

Automatic and Secure Data Transfer of Syndromic Data between Hospitals and Public Health Using the PHINMS

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OBJECTIVE

This presentation describes the secure and reliable data transfer methodology of syndromic data between hospitals and public health agencies using the Public Health Information Network (PHIN)¹ Messaging Service (PHINMS)². Included is an overview of PHINMS and several programs South Carolina has developed including Auto Send, Data Extract, Email Notification, and Self-Issued Security Certificates. These programs are configurable for different hospitals and run automatically. The system can be easily adopted and customized by other states.

BACKGROUND

PHINMS is a PHIN certified messaging system, initiated and supported by the Centers for Disease Control & Prevention (CDC). PHINMS is widely used by many hospitals in the state(s) to send their Electronic Lab Reports (ELRs). The PHINMS architecture allows for multiple data streams and routing configurations. However, many states are still using the legacy File Transport Protocol (FTP) for their syndromic data transfer. There are many benefits in utilizing PHINMS that will be outlined in this presentation. PHINMS contains two components: sender and receiver. A PHINMS entity (either a hospital or DOH) can act as both/either a sender and/or a receiver. This makes two-way communication possible via the same PHINMS connection.

METHODS

South Carolina Dept. of Health and Environmental Control (SC DHEC) personnel recruit hospitals into the syndromic system. In cases where PHINMS is already implemented and available in hospitals sending ELRs, the same PHINMS installation be enabled to send syndromic data. If a hospital has no PHINMS installation, DHEC will provide IT support and funding resources to installation. PHINMS uses SSL and security certificates for authentication, authorization, encryption and decryption. Instead of CDC's issued certificates, SC DHEC provides all necessary security certificates using Windows tools. Once PHINMS is installed and configured, PHINMS Sender (either a hospital or DOH) can automatically send various file formats to be received as flat files or into a database where data analysis can be performed. South Carolina's system of syndromic data transfer is shown below (see Figure 1): a hospital sends data automatically via our Auto Send program that retrieves data from either a local or network drive and generates the necessary information for PHINMS to send to SC DHEC. SC DHEC receives data via PHINMS in a PHINMS database that is extracted by our Data Extract program for data analysis using EARS-SAS³ or other analytical programs. Simi-

larly, SC DHEC sends hospital specific data and summary reports back to hospitals automatically via our Auto Send program, extracted by our Data Extract program, for their data analysis or reporting. Our Email Notification program monitors the current data and sends email notifications when no data is received at the queue.

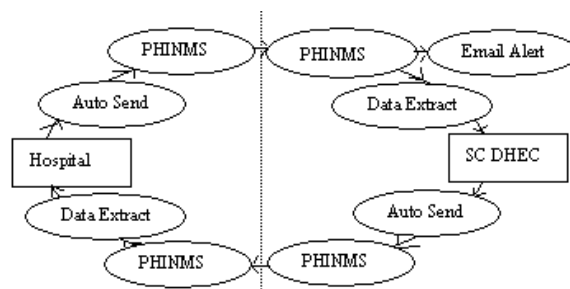


Figure 1 – PHINMS data transfer diagram

RESULTS

As of June 2008, SC DHEC was receiving daily data feeds that include information from five emergency departments. Barriers to recruiting hospitals into the System were mostly due to competing priorities within the healthcare setting. South Carolina does not mandate hospitals to report syndromic data. Once a hospital is recruited into the system, sending data via PHINMS at the hospital has proved successful. Issues associated with sending back data to hospitals through PHINMS will be addressed.

CONCLUSIONS

As with any new system, the adoption of using PHINMS has encountered challenges, as well as, successes along the way. However, challenges bring opportunities to develop novel methodologies, such as resolving issues with delivering hospital-specific syndromic data back to the hospital through the PHINMS. PHINMS has shown its potential to be the standard for data transfer of syndromic data. PHINMS is secure, reliable, cost effective, easily monitored and managed. The system will be a valuable tool for increasing the state and local hospital's surveillance systems implementation.

REFERENCES

- [1] The Centers for Disease Control & Prevention. Public Health Information Network. <http://www.cdc.gov/phin/>
- [2] The Centers for Disease Control & Prevention. Public Health Information Network Messaging System. <http://www.cdc.gov/phin/phinms/>
- [3] The Centers for Disease Control & Prevention. The Early Aberration Reporting System. <http://emergency.cdc.gov/surveillance/ears/>

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