RELATED RESEARCH

TABLETOP EXERCISE PANDEMIC INFLUENZA

Effect of Alert Fatigue on Health Care Providers' Recall

Baseman JG, Revere D, Painter I, Toyoji M, Thiede H, Duchin J. Public health communications and alert fatigue. BMC Health Services Research. 2013 Aug 5;13:295. doi: 10.1186/1472-6963-13-295. PMID: 23915324. PMCID: PMC3751004. www.biomedcentral.com/content/pdf/1472-6963-13-295.pdf

This study analyzed the effects of alert fatigue on health care providers' recall of information. Researchers examined provider preferences for receiving public health communications and the impact of message volume/frequency on information recall and alert fatigue. The study found that:

- Information delivered too frequently and/or repetitively through numerous communication channels may have a negative effect on the ability of health care providers to effectively recall emergency information. Every increase of one message per week resulted in a 41.2% decrease in the odds of recalling content; recall rates were inversely proportional to the mean number of messages received per week.
- "Noise" has the potential to desensitize health care providers to information.
- Better coordination between organizations disseminating alerts may improve recall of messages, reduce redundancies, reduce the possibility of misinformation, and improve the quality of alerts.

Improving Call Center Service to Limited English Proficient Callers

Calhoun R, Young D, Meischke H, Allan S. Practice, more practice, best practice: improving our service to limited-English Callers. Washington State Journal of Public Health Practice 2009;2(1):34-37. www.cwu.edu/wspha/sites/cts.cwu.edu.wspha/files/documents/v2n1Calhoun.pdf

A public health department examined the capacity of its Public Information Call Center (PICC) to effectively serve limited English proficient (LEP) speakers during an emergency. A pandemic flu exercise was held where LEP callers made simulated calls to PICC operators. Researchers evaluated the exercise and found that:

- For public health call centers without on-site interpreters, using an over-the-phone (OPI) service is feasible.
- Staff and volunteers communicating emergency information by phone to residents with LEP skills should be trained in how to simplify their messages and best interface with an OPI.
- Telecommunications connectivity should be periodically tested and operators should be given practice opportunities.

9-1-1 Communication with Limited English Proficient Callers

Carroll LN, Calhoun RE, Subido CC, Painter IS, Meischke HW. Serving limited English proficient callers: a survey of 9-1-1 police telecommunicators. Prehospital Disaster Medicine. 2013 Jun;28(3):286-91. doi: 10.1017/S1049023X13000265. Epub 2013 Mar 28. PMID: 23537624.

9-1-1 police telecommunicators were asked to share their experiences handling limited English proficient (LEP) calls and managing three-way communication with over-the-phone interpreter (OPI) services. The survey found that:

- 9-1-1 police telecommunicators use interpreter services at least 75% of the time when receiving a call from a LEP caller.
- Compared to calls with fluent English speakers, emergency calls with LEP individuals are positively associated with higher telecommunicator stress levels.
- Higher telecommunicator stress levels are positively associated with difficulties in assessing the situation to determine the appropriate response.
- Outreach and education of LEP communities regarding best communication practices during 9-1-1 calls

may improve emergency communications.

- Telecommunicator training to better manage three-way communications and reduce stress associated with concern for officer safety may also improve emergency communication during 9-1-1 calls.

Utilizing Text Messaging and Social Media in Emergency Communication

Findings: "NWPERRC Yr05 Aim 1, Phase 2 CBO Survey Findings." In: NWPERRC Years 05-06 Progress Report. CDC Grant # P01-TP000297. (PI: M Oberle). Seattle WA: University of WA, 2015.

The Community Communication Network (CCN) is a partnership of public health, community-based organizations, and community leaders that aims to ensure essential health-related information reaches vulnerable residents during emergencies. A survey was conducted to explore the potential for utilizing emerging technology to supplement the CCN's current e-mail and phone-based system during emergencies. The survey found that:

- 94.3% of CCN members were willing to receive emergency-related messages on their personal cell phone, depending on the type/level of emergency; 76.4% own a smartphone; 51.2% use social media as a part of their job.
- CCN members will use a variety of modes, if needed, to communicate urget messages with their communities, although 53.4% are either unsure or believe their clients/and or communities do NOT use short message service (SMS) text messaging and 82.8% have never used SMS to communicate with their constituents.
- Findings indicate SMS, Facebook, and Twitter are the most promising options for supplementing the CCN's current modes of communication.
- Given the 160 character SMS limit, a dual notification system might be most efficient in which a text would direct CCN members to their e-mail for additional information, however, using SMS may depend on the complexity of the message and/or public health issue.

Communicating with the Workforce During Emergencies

Karasz HN, Bogan S, Bosslet L. Communicating with the Workforce During Emergencies: Developing an Employee Text Messaging Program in a Local Public Health Setting. Public Health Reports. 2014;129(Suppl 4):61-66. PMID: 25355976. PMCID: PMC4187308. www.publichealthreports.org/issueopen.cfm?articleID=3270

A public health employee opt-in short message service (SMS) text messaging program was evaluated for its feasibility and utility in communicating information to public health employees and improving workforce situational awareness during emergencies. Over 1,500 public health employees opted into and tested the program. Evaluation of the program found that:

- Employee concerns about opting into an SMS program included possible work encroachment during non-work time and receiving excessive irrelevant messages.
- During an ice storm in January 2012, employees who received messages reported high levels of satisfaction and perceived utility from the program.
- SMS is a feasible form of communication with employees during emergencies although care should be taken to design and deploy a program that maximizes employee satisfaction.

HIPAA Security Rule in Relation to Text Messaging Programs

Karasz HN, Eiden A, Bogan S. Text messaging to communicate with public health audiences: how the HIPAA Security Rule affects practice. American Journal of Public Health. 2013 Apr;103(4):617-22. doi: 10.2105/AJPH.2012.300999. Epub 2013 Feb 14. PMID: 23409902. PMCID: PMC3673236. www.ncbi.nlm.nih.gov/pmc/articles/PMC3673236

Using short message service (SMS) text messaging to send personal health information requires analysis of laws addressing the protection of electronic health information. Results from a risk analysis found that:

- While the Health Insurance Portability and Accountability Act (HIPAA) Security Rule is written with flexibility to account for changing technologies, in practice the rule leads to uncertainty about how to make text messaging policy decisions.
- An SMS program can be implemented in a public health setting through two possible approaches: 1. restructuring text messages to remove personal health information or 2. retaining limited personal health information in the message but conducting a risk analysis and satisfying other requirements to meet the HIPAA Security Rule.

Text Messaging to the Deaf for Emergencies

Li-Vollmer M. Can u txt me now? Text messaging to the deaf for emergencies. NACCHO Preparedness Brief. Feb/March 2011. www.naccho.org//topics/emergency/upload/Storyfromthefield_FebMarch2011.pdf

Lack of American Sign Language (ASL) interpreters, technology, or community connections at health departments has hindered effective communications with the deaf and hard-of-hearing, especially during emergencies. Interviews were conducted with this population regarding use of short message service (SMS) text messaging for communicating public health information. Researchers found that:

- Deaf and hard-of-hearing populations valued the efficiency and access to communication afforded by SMS, the independence the format gave them, and the social connection opportunities afforded by SMS.
- Many preferred texting to other forms of technology and some felt it had better coverage than the Internet.
- Deaf and hard-of-hearing interviewees were receptive to receiving texts about public health emergencies. 91.7% stated they would be likely or very likely to sign up for alerts about severe emergencies (such as earthquakes) and the majority were willing to receive alerts and information for more moderate emergencies, such as an influenza outbreak.

Bi-Directional and SMS Text Messaging

Revere D, Calhoun R, Baseman J, Oberle M. Exploring bi-directional and SMS messaging for communications between public health agencies and their stakeholders: a qualitative study. BMC Public Health 2015;15:621. www.biomedcentral.com/content/pdf/s12889-015-1980-2.pdf

This formative, exploratory mixed-methods study looked at how a bi-directional system and the incorporation of short message service (SMS) text messaging might be used for public health messaging. Results found that:

- E-mail is a favored modality for receiving public health messages.
- The decision to use bi-directional, SMS or multiple communication strategies is complex and dependent on the situation (emergency vs. non-urgent), message recipient (stakeholder group), and public health's need to manage messaging concerns/barriers and benefits for all parties.
- Information reciprocity between public health and stakeholders who share information is essential.
- Strategies must balance message content (emergency vs. routine communications), delivery (one- vs. two-way), channel (SMS, e-mail, etc.), and public health burden with message recipient (stakeholder group) or audience preferences and technical capabilities, all while mitigating the risk of message overload and disregard of important communications by recipients.

Communicating with Health Care Providers During Emergencies

Revere D, Painter I, Oberle M, Baseman JG. Health-care provider preferences for time-sensitive communications from public health agencies. Public Health Reports. 2014;129(Suppl 4):67-76. PMID: 25355977. PMCID: PMC4187309. www.publichealthreports.org/issueopen.cfm?articleID=3271

This study identified the communication channels (modalities) by which health care providers preferred to receive public health alerts and advisories. Researchers found that:

- E-mail is the favored modality overall for receiving public health messages.
- Older providers were more likely than younger providers to prefer e-mail or fax, while younger providers were more likely than older providers to prefer short message service (SMS) text messages.
- Understanding the preferences of providers for receiving alerts and advisories may improve the effectiveness of vital public health communications systems and, in turn, may enhance disease surveillance, aid in early detection, and improve case finding and situational awareness for public health emergencies.

Crafting Public Health SMS Text Messages

Revere D, Schwartz MR, Baseman J. How 2 txt: an exploration of crafting public health messages in SMS. BMC Research Notes. 2014 Aug 11;7:514. doi: 10.1186/1756-0500-7-514. PMID: 25113387. PMCID: PMC4267116. www.biomedcentral.com/content/pdf/1756-0500-7-514.pdf

Researchers investigated the message content and formatting requirements of health care providers for public health alerts and advisories, including how to meet these needs using short message service (SMS) text messaging. Results from the survey found that:

- Topic, recommendation, geographic location, signs and symptoms, population affected, and link to additional information are essential componetns of a public health message.
- Public health agencies must include a link to additional website information when sending SMS messages.
- SMS could be a useful public health tool for communicating with health care providers, but further investigation of how to effectively use SMS and other mobile technologies is needed to inform public health decisions regarding adoption of messaging systems utilizing these newer technologies.

Information Seeking Behaviors to H1N1 in LEP Chinese Speakers

Yip MP, Ong B, Painter I, Meischke H, Calhoun B, Tu SP. Information-seeking behaviors and response to the H1N1 outbreak in Chinese limited-English proficient individuals living in King County, Washington. American Journal of Disaster Medicine. 2009 Nov-Dec;4(6):353-60. PMID: 20104728.

This study investigated the information seeking behaviors and response to the 2009 HIN1 outbreak by limited-English proficient (LEP) Chinese speakers. Results found that:

- The majority of respondents demonstrated a basic understanding of the disease and were unconcerned by the outbreak.
- Major channels for H1N1 information included watching TV (81%), reading Chinese newspaper (69%), and community-based organization (30%).
- Only 2% obtained information from a public health system or hotline.
- The odds of being informed of timely H1N1 information were significantly higher for participants who did not speak English at all than those who reported speaking English “not well”.
- Scarce use of the local public health system to obtain H1N1 information suggests more work needs to be done to reach out to the LEP community to enhance their capacity to respond to future outbreaks.