Online Social Networks to the Rescue: Fulfilling the Ten Essential Public Health Services

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Abstract

Budget cuts and shortages in the public health workforce have contributed to the reduction of public health services in 91% of state health departments (SHDs). To adjust for these changes, health departments must discover novel ways to deliver essential public health services to their constituents. Researchers conducted a retrospective analysis of the content published on SHDs' Twitter pages to determine if online social networks were used to fulfill the ten essential public health services. While 42 SHDs had a Twitter page, the volume and content of tweets varied. Although tweets were posted that related to all ten of the essential public health services, nearly half of the tweets represented essential service three, which is to inform, educate, and empower people about health. SHDs can and should do more to use these resources to try to fulfill all ten of the essential public health services in order to deliver needed services to a community even when faced with a reduced budget and workforce.

Keywords

social media, Twitter, essential public health services, state health departments

Cover Page Footnote

A lthough successful implementation of the ten essential public health services[*] is vital to improve the health of a community, a variety of barriers including budget cuts and a reduction in workforce have negatively affected the delivery of these services. Since July 2008, 92% of state health departments (SHDs) have reported cuts in their budget.[1] Not only that, but 60% of SHDs have reported mandatory furloughs and layoffs and 91% have lost staff due to attrition.[1] Finally, 91% of SHDs have reduced services delivered since July 2008.[1] With the demands put on SHDs to deliver the essential public health services despite workforce shortages and a reduced budget, departments need to discover innovative ways to provide these services. This exploratory study attempts to determine if SHDs can utilize online social networks to fulfill any of the ten essential public health services.

Previous research has shown that adoption of online social networks by SHDs has steadily grown over the last five years.[2] More than half of SHDs use Facebook to deliver health information, and even more use Twitter.[2] Although there are more than 500 million active users and 150,000 new members each day, Twitter is relatively new.[3] Even more novel is the use of Twitter by organizations as a way to engage stakeholders. The purpose of this pilot study is to understand how SHDs use Twitter and if they are using this low-resource tool to fulfill any of the ten essential public health services.

The researchers conducted a retrospective analysis of SHDs' Twitter pages in order to observe the content and activity of posts over time. Posts from a four-week period were recorded and a stratified random sample of the observed tweets was distributed to public health professionals to categorize based on the essential services (ES). From the sample of tweets categorized, each ES was represented at least once. ES 3, which is to inform, educate, and empower people about health issues, was most frequently represented.[4] From this research, the utility of online social networks in fulfilling the essential public health services is evident. SHDs can and should do more to use these resources to their full potential to deliver needed services to a community particularly when faced with a reduced workforce and budget.

METHODS

Bounded by resource limitations, this pilot study focused on SHDs since there are fewer SHDs than local health departments. To determine how SHDs use online social networks, the largest micro-blogging site in the United States, Twitter, was selected as the source for data collection. Twitter was selected over other online social networks due to its adoption by the majority of SHDs, its production of concise pieces of information referred to as "tweets," and the public nature of the posts published on this site. These features could assist in the delivery of information from a health department to a population in a succinct and accessible way. Using data from the Centers for Disease Control and Prevention to identify state health departments, the first author then searched each organization's website to determine if there was a Twitter page. Then, by using the Twitter and

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[*] The ten essential public health services are presented in Figure 2.

Google search engines, Twitter pages were found for 42 SHDs. Twitter pages were not found for eight SHDs after these three searches.

Following approval by the Institutional Review Board, a retrospective analysis of SHDs' Twitter pages was conducted to observe the content and activity of posts over time. Posts from January 7th, 2013 to February 3rd, 2013 were recorded. The final database included 2,424 tweets. A stratified random sample was distributed to 11 former or current public health professionals for them to conduct a content analysis. After all data were categorized, the primary investigators performed a frequency analysis to determine the number of tweets that related to each ES.

RESULTS

The average number of tweets posted per day varied by each SHD and ranged from zero to 14, with some agencies tweeting as many as 394 tweets in a month, and others not tweeting at all in a given month. The average number of tweets published per day for all SHDs was approximately two. Not only did the volume of tweets differ among SHDs, but the content differed as well. Although not all of the tweets posted related to an ES, more than 80% of the tweets did. Each ES was represented at least once in the sample of tweets categorized in this study. The frequency of each ES varied, with ES 3 being represented the most (44.6% of all categorized tweets) and ES 6 being represented the least (1.0%). A chart detailing the percentage of tweets that pertained to each ES can be found in Figure 1.

Figure 1: Percentage of Tweets Pertaining to Each Essential Public Health Service
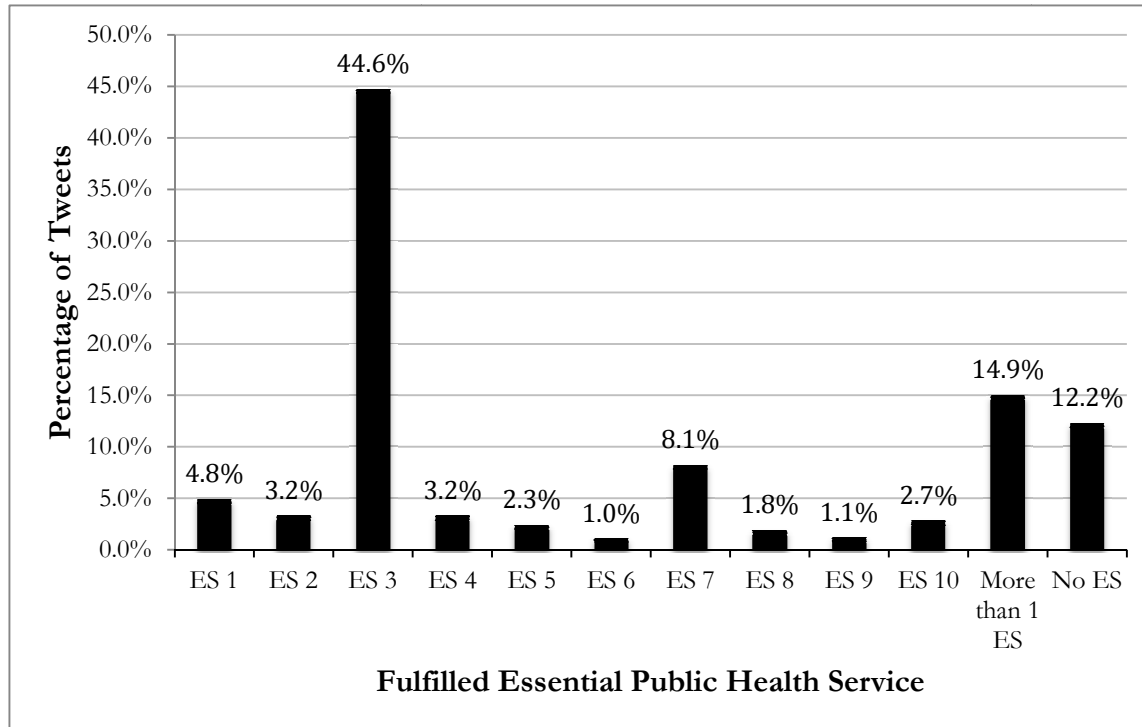
Figure 1 above shows that Twitter is being used in relation to the ten essential public health services. Although SHDs most frequently posted content that related to health information or education, the utility of this social network is more extensive and content could be published that relates to all ten of the essential public health services. Figure 2 provides public health professionals with examples of tweets that relate to each ES.

Figure 2. Observed Tweets Relating to Each Essential Public Health Service

Essential Service[4]	Observed Tweet
ES 1: Monitor Health Status	Whooping cough making record comeback here and nationally.
ES 2: Diagnose and Investigate	How to tell between a cold and the flu. Check out this website.
ES 3: Inform, Educate, and Empower	Every time you eat, drink at least an 8-ounce glass of water.
ES 4: Mobilize Partnerships	Want to volunteer for emergencies/events? The Rocky Mt Medical Reserve Corps could be your answer.
ES 5: Develop Policies and Plans	ADH receives Blue and You Foundation grant to improve stroke care.
ES 6: Enforce Laws to Ensure Safety	Governor is joining others to announce responsible gun safety legislation at 10am.
ES 7: Link People to Health Services	Free flu shot clinics will be open to the public from 1-4pm Wednesday.
ES 8: Assure Competent Workforce	New job opening. See link.
ES 9: Evaluate Health Services	With 600 people on the organ donation waiting list in Delaware, we need to change the equation.
ES 10: Research Health Problems	Report on Research: Selling food: Food marketing to children and teens is a public health concern. Read it here.

IMPLICATIONS

The data presented in this study suggest that the utility of online social networks is largely untapped by SHDs. While SHDs are already utilizing these resources to transmit messages to community members, the content is largely focused on health information and education. Although this information is essential and may be more apparent and appropriate to carry out using Twitter, SHDs can and should attempt to increase the scope of the tweets they post beyond health education. The ten essential public health services that govern the actions and responsibilities of health departments can serve as a framework to guide public health professionals in the content they publish on online social networks.

This pilot study was limited to only one online social network—Twitter. Despite the growing popularity of this network, not every individual utilizes or even has access to this site. If health departments rely heavily on this network alone for public health service delivery, health disparities could be exacerbated since the reach would be limited to the users of this network. Therefore, integration of multiple social networks along with more traditional routes of service delivery may be beneficial and is encouraged to reach a wider and more complete portion of the population served.

Additionally, this study was limited to SHDs. More research on the utility of these networks for local health departments is needed. The results of this pilot study are also limited by the time frame allowed for data collection. Further research could investigate how posts differ over time by using a constructed month sample, which could assist in reducing temporal bias. Lastly, since each practitioner selected to analyze the content of the tweets received a different subset of tweets, there is a possibility that their opinions differed according to the categorization scheme.

More research is necessary in this field to determine appropriate strategies for health departments with an online presence and to understand the scope of the functions these networks can serve. With this research, the potential for online social networks to serve as a low-resource tool in a variety of services delivered by health departments is apparent. During a time characterized by shortages in the workforce and budget cuts, the integration of these networks in the services delivered by health departments should be expanded.

SUMMARY BOX:

What is Already Known about This Topic? Health departments need to deliver the ten essential public health services to their respective communities to promote health and well being despite budget cuts and reductions in the workforce.

What is Added by this Report? Presently, SHDs are using Twitter primarily to inform, educate, and empower their followers. These online social networks are underutilized, and their utility could be expanded to provide the ten essential public health services to communities.

What are the Implications for Public Health Practice, Policy, and Research? Health departments should use these resources to their full potential by publishing content that relates to the ten essential public health services. Their utility should be expanded beyond purposes of health information and education.

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