

PACIFIC ADA CENTER
EMERGENCY MANAGEMENT AND PREPAREDNESS – INCLUSION OF PEOPLE WITH
DISABILITIES WEBINAR SERIES
PERSPECTIVES OF BUILDING OCCUPANTS WITH MOBILITY IMPAIRMENTS ON FIRE
EVACUATION AND ELEVATORS

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>> Lewis Kraus: Welcome to the Emergency Management and Preparedness - Inclusion of Persons with Disabilities Webinar Series. I am Lewis Kraus from the Pacific ADA Center, your moderator for this series.

This series of webinars is brought to you by the Pacific ADA Center as a collaborative effort between the ADA National Network and FEMA's Office of Disability Integration and Coordination. The ADA National Network is made up of 10 regional centers that are federally funded to provide training, technical assistance, and other information as needed on the Americans with Disabilities Act. You can reach your Regional ADA Center by dialing 1-800-949-4232. FEMA's ODIC covers the same 10 regions with regional disability integration specialists more information about FEMA can be found at www.fema.gov, then type ODIC into the FEMA website search.

This is the fourth year of this webinar series which shares issues and promising practices in emergency management inclusive of people with disabilities and others with access and functional needs. The webinars provide an opportunity for emergency managers, people with disabilities, and others with access and functional needs, first responders, planners, community organizations, and other community partners, to exchange knowledge and information on promising practices in an inclusive emergency preparedness and management for the whole community.

The series topics will cover emergency preparedness and disaster response, recovery, and mitigation, as well as accessibility and reasonable accommodation issues under the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the ADA, and other relevant laws. The series alternates monthly between ADA National Network Learning Sessions and FEMA Promising Practices. The upcoming sessions are available at www.adapresentations.org/schedule.php. These monthly webinars occur on the second Thursday of the month at 2:30 Eastern, 1:30 Central, 12:30 Mountain, and 11:30 a.m. Pacific Time. By being here you are on the list to receive notices for future webinars in the series. The notices go out two to three weeks before the next webinar and open that webinar to registration.

If you have your phone open, if you can mute that right now. Thank you.

For those of you who are new to this webinar series, we will now review some of the features of the webinar platform before we begin the session today. In this session only the speakers have audio. The audio for today's webinar is being broadcast through your computer. Make sure your speakers are turned on or your headphones are plugged in. You can adjust the sound by sliding the sound bar left or right in the Audio & Video panel. If you are having sound quality problems, go through the Audio Wizard which is accessed by selecting the microphone icon with the red gear symbol on it in the Audio & Video panel.

If you do not have sound capabilities on your computer or prefer to listen by phone, you can dial 1-805-309-2350, pass code 555-2153. This is not a toll-free number but you can find your local numbers on our website at www.adapresentations.org/local_numbers.php.

I want to remind you that the webinar is being recorded and it will be able to be accessed on our www.adapresentations.org website in the archives section next week.

You can follow along on the platform with our slides. If you're not using the web platform, you can download a copy of today's PowerPoint at the www.adapresentations.org/schedule.php web page.

Realtime captioning is provided for this webinar. The caption screen can be accessed by choosing the CC icon in the Audio & Video panel. The box showing the captions can be resized to show more or less text as you would like.

The Whiteboard, where the presentation slides can be resized smaller or larger by choosing from the dropdown menu located above and to the left of this Whiteboard. And the default is Fit Page. You can also reposition or resize all of the windows, the chat, participant, captioning, and Audio & Video panels by detaching and using your mouse to reposition or stretch/shrink. Each panel may be detached by using the icon with several lines in it, triangle pointing down located in the upper right corner of each panel.

At the conclusion of today's presentation there will be an opportunity for everyone to ask your questions. You may submit your questions using the chat area within the web platform. And the speakers and I will address them at the end of the session. So feel free to submit them as they come to your mind during the presentation. To submit your questions, go into that chat area, as shown on the slide, or press Control-M and enter your text in the chat area and hit return. If you are listening by phone and not logged into the webinar, you can ask your questions by e-mailing them to adatech@adapacific.org.

If you experience any technical difficulties during the webinar, you can send a private chat message to the host, that's us, by double clicking the Pacific ADA Center name in the participant list. You will get a tab that's titled Pacific ADA Center in your chat panel. Type your comment in the text box and hit enter. If you're using the keyboard, you can use the F6 key and then arrow up or down to locate Pacific ADA Center and then select to send the message. You can also send your message to adatech@adapacific.org or you can call us at 1-510-285-5600.

Today's ADA National Network Learning Session is titled "Perspectives of Building Occupants with Mobility Impairments on Fire Evacuation and Elevators." Safe and effective evacuation during a fire or other catastrophic event requires planning, practice, and available options to exit the building. Building occupants with mobility impairments face additional difficulties during fire evacuations, which may limit their evacuation options.

This webinar presents a study conducted by the National Institute of Standards and Technology, NIST, to develop guidance for building designers, facility managers, safety

officers, and emergency personnel on how occupants, particularly those with mobility impairments, can most effectively evacuate buildings during fire emergencies.

The NIST researchers conducted face-to-face interviews with 51 people with mobility impairments located in five major metropolitan areas who work in multi-story buildings. They were asked about their everyday mobility at work, their experiences with fire drills or fire emergencies at work, and their opinions about using elevators to leave a building during a fire evacuation.

The study identified a wide range of issues surrounding the evacuation of occupants with mobility impairments. Key to all of these issues is the need to include those with mobility impairments in the planning and execution of fire evacuations and to facilitate their ability for self-evacuation as much as is practicable.

Our speakers today are Kathryn Butler, a physicist in the Fire Research Division at the National Institute of Standards and Technology. She has studied a wide range of fire-related topics, including emergency communication, respirator fit, fire spread in wildland-urban interface fires, and fire behavior of materials.

Susanne Furman is a cognitive scientist in NIST's Visualization and Usability Group where she works on and investigates user's mental models in cybersecurity and usability of biometric devices for the Department of Homeland Security and the Federal Bureau of Investigation.

Erica Kuligowski is the Group Leader of the Wildland-Urban Interface Fire Group in the Fire Research Division at NIST with a background in fire protection engineering and sociology. Her research interests include evacuation and response behavior, people movement, and behavioral data collection and analysis from fires and other emergencies, emergency communications, and evacuation modeling.

So, Kathryn, Erica, Susanne, I am going to turn it over to you.

>> Kathryn Butler: Good afternoon, everyone. I'm Kathryn Butler here with my colleague, Susanne Furman.

>> Susanne Furman: Good afternoon, everyone.

>> Kathryn Butler: And Erica Kuligowski.

>> Erica Kuligowski: Hello.

>> Kathryn Butler: We're delighted to have this opportunity to share with you the results of the study on fire evacuation, helping occupants with mobility impairments provided their thoughts on evacuation training and new evacuation methods including the occupant evacuation elevator. Here are the topics that we will be covering in this webinar.

First, Erica will tell you a little about the background that led up to this study, including some of the efforts by NIST and other organizations to improve the ways that people can get to safety in a fire emergency. Then she will spend a little time on the goals of the study and how we carried it out and who participated in the interviews that were at its heart.

We will then present a summary of our findings along with the selection of quotes from the interviews that illustrate some of the points that we want to emphasize.

We will talk about the evacuation experiences of our participants, the methods that they have used during fire evacuation, and the evacuation plans and trainings that they have encountered at their workplaces.

One of the main interests in this study was to find out what people thought of the idea of occupant evacuation elevators which we described to them during the course of the interview. We will end the webinar with a list of guidance that came out of the study on fire

evacuation plans and training, on the use of existing elevators for fire evacuations when and if it is feasible, and on occupant evacuation elevators.

I'll start with this first quote from one of the participants in our study. "If you make a good design for everyone, then everyone will be happier." This nicely expresses the benefits of Universal Design and I think sets the stage very well for our presentation.

I'll turn it over to Erica.

>> Erica Kuligowski: Thank you, Kathy.

A bit of background before we get into the details of the study. NIST conducted an investigation of one of the largest evacuations which occurred at the World Trade Center in New York City on September 11 where more than 2,000 building occupants perished. The investigation resulted in a list of recommendations to improve the safety of high-rise buildings, their occupants, and emergency responders.

One recommendation called for buildings to be designed for timely, full building evacuation during large-scale catastrophic events. So since this disaster, efforts have refocused on evacuation procedures especially for occupants who cannot negotiate exit stairs without assistance. There are strategies and methods available including emergency stair travel devices, areas of refuge, and occupant evacuation elevators which Kathy talked about. Both emergency stair travel devices and areas of refuge pose some potential problems from an evacuee's perspective, many of which we'll be discussing today.

A more promising means to improve evacuation capability of people with mobility impairments, at least in new construction, are these occupant evacuation elevators. Several projects have been established both worldwide and within NIST that are specifically focused on the use of elevators for evacuation during fires.

First, due to the recently developed requirements on the use of elevators for both evacuation and firefighter access. So these are from the International Code Council or ICC, listed on the screen, the National Fire Protection Association or NFPA, and the American Society of Mechanical Engineers, ASME.

And so due to those requirements NIST and others primarily focused on research regarding the technical aspects of occupant evacuation elevators. A few years ago we got together with the General Services Administration, the government's largest civilian landlords, to discuss the lack of guidance and fundamental understanding of how occupants, particularly those with mobility impairments, can most effectively evacuate buildings during fire emergencies. This process was essentially developed from this realization of a need for additional research on the ways in which elevator technologies could and should be used for fire evacuation.

I just wanted to take a moment and acknowledge the sponsor for a portion of this study, which is the U.S. GSA.

The purpose of this report and this project is to provide guidance to assist designers, facility managers, and fire emergency personnel on how they might improve designs, technologies, and emergency procedures for safer evacuations of occupants with mobility impairments during fire emergency.

We had two main goals for this study. One -- and these are listed on the screen -- to gain an understanding of how building occupants with mobility impairments currently evacuate multi-story buildings in the United States during fire emergencies; and number two, to learn about the concerns of people with mobility impairments on using elevators during fire evacuations.

Our overall approach to the study really is summed up on the screen: Go to the source. By this we mean the source being people with mobility impairments who are truly the experts on issues associated with fire evacuations in buildings.

To gain further insight on the two goals listed previously we asked the following three main questions as part of the study:

One, how do participants describe their everyday mobility while at work?

Two, what experiences have the participants had during fire evacuations or fire emergencies while at work?

Number three, what do participants think about using elevators during a fire evacuation?

This slide covers how we gathered information for this study. First we asked about demographic information, including age, where participants selected from categories of age-groups, as well as asking about gender. We also asked about information on the building or workplace. That included asking about the number of floors in their building, what floor he or she worked on, and the length of time they worked in that building.

We also asked, and I quote, "During a normal workday, how did you move vertically from the main floor to your workplace?" Is that stairs, elevators, etc.?

Additionally we asked each participant to tell us about their everyday mobility on stairs. So without assistance, how many stairs can you go up or down. For example, rating a few steps to four or more flights of stairs as either easily, yes with some difficulty, and all the way to not at all.

We also asked which of the following mobility aids he or she used daily in the workplace, listing examples as crutches, canes, wheelchairs; and also how long they've been using one or more of these aids.

The second part of the slide covers information that we asked during the in-depth questions. We asked about everyday workplace activities, experiences with fire evacuation including the usage of various evacuation methods, and evacuation procedures and training. Additionally participants were asked about their use of elevators for evacuation. Then they were showed a video explaining occupant evacuation elevators after which they were asked about their willingness to use these systems for evacuation, as well as about any concerns they have with these systems.

As far as procedures that we used at NIST, during all interviews, we thought that it was important to express that we made sure that we were careful with all of the important information that was provided to us. We kept identities protected by replacing names with two-letter identifiers throughout all of our documentation. In addition, there was comprehensive data analysis that we used to arrive at the conclusions that Kathy will talk about. All interviews were transcribed, previously audio taped, and we performed analysis by organizing interview material into themes.

And then also during the writing of this report, we put extensive thoughts into the quotes that were selected and displayed in the report. We felt that it was important that the reader understand the personal experiences of the individuals with which we spoke. More information on other methodology is found in the report.

So before I discuss information on our participants I wanted to briefly discuss the recruitment procedures. We recruited participants from major metropolitan areas within five different U.S. geographical regions with the assistance of advocates from the disability community.

The image on this slide is showing a total of 51 participants from five different regions of the U.S. 10 people participated from the Western region, 15 from the Southwest, nine from the Midwest, nine from the Southeast, and eight from the Northeast.

We're very thankful to the disability advocates from each metropolitan area who were instrumental in helping us identify potential participants for this study. The disability advocates were from federal agencies as well as state agencies and Mayors Council on Disabilities. We couldn't have done this study without them as well as without the 51 individuals who we interviewed.

So, who did we interview? 51 participants in total. Of them, 53% were male, 47% female, with ages ranging from mid-20's to over 60 years of age. 31% were 56 age plus. 22% were in the category between 46 and 55 years old. 27% were between 36 and 45 years old. And 20% were between 26 and 35.

The next graphic shows the information obtained when we asked about the usage of mobility aids at work. A large majority of the participants, 42 out of 51, use wheelchairs. A smaller number of people also use crutches, canes, rollators or walkers and scooters. The other category shown includes portable oxygen supply, ankle, foot, orthotic brace, and service dog.

You'll notice the number sums to more than 51 because some participants use more than one device in their workplace or they kept an alternate device for emergencies. Although we did not specifically ask questions about disability type, we asked participants about their mobility aids. And in the process many self-described how they acquired the need to use a particular aid or device. And that's how we received information about disability at birth or later in life.

Also, the stories we heard during interviews were ones that described difficulties moving throughout the building on a day-to-day basis. Some of these are listed on the screen, including stories of difficulties in pressing elevator buttons, injuries if picked up in the wrong way, for example, during evacuation or drills, and capability that can change with age or even time of day.

Participants in the study worked in buildings that were owned and managed by various organizations. This slide shows a pie chart that displays ownership of the participants in the buildings. The chart shows that more than half of the buildings were government-owned and run. There's a black section or a section that's not labeled on the screen in that pie chart. That represents two participants who were not affiliated with a specific building but who told us about their experiences as visitors of various buildings.

The second half of the slide also shows the range of floor numbers on which participants worked from the basement floor to the 13th floor and even higher in the building. The ground floor is also highlighted in the color green, noting that if the evacuation alarm sounded in their offices, these five participants could leave the building the same way they entered.

Finally, the last slide on participant information we're showing the vertical locations of participants within their buildings. This graphic shows buildings that are arranged by height, given the number of stories.

The buildings in which people were located in the study ranged from two stories, on the left, all the way to 60-plus stories on the right of that graphic. Each participant is represented by a yellow square located at the appropriate floor within the building icon that

represents the height of their particular building. People whose primary location is at the basement level are positioned below the base of the plot.

And just to note, also in the report, the number of buildings at each height is given by number underneath each building icon in the graph. That is not shown here but that is in the report. For our information here, we spoke to individuals working in two three-story buildings, five four- and seven-story buildings, and two eight-, nine-, 10-, 12-, and 14-story buildings. There was only one of each of the other sizes shown on the screen.

I will pass it back to Kathy now.

>> Kathryn Butler: Thank you, Erica.

We will now present the main findings from the study starting with the evacuation experiences described in the interviews. The participants described the wide range of experiences, a selection of which you can find in the study report. At the end of the talk I'll let you know where you can find the report online.

Here is a summary of the approaches that works well during evacuation. People had positive feelings about evacuations in which they followed a well-practiced plan or in which co-workers stayed with them and helped them by alerting security and assisting them to safety. They also enjoyed situations in which they were assisted by first responders who asked them about how they preferred to evacuate and listened to what they had to say.

On the other hand, people felt very negatively about evacuations in which there was no plan or there had been no drills; they had been left alone with no information about the emergency and no way to communicate with emergency personnel; or the communication was only one way and they couldn't tell emergency personnel that they were waiting. They also felt negatively about being carried out of the building in a precarious way, either bodily or in their wheelchair.

Here is a quote from someone who was happy with the respectful assistance they received from first responders.

>> "They called the fire department and the guys came, and they said, 'Ok, how can we best help you?' And I told them what to do. And they took us downstairs, really asking is critical because different people have different needs, different abilities, and different comfort levels, and some people can become very anxious and frightened. So some disability training for the emergency personnel is, I think, very important in what might be needed for different types of disabilities."

>> Kathryn Butler: And here is someone who never got out from the building after an earthquake.

>> "I went to the designated room. There wasn't anyone who showed up. Eventually someone passed in the hall and I flagged them down so that they could help me use the phone to call the security desk to let them know that I was waiting. We did that twice. The security guard said that they would come around and have someone help me, and that never happened. I never got out of the building."

>> Kathryn Butler: The participants in the study told us about the evacuation experiences and plans. They described a number of methods that they had used or thought of using. In the next several slides, we'll describe each of the methods on this list along with the benefits and concerns that were raised by each one.

First, the existing elevator. According to national building code, building elevators are recalled to a designated floor during a fire emergency after which may be used by firefighters as they see fit. Some participants talked about using the elevator before it's been taken out of

commission. And others talked about using it after the firefighters arrived and had taken control.

In the interviews, we also discussed possibility of using the existing freight or service elevator for evacuation. Study participants talked about a number of ways that they had or could use stairs to evacuate the building. Methods included walking down the stairs using crutches or holding the railing, taking the stairs in their manual wheelchair, either by themselves or with assistance, crawling or sliding on the stairs, being carried by co-workers or first responders, and using an emergency stair travel device.

Finally, many buildings had designated areas of refuge where people with mobility impairments could wait for assistance. A safety campaign has been very effective in getting across the message that elevators should not be used during fire evacuations. Study participants were well aware of this and also understood that the elevators in their building would be taken out of commission during the fire emergency. However, they also thought of the elevator as a quick and easy way to evacuate the building. It's very familiar to them since it's the way they get around the building all the time. They're able to keep their mobility device with them and other people don't have to risk their own safety in helping them.

However, there are a number of concerns in using the elevator for evacuation starting with the fear and anxiety of knowing that one's personal safety may be at risk. There is also the uncertainty of whether communication will be possible from inside the elevator. You don't know how long you'll need to wait for the elevator and how long the ride will take if you stop at multiple floors.

Elevator signs may be an issue if other people are also using it. Some study participants need help operating the elevator every time they use it. In some buildings the elevator does not open to a location with an unobstructed path to the outside exit. And participants expressed the need for a backup plan in case the elevator didn't work.

The concern about physical safety as expressed by one of the participants here.
>> "I'm concerned that the elevator being connected to the electricity, to the power supply, isn't safe to use it. Would it be safe? That's a concern. But all things being equal, if it wouldn't be affected by an electrical problem, then I wonder if, 'Lord, could I quickly use the elevator before it's taken out of service?'"

>> Kathryn Butler: Many buildings have a special elevator not ordinarily used by occupants but can be used to carry freight or service the building. In addition to many of the same benefits that were described for the existing passenger elevator, some participants thought the freight elevator in their building would have additional safety features. The size is typically larger than the elevator they use every day and for some the freight elevator goes directly to the outside exit.

Additional concerns that were mentioned included that the freight elevator was not readily available to building occupants and it may require someone with a key who knows how to operate it. Accessibility may be an issue with some freight elevators located in areas that may be cluttered and others opening in a loading dock without an accessible path to street level. And finally, the freight elevator is an unfamiliar way to left building.

Now we'll talk about ways that study participants described using the stairs for fire evacuation. Individuals who were able to negotiate the stairs with crutches or holding on to the stair rail. The biggest benefit is being able to evacuate the building and reach safety with other building occupants. They remain independent and in control of their evacuation, able to leave without waiting for someone to come get them. However, they know that they will be slow.

They may not be able to enter the stairwell until the main crowd of people exited and they will probably be one of the last to leave the building. There is a risk of injury or physical harm from slipping on the stairs. And the exertion may be costly and require hours and possibly days of recovery.

Here is someone describing their worries about walking slowly is down the stairs.

>> "I would think everyone else would evacuate first because then we're in the way of everybody. We know everybody's really coming down fast. There's really no way for us to get in the middle of that. We could lose our balance. We could fall. We would stall the people coming behind us. It's not feasible to go down when everybody else is going down. So we have to wait."

>> Kathryn Butler: A few of the people we interviewed were capable of getting themselves down the stairs in their manual wheelchairs. Some of them had friends that they had done this with in the past and others described the technique for lowering themselves down using a continuous railing. For those who could do this, the benefits were that they maintained independence and control and that they could remain in their own wheelchair. However, there is a risk of injury to themselves and to others and also a risk of damage to the wheelchair.

This is how one of our study participants described getting out with assistance from helpers.

>> "I can just get somebody to pop my chair back on a wheelie and take me down the 15 stairs and get the hell out of the building on a moment's notice. So let's go fast and furious and leave. I have my helpers. Worst case, they grab the front and the back of the chair on either side, they pick it up, and we walk down."

>> Kathryn Butler: And here's someone talking about the possibility of damage.

>> "I don't like to do it because it's hard on the chair. It's hard on the front wheels. So I don't like to go down but so many steps to demonstrate. If I had to, if it's burning, I'm going down. I don't care what the front end looks like when I get down to the bottom"

>> Kathryn Butler: In a true emergency, some study occupants are able and willing to leave their chairs and negotiate the stairs by crawling or sliding. This allows them to get out of the building and gives them a measure of independence and control over their situation. However, there is a risk of injury or physical harm in doing this.

Here is how one participant describes the decision to crawl down the stairs.

>> "I've had in situations, just got out of my chair and crawled down steps and have had somebody take my wheelchair. So that would be what I would do. If I'm in an emergency stair travel device, they're probably not bringing my chair with me. So do I want to when I get to the bottom be stuck in the emergency stair travel device? No. I would much rather have my manual chair there to be able to move myself to safety."

>> Kathryn Butler: Being carried up or down the stairs is another possibility for evacuation. Strong co-workers offered to help. And many first responders are trained in methods to lift and carry people out of the building. This provide as a way to evacuate the building to safety but there is a risk of injury or physical harm if the person doing the carrying does not use the right technique or if a specific disability requires the person to be handled in a particular way.

This participant describes the desire to get out of the building.

>> "I'm not a heavy individual, you know? I can be carried, safely, if somebody is physically able to do that. So if there wasn't an evacuation chair, that would be an option for me. And I would rather take that option if somebody is able to do it and willing to do it than wait for help that may never come."

>> Kathryn Butler: And this participant shows how it would be to carry him or her improperly.
 >> "There's never been a cause for me to evacuate and I'm glad because had I been evacuated, I would have been injured. If someone tried to lift me, my body is pretty weak. So if you didn't know how to lift someone like me properly, you'd hurt me. And generally speaking, that's a big problem. If you slung me over someone's back, you'd break my back."
 >> Kathryn Butler: In order to evacuate people with mobility impairments using the stairs [Inaudible], many buildings now have something called an emergency stair travel device. Some people call it a stair chair or an emergency chair.

Two examples are shown on this page. The idea is that the person needing to be evacuated is transferred on to this chair and strapped in. An assistant pushes the emergency stair travel device to the top of the stair where it tilts to allow the person to be pushed down the stair in a sitting position. Modern devices goes downstairs smoothly and are equipped with a locking mechanism that stops the device safely on the stairs unless it is being actively operated by the assistance.

The benefits from this method are that they can evacuated building. There is physical safety. Once they are in the stair travel device. And they can evacuate along with their co-workers.

The concerns are that especially if they're using a power wheelchair, they lose mobility device and are not sure what they will be able to use once they get to the bottom of the stairs. There's also a physical risk, especially in being transported from the wheelchair into the stair travel device, and the anxiety is involved, especially if they haven't practiced this in the past. This method requires assistance. And it also requires that there be one emergency stair travel device per person per trip. That means that there may be an issue if there are visitors with mobility impairments.

Here is someone describing how they had been evacuated with their co-workers.

>> "It's also a big cultural and ideological shift, I think, to go actually from 'disabled people are the special people who need to be specially evacuated by rescue personnel' versus 'disabled people can be integrated with their co-workers and be evacuated by their office mate or the cubie next to you.' And I think that's one of the final points of integration, right? Because you don't want to be special people who need special handling."

>> Kathryn Butler: The loss of mobility device is a very serious issue for a number of people.

>> "It's always an issue. Letting go of my equipment because so much of my health, my mobility, and my independence is tied to a very customized piece of equipment. It's not like, oh, ok, I'll go pick up an extra one at the grocery store. It's more than just we are being stubborn and we don't want to leave our chairs behind. It's a survival issue, quality of life, survival."

"A mind shift has to happen. The equipment is part of the person and must be evacuated with the person."

>> Kathryn Butler: One proposed solution for providing safety for people with mobility limitations is an area of refuge where individuals can safely wait until assistance arrives. Areas of refuge allow individuals the opportunity to remain in their mobility devices in a protected area while they await either resolution of the emergency situation, such as determination of an erroneous fire alarm, or evacuation assistance from emergency responders. They are able to communicate with security and rescue personnel, typically by phone available in the safe, but there is a concern about being left behind, being left alone possibly. And not evacuating the

building in this emergency. For some, the space may be inaccessible and unusable. We've heard from a couple of people that had that problem.

Here's something about the waiting and the anxiety.

>> "In the event of an actual emergency, I find it frightening to sit there and be waiting. Here's smoke I smell, people are screaming by, you know, going, 'Are you ok?' 'Are you?' 'Yes, I'm waiting for someone.' 'I'm waiting for someone.' 'I'm waiting for someone.' 'I hope someone comes.'"

>> Kathryn Butler: And something about accessibility.

>> "And I'm supposed to wait up in the stairwell, there's a designated spot up there and I'm supposed to grab that phone that's in there, which I can't reach, and someone in security is supposed to pick up and I'm supposed to let them know that I'm up here."

>> Kathryn Butler: In summary, here's a list of things that study participants would agree on: Evacuation methods should provide a feeling of safety, independence and control, the opportunity to remain with their mobility device, a means to evacuate quickly, and a way to communicate with security and/or rescue personnel.

Now we'll move on to evacuation plans and training. We had people tell us about situations that they were fairly satisfied with which have will you included having detailed, well-organized, well-practiced plans; having options for evacuations, not just one method; and being included in the planning process.

People who were dissatisfied with their evacuation plans had no plan for people mobility impairments. Some of them kept asking and were told we'll get to you but they never did. They were not consulted on evacuation methods or plans. And the plans didn't include visitors such as clients or meeting attendees or what should happen at night after a lot of people had left the building.

What works for people? People know their role. People know where they're supposed to be. And people know how to use the equipment that they've been given. Drills are important.

>> "It was always on the drills that you get that "A-ha" moment, like maybe something's wrong. We work with people with all disabilities. We have people who are blind, people who are deaf, people with mobility problems, people who are blind and deaf. And so those drills allow us to see how unprepared we are and the importance of becoming prepared because we never know who we are seeing that particular day and what obstacle or barrier they may have if we have to evacuate."

>> Kathryn Butler: Drills may be exhausting. And people with mobility impairments may try to avoid them.

>> "If I know there's going to be a drill, I try to work from home, truthfully. It just saves so much headache. You don't want to be forced to go down steps and stuff when you know you're going to pay for it for days afterwards. If someone has bad knees or a bad back and neck, yes, you might make it down the steps but you're probably going pay for it from the next two days to two weeks."

>> Kathryn Butler: Some people who were visiting an unfamiliar building.

>> "My colleagues here, we have all worked together for a number of years. We know each other and I would trust them. But how can you make yourself available to be helped by folks who maybe you've been to meetings with but you don't necessarily know? Especially with something so personal where I would require hands-on help."

>> Kathryn Butler: One of the surprises to us in doing this study, a number of people described having a plan that they would put into effect, which was not the official plan.

>> "Actually, I can do stairs. I have stairs at home. But not with the wheelchair, obviously. But I just get down out of the wheelchair and I scoot myself down or climb up. So I could do stairs and in an actual emergency, I'll tell you, I'm doing it because I'm not going to let them leave me behind."

>> Kathryn Butler: So after we talked about these evacuation experiences and different methods we showed a video that explained some of the aspects of the occupation evacuation elevator that has been designed for being put into newly built buildings.

Some of the fire safety features included in such elevators are: elevator lobbies and shafts that are protected from heat, smoke, and water; two-way communication between lobby and fire command center; direct access to stair wells from the elevator lobby; the fire floor and adjacent floors evacuated first, before any other floors; and people from those floors are transported directly to the main exit discharge floor.

The benefits that people saw in the occupation evacuation elevator included: this gives you a means to evacuate the building quickly and easily. Because the occupant evacuation elevator would also be the main elevator that you take every day, there's familiarity and ease of use. There is a higher perceived safety level. It's designed for higher safety. Feelings of comfort or relief. You can keep your mobility device, which provides independence. There's communication with first responders. And everybody can use it so there is a universal nature of the evacuation method.

But some people described concerns that they had about this method, including: continued anxiety about physical danger; the desire to have some evidence of safety and proper design and is being maintained. Fighting decades of warnings against using an elevator in a fire so there needs to be education and training when these things are put into effect. And there was also a concern about competition for space with people who have the option of being able to use stairs, especially for people who have large wheelchairs and couldn't fit into an elevator that was already full. So there was a desire for priority use for those with mobility impairments.

So here are some quotes about efficiency and about independence.

>> "That kind of elevator would be very useful in getting a building quickly evacuated because it takes time to go down those stairs and the more people can you get out quickly, especially from the higher levels, the less likely there is to be a real disaster."

"The benefits include the ability to essentially evacuate immediately without any separation from your wheelchair. So you leave with what you came in with, you leave whole."

>> Kathryn Butler: A convenient thing to use.

>> "I trust this elevator. It's fast. It's less work for everybody, myself included. Let's get the hell out of here and give it a shot."

>> Kathryn Butler: What we're fighting from decades of warnings.

>> "I guess because it's so against what we've been trained and taught, you have that build-in hesitation. It's almost like you're trained, 'Go and wait here,' versus, 'Go and get in that elevator.' You're almost trained that you're safer to wait for assistance than to get into that elevator."

>> Kathryn Butler: And priority use and competition.

>> "I think it doesn't address the crowding issue at all. In fact, I think it would be like a packed car already. And it wouldn't just be five people waiting for the elevator. It being like the whole

floor or whatever. So I just don't think there's a way to manage that because I think most people are going to perceive that to be the fastest, easiest way to get out."

>> Kathryn Butler: So in our report we put together guidance for evacuation planning and procedures and also guidance on existing elevators and on occupation evacuation elevators. For evacuation planning and procedures, first of all, an emergency evacuation plan is essential. Building occupants with mobility impairments should be included as essential partners in developing the plan. Multiple options should be available for evacuation. And after-hour procedures and visitors should be included in the plan. There are training concerns that need to be worked out in advance for the occupants. And emergency personnel needs to understand that building occupants with mobility impairments will leave the building if they can and they need to facilitate that as much as possible.

On existing elevators, if it is possible to use existing elevators to evacuate people, then there should be both communication about signage at the elevator; there should be two-way communication with emergency responders; if existing elevators are an option, then there needs to be education on how they should be used during a fire evacuation. And consideration should be given to preference for elevator use during evacuation given to building occupants with mobility impairments. And also, there is a need for alternative ways to evacuate the building.

For occupant evacuation elevators the elevators should be designed to be large enough to contain multiple wheelchairs. There should be coordinated emergency communication on occupant evacuation elevator availability and two-way communication with emergency personnel. There needs to be education on why occupant evacuation elevators can be trusted to get people safely to an exit. And consideration should be given to preferred use for building occupants with mobility impairments during evacuation. And, again, there is a need for alternative options for leaving the building.

Finally, I think this quote from one of our participants nicely sums up the hopes for safer, faster, and more efficient fire evacuations in the future.

"With the time it takes me to get out of the wheelchair into the stair chair and get me down the steps, just the process involved and then the time and then the danger of doing that to me and the people that are trying to help me, going down the elevator is a way, way better way to do it if it can be done."

I know that some of the people who shared their insights with us during this study and some who helped us find these participants are on the line with us now. We wanted to thank you profusely for your generosity. We hope that we have done justice to the knowledge and wisdom of everyone who gave us their time, efforts, and stories.

Many more details of this study are available in the report which you can see down at the bottom of this page. It's in this technical note. You can also search on that if you would like to. Our contact information is also listed here.

At this time we'd be very happy to answer any questions that you have for us.

>> Lewis Kraus: All right, Kathy, Erica, Susanne, thank you so much. That was a really interesting summary of your report and incredibly valuable to get that perspective from people with disabilities.

For those of you listening in, please remember to submit your questions in the chat window and we'll get to those as they come in.

The first question is one where you initially referred to the OEE video early on in your talk. Is that available for review by the public and how can somebody view it?

>> Erica Kuligowski: The video that was used for the study is a bit different. Actually, what was interesting during the interviews was the participants provided us comments on how to improve the video. So we learned a lot even through that process. The video was simply to provide information on the features of OEEs but they helped us to understand ways to better communicate that information. So we are working on improvements to the video. That will be available for public use hopefully in the next few months or so. And that probably will go on our YouTube page, I'm assuming.

>> Lewis Kraus: So people can look for it on that page in, what, a month or so?

>> Erica Kuligowski: Correct. I would say a couple of months. The information is the same, just how we're communicating the information will be a bit different.

>> Lewis Kraus: Ok. Great. Thanks.

The next question. "I know of a deaf person who uses a wheelchair. Does the OEE communication system include a text option or is it only voice communication?"

>> Erica Kuligowski: That's a good question. I'm not sure if the code distinguishes between an audio or textual communication option. I would have to refer to the code on that particular question and I don't know off the top of my head if they distinguish between how the information should be communicated.

I think that's a great question. That's something certainly that building should be taking into account. I would need to go and look specifically if the code distinguishes one or the other. I don't have that information right in front of me.

>> Lewis Kraus: All right. Very good.

The next comment -- this is really just a comment from someone. "These OEE are currently not available so the best thing to do is to have the building self-evacuate. Waiting in place did not work in 911. A stair travel device was used to get people out. I think to have those devices in a building is currently the best solution."

So I don't know if you want to respond to that or just take that information.

>> Kathryn Butler: Yes. Thank you for that information.

>> Lewis Kraus: All right. While we wait for some more questions to come in -- actually all of the elevator information, how do you see the information being used? Is that going to then be used by like the ICC or any other organizations in putting together development of these elevators or use of the elevators?

>> Erica Kuligowski: Since the code primarily focuses primarily on the technical assets, the question asked about the two-way communication and where the stairwell should be, this was more on the usage of these systems. So we see this potentially being incorporated, hopefully, in building emergency planning.

We have been working with the General Services Administration and so they've been working to incorporate this information into their own plans for their buildings. So we're hoping that it would be incorporated into individual building plans or by building owners for multiple building plans. The ways we can best get this information out, we're trying to find those avenues.

>> Kathryn Butler: At the moment, yeah, there's a push to try to get building designers to include these in buildings. I know that last year there was a notice that the new World Trade Center was incorporating it into at least one of their new buildings. But this is the point where we are now, trying to convince people to include this in the building design.

>> Lewis Kraus: Ok. Great.

Another question. "Stair chairs are very easy to use when going downstairs. Do you have any advice on evacuating from floors underground?" In other words, going up the stairs. I assume.

>> Kathryn Butler: We actually -- while we were interviewing, we saw one chair -- well, there are motorized chairs that allow you to go up the stairs as well as down. I don't know how much more expensive they are or what the availability is but there are designs that are available.

>> Lewis Kraus: Ok. Next question -- while we're waiting for another question, what's your dissemination plan for -- you kind of answered this a little bit before, but what do you think your dissemination plan for the report is? Are you guys using it yourself to try and reach out to different organizations? Is there a call for, for example, people on the call here or others to spread the word? How do you want to see it extended?

>> Kathryn Butler: Thank you for that question. Actually, I've been asked by the U.S. Access Board to present in their January meeting. But at the moment, we have it up on our website. We sent it out to everybody who was involved in the study.

So, yes, if there is anybody on the line who would like us to give a presentation to your organization, please contact one of us and we'll set something up.

>> Lewis Kraus: Ok. That's great.

And what do you see as kind of the next -- is there a follow-on to this work, or any other kind of similar work that you guys are working on or have in the hopper?

>> Erica Kuligowski: Not at the moment to continue this study. I think we're primarily in the phase where we're trying to get the word out. So as Kathy said, we're just hoping -- and very appreciative to anybody on the line who might be interested in passing this information around to others who might be interested. And like Kathy said, we can answer any questions or give a similar webinar. But not at the moment -- to carry this study any further than we have, not right now.

>> Lewis Kraus: Ok. Great.

We're not really seeing any more questions. People really don't have any more questions for our speakers today? Don't be shy. Write your questions in there. We've had a few but -- it's such a great report. I really enjoyed the results and the method of it as well. What was the reason for doing the study in the first place? How did you guys get this task?

>> Erica Kuligowski: Well, when we were speaking with the General Services Administration about the usage of these systems, I think when we were putting our heads together realized that a lot of the technical information had been set but not much guidance on how to use these systems, who should be using them, the idea of priority came up, how it can we best ensure that they are used in the safest and effective way. And for maybe the people who might need them the most.

So when we were thinking about the lack of guidance on this topic -- also in putting our heads together we thought, well, why don't we -- go to the source and really ask information from the experts. So that's really where this whole study started, is trying to understand maybe what we're missing as far as what the features were for OEEs and making sure that when we're putting together guidance, we're basing it on the benefits and concerns from the people, from anyone, really, who will be using these, especially people with mobility impairments.

>> Lewis Kraus: Yeah. That sounds great.

>> Erica Kuligowski: And I also think that the guidance -- I think it carries an important and higher weight by reaching out and getting the information that we got before we developed the guidance.

>> Lewis Kraus: Certainly. Certainly does. Absolutely.

All right. In my plea for more questions came up with a few.

Has there been any reaction or concerns by first responders specifically fire personnel that have been for decades using these elevators to fight fires?

>> Erica Kuligowski: I guess -- I can't necessarily answer that question because we haven't heard any specifically or directly related to this study or otherwise. I know that they were involved with some of the initial -- there were representatives from the fire service community on the ASTMA 17.1 committee that developed these kind of requirements for OEEs. So that was an important perspective to have on the committee. But we have not received any concerns personally from the fire service regarding this study or this set of guidance.

>> Lewis Kraus: Right. And I think the question was really a good one because you'll have your people at the federal level or national level who will say some things but the people on the street, so to speak, may have a different reaction when faced with something that changes a method that they are very used to. So it will be interesting to see how it proceeds from there. Hopefully it will be smooth.

Do you expect the U.S. Access Board and/or DOJ to use your study to develop Accessibility Guidelines for evacuation elevators that eventually will become standards?

>> Kathryn Butler: That would be a nice thing to have as an outcome from this. We're hoping that -- we would be looking forward to talking with the U.S. Access Board in January and perhaps coming out from that will be some desire to use this as guidance.

>> Lewis Kraus: Yeah. I think that's a perfect idea. This is such a nice report, a good report. It's a voices from the field kind of report that really gives people some way to deal with something that maybe hasn't been in the standards or codified yet. So it would be good to be able to get to all of them. And to the extent that the ADA National Network can help you with that, we're happy to do that.

>> Erica Kuligowski: Thank you.

>> Lewis Kraus: Ok. Here's a sort of more philosophical question from someone here about -- can you give my feedback on how we can change the culture from one where people think it's acceptable to wait for someone to come up and help as opposed to a more integrated model where people with disabilities evacuate at the same time as everyone else?

>> Kathryn Butler: That's a really good question. How do we change a culture?

It was really interesting talking to people in various situations because in some buildings there was very much a culture, you know, the entire building was together, people were talking, communicating, various agencies within the building were working together on getting people out. And then in other places nothing was going on. The building manager had changed hands. Nobody was hearing anything. People weren't talking to each other. And so that's a very good question as to whether people can take it into their own buildings and have some effect or whether we can have some effect from agencies outside to change the cultures. But I think that's an excellent point.

>> Erica Kuligowski: I think just to add on to what Kathy is saying, and from what I hear her saying -- and I agree with her. The involvement of everyone who should have a say in the evacuation planning, and a champion for this work, I think probably both is needed. And then further down the line, as far as changing the culture about using elevators, I think we heard a

lot of really great suggestions on doing that, especially for something that we've been told for so many years not to use the elevators but just getting evidence that they really are going to be safe and ok.

So we talked in the report about providing -- you know, what could be involved in the education piece or at least how can we know now that we can use them. So changing the culture in that providing evidence where they have been used before successfully, if they have been used, where have they been tested at least. Maybe having elevator manufacturers come to the building and talk about these systems, and have it be from a source that's credible.

So we talked a lot about kind of ways in which to change the culture. And it sounds like -- which could be a lot of different place that culture shifts might need to occur. Evacuation planning as well as changing the culture for elevator usage now versus before when we weren't supposed to use them.

It's a good question. I'm not sure we have all the answers yet but we've definitely been thinking about them.

>> Lewis Kraus: Yeah. And I would add to it that there's a lot of people in the field trying to get that change. You know, not to toot our own horn but this webinar series is trying to do that as well by, you know, getting FEMA's information out there and get Promising Practices out there so that people can have their minds changed about what has happened before and what might be able to happen in the future and how people are sort of moving the needle to a different way of doing things in a more equitable way of doing things. I think the report is exactly in line with all of that.

All right. Go ahead.

>> Kathryn Butler: I wanted to thank you very much for this opportunity.

>> Erica Kuligowski: Yes.

>> Kathryn Butler: This is a great way to disseminate the information to a larger audience.

>> Erica Kuligowski: Yes. Thank you.

>> Lewis Kraus: Absolutely. It's our pleasure.

>> Erica Kuligowski: And thank you to everyone online.

>> Lewis Kraus: Yeah. Yeah. A lot of people came to listen to you.

All right. For everyone listening, please, if you have -- if you realized that you have a question and you want to ask, there's Kathy and Erica and Susanne's information on the screen. You can contact them if would like. You can also contact our regional ADA Center at 1-800-949-4232 and we can answer questions around that.

Also I want to remind you you'll receive an e-mail with a link to an Online Session Evaluation. Please complete that evaluation for today's program as we really value your input. We want to show our funder the value of what we're doing.

We want to thank Erica, Susanne, and Kathy today for sharing their time and knowledge with us.

A reminder to everybody that the session was recorded. And it will be available for viewing next week at www.adapresentations.org/archives.php.

Thank you, everyone, for attending today's session. We'll let you go a little early. We look forward to seeing you on January 12 for our next session, "Including Disability: The Updated California Office of Emergency Services Active Shooter Awareness Guidance."

All right. Have a good day, everybody.