

Data Collection: San Patricio County Pandemic Preparedness Assessment

Sherdeana Owens, DDS, MPA¹, Aima Jeffresswood, DM, MBA²

¹Texas A&M University Corpus Christi, College of Nursing and Health Sciences

²Colorado Technical University

Abstract

Background: Assessment of community preparedness for a pandemic event is a crucial part of disaster management planning for any county health department. Data collection is an integral part of such an assessment. Presented in this article are data from the 2011 San Patricio County Pandemic Preparedness Assessment. This contracted research provided data to the San Patricio County Department of Public Health for use in crafting effective community preparedness programming. **Purpose:** The purpose of this research was to obtain information about general and pandemic preparation of residents within San Patricio County, and to identify the most effective means of communicating the risks posed by pandemic influenza (San Patricio County Pandemic Preparedness Assessment, 2011; The Social Sciences Research Center, Texas A&M University-Corpus Christi). The goals of this study were to help with pandemic planning efforts and to build more resilient communities within the county. **Methods:** The research data was collected in the summer of 2011 using telephone and in-person surveys. The initial target audience was a randomly selected sample of San Patricio County residents based on a purchased home telephone listings for 3,000 residents. Subsequent data was collected from residents of family-oriented neighborhoods in Portland, Sinton, Odem, and Ingleside, Texas. **Results:** A total of 437 completed surveys were collected with 222 phone surveys and 215 in-person field surveys. Key findings indicated that some segments of the San Patricio County population were either very well or somewhat prepared for a broad range of disasters. Findings also identified the most effective communications methods in case of a general emergency situation as being cell phones. Information access was identified as television with the most trusted information source being a physician or healthcare professional. **Conclusions:** Findings from this study indicate that a significant portion of the target audience had some preparation for a pandemic event. Findings also identified effective methods for disseminating information to the community at large during a disaster included television and cell phone. Public health data collection methods might require adjustment to align with the characteristics of the specific target audience.

Introduction

This research was primarily intended for community leaders developing a local strategy for building resilience in the event of

a widespread health emergency, specifically influenza. The purpose of this research was to obtain information about general and pandemic preparation of residents within

San Patricio County, and to identify the most effective means of communicating the risks posed by pandemic influenza (DPH 2011). The main emphasis was individual preparedness and the efficacious dissemination of information.

The goals of this study were to help with pandemic planning efforts and to serve as a base for building more resilient communities within the county. The influenza pandemics of 1917, 1957 and 2006, and the global response to the 2009 H1N1 event, affirmed the importance of collaborative assessment and strategic planning by federal, state, and local governments (MacDonald et al., 2013). The H1N1 influenza virus first appeared in Mexico in March 2009, later surfacing in California, Texas and New York, with health hazard strands that emerged also in Canada, Europe, and the Middle East with rapid impact. Statistical data from the Center for Disease Control estimated that the number of cases of H1N1 in the United States between April and November of 2009 as 47 million, while the number of H1N1 related deaths were estimated at 9,820. In December of 2009, there were 210 laboratory confirmed pediatric deaths in the United States due to H1N1 (CDC, 2009). The first reported H1N1 related death reported in San Patricio County was of a Portland man, 48 years of age in November, 2009 (Nueces, San Patricio Counties Report H1N1, 2009).

Most recently, we saw widespread fear in the United States during the Ebola outbreak. Hospitals were required to initiate training and treatment protocols, public health agencies published information for

citizens and grappled with quarantine regulations, while the public sought trustworthy sources of information. This underlines the importance of identifying and utilizing effective methods for communicating risks to the community.

The urgency of this report concerning pandemic preparedness rests on the emphasis on resilience. Moreover, given that resources are limited in the wake of an emergency, it is increasingly recognized that communities will be required to be without support and on their own for a period of time after the onset of an emergency. This suggests that the communities' resilience will be impacted beyond normal day-to-day outcomes.

In relation to infrastructures, GAO, (2009) suggests that while a pandemic will not directly impact the physical infrastructure(s) such as computer systems and power lines; the concern lies in removal of essential personnel needed to operate these essential systems in the workplace. During pandemic outbreaks, absences from the workplace are attributed to illness, and the need to care for family members. Thus, it will diminish the human resources throughout infrastructures.

While resilience is a relatively new public health term, it captures and expands upon many traditional themes in emergency preparedness, and general health promotion. In the context of today's resource-limited environment where efficiency is critical, communities can identify and leverage the activities that are currently in place thereby building resilience.

Methods

The data for the project (DPH 2011) came from the following sources: Telephone survey of residents in San Patricio County (initial sample); and in-person survey collected in San Patricio County through door-to door solicitation in selected communities (expanded sample).

For the purpose of this project, a community survey of residents located throughout San Patricio County was necessary to obtain information about the general and pandemic preparedness efforts of residents within San Patricio County, as well as to identify the most effective means of communicating the risks posed by pandemic influenza.

The initial plan was to conduct a telephone survey only based on a listing of home telephone numbers. Early data collection was skewed towards an older population sample. Close scrutiny determined that an afternoon/early evening telephone survey contacted a disproportionate number of retirees. There was also the tendency for younger persons to forego a landline telephone in favor of a cellular instrument. In an effort to include more young people and families in the sample, a field survey was added. The first plan was to query shoppers at a local department store and a large grocery store in Portland, Texas. The grocery store was not amenable to the plan and the department store required a lengthy approval process. In an effort to collect additional data in a timely manner, family-oriented neighborhoods in Portland, Sinton, Odem, and Ingleside, Texas, were selected for field surveys by the Principal Investigator

and the Manager of the San Patricio County Health Department.

For the telephone and field surveys in San Patricio County, a survey instrument of 45 mostly closed-ended questions was developed. The survey instrument was comprised of six sections (DPH 2011).

Introduction. This section asked the respondents if they were over the age of 18, a resident of San Patricio County, and willing to voluntarily participate in the study.

General Level of Emergency Preparedness. Comprised of 11 questions, this section asked respondents about their overall level of individual preparedness in the event of any type of disaster.

Emergency Preparedness for a Pandemic. The third section consisted of 16 questions that asked respondents about their overall knowledge about pandemics and their current preparedness efforts. It also included questions on the respondents' ability to care for themselves or others in the home during a pandemic

Sources of Information. This section asked respondents about whom they would trust for information in the event of a national health crisis such as a pandemic. It also asked questions about the ways people communicate in a disaster and methods of getting information from authorities.

Demographics. This section asked respondents basic demographic information such as sex, race/ethnicity, education, age, number of children and adults in the household, employment status and annual income.

Future Contacts. The last section asked

respondents for their name, address, phone number and e-mail so they could be contacted in the future.

Results

Of the 3,000 telephone listings, 2,914 were dialed; of these, 222 completed surveys were collected. 215 in-person field surveys were collected for a total of 437 completed surveys. In this sample of San Patricio County residents, 58% of the respondents were white and 38.3% were Hispanic. Respondents to the telephone and field surveys included 67.8% females and 32.2% males. In addition, 72.4% of the sample was 51 years of age or older. Regarding annual income, 21% of the respondents reported incomes between \$10,000 and \$40,000, 13.9% reported incomes between \$41,000 and \$70,000, and 17.7% reported an income of over \$70,000. With respect to education, 28.1% completed high school, 24% had some college (1-3 years), 24% received an undergraduate degree, and 9% had completed graduate degrees.

In the San Patricio County study, three fourths or more of the respondents indicated that they had critical items in the preparedness inventory. For example, 77.9% reported they had a 3-day supply of non-perishable food, 78.5% reported they had a disaster supply kit, 84.9% reported they had a 3-day supply of medication and medical equipment, and 83.7% stated they had secured important documents and records. These results are higher than that reported in other national studies.

To effectively prepare for a pandemic, individuals must be aware of the threat to

public health posed by an influenza pandemic. The first question asked in section 3 was, "Are you familiar with the term pandemic flu?" Sixty percent of the San Patricio County respondents affirmed that they were familiar with the term while 34.3% said they were not. This underlines the need for a more effective method for communicating risk.

In the study, three-fourths or more of the respondents indicated that they had critical items in the pandemic preparedness inventory. For example, 94.4% reported they had medicine for fever, 87.7% reported they had a thermometer, and 63.9% reported getting flu vaccines in the past year. In the national *Pandemic Influenza Survey* completed in 2006 by the Harvard School of Public Health Project, 84% reported they had medicine for fever and 83% reported they had a thermometer. The higher number of resources reported by San Patricio County residents could be due, in part, to the socio-economic status and age distribution of the sample.

In the area of knowledge, 73.4% respondents in San Patricio County reported that they knew at what temperature a child required medical attention if he or she had a fever, 84.7% reported they were aware of the symptoms of a person with the flu, and 91.6% reported that they were aware that hand-washing was the best preventive measure against the flu. About one-fifth of the San Patricio County residents did not know at what temperature a child or an adult needed medical attention in the event of a fever. This information is critical in order for individuals, particularly children,

to be diagnosed early and receive proper medical attention.

Additionally, in San Patricio County, 82.4% of the respondents reported that they were prepared to take care of members of their household for 7-10 if they became sick, and 80.7% reported that if they were sick with pandemic flu and had to remain at home for 7-10 days that they had someone who would care for them. Care taking for sick family members could be a challenge for some residents (43.7%) who reported that they did not have sick days at their place of employment.

In this study, 63.9% of the San Patricio County respondents reported that they had received seasonal flu vaccines. This higher response rate in San Patricio County is probably due in part to the number of older adults that were in this sample.

In San Patricio County, among those respondents with children, 38% reported that their children had received a seasonal flu vaccination in the past year. This low rate of vaccination among children should concern local health officials given the health risks associated with influenza in children.

When asked, "If there were an outbreak of pandemic flu in your community, how much would you trust the following sources to give you useful and correct information about the outbreak?", respondents (83.9%) reported that they trusted their doctor or health care professional a lot; 52.4% reported that they trusted the local or city or county public health department a lot, and only about one

third (32.3%) reported trusting elected leaders in the community a lot. In fact, 15% of the respondents reported that they did not trust elected leaders in the community at all. Regarding the news media as a source of information, 39.4% reported that they trusted this source a lot and 38% reported some trust in the media

Though results for San Patricio County have shown that the sources of information respondents trusted the most are limited (usually only their doctor or local public health department), they reported that their main method of getting information from authorities in a large scale disaster or emergency was from television (68.4%).

Discussion

In many areas, the preparedness level among San Patricio County residents exceeded the national averages. There could be a number of reasons for this high level of household preparedness among respondents. First, a significant number of the respondents in this study were older white men and women. Previous studies have shown well-educated older men and women tend to be better prepared for emergencies than other age groups, such as young mothers. Second, barriers to preparedness include lack of time or money. In preparedness research, individuals with higher incomes are less likely to cite cost as a barrier and are more likely to report that they are very well or somewhat prepared for a disaster, including a public health crisis. In this study, 31% of the respondents reported an

income of over \$41,000 and a significant number reported they were retired. Third, the research was conducted during Hurricane Season in south Texas, thus, people are more aware of the importance of preparedness. In fact, there were on-going educational campaigns utilizing highway signs, television public service announcements, the distribution of brochures, and preparedness conferences to educate the public on the importance of disaster preparedness particularly in the event of a hurricane. Finally, given the age of many of the respondents, it is likely they have experienced a disaster before such as a tropical storm, hurricane, flood, or drought in this region.

Further, with appropriate training, community-based risk communicators would be well positioned to provide information tailored to local cultural norms. Therefore it is important to understand the main methods of communication within the population and to target those when timely communication about health emergencies is needed. As our survey results showed, the main method of communication with friends or relatives is the cell phone (84%) while the main method of obtaining timely information was television, knowing this can improve the chain of communication between authorities and the population.

Additionally other factors to consider when communicating in health emergencies are:

- Be honest, frank, and open.
- Coordinate and collaborate with other credible sources.
- Understand that trust is built as a

process of giving information on a timely manner, even though the circumstances may change.

- Consider community-based approaches for delivery of information, as these are the best methods to give a culturally competent message.

According to the report, Public Health and Disaster Preparedness of Vulnerable Populations in Houston (2009) page 3, residents seek preparedness plans “that are community-specific, delivered through local and trusted sources...and suitable for people of limited means and resources.” There was mention of utilizing neighborhood-based schools and churches as avenues for disseminating information.

Findings from the San Patricio County research also identified levers of community resilience that included some of the following (TDH 2011):

- 1. Wellness**-Promote pre- and post-incident population health including behavioral health.
- 2. Education**-Ensure on-going information to the public about preparedness, risks, and resources before, during and after a disaster.
- 3. Engagement**-Promote participatory decision making in planning, response and recovery activities.

For each of these levers, specific activities can be initiated by state and local entities as a way to build community resilience in the event of a national health emergency. Of particular importance, according to the Houston report, resilience is related to support from families and immediate neighbors. It is imperative that county health officials implement programs

to strengthen all portions of their communities and neighborhoods.

County assessments can provide officials with a sound basis for revising and improving disaster preparedness programs. Honing data collection methods to address specific audience demographics is a key to

effective research in this area. Utilization of telephone surveys, field interviews, and electronic questionnaires are potential methods for evaluating the preparedness of communities thereby providing officials with the data needed to improve current programs and initiate sound plans for the future.

Acknowledgements: We gratefully acknowledge support provided by the San Patricio County Department of Public Health which funded this study in accordance with the contractual agreement between the said Department and the Social Science Research Center, TAMUCC, College of Liberal Arts. We also acknowledge the co-principal investigator, Linda Kilz, Ph.D., and the graduate research assistants Diana Fonseca, Paola Munoz, and Christina Rodriguez. The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the acknowledged agencies.

References

1. San Patricio County, Department of Public Health. (2011). San Patricio County Pandemic Preparedness Assessment, 2011. The Social Sciences Research Center, Texas A & M University-Corpus Christi
2. MacDonald et al., 2013 Goldie MacDonald, a Ann C. Moen, b Michael E. St. Louis. DOI:10.1111/irv.12218 www.influenzajournal.com
3. Center for Disease Control. CDC *Estimates of 2009 H1N1 Influenza Cases, Hospitalization and Deaths in the U.S., April-November, 2009.*
4. Pandemic Flu Information, State Continuity Forums. *Nueces, San Patricio Counties Report 1 H1N1 Death.* November 6, 2009. http://www.swineflu.org/forum_posts.asp?TID=31014.
5. GAO, (2009 INFLUENZA PANDEMIC. Continued Focus on the Nation's Planning and Preparedness Efforts Remains Essential GAO-09-760T
6. Harvard School of Public Health Project. *Pandemic Influenza Survey.* 2006. www.hsph.harvard.edu/panflu/panflu_release_topline.doc
7. Public Health and Disaster Preparedness of Vulnerable Populations in Houston (2009)
8. Telford, Rosie, and Anne Rogers. "What Influences elderly peoples' decisions about whether to accept the influenza vaccination? A qualitative Study." *Health and Education Research* 18, no. 6 (2003): 743-753.
9. Maurer, Jurgen, Harris, Katherine, and Parker, Andrew. "Does receipt

- of seasonal influenza vaccine predict intention to receive novel H1N1 vaccine: Evidence from a nationally representative survey of U.S. adults." *Vaccine*. 27 (2009): 5732-5734.
10. Ahern, Jennifer, Sandro Galea, Alan Hubbard, and Adam Karpati. "Population vulnerabilities and capacities related to Health: A test model." *Social Science and Medicine*, 2008: 691-703.
 11. Heinz Center for Science, Economics, and the Environment. *The Hidden Cost Coastal Hazards: Implications for Risk Assessment and Mitigation*. Washington D.C: Islander Press, 2000.
 12. Lofgren, Eric T., et al. "Disproportional effects in populations of concern for pandemic influenza: Insights from seasonal epidemic in Wisconsin, 1967-2004." *Influenza and Other Respiratory Viruses*, 2010: 205-212.
 13. Peek, Lori. "Children and Disasters: Understanding Vulnerability, developing capacities, and promoting resilience." *Children Youth and Environment*, 2008: 1-19.
 14. Xu, Jiaquan , Kenneth D. Kochanek, Sherry L. Murphy, and Betzaida Tejada-Vera. *Death: Final Data 2007*. National Vital Statistics Report, U.S Department of Health and Human Services Center for Disease Control and Prevention, 2010.
 15. Phillips, Brenda D., Deborah S.K. Thomas, Alice Fothergill, and Lynn Blinn-Pike. *Social Vulnerability to Disasters*. Boca Raton: CRC Press, 2010.

