



Mobile Manual Standing Wheelchair (VA Reference No. 10-151)

Unique mobile manual standing wheelchair that allows patients the ability to stand up easily and move freely while in a standing position

Technology

Manual mobile standing wheelchair for patients with spinal cord injury and other disabilities

Inventors

Gary Goldish, Andrew Hansen
Minneapolis VA Medical Center

Key Features

- Novel lifting mechanism to provide seated and standing positions
- Easy transition
- Versatile with three speeds
- Results in increased independence and improved quality of life for patients

Stage of Development

Conceptual stage

Keywords

Manual wheelchair
Standing, sitting position
Spinal cord injury
Personal mobility device

Patent Status

Patent application

Contact

Lee Sylvers, Ph.D.
Technology Transfer Program
Department of Veterans Affairs
Office of Research & Development
810 Vermont Avenue, NW
Washington, DC 20420
Phone: 202-443-5646
Fax: 202-495-6153
E-mail: lee.sylvers@va.gov

Technology

The Department of Veterans Affairs (VA) has developed a conceptual model for a manual mobile standing wheelchair. The basic principles of the manual mobile standing wheelchair include the ability to move easily between seated and standing positions and the ability to use the wheel rims for propulsion in either of these positions. The initial design utilizes a four bar linkage system which allows a simple transition between sitting and standing while maintaining the same orientation of the trunk. The drive system is designed to allow a normal standard wheelchair gearing (1:1 ratio of arc lengths of wheel rim to drive wheel), one slower gear for climbing hills, and one faster gear to allow faster propulsion in the sitting position.

Opportunity

The aging population and patients with debilitating medical conditions such as spinal cord injury prefer to maintain their mobile independence and benefit their health by preserving a certain level of physical activity. Wheelchair and scooter technology is evolving to give people with disabilities more mobility. Impact on the healthcare delivery industry is significant because it is encouraging mobility of people who were previously bed ridden thus reducing the impact of healthcare costs associated with long term immobility (for example, treating a single pressure sore can cost as much as \$300,000).

In addition, wheelchairs and scooters provide improved lifestyle for disabled people and helps transition the healthcare delivery system toward lower cost home care instead of hospital care. As a result, patients receive a number of health benefits. The overall market for wheelchairs and scooters benefits, as well, resulting in a global wheelchair and scooter market that was estimated at \$3.9 billion in 2009 with over 4 million units (manual and powered) sold. The overall market is expected to grow to \$7.9 billion by 2015.

Competitive Advantage

The developed concept for the mobile manual standing wheelchair has a number of competitive advantages when compared to existing devices. The wheelchair is mobile in both sitting and full standing positions and can easily transition between sitting and standing positions. In addition, the wheelchair is versatile with slow, normal, and fast speeds. Use of the wheelchair could result in numerous health benefits, increased independence, and improved quality of life.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).