A Mobile Phone App to Enhance Communication between ID Physicians and Members of the Public Health Community

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University of Iowa comp|epi computational epidemiology research

Infectious Diseases Society of America EIN Emerging Infections Network

The University of Iowa

BACKGROUND

EMERGING INFECTIONS NETWORK is a provider-based sentinel surveillance system first funded by the CDC in 1996.

The EIN has the following tasks and goals:

1) Detecting new or unusual clinical events in its members' practices,
2) Identifying cases to help public health authorities investigate outbreaks,
3) Gathering information about clinical aspects of emerging infectious diseases,
4) Connecting EIN members and CDC investigators so that surveillance for specific emerging infectious diseases is enhanced; and
5) Informing EIN members about these infections and the surveillance needs of the public health community.

The EIN membership represents a broad cross-section of infectious disease physicians, currently consisting of 1,599 active practicing infectious diseases physicians from all 50 states and the District of Columbia.

The EIN has a robust electronic mail conference (listserv) which facilitates communication between infectious diseases providers and the public health community. On average, 240 threads occur per year, with approximately 4 to 5 responses per individual thread.

The EIN also sends members periodic queries (short surveys on infectious disease topics) which have addressed numerous topics relevant to both clinical infectious diseases and public health practice. An average of 5 to 6 queries per year are sent to members; the results of most queries are published in the peer-reviewed literature (43 papers published from 2006 through Sept 2013).

PROJECT GOAL: To provides a tool to enhance communication between EIN members using a fast, secure method of performing quick polls.

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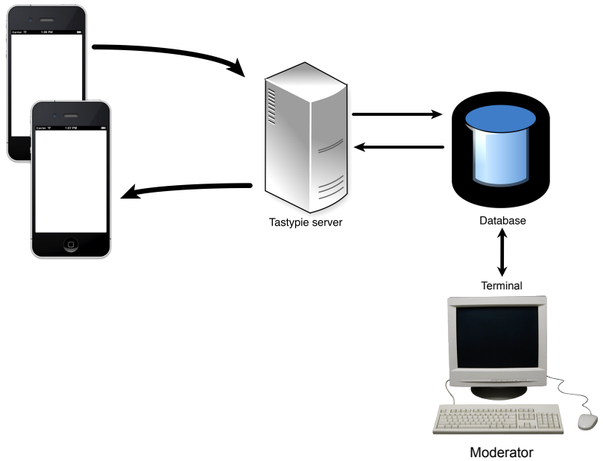
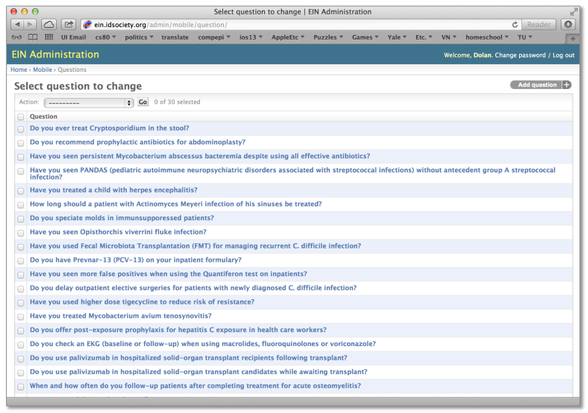
METHODS, MATERIALS and RESULTS

An IDSA EIN app for iOS was created using Objective-C and Cocoa Touch framework.

The app's server is written in Python using the Django-Tastypie API framework to communicate app data via JSON (see below)



Terminal/Moderator Interface

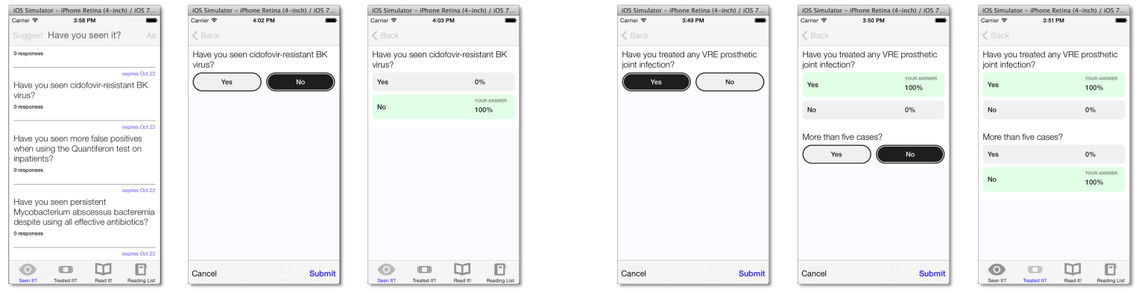


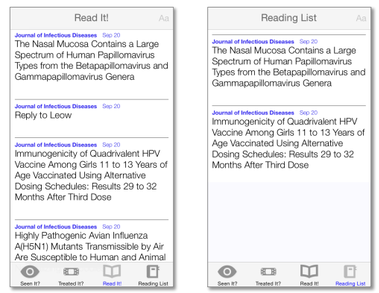
The app has two distinct components – a **Question Component** and an **Articles Component**.

The Question Component presents moderated questions in two forms to logged-in IDSA EIN members. The EIN moderator can use a web-based interface to add and edit questions, and download and analyze results.

"Have you seen it" questions ask about unusual or epidemiologically relevant infections, allowing for rapid detection of similar cases in other locations.

"Have you treated it" questions ask about treatments and outcomes for unusual infections. We accept suggestions for new questions using an in-app email form.





The Articles Component of the app allows users to view RSS feeds from multiple ID relevant journals which can be read immediately.

Alternatively, users can selected articles in a personal reading list.

The **Articles Component** provides a quick and convenient way, via RSS feeds, for users to follow current literature and provides users an incentive to open the app and interact with the **Question Component**. The RSS feeds supported at launch are the Journal of Infectious Diseases and Clinical Infectious Diseases, with support for more relevant journals coming in the near future.

CONCLUSIONS

The app augments existing IDSA EIN sentinel network activities. The listserv has clinician and public health community members, with >200 separate threads and ~1,000 total responses/year. However, the listserv and query functions have limitations.

Each listserv thread contains responses from only a small number of members, resulting in less representative responses. Queries have a good response rate but take up to a month to complete.

The app has the potential to provide real-time feedback from a more representative sample of clinicians with better signal detection abilities than either the listserv or query functions.