



Keeping U.S Veterans Safe: A Guide to Overcoming Obstacles to Access

Introduction:

There are over 23.2 million veterans living in the United States today. Of those, 9.6 million are over the age of 65.ⁱ An estimated 5.5 million veterans are disabled from all causes, and 3.6 million are living with a service-related disability.ⁱⁱ Many veterans are able to live at home independently with the support of specialty-designed technology or innovation that addresses the important activities of daily living. This paper introduces powered toilet lift technology as one such innovation – an innovation that serves to support safety, dignity and personal care in the veteran faced with toileting challenges.

Embracing the Challenges of Disability:

According to The World Health Organization International Classification of Functioning, Disability and Health (ICF), disability is considered an umbrella term for any or all of the following components: impairments, activity limitation, or participation restriction, as influenced by environmental factors.ⁱⁱⁱ

Globally, one in five individuals is living with at least one commonly recognized disability, and most people will experience a disability of some form during the course of their lifetime. Disability does not necessarily mean poor health. For example, in the early stages of disability associated with paraplegia, the affected person may be considered in compromised health and may have a greater need for medical and health care, but once the condition is stable the person may enjoy meaningful health and quality of life.

Health is increasingly conceptualized in terms of quality of life: what activities individuals can do, in what areas of life they are able to participate as they wish, and what long-term supports they need to thrive in their community. Three main factors influence these quality of life outcomes:

- Activity limitations
- Participation restrictions
- Environmental factors

Activity limitations are described as difficulties an individual may have in executing activities of daily living. Participation restrictions are challenges an individual may experience in common in life situations. Environmental factors include all the physical and social aspects of the environment that affect a person's experience of disability, including equipment used or personal assistance provided. Environmental factors may act as facilitators that diminish disability, or barriers that create disabilities.

Barriers to Quality of Life Outcomes:

Studies show that individuals with disabilities are more likely than people without disabilities to report:

- Poorer overall health.
- Delays in medical care because cost.
- Inadequate (underinsured) or lack of health insurance.
- Fewer health care resources.

People with disabilities can lead long healthy lives. But primary and secondary risks must be managed. For example, toileting can be a secondary risk for individuals and their family members. Over time shoulder injuries occur from the cumulative damage associated with manual handling forces to both individuals and their caregivers, who in many cases are well meaning family members.^{iv} The traditional lift under the individuals' arms increases injury risk and cumulative trauma to the shoulder in the caregiver performing the lift. This unsafe task also places the individual at risk for shoulder injury, especially in the presence of shoulder instability.^v Physically deconditioned caregivers and/or patients are at even higher risk for shoulder issues. This is not the only barrier to quality of life posed by toileting activities.

Toileting has become of increasing interest as the general U.S population is aging. Much of this interest is a result of the 2011 Report from the Center for Disease Control. In the June 2011 Morbidity and Mortality Report, data suggests that of the 234,094 non-fatal bathroom injuries, over 81% were related to falls.^{vi} Toileting represented the 2nd most frequent injury activity. Standing up from, sitting down on, or using the toilet was the 3rd most precipitating event. Many veterans at home are unaware that standing after sitting can result in postural or orthostatic hypertension, which is a sudden drop in blood pressure that causes lightheadedness or dizziness.^{vii}

One study, composed of 157 veterans living at home, explored the physical conditions associated with toileting challenges. Of the 157 veterans surveyed, the following conditions and distribution was identified: Cerebral Dysfunction (n=2) 1.2 %; arthritis, diabetic neuropathy or general muscle weakness (n=4) 2.4%; ALS, MS, or Parkinson's Disease (n=36) 22.9 %; Muscular Dystrophy, neuropathy, myositis (n =98) 62.4%, spinal injury (n=5) 3.1 %. In addition to the physical conditions or co-morbid conditions, there are physical characteristics associated with the need for toileting assistance. These physical characteristics include: upper or lower extremity weakness, generalized weakness, and the need for assistive devices to walk or stand. Each one of the described veterans would benefit from a powered toilet lift technology because of a physical condition or co-morbid condition.

Criteria for Toileting Support:

A number of supportive technologies, devices, and environmental innovations are available to enhance dignity, prevent falls or skin injury, and promote toileting health. These include ADA toilet grab bars, raised toilet seat, power toilet lift, sit-to-stand, or ceiling lift. These innovations range in price from \$50 to \$10,000. The challenge to therapists is matching the veterans' emotional, social, and physical needs with available innovations for the greatest measurable return on investment. This can be done by way of a criteria-based protocol.

The first step in matching veteran needs with technology is to conduct a mobility assessment. Veterans who score a “yellow light” or who require moderate assistance will benefit from power toilet technology. Other conditions/criteria include: size and configuration of the bathroom, hand strength, dexterity, height and weight, general leg strength, calf muscle strength, generalized muscular weakness, orthostatic intolerance, history of falls and more. Consider the following case study, which illustrates use of criteria for selecting appropriate technology.

Case Study*

Ellen served in the later part of the Vietnam encounters. As a nurse in Germany for most of her tour, she participated in lifting, moving, and treating a variety of heavy individuals who were dependent because of combat injuries. These injuries or conditions included: pain, fear, fractures, extensive soft tissue damage, spinal and cerebral injuries and more. Handling critically injured troops over time led to musculoskeletal injuries of her own.

At the time of her deployment, Ellen and her co-workers did not understand the dangers associated with manually handling. However, researchers now have science to help healthcare workers better understand the dangers inherent in manual handling activities. William Marras at Ohio State University explains that 75% of the time the healthcare worker lifts greater than 35 pounds, a microfracture occurs at the vertebral endplate. This microfracture is designed to heal completely, but will produce a small amount of scar tissue.^{viii} The human body is not designed to lift more than 35 pounds.^{ix} Like Ellen this is done repeatedly throughout the day, the year, or a lifetime, and is not unusual in the life of today’s healthcare worker.^x

Today Ellen lives in her own single story home. She has no ability to “push up” from the toilet using her hands or arms. Her left knee is “locked up” 40% of the time. Ellen fell last month attempting to stand up from the toilet when she leaned onto the wall mounted sink the sink broke from the wall leading to both her and the sink crashing to the floor. A mobility assessment indicated that Ellen scores “Yellow” status, meaning she requires moderate assistance in activity and mobility. She is a candidate for a power toilet lift because:

- Ceiling lift is indicated for “Red” or “Yellow” status, but Ellen’s bathroom precludes use of a ceiling lift.
- Sit-to-stand device is unnecessary for a “Yellow” status.
- The bathroom size and configuration accommodates the powered toilet lift.
- The powered toilet lift is the right height, this preventing lock-up of the knee upon flexion.
- The powered toilet lift controls elevation off the toilet and precludes the need for hand or arm strength.
- The powered toilet lift controls descent onto the toilet precluding the need for hand/arm strength or knee flexion.
- The powered toilet lift offers slow deliberate motion reducing the fear of falling.

Until a standard criterion has been validated, therapists often create criteria based on expert opinion. Ellen’s therapist recognized the impact this innovation would have on her quality of life. The therapist also recognized that that failure to provide safe, dignified, cost effective technology can lead to unnecessary healthcare costs by way of falls, skin injuries, and more. Like many veterans, Ellen expressed a high degree of satisfaction with this specially-designed technology. (See Table One: The Voice of the Veteran)

Summary:

The spirit of the veteran living in the US is to be independent and live free of barriers to quality of life outcomes. Disability is not a limitation by any means. However, the failure to manage risks associated with disability is a limitation. *Disabilities Unlimited* explains that disability is a powerhouse of determination waiting to be discovered, employed, and accepted.^{xi} Resources are available to therapists that serve to remove unnecessary barriers to safe, dignified and hygienic independent living.

Table One: The Voice of the Veteran

In a qualitative study comprised of 15 subjects, 100% of the subjects responded positively to powered toilet technology. The following are statements made by veterans who wanted to share their experience with powered toilet technology:

“I have had struggles trying to pull myself on and off the toilet. My wife has had to help me. Having the powered toilet lift allows me the dignity and confidence to go to the bathroom on my own.”

“The powered toilet lift has been essential to my safety, dignity and basic hygiene. When I was diagnosed with IBM 15 yrs. ago I had to have my wife clean my behind. A higher toilet and riser on top was not enough! With this new technology, I do not have to worry about my wife getting hurt and take care of things on my own.”

“I am a paraplegic. Transferring to and from the toilet has become increasingly difficult over time. The powered toilet lift installed quickly. I was able to use it right away and transfer back and forth with ease.”

“I had a left-sided CVA and regained most of my strength and coordination but injured my right shoulder and needed help to get on and off the toilet. I was so pleased to know that there was a solution. “

“I was diagnosed with Parkinson’s Disease more than 20 years ago. I am at the stage where the disease has affected my speech and my motor coordination. I found it so hard to use handicap toilet with 6” riser and at times I was so tired trying to get up that I would need to call 911 to come in and help me. I found that the powered toilet lift had a lift that looks discreet and would do what I needed. I have been so pleased and now I cannot live without it”

“My wife hurt her back trying to get my off the toilet.”

“I fell trying to get to stand up from my handicap toilet that has a 6” riser. Since that time a powered toilet lift was installed, and I cannot imagine living without it.

“I have muscular dystrophy. I was admitted to the acute care facility because of a toileting-related fall at home. The powered toilet was installed in my home, now I can go on my own with no assistance and I feel confident not to have my wife or someone with me all the time.”

*Composite case based on structured and unstructured interviews

-
- ¹ Veterans by the numbers. Accessed March 10, 2014 at: <http://www.infoplease.com/spot/veteranscensus1.html>
- ² Veterans Facts and Statistics. Accessed March 11, 2014 at: <http://www.disabled-world.com/disability/statistics/veteran-statistics.php>
- ³ World Health Organization - International Classification of Functioning, Disability and Health (ICF). Accessed March 10, 2014 at: <http://www.who.int/classifications/icf/en/>
- ⁴ Gallagher SM & Arnold M. Shoulder pain in caregivers and patients: A lesson in safer patient handling *Am J SPHM*. 2013;3(2):8-15.
- ⁵ Huang SW, Liu SY, Tang HW, Wei TS, Wang WT, Yang CP. Relationship between severity of shoulder subluxation and soft-tissue injury in hemiplegic stroke patients. *J Rehabil Med*. 2012;44(9):733-9.
- ⁶ Morbidity and Mortality Report 2011 from the Centers for Disease Control - Non-Fatal Bathroom Injuries among Persons \geq 15-years-old. Accessed March 2, 2013 at: www.cdc.gov/mmwr/preview/mmwrhtml/mm6022a1.html
- ⁷ Bonder BR & Dal Bello-Haas V. *Functional Performance in Older Adults*. FA Davis Company: Philadelphia. 2009: 82.
- ⁸ Marras W. *Trade-off in Patient Handling: Push and Pull*. Accessed March 3, 2014 at: <http://biodynamics.osu.edu/publication%20pdf/2009/Trade-offs%20in%20patient%20handling%20risks%20-%20pushing%20and%20pulling.pdf>
- ⁹ Waters T. When is it safe to manual lift a patient? Accessed March 12, 2014 at: http://www.asphp.org/wp-content/uploads/2011/05/When_Is_It_Safe_To_Manually_Lift_A_Patient.pdf
- ¹⁰ Gallagher SM. American Nurses Association. *Implementation Guide to Safe Patient Handling and Mobility Interprofessional National Standards*. ANA Nursing World, Silver Spring MD. 2013.
- ¹¹ The Real Meaning Behind the Word *Disability*. Accessed March 12, 2014 at: <http://disabilitiesunlimited.org/the-real-meaning-behind-the-word-disability/>



LiftSeat Corporation
158 Eisenhower Lane South
Lombard, Illinois 60148

(877) 665-4381
www.liftseat.com

Written By
Susan Gallagher, PhD, MA,
MSN, RN, CBN, HCRM,
CSPHP March
2014