

Effects of Age on Use of Various Media to Receive and Share Public Alert Information by People with Disabilities

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Introduction

Citizens with disabilities are at once the most vulnerable during an emergency, and the most likely to have greater access challenges to communications media than the rest of the population. Consequently, finding technological solutions that ensure access is critical to an effective emergency communications and emergency management plan.

Most people tend to use technologies they learned in their youth. Does age affect the types of technologies that people with disabilities use during emergencies? Do young people with disabilities use newer communications media and devices at greater rates than older people? Might adoption of technology among older people increase as greater numbers of “digital natives” advance into older age cohorts?

These questions have particular import for policy makers and others working in the area of emergency communications, particularly with regard to people with limitations due to age related decline or other disability. They are also critically important to the wireless industry, which is directly responsible for development of wireless devices, software and services. Data from the Emergency Communications Survey conducted by the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC) are analyzed here to provide some answers to these questions.

Methodology

Data were collected from November 1, 2012 through March 30, 2013 using convenience sampling to draw a sample of adults over age 18 with any type of disability. Participants were recruited through the Wireless RERC’s Consumer Advisory Network (CAN), a

nationwide network of consumers with disabilities. In addition, the research team conducted recruiting outreach via its internet and social media outlets, including the Wireless RERC website, and Twitter, Facebook and LinkedIn accounts.

Recruiting was also carried out by asking individuals working on disability issues at the national, state and local levels to reach out their networks of people with disabilities. These organizations included the Department of Labor's Office of Disability Employment Policy, U.S. Department of Transportation, Federal Emergency Management Agency's Office of Disability Integration and Coordination (FEMA-ODIC), Federal Communications Commission's Consumer and Governmental Affairs Bureau, National Emergency Numbering Association (NENA), National Organization on Disability, National Association of the Deaf, American Stroke Association, Hearing Loss Association of America (HLAA), American Foundation for the Blind, National Federation of the Blind, the Coalition of Organizations for Accessible Technology, Alternative Media Access Center, California State University, Technical College System of Georgia, Pennsylvania State University and others.

Data Analysis

Two questions in the Emergency Communications Survey in particular shed light on patterns of technology use by people with disabilities during public disasters and emergencies across age cohorts. These questions are:

1. For the most recent instance when you received a public emergency alert, how were you alerted?
2. If you shared the alert information for the most public alert you received, how did you share it?

The questionnaire focused on the most recent instance of receiving public alert information so that respondents would not have to consider all of the times over the years when they received public alert information. It also focuses attention on recent experience, rather than experience years earlier.

Receiving alerts

Table 1 shows response data on the percentages of respondents who used any of a list of possible means and media for the most recent public alert they received. Respondents could choose all that applied.

Table 1 – For the most recent instance when you received a public emergency alert, how were you alerted?

Respondents with a disability	18-35	36-45	46-55	56-65	66+
Sirens or other alarms	25%	24%	21%	27%	21%
Direct observation of your surroundings	24%	21%	17%	21%	15%
Direct contact with someone nearby	19%	12%	12%	12%	8%
Phone call (landline, mobile phone)	21%	17%	23%	27%	22%
Television	55%	54%	53%	57%	51%
Radio (regular radio)	19%	22%	21%	24%	22%
NOAA Weather radio	15%	12%	15%	13%	21%
Text message	48%	44%	34%	19%	23%
Email	40%	30%	32%	27%	32%
Internet news	27%	25%	15%	20%	9%
Social media posting from federal, state or local emergency management agency	20%	22%	12%	9%	8%
Social media posting from friends and family	24%	17%	12%	5%	2%
Emergency app installed on Smartphone	16%	17%	8%	8%	7%
Instant messaging/chat	1%	6%	<0%	1%	1%
TTY	0%	2%	0%	0%	1%
AVERAGE (for all items)	24%	22%	20%	18%	16%
Average for communications media (everything but the first 3 items at the top)	24%	22%	20%	18%	17%

Television remains by far the most commonly used medium for recent experience with emergency alert information. Notably, roughly the same percentage (low to mid-50% range) received alert information via television across the five age groups shown. Regular broadcast radio was used at less than half the rate of television (low to mid-20% range), but, like television, at roughly equal rates across the five age groups.

Among the three non-technology based means of receiving alert information shown (sirens and alarms, direct observation, and direct contact with someone nearby), the last stands out, because of the substantial variation at both ends of the age range. The youngest and oldest age cohorts reported receiving alert information at substantially higher and lower rates, respectively, than the middle three age cohorts. This suggests that the youngest group is much more socially connected than the rest of the respondents. It also suggests that the oldest age cohort (66 and older) are more socially isolated.

Media used primarily (or increasingly) on mobile platforms show substantial and progressive age effects, with younger respondents showing greater rates of use than older respondents. These include: text messaging, emergency apps, internet news, and social media from either official emergency organizations or personal networks. While internet news and social media can and often are used on non-mobile platforms such as desktops and laptops, they are increasingly used on mobile platforms.

Sharing alert information

With regard to sharing emergency alert information, the impact of age on use of communications means and media is evident. First of all, there is no pattern of age impact on sharing emergency information in person with someone nearby. Such sharing was the most commonly reported, and ranged from a low of 42% of respondents age 66 and older to a high of 55% for the next two younger age groups. The same lack of a distinct age pattern applies to email sharing of alert information, which was used by approximately 30% of the respondents to share emergency information during their most recent public emergency experience.

Voice calling shows a strong positive relationship with age: as age increases, voice calling increased from 35% of respondents 18-35 years old, to 55% of respondents age 66 and older.

Three media – text messaging, social media, and instant messaging/chat – all showed substantial inverse age effects - their use increased as age decreased. This effect is strongest for sharing on social media and somewhat less so for text messaging and instant messaging. Respondents in the two youngest age groups used text messaging and social media for sharing emergency information at relatively high rates, while the oldest age group (66 years and older) used these at low rates.

Table 2 –If you shared the alert information for the most public alert you received, how did you share it?

Respondents with a disability	18-35	36-45	46-55	56-65	66+
In person to someone nearby	49%	46%	55%	55%	42%
Phone call (landline, mobile phone)	35%	39%	48%	47%	55%
Text message	54%	53%	37%	33%	14%
Email	28%	38%	28%	34%	30%
Shared on social media site	42%	36%	24%	9%	2%
Instant messaging/chat	11%	18%	7%	5%	2%
TTY	0%	4%	1%	1%	2%
Telephone relay service	1%	6%	2%	4%	3%
AVERAGE (for all items)	37%	38%	33%	31%	24%
Average for communications media (everything but the first item at the top)	34%	37%	29%	26%	21%

Analysis

Results from the Wireless RERC’s Emergency communications survey show pronounced age effects on use of some communications media during emergencies, but no age-related pattern for others. Three general observations can be made from these results:

1. Television still rules – TV was the most commonly used medium for receiving alert information across all age groups. Slightly more than half of respondents in all age groups reported receiving alert information via television.
2. There is no age effect on the use of traditional broadcast media – TV and regular radio (non-NOAA) are used by similar percentages of respondents across all age groups for receiving alert information.
3. Use of mobile communications other than voice calling is inversely related to age – For both receiving alerts and sharing alert information, younger age groups use text messaging and social media at substantially higher rates than older age groups. Use of mobile apps to receive alerts is also inversely associated with age, with younger age groups using mobile apps for these purposes at much higher rates than older groups.