgent need for improved communication between stakeholders involved in outbreak investigations, public health reporting and events of interest occurring between different jurisdictions within the same state. Currently, state and local public health agency personnel rely on personal communications involving phone, fax and snail mail. The Utah Department of Health (UDOH) sought to develop and encourage the use of a secured web portal that allows access to a variety of applications using a single sign-on. This was achieved by developing a secured communications framework called PHAccess¹ that allows tools and applications to be implemented within a secure web environment, using open source software and Agile methodology techniques. The user-centric design currently hosts an electronic report-staging area, ELR/EMR reporting, web-based reporting, secure messaging between stakeholders and a state laboratory result look-up feature. Currently, there are over 700 registered users; 3693 secure messages that have been exchanged and the site has been accessed over 12,205 times since January 2009. Informal feedback from users has been encouraging and formal evaluation is planned, along with expansion and integration with state level health information exchange projects.

Introduction

Secure and confidential exchange of information is the cornerstone of public health practice. Often, this exchange has to occur between public health agencies across jurisdictions. Examples include notification of reportable diseases when the testing and residence of the patient are in different counties. The cross-jurisdictional issues become exaggerated in times of communicable disease outbreaks or events of interest that are not yet classified as outbreaks. Currently, such communication occurs between state and local agencies and between agencies and community clinicians

on a personal level, with phone, fax and snail mail. There are a multitude of secured websites hosted by UDOH that offer access to single applications requiring approved users to remember multiple sites and logins/passwords. The goal of this project was to develop a centralized, single sign-on secure web portal, from which users could access multiple applications and communicate securely with each other.

Method

The framework for PHAccess was developed using open source software, PHP and My SQL. The novel concept adopted by Apple iTunes App Store was used to develop our applications. This was supported by Agile methodology techniques with frequent iterative development cycles that were driven by constant feedback from users and stakeholders. A central premise was employing a user-centric design philosophy that allows users to influence the development of as well as manage and maintain the product.

Results

PHAccess was commissioned on 1 January 2009 after 4 months of development and iteration. The site started with three applications (Issue Tracker, Secure Messaging, Admin Functions) and has since grown to over 40. Since then, there are 744 registered users (54% state health, 14% local health departments and 32% community clinicians). The site has been accessed 12,205 times and 3693 secure messages have been exchanged. The current suite of applications include an EDI (Electronic Data Interchange) reporting suite of services that include electronic report-staging area, ELR/EMR reporting, web-based reporting, secure messaging between stakeholders and a state laboratory result look-up feature. There is also a query agent that allows the user to securely query and display results from external sources such as the Utah NEDSS or State laboratory information systems.

Conclusions

An integrated suite of services has been developed using open source tools and modest resources to provide public health agencies and clinicians a secure single sign-on access to relevant information. PHAccess is currently in use and further expansion is planned to integrate this service into state-wide clinical health information exchange projects.

Acknowledgements

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Reference

1 Program demonstration. <http://www.rockymountaincoe.org/phaccess>.