Code Toilet or Not: That is the Question

Jon A. Sanford, M.Arch
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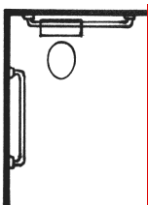
The Americans with Disabilities Act Accessibility Guidelines (ADAAG), which was developed with the intention of providing greater access for individuals with disabilities, often falls short of the mark for older adults. First, many of the guidelines, as with most other accessibility codes and standards, were developed more than 2 decades ago and are generally based upon the stature, strength, and abilities of younger disabled adults. In the time since the development of these guidelines, the demographics and abilities of the population of people with disabilities have changed dramatically. People are growing older and a larger number of individuals are living longer with disabilities. As a result, the majority of individuals with disabilities also have a variety of comorbidities, secondary conditions, and general frailty due to aging. Second, the ADAAG is predicated on the belief that design should promote independent functioning. As a result, little consideration has been given to the needs of frail individuals who require assistance from caregivers regardless of how well the environment is designed. This is particularly true of the majority of users in health care and long term care facilities.

The Need for Alternatives. Both research and the experience of long term care providers suggest that use of toilet and bathing facilities is one area in which the ADAAG specifications are clearly inadequate for older adults. For example, Sanford, et al. have consistently reported (1995, 1999, 2001) that grab bar configurations that complied with ADAAG requirements for new facilities were among the most difficult to use by older adults who stood to transfer. This is not surprising, as ADAAG specifications are intended to facilitate a non-ambulatory wheelchair user sliding directly from the chair to the toilet. In contrast, most older adults use a sit-to-stand movements to get on and off a toilet, even those who use wheelchairs. Yet, these studies are only the tip of the iceberg in the case against ADAAG specifications for toilet design. These previous studies only focused on independent toilet and bathtub transfers. Unfortunately, independent transfer may no longer be an option for frail elders who have limited mobility, reduced strength and stamina, and are at risk of falling. For these individuals, many of whom are in health and long term care facilities, personal assistance is necessary even when “good” grab bars are provided.



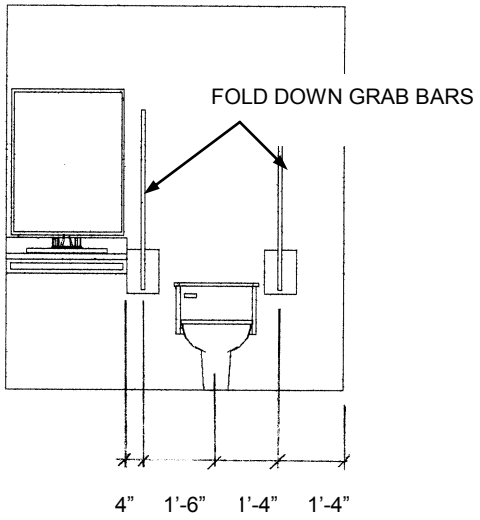
Typical ADAAG toilet configuration

To complicate matters, institutionalized frail older adults often have mobility problems, use wheelchairs and walking aids, and suffer from incontinence. Therefore, fixtures in these facilities need to accommodate older people who have many different types of impairments and comorbidities, including limitations in reach, difficulty lifting legs, and difficulty with sit-to-stand; who use devices for assistance with ambulation; and who may transfer either independently or with assistance. However, the ADAAG were not intended to accommodate people with such a disparate variety of conditions.

The need for alternative designs is outlined in a set of guidelines adopted by the American Institute of Architects (2001). The guidelines state that: "…users of hospitals and health care facilities often have very different accessibility needs from the typical adult individual with disabilities addressed by the model standards and guidelines. Hospital patients, and especially nursing facility residents, due to their stature, reach, and strength characteristics, typically require the assistance of caregivers during transfer maneuvers. Many prescriptive requirements of model accessibility standards place both older persons and caregivers at greater risk of injury than do facilities that would be considered noncompliant. Flexibility may be permitted for the use of assistive configurations that provide considerations for transfer assistance."

Alternative Designs to Meet Elders' Needs. To accommodate the largest number of older individuals, the design of toilet facilities should have sufficient flexibility to promote independent use as well as assistance by as many as two care providers, when necessary. Therefore, designs should not only accommodate elders who have the capability of supporting their own weight and pivoting on their feet during transfers, but also those who cannot. Moreover, designs should prevent and/or reduce injuries to all users, both elders and care providers and permit ease of access by individuals with many types of impairments. Based on these goals, "best practices" in the design of toilet facilities for older adults are described below.

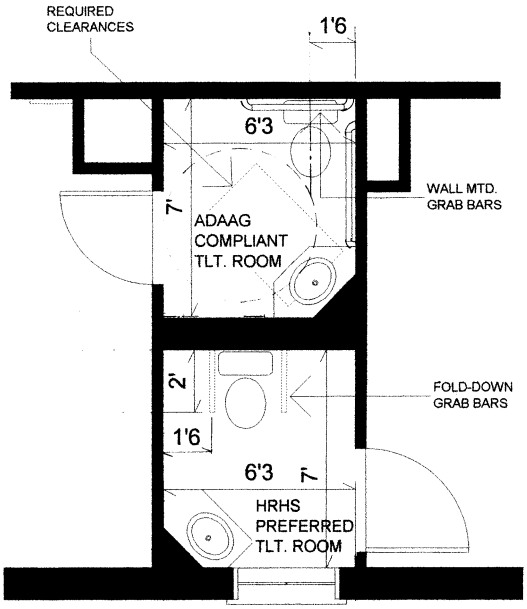
Toilet location. In contrast to ADAAG, which specifies that the centerline of the toilet shall be located 18" from a sidewall, increasing the sidewall space adjacent to the toilet will provide space for caregivers to stand alongside one or both sides of the toilet as necessary, to provide support and assistance with transfer as well as to help with the partial removal and replacement of clothing. Although there is no research data to substantiate how much space is needed, the general sentiment among designers is that more space is better.



Grab bar type and positioning. Research has repeated documented (Sanford and Megrew, 1995; Sanford, Echt, and Malassigné, 1999) that grab bars mounted at the recommended heights and distances from the toilet, both side and rear locations are too far away to be effective for 'self' assistance. In contrast, research has shown that swing-up or fold-away models (e.g., by Linido,

Hewi, or Bobrick) can place the 'assistance' where it is useful as well as providing flexibility for assisted transfers. Rather than stationary bars, fixed to the walls alongside and behind a toilet, swing-up bars are typically attached to the rear wall and pivot up and down. With grab bars in the vertical or up position, sufficient space is provided for caregivers to stand next to the toilet on either (or both) side(s) to provide support getting on and off the toilet. In the horizontal or down position, grab bars on both sides of the toilet would permit individuals requiring assistance to maintain balance while clothing was removed or replaced. Alternatively, for individuals capable of independent transfer, grab bars on both sides facilitates pulling up to a standing position and lowering down to a sitting position.
Whereas there is no data available to suggest the ideal length of grab bars, most designers tend to use swing-up grab bars that are considerably shorter (usually 24"-30") than the 42" minimum requirement for grab bars alongside the toilet. This approach makes good common sense, as these bars are typically used by individuals who have unsteady gait and are at risk of falls. As a result, the shorter bars permit both older individuals and caregivers to get as close to the toilet as possible and thereby minimize ambulation.

Implementing Alternative Designs. Although the alternative designs suggested here do not meet ADAAG specifications, there are several routes that would permit their use in facilities required to comply with the ADAAG. The first is the use of **equivalent facilitation**. Equivalent facilitation is essentially a caveat in ADAAG that permits the use of design alternatives if they can be shown to be at least as accessible for the intended population as ADAAG-compliant designs. Unfortunately, in practice, equivalent facilitation is rarely used. This is not because designers and facility owners do not want to push the envelope, but rather because of their limited ability to do so. Approval of alternative designs under equivalent facilitation is difficult. Too often alternative designs that will meet the needs of frail individuals, but that do not meet ADAAG specifications, are rejected by local code officials who generally don't understand the intent of ADA as well as they do enforcement of it. As a result, even when designs are equivalent (or in some cases superior) for a frail, older population, ADAAG-compliant solutions are still required by local codes officials.



How to meet and go beyond ADAAG

Moreover, going over the heads of local officials to receive approval for alternative designs at the state or federal level (i.e., Department of Justice) takes time that equates to lost dollars in the construction process. As a result, few facility owners are willing to roll the dice and hope that an alternative design will be approved under equivalent facilitation.

Fortunately, innovations occur despite the system when a building owner is willing to pay for what is needed in addition to what is required. For example, facility owners might construct both an ADAAG compliant toilet room to appease building code officials and a "preferred" toilet room that was not ADAAG compliant, but better met the needs of users. Often times, it is less

expensive to build a second bathroom, than to risk construction delays while trying to obtain approval of alternative designs under equivalent facilitation.

Second, ADAAG **can be circumvented** by designing alternatives that are sold as training facilities. For example, one design firm uses the concept of a "training toilet" based on the European model of "bathroom as shower room." Ostensibly, the idea of the training toilet is to circumvent the limitations of accessibility requirements, by designing bathroom facilities that were intended for training residents rather than for their actual use. Training toilets are either located in a separate room as a unisex toilet or combined with a bathing facility, for use by staff in retraining residents in toileting skills.

Summary. Although research and experience do not necessarily suggest that existing accessibility guidelines and common practices are wrong, they do indicate that current guidelines may be incomplete when the functional abilities, preferences, and transfer techniques of older adults are considered. Thus, while updating of ADAAG to meet the needs of an aging population is clearly warranted, codes are generally slow to respond to change. Thus, in institutional settings where ADAAG is mandated, it is often necessary to meet the minimum requirements and then design the rest of the facility to go beyond ADAAG in order to meet the needs of the older adults and care providers. Alternatively, when ADA guidelines are not mandated, such as in an individual's own home, it is extremely important that providers of aging services are aware of alternative toilet and grab bar configurations and recommend designs that are individualized to meet the needs of the older resident(s).

References

1. Americans with Disabilities Act Accessibility Guidelines (1991).
2. Sanford, J.A., Echt, K., Malassigné, P. An E for ADAAG: The case for ADA Accessibility Guidelines for the elderly based on three studies of toilet transfer. *Physical and Occupational Therapy in Geriatrics*. 1999; 16(3/4):39-58.
3. Sanford, J.A., Megrew, M.B. An evaluation of grab bars to meet the needs of elderly people. *Assistive Technology*. 1995; 7(1):36-47.
4. Sanford, J.A., Megrew, M.B. Using Environmental simulation to test the validity of code requirements. In: Steinfeld, E., Danford, G.S., eds. *Enabling Environments: Measuring the Impact of Environment on Disability and Rehabilitation*. New York: Plenum Press; 1999:183-205.
5. Sanford, J.A. Access to toilet and bathing facilities. Washington, DC: US Access Board; 2001. Final Report.