

Appendix D: Observation Summary

Details: April 11, 2024, 1:30 PM, Misericordia

Methodology:

- Took photos of multiple showers in variety of styles and locations
- Measured dimensions of shower and ledge (metric)
- Took note of space constraints around outside side of ledge
- Document the wheelchair, rollator, rolling shower chair, and walker (specifically the various types of rollators and shower chairs used, including ‘obsolete’ ones)
- Took note of dimensions and photos of previous solutions (ramps)
- Asked about possible alternative solutions (modifying the specific chairs themselves)
- Asked about information regarding residents, usage/removal of ramps, etc.
- Asked for permission to take photos (no recording / videos allowed)

User Information

Primary users:

- Adults with intellectual disabilities residing in Misericordia Home
- Caretakers of the adults with intellectual disabilities at Misericordia Home who are responsible for assisting in the showering process of the residents

Secondary users:

- The staff at Misericordia Home: who is responsible for maintaining cleanliness in the bathroom area will need to relocate the device accordingly

Tertiary User

The demonstrating user (Caroline) is 64 yrs old who has some intellectual and developmental disabilities. This user struggles with getting in the shower because the outside edges of the showers are high, and she struggles with depth perception in measuring the height of the step. Further, this user is about 140 lbs and represents an average client because their disability is similar to other residents at Misericordia.

The characteristics of the wheelchair / rolling chairs / other shower devices are relevant to user experience:

- All types of shower chairs, including the wheelchairs, have small wheels, presenting a problem when attempting to climb the shower ledge without a ‘ramp-like’ structure
- Wheelchair Small Wheel Diameter (3 inches)
- Shower Chair Wheel Diameter (3-4 inch)

User's Interactions / Difficulties with the Shower

Process of Transferring

1. Caretaker usually holds onto the belt of a resident who is capable but requires assistance when going into the shower.
2. Resident usually grasps onto bar handles (metal)
3. If resident has problems standing up, then they are transferred to a roller chair (usually a shower chair) and wheeled in *backwards* into the shower
 - a. *backwards* makes it easier for caretaker to have more control, but residents, such as Caroline, prefer to see where they are going in - *forwards*
4. The inner ramp is not present as of now, so caretaker has to lift the wheelchair from the outside at the armrests
5. Resident prefers a smooth entrance / exit from the shower area (no jolts resulting in a sudden ledge drop)

Priorities for an Improved Design

1. Functionality
2. Adaptability (between different heights)
3. Comfort
4. Safety
5. Ease of Sanitation
6. Contrasting Colors with white/eggshell to aid with depth perception (yellow, red, dark colors such as black, dark blue, etc.)
7. Compact (regards to length of ramp) while maintaining ADA guidelines
 - a. To accommodate for small walkway

Table 1: User Observation, Opportunities, Follow - Up, and Suggestions

Observations	Opportunities	Follow Up	User Suggestions
User has difficulty stepping over ledge and into the shower	Provide method to assist user	Use one of the ramps to facilitate transfer	Something inside the shower to assist transition; ramp?
Hard to sanitize current ramps (due to material or non slip factor)	Better material or geometry of ramps	Attempt to disinfect a mockup ramp	Usually just disinfect using soap + water a few times a week
Material is not pleasant to	Better material	Attempt to walk on	No metal surface

Observations	Opportunities	Follow Up	User Suggestions
walk on for residents without need for roller shower chair	(almost mulchy)	material while checking for structural integrity	(generally a bit unpleasant to walk on - also a bit slippery)
Color between ground and shower is not contrasting enough for depth perception	Use a more striking color	Test with users to check if color has enough contrast	Bright red, yellow, or dark green, blue, purple, black, etc.
Ramps are currently too heavy for caretakers to move (upwards of 30 pounds)	Lighter material while being structurally strong (should be designed to stay durable, but if it breaks, should break with a crumple zone in mind in case user is on the material)	Use lighter material and test by checking feedback from users	Anywhere from 0 - 15 lbs should be the goal

Information about the Shower

A key constraint on our project is that our design must be compatible with the ledge and make sure that it fits with ADA regulations. Specifically, the length of such a ramp cannot be too short (to fit with slope guidelines), nor can it be too long (to avoid being an obstacle for other caretakers / residents in the walkway).

Pictures / Sketches of Shower from User Observation



Photo 1: Ramp



Photo 2: Ramp



Photo 3: Ramp Side View

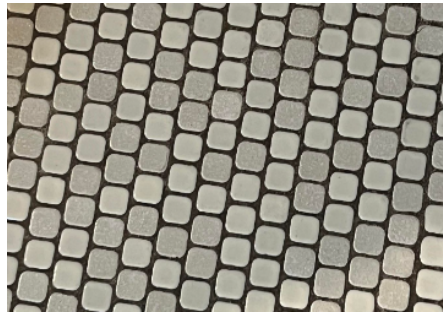


Photo 4: Tile



Photo 5: Tub



*Photo 6:
Measurements*

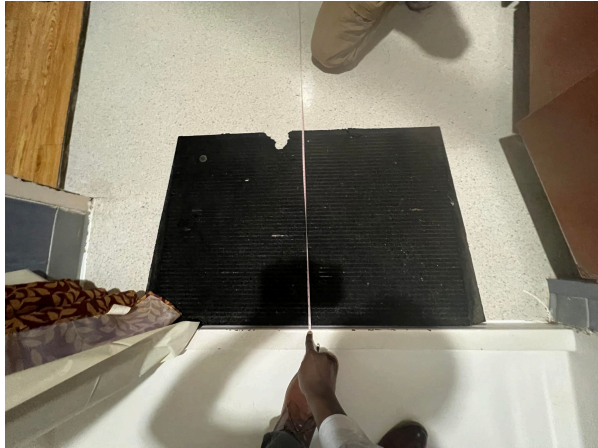


Photo 7: Measurements



Photo 8: Ramp Birds Eye



Photo 9: Tub View



Photo 10: Side View



Photo 11: Measurements



Photo 12: Measurements



Photo 13: Measurements



Photo 14: Measurements



Photo 15: Measurements



Photo 16: Measurements



Photo 17: Measurements



Photo 18: Measurements



Photo 19: Measurements



Photo 20: Measurements



Photo 21: Measurements

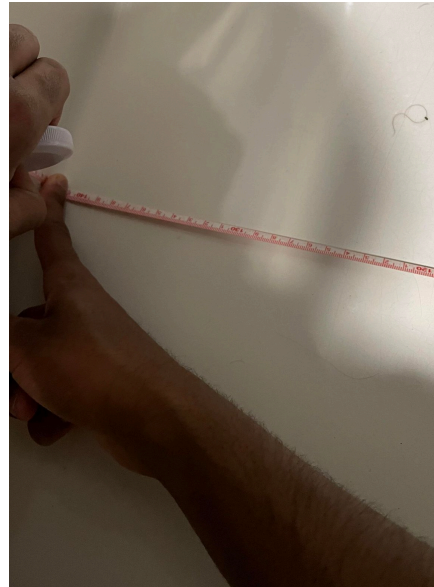


Photo 22: Measurements

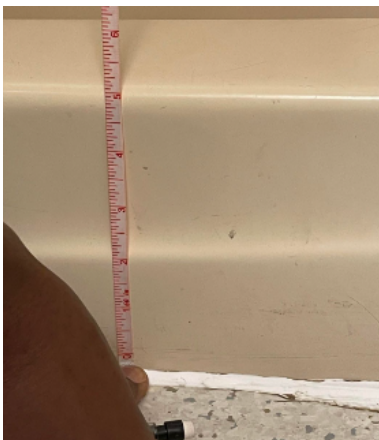


Photo 23: Measurements