Investing in a Text Messaging System:
A Comparison of Three Solutions

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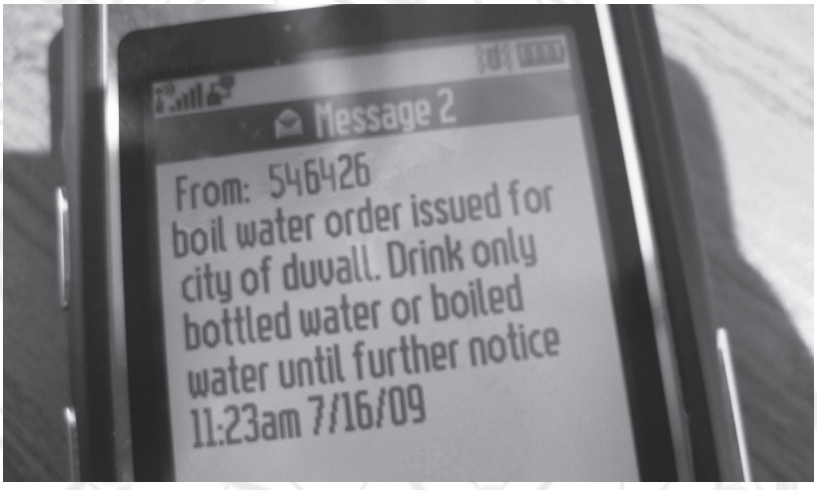
Two trillion text messages are sent each year in the United States, yet public health departments are only just beginning to take advantage of Short Message Service (SMS) to support promotion, provision, and protection of health.

Health departments can use texting systems to provide reminders for appointments and tests, emergency alerts, and prompts that promote healthy choices. Evaluated programs are beginning to provide evidence that SMS technology has the potential to improve health across populations, including ethnic minorities and lower income communities who use the technology at higher rates than affluent whites do.

Before investing in a texting system, health departments should understand the various options available and which option fits program needs best. At Public Health - Seattle & King County (PHSKC), the communications team is currently piloting, or in the planning phases of three texting programs: (1) PHSKC employee emergency alerts, (2) influenza vaccine booster reminders, and (3) targeted health promotion messages.

To evaluate the alternatives for their texting needs, the PHSKC communications team conducted a business case analysis. They studied the features of a vendor-hosted SMS model as well as two additional models.



Additional resources at
www.nwpublichealth.org

Vendor-Hosted Solution

To evaluate this model, the PHSKC communications team contracted with three different vendors, all of whom provided "hosted solutions" in which the vendor maintained a database of messages and subscriber numbers and managed the transfer of messages to the cell-phone carriers. (A subscriber is an end-user who signs up for the service, electing to receive text communications from the health department.) Each vendor provided a password-protected interface into which phone numbers were entered, either by public health program staff or by subscribers. Subscribers were grouped according to specific needs. For example, employees in the emergency alert program were organized by work location.

The vendor performed all functions other than writing the text message(s) and pushing "send." For PHSKC's vaccine booster reminder, each subscriber was given a proxy ID so that protected client names were not stored on the vendors' servers.

Hosted solutions are easy to use, and it is typically easy to migrate from one vendor to another. Disadvantages of hosted solutions include limited customization, uneven customer service, and ongoing fees. Security concerns are another limitation of using hosted vendors, and extra precautions, such as the use of the proxy ID mentioned above, should be used to secure clients' private information.

Commercial Off-the-Shelf Option

A second approach is to buy a commercial off-the-shelf (COTS) application and then use IT staff to customize the user interface. Unlike a vendor-hosted solution, the database used is in-house. The IT department works with the COTS vendor to access the underlying application code, and the COTS vendor continues to work directly with an aggregator to get the messages to the right carrier. One important consideration is that using a COTS application requires on-going relationships with the COTS vendor to ensure that the IT department

adapts the COTS application when the vendor upgrades its system.

In-House Applications

A third approach is to develop the application completely in-house. In this scenario, a health department invests in the development of the application, the infrastructure, and the database. The department works directly with an aggregator, bypassing the SMS vendor. This solution provides the most customized functionality, the most control over the data, and allows the agency to apply its security policy and practices to the application. It also requires increased technical resources, expertise, and on-going maintenance.

Costs

A high quality, fully-hosted solution, in which a few thousand texts are sent each month can cost as much as $1,200 a month and many thousands more if the agency wants to reach more residents across its jurisdiction. The PHSKC communications team found that over a five year life-cycle, the vendor-hosted solution was the cheapest, with the COTS and the in-house application costing roughly 20 percent more, including all costs from IT programming, development, maintenance, and vendor fees. A key assumption in the analysis, however, was that costs were based on a ten-thousand text message per month volume for a single program. Once text messaging is used by multiple programs within the same agency, the cost of a hosted solution rises due to multiple set-up and customization fees.

Moving Forward

A hosted solution is preferred for fast, cost-effective set-up for a single public health program where limited functionality is adequate and the volume of messages is limited. However, for multi-program or multi-agency considerations, the costs of either a customized COTS application or software developed "in-house" might be less when spread over five years or more. Also, costs could be saved if several agencies across a region combine forces and develop a customized solution together. More than 80% of adults text, and text messaging is potentially an effective means of improving and protecting population health. Now is a good time to start sharing our experiences and resources to employ the most cost effective solutions to reach our populations. ■

A highly functional texting system will

Support unique, and multiple, user accounts for different staff to access the interface.
Support combining end users into groups for sending SMS text messages.
Support accented characters for writing in Roman-based languages.
Support alphabet character sets for writing non-Roman-based languages.
Receive SMS text responses.
Support multiple billing structures so that different departments within a single agency can be billed separately for their activities.
Provide options supporting agency-paid SMS text message with no cost to the end user.
Provide customizable (ad hoc) fields/attributes (location, age, gender, zip code, city, etc.).
Provide ability to insert contents from database into SMS text message. (E.g., name, to personalize the message)
Receive confirmation/notification of SMS message (delivered and/or read receipt).
Provide technical administrator account (super-user).
Provide definable levels of rights/permissions.
Assure user log-in to administrative interface is authenticated.
Provide end user web-portal access so that end users can subscribe to texting programs using a web interface.
Offer password administration.
Allow remote (web portal) access so administrators can log on to the system and send text messages remotely.
Allow the use of short codes and customized key words in SMS.
Provide for database security and protection and assure privacy of phone numbers and other sensitive information.
Provide record of SMS text messages sent and received for public disclosure or other needs.
Allow ad hoc reporting capabilities.
Allow recipients to opt in to receiving messages using website or short-code.
Provide for growth in programming and messaging capacity.
As technology evolves, provide for flexibility and increased functionality.

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