

Delivering Health Messages Using Traditional and New Media: Communication Preferences of California Residents during the 2009 H1N1 Influenza Outbreak

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ABSTRACT

In March 2009, a novel influenza A (H1N1) virus emerged from Mexico. The pandemic resulted in a surge of media attention in which a large volume of information was communicated via multiple sources and channels, both traditional and new. In order to better understand the public's perceptions and utilization of health information provided, California residents were surveyed using a mailed questionnaire. Results showed most respondents felt they had received enough information about the outbreak. The study also found participants preferred conventional communication sources, such as television and newspapers, over new media, such as websites. Although, there were some statistically significant differences between information source usage by age as well as by education. Even though respondents reported using a variety of sources, as a whole, they were unsure of their accuracy, trustworthiness or usefulness. Further study is needed to understand if these results are representative of experiences in other states and countries.

Keywords

H1N1, pandemic influenza, risk communication, new media, crisis management strategies.

INTRODUCTION

In March 2009, a novel swine-origin influenza A (H1N1) virus emerged from Mexico. By June 2009, the World Health Organization declared the rapidly spreading virus a global pandemic, the first in nearly 40 years (Donaldson, Rutter, Ellis, Greaves, Mytton, Pebody and Yardley, 2009). The pandemic resulted in a surge of media attention in which a large volume of information was communicated via multiple sources and channels, both traditional and new.

During outbreaks or emergency events, the public may be provided with an overwhelming amount of information, as was the case with H1N1. Technological advances have increased the number of sources and channels through which information can be transmitted, in turn increasing the amount of information available to the public. Additionally, health content can be transferred almost instantaneously through new media, such as Internet or text messages, reaching millions of people. In the past, survey respondents have reported receiving most of their health information from traditional sources, such as print materials, television and informal networks (Connell and Crawford, 1988). However, recent studies have cited the Internet as an increasingly important source of health information (Elkin, 2008; Tanner, Friedman, Koskan and Barr, 2009). This has resulted in more focus being placed on new media, and the technologies people use in their daily lives as potential platforms for consumer health information (Sarasohn-Kahn, 2008). Social media sites, such as YouTube, Facebook, MySpace and Twitter, are increasingly popular among Americans aged 18-30 and are playing a more prominent role in online health searches (Vance, Howe and Dellavalle, 2009).

While new media are very important information sharing tools, it is not as clear whether they are useful during a

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disaster, especially when resources might be constrained or limited. Many agencies are implementing these new technologies, such as establishing Facebook pages or Twitter accounts, as a way to reach more people and/or to reach isolated populations with health information. It is useful for agencies to have the capability to quickly and continuously updated information during a disaster as the situation changes. However, this may leave much room for misinformation to circulate. While millions of people are utilizing various forms of new media, it is unclear how effective or efficient these platforms are for delivering accurate, trustworthy and useful health information.

The California Department of Public Health (CDPH) has been actively preparing for pandemic influenza by collecting data on attitudes, perceptions and beliefs to help improve communication between the public and health officials. The 2009 H1N1 outbreak provided an opportunity to collect feedback during an actual pandemic and assess what information sources people used, trusted and found accurate. To better understand the experiences of California residents during the outbreak and to examine preferences for receiving health information, the UCLA Center for Public Health and Disasters (CPHD) and the CDPH worked together to disseminate mailed surveys to residents across the State. Following is a descriptive account of selective study findings.

METHODS

Survey Sample

A stratified sampling method was used for this study. A list of residential addresses was purchased from GENSYS Sampling Systems to gather a statewide probability sample that was designed to survey equal numbers of households in each of three strata: the Bay Area, Southern California and the rest of the State. The Bay Area stratum included: Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma counties. The Southern California stratum included: Santa Barbara, Ventura, Los Angeles, Orange, San Diego, Imperial, Riverside, and San Bernardino counties. The remaining 39 counties were included in the third stratum and represented the remainder of the counties in the Central Valley, the Sierras and Northern California. Weighting was utilized to account for the differential selection probabilities associated with the sample design. Data from the California Department of Finance were used to determine the appropriate sample weights (State of California Department of Finance, 2009).

Data Collection

Survey materials were sent in English and Spanish to 1,500 residential addresses in California. The first mailing was sent on November 11, 2009, with a reminder postcard sent on December 9, 2009. Households that had not returned questionnaires were resent survey materials on December 18, 2009. Returned questionnaires were collected until January 27, 2010, with an overall response rate of 15%. In total, 214 households returned questionnaires: 76 from the Bay Area (35.5%), 70 from Southern California (32.7%) and 68 from the rest of the state (31.8%).

Measures

The study instrument for this study was developed in partnership with the California Department of Public Health. The instrument was reviewed by executive staff at CPHD and approved by the project team from the State Health Department. The instrument consisted of multiple measures regarding the 2009 H1N1 outbreak. The questions gathered data on information sources, risk, protective actions, information availability, and communication strategies. Information was also collected on demographic characteristics of the study sample. Standard questions were asked about gender, education, marital status, employment status, age, race/ethnicity, income, number of household members, and number of children under 18 in the household.

Analytic Strategy

Data were entered into Microsoft Access (Microsoft Corporation, 2003) and imported into SPSS v17.0 (SPSS Inc., 2007) for analysis. Descriptive statistics were calculated using SPSS with both unweighted and weighted datasets for all variables. With each frequency distribution, measures of central tendency (mean, median, and mode) and dispersion (range and standard deviation) were obtained as appropriate to the Steven's classification

of the variable. To test for associations between all variables of interest, Pearson's chi-square test was utilized. Due to the sample size, an alpha level of 0.05 was used to determine statistical significance.

RESULTS

Sample Characteristics

Table 1 presents the distribution of select demographic characteristics for the weighted survey sample compared to 2007-2008 population estimates from California Department of Finance. As a whole, the weighted sample had more females, married people, older persons and individuals with higher education and income than population estimates. Respondents also reported smaller household size, fewer children under 18 years of age and fewer were in the work force. In regards to race/ethnic composition, Blacks/African Americans and Whites/Caucasians were over-represented in the sample while Asian/Pacific Islanders and Hispanic/Latinos were under-represented.

	Weighted sample (%)	Population estimates (%)
Geographic area		
Bay Area	20.2	18.8
Southern California	58.2	58.7
Rest of California	21.6	22.5
Race/Ethnicity		
Black/African American	9.3	6.2
Asian/Pacific Islander	11.0	12.2
Hispanic/Latino	14.2	36.6
White/Caucasian	59.8	43.1
Other	5.7	1.9
Age of respondent (years)		
18-29	8.5	22.9
30-39	17.5	19.2
40-49	12.4	20.4
50-59	31.0	16.8
60-69	16.0	10.1
70+	14.6	10.6
Education level of respondent		
12 th grade or less	2.9	18.8
High school degree	9.5	23.3
Some college education	19.4	26.5
College degree	46.0	20.9
Graduate degree	22.2	10.5
Household income		
\$29,999 or less	22.3	31.2
\$30,000-\$49,999	15.2	20.9
\$50,000-\$99,999	38.5	30.6
\$100,000 or more	24.0	17.3
Gender of respondent: Female	64.2	50.2
Marital Status: married	59.5	50.6
Employment status: In labor force	57.0	65.9
Households w/ children (<18 years)	32.7	38.0

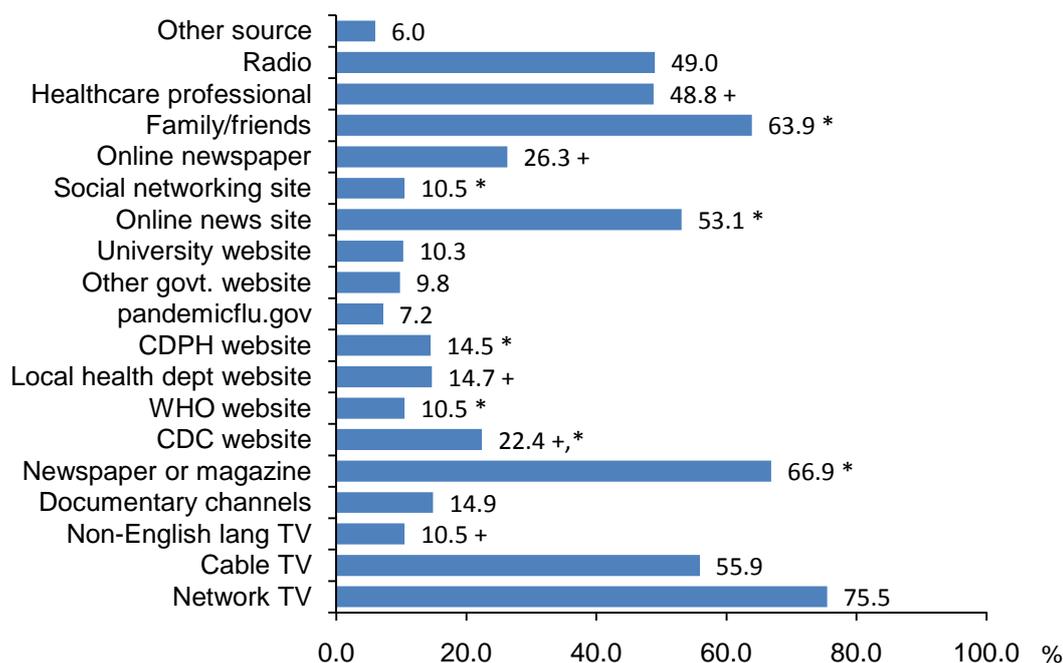
Table 1. A comparison of the weighted survey sample to California population estimates (N=214).

Amount of Information Respondents Received

A majority of respondents believed they have enough information about the H1N1 outbreak, especially as it related to protecting themselves (63%), preventing infection (63%) and understanding its transmission from person-to-person (58%). About half of respondents said they had enough information on the benefits of getting vaccinated (55%), early symptoms (55%), differences between H1N1 and seasonal flu (48%), when to go to the doctor (47%), and what to do to prepare for H1N1 (47%). Only about a third (34%) of people reported having enough information on how to treat someone in their family for swine flu.

Information Sources Used

Overall, 75% of respondents reported using network television (TV) to obtain information about the outbreak (Figure 1). Other common means of receiving information were through newspapers or magazines (67%), family/friends (64%), and cable TV (56%). Less common means of getting information included the pandemicflu.gov website (7%), university websites (10%), social networking sites (10%), the WHO website (10%), and non-English language TV (10%). There were some statistically significant differences between information source used and age groups. Individuals age 18-49 were more likely to report using the CDC website, the WHO website, the CDPH website, social networking sites, and family/friends for information compared to individuals 50 and older. Similarly, there were statistically significant differences between educational attainment and information source used. Individuals with a bachelor's degree or higher were more likely to report using the CDC website, their local health department website, online newspapers, and healthcare professionals as information sources compared to individuals with less education. The majority (89%) of respondents said their sources of information for this outbreak were the same sources that they would use to get information about other health issues.



Asterisks (*) indicate statistically significant associations between age and information sources, and plus signs (+) indicate statistically significant associations between education and information sources using Pearson's chi-square ($p < .05$).

Figure 1. Information sources used by survey respondents during the H1N1 outbreak.

Future Communication with Public Health Officials

When asked about how important it was to be able to communicate with public health officials about questions or concerns, over 50% of respondents reported it was extremely important while 35% said it was somewhat important. Less than 5% of respondents said it was not at all important.

Respondents were then asked about some of the means of communication they would definitely use, might use or definitely not use. Most respondents would prefer using a toll-free number with a live person (45%) followed by an interactive website where they could write questions (31%), and some other means for communication (24%). Respondents reported they definitely would not use a Twitter account (81%), a call-in TV show with health officials (76%) or a call-in radio show with health officials (75%). Means of communication that might be used by some people included a drop-in information booth in the community (51%), an email address for the health department (46%) and a toll-free number with recorded messages (44%).

The respondents were also asked if they have any specific recommendations for health officials about communicating with people and their community. In general, respondents wanted to see increased availability of vaccines and vaccine information. Moreover, respondents wanted health officials and media sources to report information in simple layman's terms with honesty, to respond to false rumors and to mitigate fear and panic. They also reported that the information should be more accessible and coherent from different agencies.

CONCLUSION

This study asked participants about their communication usages during the 2009 H1N1 outbreak and opinions about communicating with public health officials. Findings show California residents received an abundance of information during the 2009 H1N1 outbreak. They also received health messages and outbreak information through both traditional and new media. Respondents had a mixed preference for using traditional compared to new source for bi-directional communication with public health officials.

This study found that participants preferred traditional communication source during the H1N1 outbreak, such as televisions and newspapers, over new types of media. Although, there was a statistically significant association between information source usage and age that showed individuals 18-49 years were more likely to report using new media sources than those 50 or older. Thus, crisis managers need to be aware that communication preferences may vary with the age of the information recipient. When resources are limited during a disaster or emergency, health officials may elect to disseminate information through more traditional means as they could potentially reach a greater number of people and have been shown in the past to be a preferred method (Connell and Crawford, 1988). However, they need to be aware that this may result in narrowcasting messages to older segments of the population.

Respondents were also asked about what means of communication they would use to voice their questions and concerns during an outbreak. Results were mixed about the format preference for communicating. For example, respondents were most likely to report a telephone hotline with a live respondent (traditional), an interactive website to ask questions (new) and a health department email address (new) would definitely be used to communicate with officials. Yet, respondents said they would definitely not use a Twitter account (new), a call-in radio show (traditional) or a call-in television show (traditional) for communication. Therefore, crisis managers need to be aware that they may have to diversify their strategies for communicating with the public in order to reach the broadest audience possible.

As a pilot study, the results provide interesting insight into the effectiveness of communication strategies used during the 2009 H1N1 outbreak. However, further research should be conducted with a larger sample to verify these results and collect additional data on California residents' communication usage and preferences. One limitation to the study results is that the small sample size may have limited our power to detect variance when it may have been present. Thus, associations might have been undetected in the analysis. Secondly, the H1N1 outbreak spanned a large amount of time in which information about the disease and its severity was ever-changing. It also occurred at a period when technology and communication channels were rapidly evolving. These factors could have shaped the public's perception about the disease and also reflect their preferences for communication sources, which may be different if measured at another point in time. Further research is necessary to assess whether perceptions, communication usages and preferences reported in this study are representative of other locations in the United States as well as the rest of the world.

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