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Communicating the Risks of Bioterrorism and Other Emergencies in a Diverse Society: A Case Study of Special Populations in North Dakota

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In the event that terrorists use air, water, or food to deliver destructive agents to civilian populations, some groups and populations may be disproportionately at risk and have unique communications needs. Bioterrorism represents an even greater national public health threat if the nation's preparedness and readiness plans do not address the needs and perspectives of, for example, low-income residents, racially and ethnically diverse communities, and other "special populations." The objective of this study was to develop communications strategies to reach special populations in North Dakota before, during, and after a bioterrorism attack or other crisis. To achieve the study objectives, the investigators used telephone interviews and telephone focus groups with organizations that represented special populations. Areas of inquiry included attitudes and concerns about crises, sources of information used and those identified as most credible, methods to reach people during a crisis event, and awareness of and attitudes about the agencies and organizations that affect risk communications.

SEVERAL HIGH-PROFILE EVENTS over the past decade, including the anthrax attacks in the United States during the fall of 2001, have revealed significant civilian vulnerability to the intentional use of chemical, biological, radiological, nuclear, and explosive devices (CBRNE) as instruments of terrorism.[1,2] Some experts anticipate that use of CBRNE weapons may increase in the near future, and they speculate that these acts are more likely to occur than other kinds of attacks currently given priority by policymakers, such as the detonation of a nuclear device.[3,4] CBRNE weapons may be aimed at noncombatants and may use the environment or food sources as a delivery system for disease agents, chemical toxins, or radiation, or they may directly target natural resources for destruction.[3]

In a report released by the General Accounting Office in 2003, experts highlighted the attractiveness of chemical plants as "soft targets" for terrorists and noted the seriousness of our vulnerability in this area.[4] Thousands could be threatened by one chemical release into the atmosphere following a deliberate destructive act at an industrial facility.[4]

Realizing the urgent need for adequate preparedness for these emerging threats, the U.S. has begun to develop contingency plans to safeguard public health.[5] The Environmental Protection Agency (EPA), the Agency for Toxic Substances and Disease Registry (ATSDR), and other federal and state regulatory bodies are guided by existing laws and pending legislation (e.g., the Model State Emergency Health Powers Act) to clarify their role,

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authority, responsibilities, and powers to compel in the event that CBRNE weapons are used.[4,6–8]

Risk communication principles and practices apply to nonemergency events as well and can be grouped into one of three broad categories: (1) disease prevention related to health risk behaviors,[9,10] (2) occupational and environmental exposures to toxic chemicals, and (3) product safety and consumer protection.[11] Although risk communication is often associated with an exposure resulting in later development of cancer or other chronic diseases, it also applies to potentially acute or catastrophic situations, such as the risk of explosion or injury.

Risk communication also can be used in other public health arenas such as vaccine safety or the potential risk of infectious diseases (e.g., risk of polio or HIV transmission and infection). In addition to risk communication, HIV/AIDS prevention has drawn on a broader set of communications tools and strategies, such as behavior change theory, social marketing, and health literacy. This integrated approach recognizes that before they can reduce their risk and vulnerability to HIV, individuals and communities need to understand the urgency of the epidemic. They need to be given basic facts about HIV/AIDS, taught a set of protective skills, and offered access to appropriate services and products. They also must perceive their environment to be supportive of changing or maintaining safe behaviors.[12]

DEFINITIONS AND MODELS

The many terms used in the subject area of risk can be confusing. For the purposes of this study and in the context of disaster preparedness and response, *special populations*—also referred to as *high-risk, at-risk, vulnerable*, or *special needs populations*—are defined as groups whose needs are not fully addressed by traditional service providers or who feel they cannot comfortably or safely access and use the standard resources offered in disaster preparedness, relief, and recovery. They include but are not limited to those with physical or mental disabilities (e.g., blindness, deafness, impaired hearing, cognitive disorders, mobility limitations), people who do not speak English or whose English is limited, people who are geographically or culturally isolated, those who are medically or chemically dependent, homeless people, frail/elderly people, and children.[13]

Risk communication is defined as the interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk as well as other messages that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management.[14]

Risk communication is based on four theoretical models that describe how risk information is processed, how risk perceptions are formed, and how risk decisions are made during high-stress events.[15,16] Briefly, the models include: (1) the Risk Perception Model, which describes the many issues that determine people's "levels of concern, worry, anger, anxiety, fear, hostility, and outrage, which, in turn, can significantly change attitudes and behavior"; (2) the Mental Noise Model explains how, in a heightened state of stress and fear, people can have difficulty receiving and understanding information clearly; (3) the Negative Dominance Model suggests that in stressful situations, people tend to pay more attention to negative information than positive information; and (4) the Trust Determination Model explains that trust, developed over a period of time, is necessary to allow risk communication strategies to work.

RISK COMMUNICATION, CULTURAL DIVERSITY, AND MANAGING THE TERRORISM THREAT

Strategies for risk communication are essential for effective actions and the protection of public health in the event that terrorists use air, water, or food as the vehicle for delivering destructive agents to civilian populations.[17–19] New federal and state laws to strengthen the public health response to unconventional threats have a strong and explicit requirement for clear communication with the public.[8] For example, the Centers for Disease Control and Prevention's (CDC) Terrorism Preparedness and Response Strategy provides the national public health strategy for terrorism preparedness, response, and public communications.[20] In addition, this strategy provides a comprehensive framework of CDC's vision, mission, strategic imperatives, critical objectives, and key actions that will guide not only the CDC, but also the greater public health community to achieve readiness and effective risk communication.

The CDC recognizes that achieving readiness for terrorist attacks is very complex. However, the agency has worked for many years to identify, diagnose, and treat many of the diseases and health consequences associated with today's terrorist threats. The core competencies of public health, including risk communication, that have driven their mission in the past now provide the foundation for their renewed effort to protect the public's health from terrorist attacks.

Beyond these legal obligations and mandates, and perhaps far more important, is the need to maximize, through risk communication, the public's capacity to act as an effective partner in containing an incident of biological or chemical terrorism.[21] Effective risk communi-

cation facilitates successful execution of a rapid coordinated response and is not merely desirable but essential for risk management and informed decision making.[1,22]

A significant act of terrorism requires the mobilization of large numbers of civilians, and the public can be a valuable asset in implementing plans to minimize the destructive consequences of such actions.[21] However, this requires overcoming the considerable challenges of successfully engaging diverse groups who may display a range of emotions, appraisals, decisions, and behavioral responses to acute and significant risks.[23–25]

Some historical experiences with smallpox in the U.S. suggest that with appropriate communications and planning, communities can be successfully engaged as an active partner to manage a public health emergency.[26] However, history also tells us that the government-public relationship is fragile during crisis situations, and trust in the government's ability to fairly and effectively manage a public health emergency or infectious disease outbreak can easily be lost with a few missteps, leading to considerable social disruption.[26]

The events of September 11 and the subsequent bioterrorist attack on our nation through the mail delivery system proved how difficult it is to provide clear and consistent information to affected individuals, to the professionals who must come to their aid, and to the public.[27] The communication surrounding these events was often inconsistent, inadequate, or late.[28,29] This hampered community, state, and national responses to the threats and led to widespread public confusion.[27] Moreover, the lack of credible information fractured the public's trust in the very leaders and organizations responsible for ensuring their health and safety. These unintended consequences illuminate the need for clear strategies, enhanced coordination, focused training, and the right tools to effectively communicate with all communities about unconventional and emerging public health threats.

WHY DIVERSITY MATTERS IN MANAGING THE RISK OF TERRORISM

Today, as the nation is forced to think about ways its civilian populations may come under attack, it also must be concerned about responding strategically to specific groups and populations who may be disproportionately affected by CBRNE weapons. Chemicals and diseases used as weapons will represent an even greater national public health threat if new preparedness and readiness plans do not address the needs and perspectives of lower income communities and racially and ethnically diverse populations. Because biological and chemical weapons and emerging public health threats are blind to economic differences, race, and ethnicity, it is important to consider their impact on underrepresented groups, urban dwellers, and low-income populations.

Poverty, inadequate housing, malnutrition, and immune suppression are often the fabric of economically deprived communities and the unfortunate catalysts for the spread of disease.[30] Once such an outbreak occurs in these groups, affected individuals who live there could quickly overwhelm emergency rooms and hospitals, especially when many may not have adequate medical insurance or regular access to a private physician.[2,17,31]

NORTH DAKOTA GEOGRAPHY AND DEMOGRAPHICS

The demographics and geography of North Dakota present significant challenges in terms of communicating with special populations during an emergency. North Dakota is a large state—70,704 square miles—with a relatively small population of about 640,000 people. Of the state's 53 counties, 36 are considered "frontier counties," having fewer than 6 people per square mile.[32]

Most of the state's residents are of German (282,000) or Norwegian (193,158) heritage. However, the population also includes about 31,000 Native Americans, many of whom live on one of four reservations. In addition, about 12,000 people are immigrants, including Bosnian, Somali, and Kurdish refugees. About 38,000 people speak a language other than English, and, of those, about 11,000 speak English less than "very well." The population also consists of more than 94,000 senior citizens (older than 65) and nearly 98,000 people who have disabilities.[32]

The majority of North Dakotans rely on the mass media to receive information during an emergency. However, cultural, language, age, or disability barriers may limit the ability of many of the state's special populations to either receive or understand that information.

METHODS

This article summarizes the major findings of a Special Populations Study conducted for the North Dakota Department of Health (NDDH) by the Consortium for Risk and Crisis Communications. Phone interviews were conducted with special populations, and telephone focus groups were conducted among representatives of not-for-profit organizations who represent or work closely with special populations.

Telephone Survey

A random, census-balanced telephone survey (random-digit dialing) of approximately 15 minutes was con-

ducted among 257 residents of North Dakota defined as belonging to a "special population." Respondents were designated as special populations if they met specific criteria, based on their answers to a number of self-selected screening questions:

- Seniors: respondents 65 years of age and older ($n = 120$)
- Rural residents: lived in rural areas of the state as defined by U.S. Census data ($n = 166$)
- Non-English-speaking residents or residents who said English is not their native language and/or those who said, "I was born in a country other than the U.S." ($n = 45$)
- Native American residents ($n = 72$)
- Disabled residents: answered yes to the question "Are you disabled?" ($n = 45$)
- Hard-of-hearing residents: answered yes to the question "Are you hard of hearing?" ($n = 45$)
- Residents with poor eyesight: answered yes to the question "Do you have problems seeing?" ($n = 51$)
- Homebound residents: said they "live alone and have trouble getting out" and/or "I am homebound and rely on others for transportation." ($n = 88$)

The researchers appreciate that telephone surveys are not the most effective way to reach these special populations, because of language barriers, access, and other factors. But the usefulness of the telephone survey is that it allowed us to establish benchmarks—such as concern about terrorism and awareness of public health resources—that could not be obtained using qualitative research. The results of the survey are therefore directional, and in the report we offer only aggregate percentages when providing statistics or answers to questions.

Telephone Focus Groups

Telephone focus groups are a cost-effective way of canvassing the views of professionals who provide services to and interact regularly with special populations. These professionals include officials who work at not-for-profit advocacy organizations and local public health officials in areas where special populations live. These officials have firsthand experience communicating with special populations and can offer keen insights on what risk communications strategies are effective. Four telephone focus groups were conducted with representatives of special populations in North Dakota.

The steps taken to identify and recruit participants to the focus groups are as follows:

- The North Dakota Department of Health provided Widmeyer Communications with the names and contact information of public information officers who represented all regions of North Dakota.
- Widmeyer contacted the public information officers and asked them to identify any organizations that represented or advocated for the following special populations (Widmeyer also conducted secondary research to identify organizations):
  - ➢ Native American residents
  - ➢ Spanish- and Bosnian-speaking residents
  - ➢ Migrant workers
  - ➢ Refugees
  - ➢ People with disabilities
  - ➢ Senior citizens (both residential and in assisted living)
- Widmeyer prepared an invitation letter requesting participation in a 90-minute telephone focus group. Participants were given a choice of three time slots.
- Twenty people participated in the groups (five in each of four groups). All represented one or more of the special populations listed above.

Conclusions are discussed in greater detail in the following pages. Results from both the telephone survey and telephone focus groups are integrated into each conclusion.

DATA ANALYSIS

Widmeyer ran cross-tabulations on quantitative data to produce distributions on each question for each distinct special population to determine if there were significant differences in responses. Our method of analyzing the results of the telephone focus groups was content-based; we read typed transcripts for each group to identify trends and qualitative feedback or "quotes" to support them. We did not use commercial software for content analysis because of the small number of groups but would recommend this for others who survey a larger number of groups.

RESULTS

Low Level of Concern about Terrorism

Terrorism and bioterrorism are not top-of-mind concerns among North Dakota's special populations. The "it won't happen here" attitude is a significant obstacle in communicating about this issue.

Survey results indicated that special populations are not very concerned about terrorism. Concern for terrorism as a public health threat is lower than concerns about dangers to the water supply, air quality, and the possibility of a disease spreading (see Figure 1).

Survey results also indicated that special populations think terrorism is unlikely to occur in North Dakota.

How concerned are you about each of the following public health threats? (% answering "a great deal")

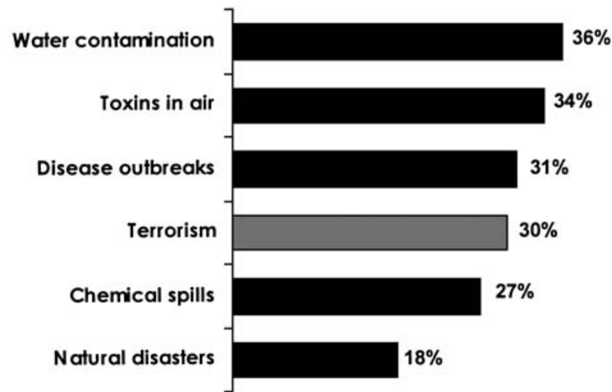

FIGURE 1. LOW LEVEL OF CONCERN ABOUT TERRORISM IN STATE

Only a small percentage of special populations said they have given a "great deal" of thought to the possibility of a terrorist event occurring in North Dakota (Figure 2).

Participants in the telephone focus groups who represent or work closely with special populations say that the attitude that "it won't happen here" is an obstacle in communicating about terrorism.

> "Bosnian refugees are not concerned about terrorism, because, first of all, the United States is their oasis of peace. And they came here because [they] were looking for something different, for something peaceful and secure. And they are not even thinking about the possibilities of anything happening here."

> "We are conducting a series of training spots on homeland security and possible terrorist attacks. We present this information to our senior companions or volunteers, who, in turn, share that information with their senior friends. They don't think about bioterrorist attacks or any kind of attacks."

> "I think most migrant workers feel terrorism is the 9/11 event in our capital, New York, and Pennsylvania. They do not know what bioterrorism is."

Special Populations May Face Unique Risks

Participants in the telephone focus groups who represent or work closely with special populations say that special populations often face unique risks, which must be addressed in communications.

Senior citizens can be reclusive

> "I see in the elderly that they tend to maybe hibernate more, due to fear of catching an illness. You hear from a lot of them that the reason they don't take the flu shot is because they're afraid they're going to get the flu. They may avoid public meetings that they should be going to because of the fear of catching something."

Migrant workers exposed to crop dusting

> "I feel the migrant worker population on farms would be at greater risk than the general public with regard to terrorists who would spray the fields with toxins. Farm workers would assume that crop dusting is occurring, as it is not unusual for them to be affected by pesticides."

Refugees view America as a safe haven

> "If we faced a biological attack, the helplessness they would feel due to language and access issues would cause them to begin to panic very quickly. Most of the refugees that I work with do not express any concerns over terrorism. They believe that the United States is powerful enough to protect them from attacks. If this belief is shattered due to actual attacks, this population may well have a severe reaction."

Native Americans live in close-knit communities and can be fatalistic

> "Because Native people, American Indian people [often] . . . live [with] extended families, . . . I don't think that there is a real recognition about how often biological disease can be transmitted across human beings in a very close setting."

> A representative for this special population spoke of a response to the smallpox threat. "One Native American said to me: 'I'm old and because it's so devastating there isn't a chance for me.' It is almost a fatalistic idea that we're not going to be saved because there are just too many of us."

Where to Get Information

Survey results indicated that North Dakota's special populations do not know where to turn for reliable information on terrorism (Figure 3), but they are interested in having information before an emergency and want to

How much thought have you given to the possibility of a terrorist event in North Dakota?

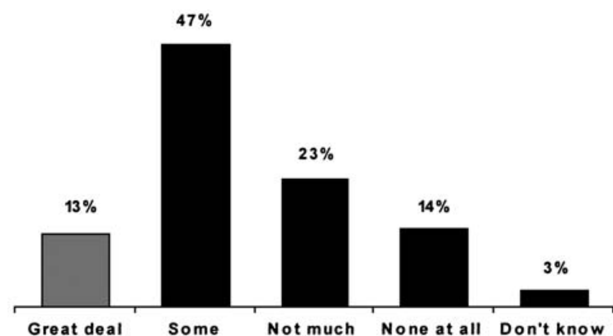

FIGURE 2. "IT WON'T HAPPEN HERE" ATTITUDE

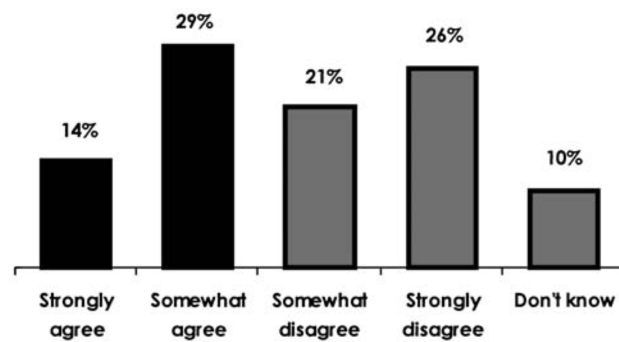

FIGURE 3. DO NOT KNOW WHERE TO TURN FOR RELIABLE INFORMATION ABOUT TERRORISM

know about what actions to take during a terrorist event, just in case there is one (Figure 4).

Participants in the telephone focus groups who represent or work closely with special populations agreed that special populations would want information before an emergency occurs and that special populations need to be informed about terrorism.

> "If [terrorism] is presented to them, and if it's given as an option of happening, I'm sure the biggest concern would be what to do with a situation like that. Because lack of knowledge is the biggest fear of Bosnian refugees."

> "When you present information to seniors it sounds very real to them, and then they start to think about it. When you present information, . . . they start to think about possible serious threats to safety and want to know more."

Helping the Community Is a Strong Motivator

"Helping my community" was the strongest motivator for seeking out information on bioterrorism and fits well with the unique characteristics of different special populations. Survey results indicated that "to know how I could help my community" would motivate special populations most to seek information about a terrorist event (Figure 5). It is worth noting that "to feel safe from harm" was chosen as the message to test instead of "to protect my family." Previous polling among the general public about health emergencies indicates that this protection message resonates with people, but it is considered to be practical and simple common sense, as opposed to an effective call-to-action.

Participants in the telephone focus groups suggested that a "help your community" message would fit well with some of the unique features or attributes of North Dakota's special populations.

> "The view of Native Americans is 'our families are not just mothers'—you know, the nuclear family, but extended family as well—the community. And how do you protect them?"

> "Again, migrant farm workers do not feel they are part of the community. A community message might be the way to engage this special population."

Obstacles to Communication

The North Dakota Department of Health faces a variety of obstacles in communicating with special populations, including a lack of trust in government agencies, low awareness of the department, and various cultural differences. But research indicates that the most pressing problems in general communications are that the department does not use language people understand and it is not taking advantage of existing communications networks.

Survey results indicated that special populations can be suspicious of information they receive from the government about health emergencies (Figure 6). Participants in the telephone focus groups also acknowledged this sense of distrust and traced it back to several reasons.

> "Some of them would probably still say no to a public health worker doing door-to-door immunizations. They just wouldn't trust having the immunization [from a representative of the government]."

> "Communication from folks not known by Hispanic farm workers may be ignored, not because the families are rude or lack trust, but they may not feel the data is meant for them. Some folks have had poor experience with government programs and would not access services."

> "Lack of trust in government sources is, first of all, because of the confusion. There are different people that are going to come out and say different things about the

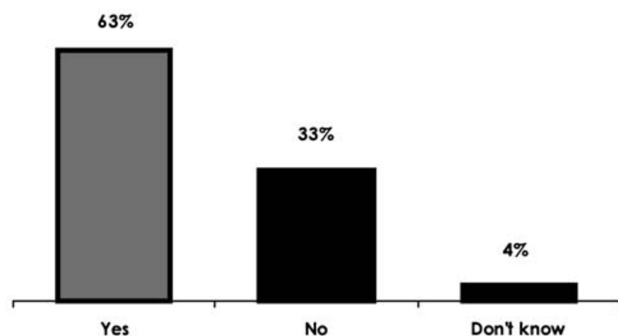

FIGURE 4. WOULD LIKE TO HAVE INFORMATION

Which one of the following would motivate you to seek more information about a terrorist event?

FIGURE 5. NEED FOR MORE INFORMATION

> same issue. And I'm talking about guidance specifically. Bosnian refugees do come from a country [where] government wasn't really truthful."

The lack of familiarity with both the North Dakota Department of Health and the local department of health is a major reason NDDH faces challenges in communicating with special populations. Survey results indicated that special populations have a low level of awareness of either the state or local health department: Only 16% are very familiar with NDDH, and only 25% are very familiar with their local health department (Figure 7).

Survey results also indicated that special populations have had few dealings with health departments at the state or local level: 76% of special populations have had no dealing with NDDH, and 66% have had no dealing with their local health department.

Participants in the telephone focus groups who represent or work closely with special populations say special populations are not familiar with the North Dakota Department of Health or other health departments or do not normally use their services.

> "Migrant and seasonal farm workers do not receive North Dakota Department of Health communications, as the information is in English. Unless a medical condition would prohibit the farm worker from working, they would not access services from public health. Prevention oriented services are not accessed on a general basis."

> "I would say that communication between any North Dakota agencies and Bosnian refugees is very limited to what they hear from friends that speak their language or friends that are English-speaking and get in contact with them more."

> "Refugees would not turn to public health in an emergency, as I would venture to guess that the farm workers would not know where the office was, there would not be the language skills to access public health, and hours of the office, etc."

Language Difficulties Most Important Problem

The telephone survey among special populations did not ask respondents about the importance of language barriers in receiving communications from the North Dakota Department of Health. However, there was nearly universal agreement among participants in the telephone focus groups who represent or work closely with special populations that language barriers—people not understanding English or not fully understanding what they were being told—was the most pressing problem.

> "First of all, the Bosnian people here are not very good in English, of course. And academic English—that is definitely out of reach for more than half of the residents here."

A telling example was in the misunderstanding Bosnians, even those fluent in English, had about the national preparedness or "duct tape" announcements.

> "First of all, 90 percent of Bosnian refugees thought that issue shown on TV is wrong. Because they don't understand and only use tape on windows or a glass surface in Bosnia to protect from glass shattering in the case of grenades and stuff. And like I said, the best way of reaching out to the Bosnian people is to basically have something written in their native language to explain to them how to use specific things, when to use them, and why we suggest using it."

> "Many Native Americans do have telephones and they do have radios, but I think sometimes they're not geared linguistically for that population. If there is some semblance of a Native voice that speaks in that language or draws the attention, the vernacular, I think that sometimes it's much more understood."

> "Migrant and seasonal farm workers do not receive ND Department of Health communications as the informa-

Are you concerned or suspicious about information you would receive from the government about a major health emergency?

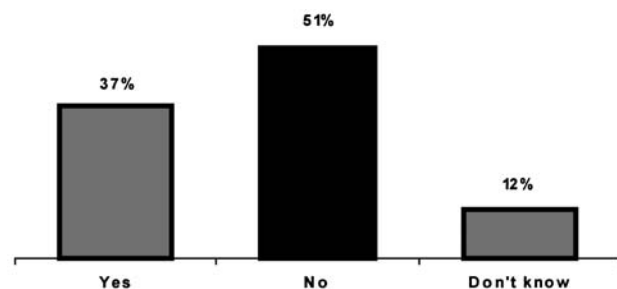

FIGURE 6. LACK OF TRUST IN GOVERNMENT AGENCIES

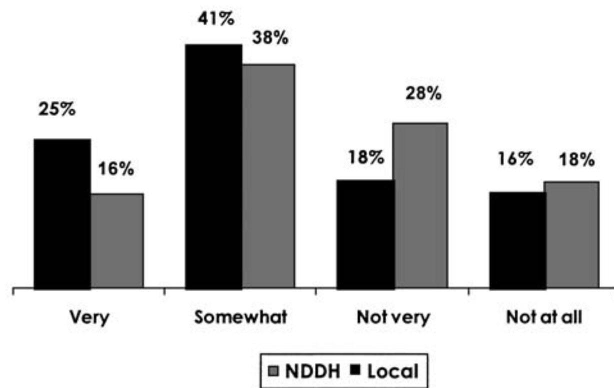

FIGURE 7. LACK OF FAMILIARITY WITH THE DEPARTMENT OF HEALTH

> tion is in English. Communications are often done through the radio or TV, and if it is not done in their first language, on a station the families watch or listen to, it will not be received."

In reply to many of the communications obstacles described above, participants in the telephone focus groups who represent special populations suggested the Department of Health needs to strengthen relationships with individuals and organizations who already have the means to reach special populations.

> "I think if they use Native press and the Native news networks, I think that would help make those public announcements more meaningful. To build trust in the Native community, you have to have somebody who can go in there and be visible and can build an infrastructure support. There are different networks of communication, as someone suggested . . . —you just have to find them."

A migrant worker representative suggested the Department of Health work more closely with Migrant Health:

> "We have health center activities in both North Dakota and Minnesota."

> "I think it all boils down to individual agencies need to develop plans that filter down to the population that they're responsible to. Just kind of getting the main players together and talking through some of these things I think would be a good best practice."

Local Spokespersons and Understandable Messages Are Key

Findings suggest that traditional media can be effective, but local spokespeople and understandable messages are the real keys to successfully reaching special populations. Survey results indicated that special populations may turn to traditional media for information about a terrorist event (Figure 8).

When asked in the telephone survey what would be the best method to reach them during a terrorist event, a large majority of special populations surveyed said by phone (63%); local news was second at 15%. So, although they turn to traditional media for information, special populations want to be kept up to date about developments over the phone. *Our interpretation of this response is that people want to hear from people they recognize and understand over the phone and not necessarily that the telephone is the best method for the Department of Health to use in reaching special populations*. This interpretation is based on research that shows that people typically identify the phone "top-of-mind" as a preferred communications tool but then qualify it by saying that they need to trust the person making the call.

Participants in the telephone focus groups emphasized that local, familiar spokespeople and messages that are understandable are the keys to effective communications, not traditional media or phone.

Traditional media

> "If it is not done in their first language, on a station migrant worker families watch or listen to, it will not be received. We are finding that a lot of the migrant workers do not listen to local radio stations, due to language differences and music they are not interested in. With regard to TV, a lot of the folks have satellite dishes, so they can get Spanish programming [that] does not cover local or even regional information."

> "Bosnian refugees do watch television, they do have radios, [and] they do have phones. But most of the people

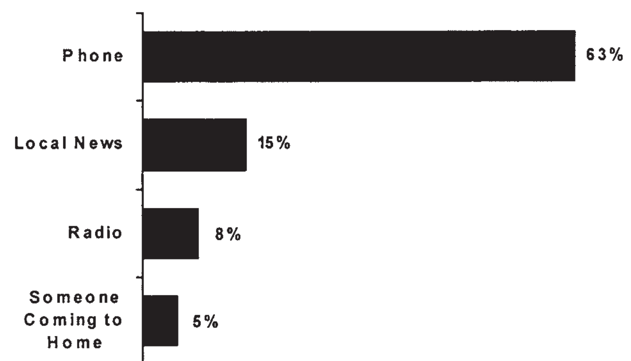

FIGURE 8. TRADITIONAL MEDIA CAN BE EFFECTIVE IN SOME CASES

> here are employed, and they work more than one job. TVs are not really acceptable to them because of the lack of understanding."

Phone

> "Many refugees do not speak English and will simply hang up on you if you are not speaking their language. If the local groups could develop a phone tree system, I think that would address a couple of the problems. The leaders [could] call selected community members who, in turn, [could] pass on the information to the members on their lists."

> "Telephone contact will work with some migrant farm workers, but not the majority. Probably the best method by phone would be to call and work through Migrant Health, as we do try to get a friend or grower's number in the event of an emergency and update information each time a person comes to our office."

Use familiar spokespersons and nontraditional outreach

> "Department of Health can reach farm workers in focus groups after church [Spanish masses are held throughout the year in a number of communities in the Red River Valley]; work with the Spanish radio stations to do public service announcements; [and] share materials with agencies and businesses which serve farm workers."

> "To demonstrate a point, recently we were concerned about West Nile in the Native American community. It's not only the visual message, the voice message, and the voice recognition of a Native voice that people could hear, but also the location. This was delivered at a pow-wow, where you would have thousands of people in attendance—you know, at large events or events where people come encouraging to protect the elders who may or may not be aware of the dangers of something like West Nile. So those are emergency notices and statewide communications that really need to take into consideration not only the image, the voice recognition, but also the location."

DISCUSSION

Bioterrorism can result in widespread fear, outrage, and elevated risk perceptions, resulting in intense pressure on government officials to "do something." Poor communication can result in at-risk populations overreacting, taking inappropriate actions, and losing trust in government officials or agencies.[1] As evidenced by the study results, a future bioterrorist event would inevitably require state and local agencies to communicate with multiple and diverse audiences. Communication must be a central feature of responding to a bioterrorism event.[1,17,33]

Communication in such events serves multiple purposes, including informing and instructing widely diverse audiences, minimizing fear and anxiety, encouraging individuals to adopt appropriate protective actions, building trust, and minimizing or dispelling misinformation or rumors.[1,17] Addressing the unique information and communication needs of special population groups can help public officials to select the appropriate strategies and develop the right messages for specific audiences.

Additional research is needed on how existing health, social, and economic disparities among special population groups could complicate risk communication efforts in the event of a terrorist attack, particularly in communities with limited numbers of health-care facilities and practitioners specially trained to provide care to these groups. Factoring in the effects of largely uninsured populations and planning for effective emergency response in these communities are essential to prevent significant morbidity and mortality in the event of a crisis.

New and better approaches to communicating risks also need to be developed. Quarantine, travel restrictions, and the use of law enforcement personnel to execute public health policy, when set against a history of discrimination and stigmatization in the protection of individual rights, could create an unstable information environment in the midst of what would already be a dangerous and chaotic crisis.

Ongoing concerns surrounding emergency preparedness planning with special population groups need to be addressed:

- Skepticism of information that is delivered by mainstream communication sources
- Low health literacy or the inability of an individual to access, understand, and use health- and emergency-related information and services to make appropriate risk reduction decisions[34]—including language barriers—as well as disparities in Internet access and usage
- Limited involvement with public health officials and emergency responders in risk communication planning, response, and recovery

These issues would be further compounded by ongoing anxiety and the potential long-term stress of a terrorist event. All of these issues must be addressed to minimize vulnerabilities and increase cooperation during a crisis.

NORTH DAKOTA DEPARTMENT OF HEALTH EFFORTS

Upon completion of the Special Populations Study, the North Dakota Department of Health began to address

several of the findings and recommendations in the study. For example:

1. The North Dakota Department of Health convened an advisory committee representing the state's special populations. Members included representatives of groups that work with special populations, such as the elderly, refugees, migrant workers, Native Americans, and people who are physically or mentally disabled. A template was developed that committee members used to develop guidelines for communicating with each special population.
2. Using results from the Special Populations Study and guidelines from the committee, public health public information officers at the state and local levels are developing plans for communicating with special populations. The plans will identify contacts in communities, state agencies, and statewide organizations that work with special populations. Procedures will be developed to distribute emergency messages and other information to such agencies, including use of the state's Health Alert Network. In addition, local public information officers will meet with special population representatives in their regions to identify spokespersons, if needed.
3. The North Dakota Department of Health contracted with a translation service to translate terrorism- and disease-related fact sheets into several of the state's most common languages (other than English): Bosnian, Kurdish, Somali, Russian, and Spanish. The information will be posted on the department's website and sent to agencies that work with special populations.

LESSONS LEARNED

The process of developing special population communication plans has revealed the following lessons learned: First, because some groups who were originally considered special populations actually rely on mass media for emergency information, the NDDH decided to concentrate its communication planning efforts for special populations on those groups not reached by traditional media. For example, although rural residents are a unique population, they get most of their information from radio and television broadcasts. The same is true of university students.

Second, the advisory committee highlighted the importance of partnering with local organizations and community groups to reach special populations during an emergency. As a result, state and local special population communication plans will focus on partnering with those groups.

RELEVANCE

The combined qualitative and quantitative research approach discussed above can be a useful tool for state departments of health and similar agencies in determining the most effective ways to communicate with special populations during a public health emergency. The most promising component of this research is telephone focus groups. In most instances, participants in the telephone focus groups mentioned they had little contact with NDDH but wished for more. This indicates a great interest on the part of organizations that represent special populations to share "best communications practices" with departments of health and even to act as distribution channels in getting messages out. It is neither expensive nor difficult to identify potential participants, and we encourage others to emulate our approach.

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