



Healthcare Needs for Prevention of and Recovery from Stroke

Over 700,000 Americans suffer a new or recurrent stroke each year. Stroke is the leading cause of serious, long-term disability in the United States costing an estimated \$57.9 billion per year.¹ Physical therapists are trained to provide care that diminishes the disabling impact of stroke providing survivors with enhanced quality of life and reduced strain on the nation's healthcare system.

Impacts of Stroke on Society

Stroke is the number three cause of death in the U.S., and the leading cause of serious, long-term disability. Annually about 540,000 of people survive beyond their first year after a stroke. Over 2.5 million stroke survivors are living in the US outside of institutionalized care. Between 50 and 70% of stroke survivors regain functional independence but 15 to 30% are permanently disabled. Three months after stroke, 20% of survivors require institutional care. Stroke costs the U.S. an estimated 57.9 billion annually.¹

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How does stroke cause disability?

During a stroke, blood supply to the brain is cut off, and the brain's ability to carry out its vital functions is interrupted. Permanent damage is caused by sustained interruption of blood flow to brain tissue. This damage causes persons with stroke to experience disability due to a multitude of physical problems including weakness, walking and balance deficits, difficulty speaking, cognitive deficits, visual impairment, and depression. These impairments lead to disability that ranges from diminished ability to work to requiring 24 hour skilled care.

What happens to stroke survivors?

In the past, survivors of stroke have faded from their pre-stroke roles in society. This has frequently led to a sedentary, isolated existence which ultimately results in a further decline in function, health, and general wellbeing. Persons with stroke have as high as a 73% incidence of falls and of those who fall, stroke survivors experience a 10-fold increase in hip fracture compared to those without stroke.^{2,3}

Stroke not only impacts the survivor, it also creates heavy demands on family, caregivers, and society. Family members are often forced to reduce or quit work to care for the family member with stroke. When families are

not able to provide the required care, persons with stroke often spend the remainder of their lives in skilled nursing facilities. The American Heart Association estimates that direct healthcare costs related to stroke in billions of dollars include 15.5 for hospitalization, 14.3 for nursing home care, 6.2 for physician and other professional care including home healthcare, and 1.3 for drugs and medical equipment. Indirect costs amount to \$20.6 billion in lost productivity.¹

Physical Therapists Role in Stroke Prevention & Treatment

Extensive clinical and statistical studies have identified several risk factors for stroke. Some risk factors cannot be influenced by an individual such as family history, age, gender, race (African Americans have a higher incidence of stroke, including that caused by sickle cell anemia, a genetic disorder), or previous stroke or heart attack. There are, however, many factors we can control, including: high blood pressure (hypertension); cigarette smoking; high blood cholesterol; diabetes; carotid artery disease; obesity; and physical inactivity.

What can physical therapists do to improve quality of life and reduce costs related to stroke?

The APTA House of Delegates identifies the role of physical therapists in promoting lifelong physical fitness, including aerobic conditioning, flexibility, and strengthening. Physical therapists work with individuals across the lifespan to increase the likelihood that Americans will maintain a healthy, physically active lifestyle to prevent stroke and other chronic diseases. All too often people have to figure out how to begin an exercise program by themselves—and that can lead to poor results or even injury. One of the most common reasons why people stop an aerobic program is a muscle or joint problem that develops because their body is unaccustomed to the increased physical stress of exercise. As experts in exercise prescription for persons with a variety of medical conditions, physical therapists are knowledgeable about how to design an exercise program that accounts for an individual's medical conditions, abilities, body type, goals, and lifestyle—all elements critical to safety and success.

Trained at the masters and doctoral level, physical therapists are also specialists in facilitating recovery of mobility and function after stroke. As part of a team of rehabilitation specialists, they help stroke survivors acquire the tools,

resources, and knowledge necessary to optimize their wellness and quality of life after stroke. Physical therapists are involved in stroke rehabilitation from the first days in the hospital, through the acute rehabilitation process, and as the person transitions to their new life after the stroke. In each phase of recovery physical therapists provide a comprehensive review of a patient's abilities, potential for recovery, resource needs, and specific problems relating to issues such as mobility, pain, and falls. From this evaluation, the physical therapist works with the patient to design an individualized program to optimize the person's function, comfort, and quality of life. The benefits of access to rehabilitation services, including physical therapy, expand well beyond the stroke survivors themselves by reducing costs of healthcare for progressive disease and improved productivity of stroke survivors and their families. Unfortunately, opportunity for stroke prevention, improved quality of life and productivity for those with stroke, and reduced cost to individuals and society are often lost as a result of access and funding limitations.

What does research tell us about the role of physical therapists for patients with stroke?

There is strong support for the benefit of specialized rehabilitation services for people with stroke. We know that organized stroke unit care results in long term reductions in death, dependency, and the need for institutional care.⁴ In addition, a recent review by the Cochrane collaboration found that outpatient rehabilitation services for patients within one year of stroke reduced the odds of a poor outcome by 72% and increased patients' personal activity level by 14%.⁵ Findings over the past decade have revealed the potential for physical reorganization of brain tissue in response to challenging task-specific practice. Clinical trials are ongoing to understand how to optimize brain reorganization and recovery through therapeutic exercise prescribed by rehabilitation specialists including physical therapists.

Current Policy Challenges

Repeal of the Medicare Therapy Cap

Repeal of the Medicare Therapy Cap is essential to ensuring that Medicare beneficiaries receive the care that they require to stay active to prevent stroke and when it cannot be prevented, to maximize recovery from stroke. Physical therapy care can effectively lower risk of injury from falls, reduce risk for development of chronic disease, and optimize return

to productive life roles. Because stroke can affect individuals in very diverse ways, placing an arbitrary cap on benefits, without consideration for severity, risks leaving the most disabled individuals without access to needed services. For example, we know that the time frame for recovery is longer for individuals who have a severe stroke. Without accounting for stroke severity, the cap is likely to limit access to needed services prior to optimal recovery for this population. For these individuals, the cap risks curtailing services prior to reaching the point of cost-effectiveness for therapy services.⁶ Investing in needed medical care, driven by the patient and medical team, will ensure individualized care that minimizes future demand on the medical system.

Direct access to physical therapy for Medicare beneficiaries

Direct access would allow Medicare beneficiaries to directly access physical therapists for outpatient services as authorized by state law. Direct access eliminates the burden of unnecessary visits to physicians in order to access physical therapy. Beneficiaries would be able to get timely care to address physical limitations as they endeavor to lead an active, healthy lifestyle. Patients who have suffered a stroke would be able to efficiently access their physical therapist as they learn to manage their disability. An example of need for this access is for brief interventions to prevent progression of secondary effects of stroke such as joint pain, muscle stiffness, balance deficits, and falls. Physical therapists are one of only a small number of medical specialty providers trained to provide safe effective exercise prescription for patients with the types of physical disabilities caused by stroke.

Current Funding Challenges

Government funding aimed at keeping seniors safe from falls

Persons with stroke fall with alarming frequency. Recognition of the need to provide education, outreach, research, and programs to reduce falls in older Americans is growing. Physical therapists are frontline health care providers in initiatives to reduce falls through interventions to improve mobility, strength, and balance. Physical therapists are already providing patient education, community outreach, research and programs to prevent falls and would benefit from investment of the federal government in this public health initiative.

Physical therapists are an untapped resource that could make a large impact on a nation-wide effort to enable Americans to achieve a physically active lifestyle. Physical therapists have already instituted many preventative initiatives but their services for prevention are not supported as part of medical reimbursement systems such as Medicare.

Government funding aimed at improving public transportation for the disabled

Persons with stroke often have limited ability to walk or operate a wheelchair and are effectively stranded in their homes outside of ambulance transportation. This leads to both diminished medical services and social isolation. Current programs for door-to-door public transportation are overwhelmed and cannot be relied upon by the people who need them the most. Grants to research and develop new ways to ensure that our disabled citizens can access their communities would have a profound effect on persons living with disability secondary to stroke.

Support for preventative medical care

As the United States faces ever escalating medical costs, increased support for preventative care is an investment worth making. Stroke is an excellent example of the high cost that society pays for lack of attention and financial support for preventative care. Many people want to be healthy but do not know how or have medical conditions that thwart their efforts to adopt healthy habits. Physical therapists are an untapped resource that could make a large impact on a nation-wide effort to enable Americans to achieve a physically active lifestyle. Physical therapists have already instituted many preventative initiatives but their services for prevention are not supported as part of medical reimbursement systems such as Medicare.

Support for rehabilitation sciences research

From 1990-2000, the National Institutes of Health (NIH) dedicated research initiatives to understanding how the brain recovers from injury or disease. This period was called the

“Decade of the Brain.” As a result there have been many advances in neuroscience that have impacted the rehabilitation of stroke survivors. For example, we now understand that the brain has the potential to recover motor skills as a result of intense, task practice. This recovery is a result of neuroplasticity or the capability of neurons in the brain to either recover function or, in the case of neurons that have died off as a result of stroke, surviving neurons can take over the function of the neurons that have been lost. Several scientists who are physical therapists are conducting NIH-funded rehabilitation research to determine how task-training and exercise can promote motor recovery after stroke. Innovations in rehabilitation have resulted from these efforts. For example, constraint-induced movement therapy is a method where the less involved arm after stroke is put in a mitt in order to encourage more effort and practice from the arm that has paralysis. Treadmill training with the use of body-weight support and the assistance of a physical

therapist is an example of an intense form of task-practice that assists stroke survivors to recovery walking ability. Continued support for research endeavors is vital to ensure that physical therapy practice is based on objective study of best clinical care to optimize patient and societal benefit.

References:

- 1 American Heart Association. *Heart Disease and Stroke Statistics — 2006 Update*. Dallas, Texas: American Heart Association; 2006.
- 2 Forster A, Young J. Incidence and consequences of falls due to stroke: a systematic inquiry. *BMJ* 1995, 311(6997) p. 83-6.
- 3 Gustafson Y. Falls and injuries after stroke: Time for Action! *Stroke* 2003, Feb;34(2):494-501.
- 4 Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. *The Cochrane Database of Systematic Reviews* 2001, Issue 3. Art. No.: CD000197. DOI: 10.1002/14651858.CD000197
- 5 Therapy-based rehabilitation services for stroke patients at home. Outpatient Service Trialists. Therapy-based rehabilitation services for stroke patients at home. *The Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD002925. DOI: 10.1002/14651858.CD002925.
- 6 Duncan P, Goldstein L, Matchar D, Vogel B, Jia H. Medicare Stroke Rehabilitation Issues: Medicare Therapy Caps. 2006, unpublished.

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