

Research on Evacuating Persons with Mobility Impairments One-on-one Interviews with Occupants

Purpose

This interview is being conducted by the National Institute of Standards and Technology (NIST), an agency of the U.S. Department of Commerce.

The efficient evacuation of people from fire in a high-rise building is a critical concern both for existing buildings and for the design of new buildings. It is particularly important to address the needs of people who are less physically able to evacuate quickly during a fire emergency. Elevators may assist in solving this problem if their safety is trusted. The focus of this research is to gain an understanding of the knowledge, views, and experiences of people with mobility difficulties regarding fire evacuation using elevators. The outcome will be guidance to designers and building managers on aspects of fire evacuation that concern occupants with mobility impairments and on how to improve elevator design and usage during fire emergencies.

The interview is a follow-on to the questionnaire you previously completed for this study. It will ask you for more detailed information on your previous evacuation experiences, your awareness of emergency procedures, and your views and preferences on using an elevator to evacuate during a fire emergency. The interview will be one-on-one with a member of the research team, either in person or by phone.

Participating in this interview is voluntary; however, your assistance would be greatly appreciated to help improve the safety of high-rise building occupants.

Everyday activities

- 1) What is your normal pattern of movement at work, starting with your arrival at the work site? Take me through a normal day, noting how you travel around the building carrying out your everyday duties. Let's start with how you enter the building...then how you get to your office...etc.
 - Questions to probe the response, if needed:

While carrying out your everyday duties, how do you get where you need to go?

 - a) From the building entrance to the elevator or stairs
 - b) Up to the floor where you work
 - c) To carry out activities on the same floor
 - d) To carry out activities on other floors
 - e) To go to lunch
 - f) To visit the restroom
 - g) Down to the ground floor at the end of the workday
 - h) To the building exit

Fire Evacuation Experience

- 2) Can you remember the last time the fire alarm sounded in your building or a fire event took place?
- 3) Please walk me through what you did.

- Probing questions include:
 - a) Where (on what floor) were you located?
 - b) What did you do? Why?
 - c) Can you walk me through your thought process [at each step or action]? For example, what made you respond (or not)? Did you feel at risk at any point in time? If so, when and why?
 - d) [If appropriate] How did you respond to the alarm (stairs, elevators, chair, area of refuge, etc.)? What made you choose [insert means of egress choice here]?
 - e) [If appropriate] Can you walk me through your evacuation experience?
 - f) Where did you go to reach safety?
 - g) Were you assisted by anyone?
 - h) When did you evacuate – with everyone else or at some other time?
- 4) Can you remember anything about the fire alarm?
- Probing questions include:
 - a) Can you describe the alarm sound or intercom message?
 - b) What did you think and/or feel after hearing this fire alarm or intercom message?
 - c) Did you experience other cues (e.g., smoke, others' reactions) in the building, other than the fire alarm?
- 5) What has worked during fire evacuations in the past, including drills? What has not worked?
- Probing questions include:
 - a) Have you had any concerns, problems or issues during your evacuation? If so, please describe what these were and why.
- 6) Are there any other fire evacuation incidents that come to mind? *Answer questions (3) through (5) for every experience.*

Fire Evacuation Procedures and Training

- 7) Please explain what you are supposed to do in a fire emergency. (It's OK if you don't know.)
- Probing questions, if needed:
 - a) Where are you supposed to go?
 - b) Are you provided with assistance (and if so, who provides assistance)?
 - c) How will you get there?
 - d) When are you supposed to respond – with everyone else or at some other time?
- 8) Have you received any type of training on evacuation procedures during fires? If so, what types of training have you received?
- By training, we mean the following: reading pamphlets, watching a video, online classes, in-person class, participating in a practice drill
- 9) Are you satisfied with the training for fire evacuation that you have received?
- a) How so?

Fire Evacuation by Elevator [These questions will be used if the interviewee has not already mentioned using an elevator during previous experiences]

10) We would like to have your opinion on using elevators to leave the building during a fire emergency. What do you think about this idea? How do you feel about it? We would like you to consider the entire process, including:

- a) Getting to the elevator lobby
- b) Waiting in the lobby
- c) Getting into the elevator
- d) Taking the elevator down
- e) Getting out of the elevator and into the ground floor lobby

11) Is using an elevator to get out of the building during a fire an option that you have considered? If not, why not? If so, when would you consider using an elevator?

- a) Would you consider using the elevator you came in on in the morning? Would you consider a freight elevator?
- b) What benefits do you see in using an elevator to leave the building during a fire?
- c) What concerns do you have about using an elevator for fire evacuation?
- d) Can you think of any changes in procedures or design that would reduce your concerns about using an existing elevator during fire emergencies? What features added to an existing elevator system would make you feel safer? Are there any improvements that would reduce your concerns?
- e) What procedures would work best for you and make you most comfortable in the use of these systems?

12) [After showing a video or explaining Occupant Evacuation Elevators (OEEs):] So what do you think?

- a) How does this change your mind?
- b) Would you be willing to use an OEE to leave the building during a fire emergency?
- c) What benefits do you see in using an OEE to leave the building during a fire?
- d) What concerns do you have about using an OEE for fire evacuation?
- e) Can you think of any changes in procedures or design that would reduce your concerns about using an OEE during a fire emergency?
- f) What procedures would work best for you and make you most comfortable in the use of these systems?

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