

# GERINOTES

SECTION ON GERIATRICS, AMERICAN PHYSICAL THERAPY ASSOCIATION

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Contact Melanie Sponholz, GeriNotes Editor  
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# PRESIDENT'S PERSPECTIVE: ADEQUATELY EXPLORING THE FUTURE OF PHYSICAL THERAPY

John O. Barr, PT, PhD



On September 10, a number of Section on Geriatrics (SOG) members attended *Exploring the Future of Physical Therapy*, hosted by Arcadia University

and facilitated by the APTA. Built on the analyses and experiences of the *Physical Therapy and Society Summit* (PASS, 2008)<sup>1</sup> and the *Vitalizing Practice Through Research and Research Through Practice* conference (2009),<sup>2</sup> the mission of this symposium was to convene PT leaders to collaboratively discuss creative and innovative strategies and to explore future opportunities for practice. Highly thought provoking, each of these meetings has been intentionally broad in nature, focusing on over-arching issues that require our profession's attention. Although *Exploring the Future* did incorporate breakout discussion groups concerned with neurology, pediatrics, orthopedics, & sports, planned programming in this series of meetings has yet to include issues related to aging or geriatrics.

It's hard to imagine that our profession can properly envision its future and engage in appropriate strategic planning when failing to account for the impact of our aging society. For the SOG, a sentinel event was the 2008 publication of the Institute of Medicine's report *Retooling for an Aging America: Building the Health Care Workforce*,<sup>3</sup> which highlighted a crisis that is quickly approaching: the considerable shortfall in the quality and organization of the health care workforce to care for tomorrow's older Americans. This report, which called for fundamental reform in the way that the workforce is both trained and utilized in the care of older adults, has been discussed in previous Perspectives.<sup>4,5</sup>

*"It's hard to image that our profession can properly envision its future and engage in appropriate strategic planning when failing to account for the impact of our aging society."*

The APTA staff and elected leaders certainly are aware of educational and workforce issues related to health care for older Americans. These educational issues include: limited didactic coverage and few required geriatric clinical education experiences; the small number of geriatric clinical residencies and board-certified geriatric clinical specialists; and Commission on Accreditation in Physical Therapy Education criteria that address *lifespan*, but that do not focus on geriatrics.<sup>4</sup> The fundamental workforce issue is that the ranks of physical therapists and physical therapist assistants are challenged to meet today's health care needs, and will be unlikely to meet future needs, unless our numbers are increased substantially (eg, to an estimated 300,000, by 2016),<sup>6</sup> and/or we develop better ways to include nonphysical therapists on the physical therapy team (an issue grappled with in the 2011 House of Delegates). The most recent analysis of practice confirms that 40% to 43% of physical therapist patient care activity across a wide variety of practice settings is for individuals 66 years of age or older.<sup>7</sup> Physical therapists and physical therapist assistants currently have vacancy rates of 12.1% and 5.8%, respectively, in skilled nursing facilities across the United States,<sup>8</sup> which represents a considerable improvement from when this data was first collected in 2006. However, this vacancy rate is higher than that for physical therapists in acute care and outpatient settings.

Admittedly, the APTA has allocated resources and taken steps to address some of these issues, as demonstrated by: ongoing promotion of legislation related to Medicare reform and student educational loan forgiveness; regular participation in the Eldercare Workforce Alliance (<http://www.eldercareworkforce.org/>); and endorsement in 2010 of the Partnership for Health in Aging (PHA) *Multidisciplinary Competencies in the Care of Older Adults at the Completion of the Entry-level Health Professional Degree*<sup>9</sup> and in the 2011 PHA *Position Statement on Interdisciplinary Team Training: An Essential Component of Quality Health Care for Older Adults*.<sup>10</sup> An important outgrowth of *Multidisciplinary Competencies* has been the development of *Essential Competencies in the Care of Older Adults at the Completion of the Entry-level Physical Therapist Professional Program of Study* by our Section's Retooling Taskforce. The full *Essential Competencies* appears in this issue of *GeriNotes*. This document has been distributed to the directors of all physical therapist education programs in the United States, with the request that it be shared with faculty members involved in teaching aging and geriatrics-related topics within their programs. The *Essential Competencies* can guide the development of curricular content, learning experiences, and outcome measures for physical therapist students. Experienced physical therapists can use the *Essential Competencies* to assess the comprehensiveness of their clinical practice in working with older adults.

When futuristically exploring our profession, APTA leaders need to more overtly demonstrate recognition of and appreciation for the impact of aging-related factors. Ultimately, it may continue to be our job as members of the Section on Geriatrics to assure that this is attended to, optimally through enhanced collaborative efforts. To date,

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## EDITOR'S MESSAGE

Melanie Sponholz, MSPT, GCS



If someone asked you to describe or rate your quality of life, what would come to mind? I think about the time I spend with my family, cooking and entertaining friends, performing the job I enjoy, participating in and contributing to professional circles, joining in the buzz of activity of our neighborhood and elementary school, and my daily yoga or running time. I'm sure if I had unlimited time to think about this list, it would grow and grow, because there are so many rich and diverse pursuits that contribute to my overall life satisfaction. There are some things that didn't come to mind, such as my ability to get out of bed on my own, walk from my couch to the bathroom, stand up from the toilet, brush my own teeth, and put on my clothes each day. I take these abilities for granted, and no doubt they are a luxury. We are reminded of this luxury when we work with clients for whom regaining these abilities is key to restoring quality of life. But should rehabilitation stop when the basic skills of life are restored? Shouldn't our clients' rehabilitation include return not just to the ability to exist, but to the ability to have a rich, independent, and satisfying existence? We think nothing of a college athlete going to rehab until he can run and jump, and perform plyometrics. We think it is reasonable for a 50-year-old with a rotator cuff injury to return to overhead reaching and lifting, so he can return to work, or even to golf. However, somewhere along the timeline....is at 60, 70?...the circle of what is necessary starts to shrink. Somehow by the time you are 85, no matter who you are or what the activities of your life have been, it is decided that recovery for you is limited to your ability to perform basic ADLs. At least according to Medicare, and many

private insurers, the ability to lift a grandchild or go to the YMCA to participate in a community exercise group is not necessary. At what age do we stop deserving the ability to live, and become circumscribed into mere existence? This compartmentalized view of health is also totally contrary to the ICF model of enablement, which highlights the essential interaction of body structure and function, activities, and participation in an individual's life.

Maybe my opening argument is ambitious. Let's take it down a notch or two. What if my elderly client is able to get out of bed, get into the shower, and do basic meal prep. Let me re-phrase that, my client *is* doing these things on her own, but should she be? When I watch her perform these activities, I feel anxious, because I see the potential for falls at every turn. Her balance is impaired, her level of exertion is high and out of proportion with what she is doing, and the time spent to complete each activity is too long to be practical. When I test her lower extremity strength with the 30-second chair stand, and score her on the BERG Balance Scale, the results indicate that she is at risk for falling. According to the evidence, and my professional judgement, she could benefit from physical therapy to improve her safety and prevent the gradual decline in strength and balance from ending her independence. Sounds reasonable and necessary to me, and she reports that she wants to "get around like I used to, and stop worrying about falling." However, again we face an uphill battle to gain insurance approval to institute a plan of care to maintain independence and prevent injury.

Another major roadblock facing us, as geriatric rehabilitation providers, and our clients, is the general bias against people with chronic conditions. For instance, if the client just described happens to have diabetes, CHF, and DJD, many payor sources will argue against

rehabilitation, because these underlying conditions will not be cured. Even though skilled therapy will help her continue to live independently, prevent injury, and slow the progress of her chronic conditions, it will not cure her of her chronic conditions. If we resign ourselves to the payor sources' point of view that patients with chronic conditions should only be seen for a brief course of therapy, with a focus on training a caregiver to perform a maintenance program, we are seriously short-changing this population and selling our profession short. The most recent study indicates that 78% of the 31 million Medicare beneficiaries have at least one chronic condition, and 63% have two or more, with 20% having at least 5 chronic conditions!<sup>1</sup> According to the prevalent coverage determinations, we should train caregivers to perform maintenance programs and step aside to let the chronic conditions take their course, burdening caregivers more and more, and eventually institutionalizing those with these diagnoses.

If we are able to justify the initiation of treatment for our clients, we probably won't get the approval to provide the frequency, duration, and length of care that are needed to get physiological change and optimal results. Again, the very complex medical histories of our clients, the very reason that they may need more time to reach goals, works against us. The ever-looming therapy cap comes into play. Why is it still in place? And why are physical therapy and speech therapy lumped together under one cap? Heaven forbid you have a stroke and need to regain the ability to walk *and* speak and eat. The exceptions process is supposed to help those in these situations, but once again, a bias exists. Utilization studies label clinicians who serve the more complex older adult population, and therefore exceed the cap, using the kx modifier, as outliers and targets for repeated audit. Again, payor sources think minimal intervention, with care-

giver follow-up is sufficient, approving a return to basic existence, but not to a life worth living.

What I have described here is ageism, stereotyping, and discrimination against individuals based on their age. This discrimination has become woven into the policies of society and the institutional policies and procedures of our health care system. We need to act to stop this ageism and champion our patients. What we do can make a big difference. It can keep older adults safe and independent...and happy...in their homes. It can decrease caregiver burnout and stop hospitalization, with subsequent nosocomial complications and institutionalization. The burden is on us to provide the evidence, for our cause and that of our patients. We need to study and document our results. We must document what we do with the utmost care, to provide solid evidence for our interventions. We need to educate clients and our colleagues in health care about the benefits of the services we provide, so that we can continue to provide them. We have to

defend the right to practice according to the principles of scientific evidence, and according to arbitrary standards set by biased payors looking for short-term cost savings. It will be interesting to see how the reimbursement climate evolves as the baby boomers enter advanced decades. This is a generation for whom things like travel and fitness are integral to quality of life. Will we all work together to change the ever-shrinking definition of medical necessity and quality of life? I hope so.

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(President's Perspective continued from page 3)

such efforts have had some positive outcomes, as most recently evidenced by our *Essential Competencies*.

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## FUTURE APTA NATIONAL MEETING DATES

**Mark your calendars now  
and plan to attend!**

**Combined Sections  
Meeting (CSM) 2012**  
February 8-11, 2012  
Chicago, IL

**Annual Conference:  
PT 2012**  
June 6-9, 2012  
Tampa, FL

**National Student Conclave**  
November 2-4, 2012  
Arlington, VA



# EVIDENCE-BASED TREATMENT FOR A GERIATRIC PATIENT WITH CARDIOVASCULAR AND PULMONARY IMPAIRMENTS

Mary E. Guyette, PT, DPT

The patient, Jacob, is an 81-year-old male who was recently hospitalized due to pneumonia, with exacerbation of congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) symptoms. He is now receiving therapy services in a skilled nursing facility (SNF), prior to eventual discharge home. Jacob's medical history includes CHF, COPD, hypertension (HTN), and diabetes mellitus (DM). Jacob had another hospitalization approximately 6 months prior to the most recent one, with similar but less severe symptoms. Following this prior hospitalization, Jacob was able to return directly to his home, with home health care services. Currently, Jacob is experiencing considerable weakness, decreased endurance, and debility, prompting the need for SNF admission.

Prior to his most recent hospitalization, Jacob was living alone in a tri-level home. His kitchen and living room are located on the main level, bedroom and primary bathroom are upstairs (5 steps), and additional living space, bathroom, and laundry are located downstairs (5 steps). Jacob was able to move about his entire home without the use of an assistive device, but commonly used a standard cane in the community. Jacob was independent with his activities of daily living (ADLs) and instrumental ADLs, although neighbors often assisted him with outdoor maintenance, including yard work. Jacob did not require the use of continuous oxygen, but after his first hospitalization, he learned to incorporate energy conservation techniques into his daily routine. Jacob has one son, with whom he is in contact with regularly, but who lives several hours away.

Upon initial evaluation at the SNF, Jacob was on two liters of continuous O<sub>2</sub> via nasal cannula, and his O<sub>2</sub> saturation was dropping to 88% with activity. He required minimal assistance to complete bed mobility, moderate assistance for sit-to-stand transfers, and ambulated 20 feet with a two-wheeled rolling

walker with minimal assistance, before requesting to sit due to complaints of dyspnea. At that time, Jacob required maximal assistance from the physical therapist to complete a step up onto a 6-inch step with bilateral handrails.

During his therapy treatment sessions, Jacob has complaints common to COPD and CHF exacerbations, including dyspnea and fatigue, which limit his exercise tolerance. While these are common complaints, research has shown that people with COPD and CHF develop physiological changes in skeletal muscle, further affecting their tolerance for exercise and other daily activities.<sup>1</sup> These changes include altered blood flow, metabolism, and cellular structure of skeletal muscles, resulting in increased anaerobic activity, and believed to contribute directly to decreased exercise capacity. In a recent study involving people with COPD, 43% rated lower extremity fatigue above dyspnea (26%) as a limiting factor and reason to terminate maximal exercise.<sup>1</sup> However, exercise training, including aerobic and resistance components, has been shown to be effective in reducing skeletal muscle changes associated with CHF and COPD. Aerobic and resistance training can result in increased peripheral blood flow, delayed onset of anaerobic metabolism, increased muscle size and number of mitochondria, increased endurance and functional status, improved quality of life, and reduced dyspnea with activity.<sup>1</sup> Therefore, it is important that rehabilitation programs for patients with cardiovascular and pulmonary diagnoses address endurance and strength impairments.

A current research study, involving patients with CHF, examined the effects of aerobic conditioning on exercise tolerance, endurance, and muscle strength.<sup>2</sup> Eleven participants (8 men aged  $56.5 \pm 10.6$ ; 3 women aged  $49.3 \pm 9.3$ ) completed an 8-week endurance training program, including analysis of gas exchange and knee flexor and extensor strength at onset and conclusion of the program.

The endurance program consisted three 60-minute sessions a week: 5 minutes of warm-up/cool down, 35 minutes of cycling and/or jogging, and 15 minutes of ergocycling. Heart rate was monitored throughout each session and maintained at 65% of maximal workload. Results demonstrated that endurance training significantly improved peak VO<sub>2</sub> ( $16.3 \pm 3.3$  to  $20.7 \pm 4.0$  ml/kg/min;  $p < 0.002$ ), but did not demonstrate any change in lower extremity strength.<sup>2</sup> The results of this study indicate that endurance training is an effective treatment component, but further support the notion that aerobic training combined with strength training may provide more beneficial results for people with CHF and COPD.

A separate study, involving older men, aged 70 to 80 years, sought to examine the effects of strength training on cardiovascular function.<sup>3</sup> Participants were assigned to either a strength training group or control group. Strength training consisted of 3 sets of 6 to 10 repetitions at 70%-90% of 1RM on an incline squat machine, completed 3 times a week for 16 weeks, followed by 4 weeks of deconditioning. Cardiovascular function was assessed at onset, after 16 weeks of training, and again after the 4-week deconditioning period. Results demonstrated that submaximal cardiovascular function at 40 Watts, 50% VO<sub>2 max</sub>, and 70% VO<sub>2 max</sub> improved after 16 weeks of strength training, with some changes remaining after the 4-week deconditioning period. Lower extremity strength also improved, and remained greater than strength at onset, after 4 weeks of deconditioning.<sup>3</sup> The results of this study demonstrate that strength training alone increases muscle strength, but can also provide beneficial effects on cardiovascular function, which in turn, can impact overall functional ability and quality of life.

While research has examined the impact of aerobic training and strength training as separate interventions for

people with CHF and COPD, other studies suggest that aerobic and strength training are most beneficial when used in combination. Many traditional pulmonary rehabilitation programs focus on aerobic components for increased endurance, but lack resistance exercises to improve strength and muscle mass.<sup>4</sup> The limited use of resistance training is cause for concern, since functional impairments in older individuals are primarily associated with decreased muscle mass and strength, rather than decreased endurance.<sup>4</sup> The addition of resistance training to pulmonary rehabilitation programs has been shown to increase functional independence by increasing muscle mass and strength, outcomes that cannot be achieved by traditional pulmonary rehabilitation alone. Increased muscle mass is of clinical importance for people with COPD, as the muscle cross-sectional area correlates with functional independence and is a predictor of overall mortality.<sup>4</sup>

In Jacob's case, he presented with decreased endurance, decreased muscle strength, fatigue, and dyspnea, suggesting that he would benefit most from a rehabilitation program that addressed both aerobic and strengthening components. While research supports the beneficial applications of aerobic and strength training for people with CHF and COPD, there remains variability in terms of what constitutes an ideal exercise prescription. One study recommended that people with CHF begin exercise at a low intensity of 40% to 50% of heart rate reserve for 20 to 40 continuous minutes, daily. For people with COPD, they suggested 60% to 80% of peak workload. They also acknowledged that it may be more appropriate for highly deconditioned individuals to engage in intervals of exercise, totaling 20 to 40 minutes.<sup>1</sup> The study also indicated that resistance training should be implemented 2 to 3 times a week, consisting of 8 to 10 different exercises, performed at 10 to 15 repetitions to a level of moderate fatigue.<sup>1</sup> In contrast, resistance training guidelines indicated in a separate study recommended 2 to 3 times a week with 8 to 10 different exercises, performing 3 sets of 8 to 12 repetitions to fatigue.<sup>4</sup> The authors suggested that higher intensity activity results in better exercise response in people with COPD.<sup>4</sup>

In an attempt to clarify ideal exercise prescription intensity, a recent study examined the effectiveness of light to moderate strength and endurance training for older adults.<sup>5</sup> Participants were assigned to either a control group or an exercise group, which consisted of supervised, light to moderate strength and endurance activities (light strengthening, stretching, and self-paced walking), 3 times a week for 12 weeks, with each session lasting 90 minutes. Data was collected for a set of variables at onset and at conclusion of the 12-week program. Variables assessed included HR, BP, weight, body composition, flexibility, one mile walk time, FVC and FEV1, and upper/lower extremity strength.<sup>5</sup> The results of this study found no significant changes in the above variables, indicating that further evidence and research are needed to determine whether light to moderate intensity exercise can effectively improve overall health status.

*"While research supports the beneficial applications of aerobic and strength training for people with CHF and COPD, there remains variability in terms of what constitutes an ideal exercise prescription."*

While debate remains regarding the use of light to moderate versus moderate to high intensity exercise programs for people with CHF and COPD, there is also debate regarding the completion of continuous bouts of exercise versus interval training. Many exercise guidelines suggest continuous exercise, but also acknowledge that this may be difficult for people with CHF or COPD, as symptoms of dyspnea and muscle weakness limit their activity tolerance. A growing amount of evidence now supports the idea that interval training is as effective as continuous exercise, if not more so. Interval training has been shown to induce comparable physiological training effects to continuous activity, but with reduced symptoms of dyspnea and leg discomfort.<sup>6</sup> Patients with COPD, who engaged in interval training, were able to maintain lower extremity exercises at

higher intervals than that which could be tolerated during continuous exercise.<sup>6</sup> Suggested guidelines for implementation of an interval based treatment program included a frequency of 3 to 4 times a week, intervals of 30 seconds exercise/30 seconds rest or 20 seconds exercise/40 seconds rest, at 80% of maximal workload for 15 to 20 minutes and increasing to 90 minutes per session. Additional components included the use of pursed lip breathing, energy conservation techniques for daily activities, and home program instruction.<sup>6</sup> The authors went on to report that a greater amount of evidence exists to support the use of high intensity interval training for people with CHF, and that further research is warranted to improve its efficacy for people with COPD.

Jacob was living at home prior to his recent hospitalization, and was independent with ADLs; therefore, his goals for rehabilitation while at the SNF will include attaining a functional level that will allow him to return home. He understands that the nature of his CHF and COPD are progressive, and that he may need to adopt some modified techniques for activity completion, energy conservation, and symptom management in order to maintain living in his own home as independently as possible. Pursed lip breathing is one technique that will be important for Jacob to learn and implement, since evidence supports its effectiveness in controlling exertional dyspnea. Exertional dyspnea is breathlessness that is disproportionate to the activity undertaken, and is one of the primary activity limiting symptoms associated with COPD.<sup>7</sup> A literature review examined evidence regarding the use of pursed lip breathing, and found evidence of moderate quality to support the technique. Pursed lip breathing has been shown to increase O<sub>2</sub> saturation and tidal volume, while reducing respiratory rate at rest and time needed to recover from exercise induced breathlessness.<sup>7</sup> When instructing patients to use pursed lip breathing, the following guidelines were offered: inhale normally and exhale for 2 to 4 times longer than inhalation, or exhale for as long as comfortable, practicing 10 minutes per day and gradually increasing to 25 minutes per day. An additional suggestion to assist patients was to synchronize breath-

ing with walking: inhale for one stride and exhale for 2 strides.<sup>7</sup> While pursed lip breathing has been shown to be an effective treatment intervention, not all individuals respond equally. The authors indicated that people with moderate to severe COPD are likely to see the greatest benefits from implementing pursed lip breathing techniques.

In addition to implementing modified breathing techniques as needed, it will be important for Jacob to continue with exercise interventions upon discharge from the SNF. Since CHF and COPD are progressive, and symptoms of fatigue, dyspnea, and muscle weakness can limit activity tolerance, it is important for Jacob to remain socially engaged and avoid becoming isolated after discharge home. A recent study examined the effectiveness of a community-based group exercise program for people with COPD. The group met once a week for 12 weeks, with each session lasting 2 hours, and included strength and aerobic exercise, along with discussions of disease education, breathing techniques, oxygen and medication use, smoking cessation, nutrition, dyspnea management, relaxation and energy conservation, and social and community support.<sup>8</sup> Participant assessments were completed at onset and conclusion of the program, and consisted of lung function using spirometry, 6MWT, General Health Questionnaire (GHQ), St. George's Respiratory Questionnaire (SGRQ), and a COPD knowledge questionnaire. Upon completion of the 12-week program, participants reported statistically significant improvements in the GHQ score (20.61 to 12.21;  $p < 0.001$ ), SGRQ score (53.69 to 34.72;  $p < 0.001$ ), and COPD knowledge questionnaire score (6.6 to 8.8;  $p < 0.001$ ). The mean 6MWT distance increased by 18 meters (285 m to 303 m;  $p = 0.051$ ), suggesting improved exercise tolerance, although this improvement was not statistically significant.<sup>8</sup> The results from this study, and responses from participant feedback, suggest that community based intervention programs offer an effective method of disease management, and provide beneficial physiological and psychosocial outcomes.

Following hospitalization for CHF and COPD exacerbation, Jacob presented to a SNF for rehabilitation services,

in order to return to prior level of function and resume living at home independently. Jacob presented with considerable weakness, decreased endurance, and reduced functional ability following his hospitalization. Based upon evidence highlighted from recent research, Jacob would benefit from a rehabilitation program that incorporated aspects of both aerobic and strength training. These types of programs have been shown to improve cardiopulmonary function and muscle strength, resulting in improved functional ability and perceived quality of life.<sup>3</sup> In order to improve effectiveness and efficiency of treatment interventions, Jacob should be encouraged to engage in aerobic and strength training at moderate to high intensities. A growing amount of research supports the effectiveness of moderate to high intensity training for people with CHF and COPD, and has demonstrated that interval training is an appropriate method of attaining and sustaining this greater intensity.<sup>6</sup> Jacob would be an ideal candidate for participation in interval based training, as symptoms of dyspnea and lower extremity muscle fatigue limit his exercise tolerance. Lastly, Jacob has a good understanding of the progressive nature of CHF and COPD, but would benefit further from reviewing additional techniques such as pursed lip breathing, energy conservation, and home exercise programs. In order to maintain beneficial results, Jacob will need to continue with an exercise program after discharge from the SNF. He should be strongly encouraged to consider participating in a community-based exercise program that will help maintain aerobic capacity and muscle strength, along with providing psychosocial support and reduced risk of isolation, all of which can be attributed to overall improvements in quality of life.

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# PULMONARY REHABILITATION: INDICATIONS, GOALS, RESULTS

Lucy Jones PT, DPT, GCS

Pulmonary rehabilitation is a multidisciplinary program of care for patients with chronic obstructive pulmonary conditions, individually tailored and designed to optimize physical and social performance and autonomy. A common indication for referral for Pulmonary Rehabilitation is being symptomatic despite the care being rendered for pulmonary conditions. Functional limitation ensues with limitation in exercise capacity, social activities, indoor and outdoor chores, and basic activities of daily living with a resulting loss of independence.<sup>1</sup> Pulmonary rehabilitation benefits those with various pulmonary conditions, including but not limited to asthma, chronic obstructive pulmonary disease (COPD), emphysema, pulmonary hypertension, chronic bronchitis, restrictive lung disease, bronchiectasis, lung cancer, sleep apnea, pulmonary fibrosis, cystic fibrosis, trauma related injury to the lungs, and chronic respiratory failure due to chronic obstructive disease.

## PROGRAM OBJECTIVES

The pulmonary rehabilitation program objectives include reducing the impact of inactivity to increase the distance walked in 6 minutes, minimizing the sense of breathlessness to promote an improved quality of life, and decreasing the frequency of hospital admissions and length of stay if admitted to the hospital. It has been reported in a recent Cochrane clinical trial that pulmonary rehabilitation can relieve dyspnea and fatigue, enhancing the patient's sense of control over their condition and recovery. These improvements were moderately large and clinically significant. The average improvement in exercise was modest, and pulmonary rehabilitation was an important component of the management of COPD, which encompasses approximately 80% of those admitted for pulmonary rehabilitation.<sup>2</sup>

## CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Chronic obstructive pulmonary dis-

ease is the fourth leading cause of death in the United States and was estimated to be responsible for 200,000 deaths in the year 2000 alone. Chronic obstructive pulmonary disease is the third leading reason for "at home" care, after CHF and CVA.<sup>3</sup> Length of stay in the hospital for COPD was 4.7 days vs. 3.9 days for other illnesses ( $p < .001$ ). By 2020, COPD is believed to become the third leading cause of death worldwide.<sup>4</sup> From 1980 to 2000, the overall death rate for COPD increased by 67%. The rate for women tripled during this time. For the first time since 2000, the number of women who died from COPD was greater than that of men who died from COPD. Overall age adjusted death rate remains higher for males by 46%.<sup>5</sup>

The American Lung Association Survey of October 2003 found that patient limitations due to COPD included decreased ability to work (51% reported), decreased tolerance for physical exertion (70% reported), decreased ability to do household chores (56% reported), decreased participation in social activities (53% reported), difficulty sleeping (50% reported), and decreased participation in family activities (46% reported).<sup>6</sup>

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) has provided evidence-based management guidelines for COPD advocating spirometry and specific recommendations based on COPD stage. With the most important risk factor being cigarette smoking, COPD is a common preventable disease that affects a significant number of people. It may be managed by using readily available medical therapies, as well as other nonpharmacological therapies such as smoking cessation and pulmonary rehabilitation.<sup>7</sup>

The literature and research on pulmonary rehabilitation has increased and updates the 1997 guidelines published by the American College of Chest Physicians (ACCP) and the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR). Previous recommendations gained strength supporting the benefits of lower and upper extremity exercises, improvements in dyspnea, health related quality of life outcomes, decreased hospitalization, and improved psychosocial outcomes. More recent evidence indicates that longer term rehabilitation, maintenance strategies following rehabilitation, and the incorporation of education and strength

Incidence: 30 Million people diagnosed with COPD  
14.3 Million chronic bronchitis  
2.1 Million emphysema  
14 Million not diagnosed

In 2000 COPD accounted for:  
13.4 million office visits to doctors  
726,000 hospitalizations (404,000 females vs. 322,000 males)  
<http://cdc.gov/mmwr/preview/mmwrhtml/ss5106a1.htm>

Emergency room visits increased by approximately 50% from 1992 to 2000 to 1.5 million  
<http://www.copd-international.com/library/statistics.htm>

**Incidence, economic affect, and rate of hospitalization with those who have pulmonary disease of COPD.**

training in pulmonary rehabilitation, are beneficial. Evidence supports the use of supplemental oxygen therapy for patients with advanced COPD who experience severe hypoxemia at rest or with exercise.<sup>8</sup> In moderate to severe COPD, there is good evidence of a generalized loss of muscle bulk, including the respiratory musculature, noted as sarcopenia. It is possible that a similar loss of skeletal and respiratory muscle strength in more severe asthma patients could be related in part to the effects of steroid therapy. Therefore, decreased respiratory muscle function may be of significance in asthma. If this results in impaired lung function as indicated by pulmonary function testing, pulmonary rehabilitation may also be indicated for this population.<sup>9</sup>

#### Essential Components of Pulmonary Rehabilitation

**Exercise training:** Upper and lower extremity endurance training, respiratory muscle training, strength training, developing breathing strategies, and activity and rest times for decreasing dyspnea.

**Activities of daily living:** Dressing, washing clothes, showering, incorporating breathing strategies with eating and household activities, and IADLs including grocery shopping, and community activity tolerance.

**Education:** Self-management strategies, smoking cessation, disease process information.

**Psychological and behavioral intervention:** Support groups for stress management, family and personal adjustment, counseling, quality of life interventions if needed, assessment of living situations as needed.

**Nutritional support:** Proper diet, cooking, purchasing, selecting food, and portion control for sustained health outcomes.

**Promotion of long-term adherence:** Measures of disability and handicap, and quality of life measures.

#### Aspects of pulmonary rehabilitation.

#### THE PULMONARY REHABILITATION TEAM

A multidisciplinary team of qualified health professionals comprise pulmonary rehabilitation. Education and training, including breathing training, are designed to improve the quality of life and facilitate therapeutic exercises and activities of daily living. Clinical monitoring of pulmonary functions is coordinated by respiratory therapists. Physical therapists manage endurance and strength training, while monitoring breathing. Social and emotional issues

#### Pulmonary Rehabilitation Team Members

**Medical Director:** On site patient management, required in hospital or outpatient settings

Oversight required in Certified Outpatient Rehabilitation Facilities (CORF)

**Physical Therapist:** Assesses strength, balance, endurance, and gait

Encourages fitness development to continue strength and coordination gains

Home exercise instruction, adjust treatment as progress is made

**Respiratory Therapist:** Focuses on breathing mechanics, energy conservation, patient education

Emphasizes aerobic conditioning, and improved endurance for efficiency

Encourages pacing activities and medication teaching

**Occupational Therapist:** Emphasizes endurance and activity tolerance for strengthening activities

Coordinates caregiver training to encompass assistance if needed

Oversees self care activities, work, and productive activities

Encourages household leisure activities such as gardening, sewing

**Clinical Social Worker:** Provides support for grief adjustment, depression, and socialization disorders

Encourages and motivates for smoking cessation and weight management

cognitive behavior therapy, eldercare and senior living information and referral

**Dietician:** Develops meal plans for the inpatient and home environment to insure proper nutrition to promote health and to encourage healthy recovery and participation in the program

#### Pulmonary rehabilitation team participants.

associated with the challenges of living with a chronic condition may be addressed by the social worker to include the emotional challenges of living with a chronic condition.<sup>8</sup>

#### PATIENT ASSESSMENT

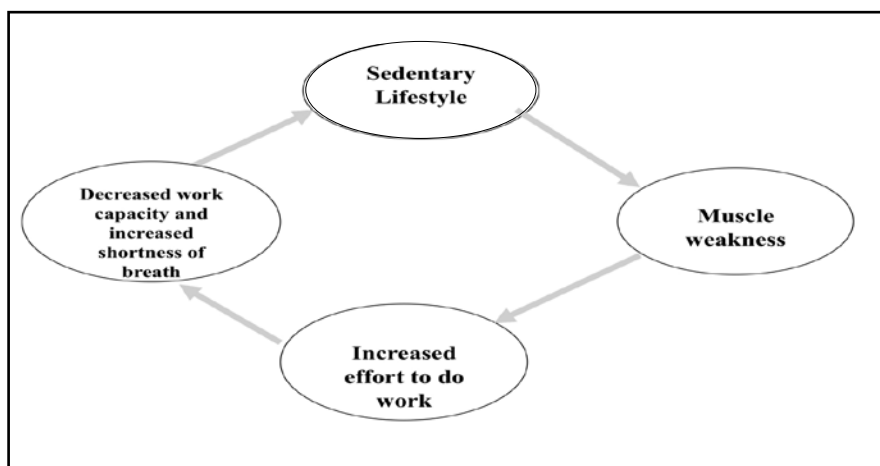
Pulmonary Function tests provide information defining the degree of impairment and the diagnostic classification caused by diseases affecting the lung. The failure of the respiratory system to effectively transfer sufficient air to support the gas exchange results in impaired metabolic activity of the muscles, being the primary cause of functional limitations in patients with respiratory diseases. The measurement of lung function by spirometry, lung volume, and diffusion studies forms the criteria for a clear diagnostic assessment before pulmonary rehabilitation can begin. These studies provide objective data and medical classification needed to qualify for pulmonary rehabilitation intervention. The pulmonary function test results give clinicians insight into the underlying cause and degree of lung tissue impairment that the individual must work against to breathe.<sup>8</sup>

The 6-minute walk test (6MWT) has become the qualifying exercise test for the patient population with pulmonary disease and is a widely used and reported outcome measure for pulmonary rehabilitation. It is a simple, inexpensive, and validated evaluation tool. Specific guidelines for the test include the equipment used to time the test, when and how to time, and what exactly is said to the patient during the test. Various metrics can be calculated from the 6MWT, including distance

walked in 6 minutes, gait speed, target heart rate, and METS. The protocol allows for consistency among staff performing the test and maximal patient safety. It reflects activities of daily living better than other walk tests, and helps to measure other functional status outcomes of the patient.<sup>10</sup> The timed walk distance performance correlates moderately with pulmonary function, although it is strongly influenced by nonrespiratory factors, such as cardiovascular involvement, peripheral muscular conditioning, and body composition. The previous comorbidities have been documented to influence survival, as well as the importance of the 6MWT as a predictor of survival.<sup>10</sup>

The reason for musculoskeletal decline in those with moderate to severe chronic lung disease is multifaceted. Functionally, a sedentary lifestyle due to shortness of breath with activity or decreased endurance can be a vicious cycle. Several factors contribute to the general deconditioning and debility of those with moderate to severe lung disease. They include chronic inactivity and disuse atrophy, systemic inflammation, nutritional imbalance, systemic corticosteroids (with steroid myopathy as a potential side effect), hypoxemia, electrolyte disturbances, and generalized myopathy due to the slowing of axonal firing and decreased neurotransmitter receptivity with immobility.<sup>12</sup>

The physical therapy evaluation includes evaluation of strength outcome measures, endurance and distance gait capability (including the 6MWT), balance assessments, exercise capacity and symptom onset, activities of daily living



**Vicious cycle of inactivity with Pulmonary Disease.**

Subjective:	Examination:	Assessment:
Pulmonary rehabilitation history	Mental status, affect	Problem list
Past medical history	Posture/physical appearance	Precautions:
Medications	Edema	Orthopaedic
Bone density testing	Breathing pattern	Cardiac
Current home exercise program	Auscultation findings	Diabetes
Recent weight loss or gain	Medication	Stroke
Prior level of function	Range of motion	Neuropathy
Equipment currently used	Integument	
Social/family status	Strength	
Cough, productive/nonproductive	Gait appearance, speed, distance	
Oxygen use	Assistance with mobility	
Tobacco history	Foot sensation, nail health	
Pain	Special tests: 6MWT, pre- & postexercise vital signs	
Greatest functional difficulties	Effort: Borg's scale: =x/10	
Patient goals	Dyspnea on exertion (DOE)=x/10	
Rehab potential		

### Physical therapy evaluation.

concerns, health quality of life measure, a review of systems, and impact of comorbidities.

The goal of pulmonary rehabilitation is to reduce symptoms, decrease disability, increase participation in physical and social activities, and improve the overall quality of life. Ultimately the hope is to maintain long-term benefits through changes in lifestyle, with fewer hospitalizations and reduced mortality.<sup>10,13,14</sup>

#### Goals:

1. Instruct diaphragmatic and pursed lip breathing.
2. Performance of household duties.
3. Instruction with medication, nebulizer dose, and rescue inhaler needs with gait, mobility while self-monitoring SPO<sub>2</sub>.
4. Set realistic short term and long term goals to address O<sub>2</sub> needs with exercise and at rest, with SPO<sub>2</sub> > than 90%.
5. Teach self management of symp-

oms, weight, SPO<sub>2</sub>, DOE, oxygen consumption, blood pressure. Teach caregiver if needed.

6. Encourage mobility as able, give home exercise program to include stretching, strengthening, ROM, footwear education, and blood glucose if indicated.
7. Home program flow sheet to be given to record participation, to be returned to PT on Mondays for self-monitoring.

### SELF MANAGEMENT EDUCATION

Education is an integral part of the comprehensive pulmonary rehabilitation program that encourages the individual to take active participation in their health care. This can lead to better understanding of the physical and physiological changes that can occur with chronic illness. As a result, patients can improve their skill at collaborative self management with improved compliance. Whether in groups, as one facility

in New Jersey uses a "Becoming Better Breathers" support group, or individually, various topics are discussed and reinforced. Energy conservation and work simplification can assist in maintaining ADL and performing job related tasks. These can include paced breathing teaching, optimization of body mechanics with activity, advanced motor planning breaking down activities into smaller and more doable parts, prioritizing activities, and using assistive devices as needed. Education about the individual's medication, and their action, adverse effects, dose, and proper use of inhaled and oral medication is an important part of self managing their pulmonary condition. Instructions as to oxygen dose, frequency of use, acquiring the appropriate oxygen needed for a trip to the doctor, do errands, or visit the grandkids is of vital importance for the person to feel comfortable leaving the home and engaging in social activities without thinking if they will "run out of air" before they return home.<sup>15</sup>

### RATIONALE FOR PULMONARY REHABILITATION

Individuals with COPD can suffer persistent dyspnea and fatigue despite appropriate medical treatment. They can frequently have muscular dysfunction that can be reduced by appropriate exercise programs. Muscle function measured by strength, endurance test capacities, health status, and quality of life are improved by exercise and endurance training. The integration of exercise training in the multidisciplinary management program is necessary as it considers all aspects of the illness.<sup>16</sup>

Results at one year of outpatient multidisciplinary pulmonary rehabilitation were recorded in a randomized controlled trial (RCT). The objective was to assess the effect of outpatient pulmonary rehabilitation on the use of health care and the patient's well being after one year. Two hundred patients with disabling chronic lung disease were randomized to either a 6-week multidisciplinary outpatient pulmonary rehabilitation program (18 visits), or standard medical management. Assessments were performed at baseline, after the 6-week program, and at one year.<sup>10</sup>

In evaluating health status and health related quality of life, the impact of self

efficacy has been studied in relation to pulmonary rehabilitation and COPD by using the COPD self-efficacy scale. A longitudinal study of 100 COPD patients before and up to 3 months after COPD pulmonary rehabilitation (PR) resulted in a significantly reduced psychosocial impact of disease immediately after PR. Improved activity and better exercise capacity also correlated with higher self efficacy. Even seriously impaired COPD patients in advanced stages of the illness experience positive changes in self-efficacy and overall feeling of well-being established during rehabilitation, suggesting the importance of personal control in coping with COPD. The confidence to tackle the riggers of their chronic disease allowed them to initiate health recovery behaviors.<sup>17</sup>

## CONCLUSION

With identifying and differentiating the disease process, impairments, disabilities, and limitations, remedial strategies can be determined. With functional consequences addressed, a person with chronic respiratory impairment can be returned to the fullest possible physical, mental, social, and economic independence. Weakness and

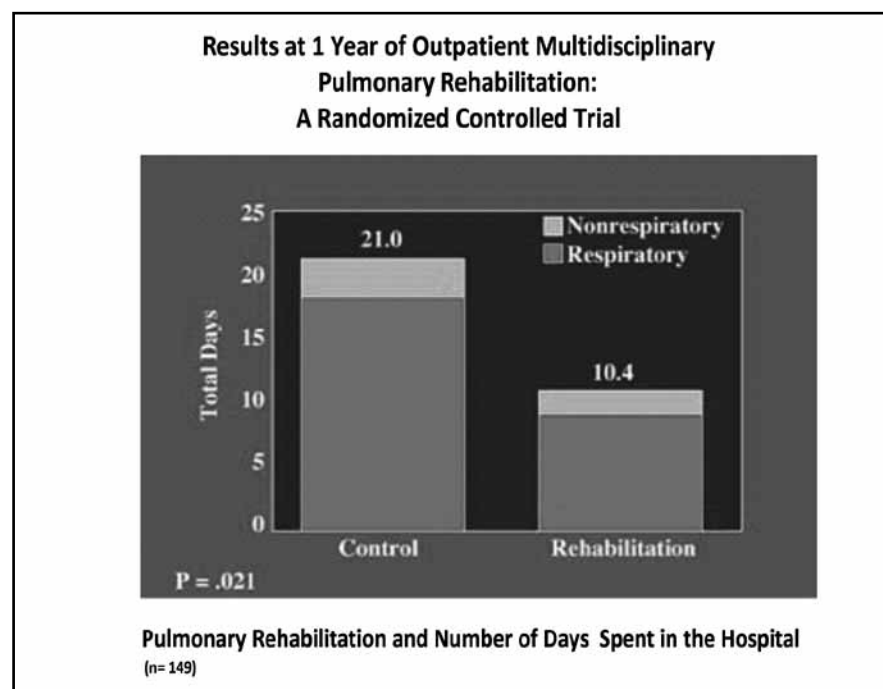
deconditioning, peripheral and respiratory muscle dysfunction, anxiety and depression, and improper nutrition have a documented response to treatment. Improvements in overall and exertional dyspnea, health-related QOL, increases in maximal exercise capacity, and a reduction in the number of hospitalizations and emergency room or doctor visits have been demonstrated in controlled trials. The effect of pulmonary rehabilitation on outcomes with those with documented chronic pulmonary disease is substantial for those who develop COPD acute exacerbation, or illness, as well as those with chronic pulmonary disease.

The relationship between the postrehabilitation 6-minute walk distance and estimated survival following pulmonary rehabilitation is presented for 3 subgroups based on postrehabilitation 6-minute walk performance. Those with walk distances > 1,000 feet (70%), those with walk distances between 500 feet and 1,000 feet (48%), and those with walk distances < 500 feet (31%) were measured. For every 100-foot increase in gait distance walked, the estimated survival was increased by approximately

11%. The relationship between postrehabilitation walk distance and survival was highly significant ( $p = 0.002$ ). The home exercise compliance with pulmonary disease is a significant factor contributing to improved health outcomes and survival in this population.<sup>15</sup>

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**Hospitalization comparison RCT of those with and without pulmonary rehabilitation.** Reprinted with permission from Griffiths TL, Burr ML, Campbell IA, et al. Results at 1 year of outpatient multidisciplinary pulmonary rehabilitation: a randomized control trial. *Lancet*. 2000;355:362-368. Copyright 2000, Elsevier.



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Lucy Jones has worked in a variety of geriatric settings from inpatient to outpatient, home health to skilled nursing facilities. She served in Titan-yen, Haiti with Mission of Hope Haiti

in their prosthetic and hospital-based clinic. Her practice has come full circle serving currently as the Geriatric Specialist for FIT Rehab, a Home Health and Out Patient group in southern New Jersey.

## SECTION ON GERIATRICS CSM 2012 UPDATE

CSM 2012 is shaping up to be another fantastic event. We head to the windy city, Chicago, IL, for the first time in many years! Chicago is an exciting city, and after many months of planning, we are excited to bring you sessions that will change your practice. We have worked with the Chicago Convention Bureau regarding busing between the Convention Center and the Hotel to reduce congestion, maximize space, and ensure you have an amazing experience, mingling and participating to the fullest at CSM 2012!

Back by popular demand, and larger than last year, the Technopalooza will return this year. This exciting addition has been a multi-organization event that will enable attendees to actually try many of the new technologies available for use in the clinic and classroom. Again, this year, scheduled demonstrations as well as expanded open times will provide people with hands on learning. Don't miss this exciting event.

Join the Section on Geriatrics for many exciting education and social events, and check out our booth form more information. As you go through the exhibit hall, look for signs that identify the Section's corporate sponsors. Thank

them for their support, since without them, we would not be able to offer the wide variety of programs at CSM. Check out the Section's schedule, and plan to attend our events at CSM 2012. We have also joined many other Sections in planning their education programs, so check those out too. The Section's preconferences are planned to help you develop clinical residencies, learn how working with residents and new employees is different than with students on affiliations, develop your skills in writing case reports, and expose you to the integrated therapies; so plan to come early and register for these courses. The APTA Web site will have the program planning and abstract information for posters, platforms, and educational sessions, so you can develop your personalized schedule. In addition, all preconference and educational sessions handouts will be online. New this year, there will be a posttest following the preconference sessions. Participants will go to the APTA Learning Center to complete the posttest that can be taken multiple times until a passing grade is achieved, and will then receive their certificate.

The Section on Geriatrics invites sponsorships from organizations who

seek to be a part of the excitement at CSM 2012. Various opportunities exist for sponsoring events, meetings, and educational sessions. Please contact Karen Oshman at [Karen.oshman@geriatricspt.org](mailto:Karen.oshman@geriatricspt.org) for additional information.

Anyone interested in joining the Program Committee for the Section on Geriatrics, should plan to attend our programming meeting to be held on Saturday, February 11, 2012.

We look forward to seeing everyone in Chicago! Any questions can be sent to [jheitzpt@aol.com](mailto:jheitzpt@aol.com) or [wenker@pt.wisc.edu](mailto:wenker@pt.wisc.edu).

*Jill Heitzman, PT, DPT, GCS, CWS, CEEAA, FACCWS*  
*Sue Wenker, PT, MS, GCS*  
*Program Co-Chairs, Section on Geriatrics*



## RESIDENCY CORNER

Tamara Gravano, PT, DPT, GCS

The word is out, and residency education in Geriatric Physical therapy is off to a running start. At the time of this article, there are at least 20 graduates of the 8 credentialed Geriatric residencies since 2004, and with more programs currently in the works, the foundation is laid for exponential growth of residency education. Indeed, a foundation is just the beginning, as many more are needed if we wish to meet the needs of our aging society.

The Section on Geriatrics supports residency education by promoting it in *GeriNotes*, at the Residency 101 preconference courses offered at Combined Sections Meeting, and by providing grants for new programs to help pay for credentialing. Right now, there is an exciting undercurrent of activity in and around those who are involved or associated with a geriatric residency. People are talking, and a growing number of academic and clinical institutions are making plans to establish their own residency programs. As residency education grows, there is an expectation of advanced clinical practice from all those involved, which bodes well for the future of our profession. This is truly a very exciting time for everyone, and I am pleased to introduce a new series of columns promoting residency education.

For a number of years, *GeriNotes* has made many inroads into the residency discussion, and has published articles written by residents, from a resident's perspective, illustrating topics like evidence-based practice, functional assessments, and the residency experience. As a residency graduate myself, and a member of the Practice Committee of the Section on Geriatrics, I would like to further extend the invitation to current and past geriatric physical therapy residents to submit clinically based articles for publication in *GeriNotes*. Let's push the bar up a notch and highlight the specialized skills that are acquired in residency and demonstrate an advanced level of knowledge in the practice of geriatric physical therapy--the main reason candidates seek out residency education to begin with!

The new Residency Corner will feature articles written by residents that describe topics such as in-depth case analysis, problem solving, and practice as nonphysician primary care providers. Here residents will get to discuss their findings and thought-processes with an audience of their peers--those clinicians and academics interested in the advancement of geriatric health care. Also, for those who may be interested to see what geriatric residency education is really all about, these clinical snapshots can help remove the veil and provide a glimpse into the level of practice our residents are experiencing.

Yet, this is only one half of the equation. What's missing? The Residency Director, Coordinator, and Faculty points of view. While residents have been sounding off on their accomplishments and challenges, we would like to extend the offer to current residency directors to chronicle their successes and offer pearls of knowledge to anyone interested in starting a residency program. I ask the residency directors to show us what creating and managing a residency program is like. Tell us what potential obstacles we should be aware of and what can we learn from your mistakes? Discuss the lessons learned from the credentialing process, or compare the particulars of resident versus entry-level student mentoring.

The new Res-

idency Corner will be a forum for both sides of the residency coin. I have spoken with a number of graduates, whom, after completing a residency, have often stayed on as faculty and aspire to start their own programs. This column is one way to demonstrate the skills required to succeed in both realms, and to help avoid common pitfalls. Many residency graduates only have exposure to their own program specifics, and as future residency directors, could benefit from lessons learned by other program faculty. Current directors and associated faculty now have a new opportunity to collaborate with and facilitate the development of other like-minded individuals who wish to promote residency education. I am looking forward to reading their contributions to the discussion.

The floor is yours.



PHYSICAL THERAPY  
UNIVERSITY OF MINNESOTA



American Physical Therapy Association  
CREDENTIALLED RESIDENCY PROGRAM

### CLINICAL RESIDENCY IN GERIATRIC PHYSICAL THERAPY

The University of Minnesota Program in Physical Therapy is seeking applications for our expanding Geriatric Clinical Residency. This 12 month program (September – August) will provide residents extensive didactic education, clinical practice, service learning, and individual mentoring in the area of geriatric physical therapy and issues related to aging. Clinical Faculty are geriatric experts in a variety of disciplines. New graduates and experienced clinicians are encouraged to apply. Resident graduates will be prepared to sit for the GCS exam. Residents will earn a salary with benefits, 2 state conference registrations, CSM registration & travel assist, 230+ CEU credits, and pay minimal tuition. On-site housing is available.

For an application or further information, please contact

Residency Director,

Becky Olson-Kellogg, PT, DPT, GCS at  
612-624-6591 or [olso0184@umn.edu](mailto:olso0184@umn.edu)

*The University of Minnesota's Geriatric Clinical Residency is credentialed by the American Physical Therapy Association as a post professional residency program for physical therapists in geriatrics.*

**Applications due March 31 each year**

# CASE REPORT: CLINICAL DECISION MAKING FOR A PATIENT WITH HYPEROSMOLAR HYPERGLYCEMIC STATE

Heather Fletcher, PT, DPT

## BACKGROUND/PURPOSE

Hyperosmolar hyperglycemic state (HHS), formally known as nonketotic hypertonicity, hyperosmolar nonketosis, or hyperosmolar hyperglycemic nonketotic coma, is the state of extreme dehydration combined with a hyperglycemic state and mild or no ketosis. This emergency situation most commonly affects the geriatric population with type II diabetes mellitus (DM).<sup>1-3</sup> Hyperosmolar hyperglycemic state is associated with a 12% to 46% mortality rate.<sup>4</sup> Chen et al found 28-day case-fatality rates for HHS were 18.83% from 2001 to 2005, and rates tend to be worse in the extreme elderly or those with multiple comorbidities.<sup>5</sup> Hyperosmolar hyperglycemic state affects approximately 17.5 per 100,000 persons per year and accounts for one in every 1000 diabetic hospitalizations.<sup>4</sup>

Hyperosmolar hyperglycemic state typically begins when impairment in kidney function causing increased glucose levels is combined with extreme dehydration. The higher rate of water loss and lower rate of sodium loss associated with dehydration, results in increased levels of sodium in the blood. Clinically, increased levels of sodium can present with signs and symptoms of muscular weakness, lower extremity cramping, lethargy, and confusion.<sup>1,2,6</sup> The American Diabetes Association (ADA) developed an evidence-based algorithm for physicians and emergency room personnel to summarize the treatment and management of adults with HHS. This algorithm includes vigorous intravenous rehydration, electrolyte replacement, administration of intravenous insulin, diagnosis and management of precipitating and coexisting problems, and prevention. This algorithm does not include the potential for physical therapy intervention in the treatment of this condition due to the limited evidence in the literature on the effects of physical therapy for individuals with HHS.<sup>6</sup>

The physical therapist, regardless of the clinical practice setting, must understand the repercussions of exercising an elderly individual with the diagnosis of HHS, or when symptoms are observed. Recognizing the signs and symptoms is key to diagnosing this life threatening condition. The physical therapist can often be the first health care professional to discover a condition such as this, when blood sugar levels are diligently monitored on a regular basis between and within treatment sessions, and the therapist observes and documents any physiologic changes with the patient. When the patient is diagnosed with HHS, the physical therapist, as a nonphysician primary care practitioner, must decide whether the current physiologic state of the patient allows tolerance of physical activity and whether it is advantageous to pursue a full evaluation and course of treatment or to hold services until symptoms resolve. The purpose of this case report is to review the current evidence and knowledge related to this diagnosis, and to demonstrate the diagnostic and prognostic process in clinical decision making, using differential diagnosis to develop the appropriate course of physical therapy examination and treatment for a geriatric patient diagnosed with HHS in the acute care setting.

## CASE DESCRIPTION

Mr. Sugars is a 72-year-old male with past medical history significant for prostate cancer 9 years ago, diverticulosis, asthma, diabetes mellitus, hypercholesterolemia, hypertension, congestive heart failure, coronary artery disease, and neck surgery of unknown specification 10 years ago. Patient presents to the emergency department (ED) after experiencing weakness and leg pain for the past 10 days. Current medications include Hydralazine, Amlodipine, Lopressor, Diovan, Fluticasone, Ventolin, Singulair, Advair, Glyburide, Lipitor, aspirin, and

Digoxin. Mr. Sugars and his wife deny alcohol use.

Mr. Sugars was seen at another local hospital 10 days ago with complaints of neck pain. A CT scan of the cervical spine at that time was negative for lesion, and he was sent home with prescriptions for Percocet and Valium for pain management. At that time, Mr. Sugars did not complain of leg pain or weakness. Since discharge from the other local hospital and initiating prescribed medications, Mrs. Sugars, the patient's wife and primary caregiver, reports "He does not seem himself," and she believes his blood sugars might be high.

Upon physical evaluation in the ED, Mr. Sugars vitals are as follows: blood pressure is 149/73 mmHg, heart rate 104 bpm, respiratory rate 20 breaths per minute, pulse ox 98% SpO<sub>2</sub> on room air, and temperature of 98.1°. Blood glucose level is 594 mg/dl indicating a state of extreme hyperglycemia of unknown cause. Venous blood gas (VBG) is 7.33 indicating anemia. Urine analysis is positive for ketones. Based on extreme elevation of blood glucose levels, high VBG levels and the presence of ketones in the urine, Mr. Sugars was diagnosed with HHS. He was admitted from the ED to the acute care ward. Based on the algorithm developed by the ADA for patient care of HHS, Mr. Sugars was placed on aggressive intravenous hydration to decrease glucose concentrations in the blood, and steadily return the blood glucose levels to safe levels while avoiding rapid shifts in osmolarity.<sup>7</sup>

At the time of hospital admission, Mr. Sugars lives in the community with his wife in a single family home, and reports indicate he ambulates with the assistance of a single point cane. At the time of consult with physical therapy, he complains of bilateral lower extremity pain and weakness; however, he is a poor historian of this pain because of his current state of HHS, and he is unable

to rate pain levels. Physicians document that they would like to determine if this pain is due to suspected preexisting nerve impingement or a secondary electrolyte imbalance from the HHS.

A physical therapy consult was requested for this patient to assess gait and lower extremity pain. The physical therapist must determine whether this is an appropriate consult at this time and whether the patient is physiologically safe for exercise. In order to make this decision, we must review the source of the leg pain, whether there is a true ambulatory dysfunction, and whether the patient is safe to ambulate based on lab values. The possible effects of prescribed medications on the current state of the patient will also be addressed.

### CLINICAL IMPRESSIONS

Leg pain and weakness are both documented symptoms of HHS. This particular patient had no complaints of leg pain and/or weakness when visiting the ED 10 days prior to this current hospital admission. It is likely that these symptoms are associated with the HHS and should resolve once glucose levels return to normal. Clinical decisions regarding the leg pain and weakness cannot be made until the HHS resolves and glucose levels have returned to normal. According to reports from the wife, Mr. Sugars has no history of impaired ambulation and uses his cane outside the home for safety and security only. Therefore, a gait assessment in the acute stages of HHS would not be an accurate account of the true functional status of the patient. A more relevant assessment should be completed once the condition has improved. Based on the clinical aspect of this case, a comprehensive gait evaluation is not appropriate at this time and would better serve the patient when glucose levels are regulated.

A vital aspect to consider in this case with the diagnosis of DM is the blood glucose level at start of treatment and how the value may be affected by exercise. A diagnostic indicator of HHS is a blood glucose level greater than 600 mg/dl. The ADA recommends avoiding exercise with blood glucose levels above 240 mg/dl, especially if ketones are present. When ketones are present in the urine, there is a high risk for a further increase in glucose levels with any form of

physical activity. This information, when combined with Mr. Sugars' complaints of leg pain and weakness, indicate that a comprehensive physical exam should not be completed at this time, and he would likely benefit from an evaluation at a more medically appropriate time.

There is no documented evidence to support an effect of Valium or Percocet on HHS or increased susceptibility to develop this condition. Valium, also known generically as diazepam, has many common reactions including, but not limited to: drowsiness, constipation, dry mouth, hypersalivation, and urinary retention. The reactions for Percocet include, but not limited to: renal failure, circulatory depression, severe hypotension, and sedation. While these reactions are not directly associated with the condition of HHS, the combinations of medications with the diagnosis of DM could contribute to renal insufficiency and dehydration leaving the patient at an increased susceptibility to develop the condition of HHS.

With the present case report, while Mr. Sugars is in the acute stages of HHS, he is a poor candidate for physical therapy evaluation and intervention due to the inaccurate account of true functional status and risk of exacerbating hyperglycemic levels if ketones are present, with an elevated blood sugar level above 240 mg/dl. This particular case would be more appropriate for a physical therapy consult once the patient is no longer in the acute stages of the disease. Once glucose levels have resolved to within safe levels for physical activity, a more accurate assessment of functional status can be completed and leg pain and weakness can be assessed to determine the true source of the symptoms.

### OUTCOMES

As a result of the clinical decision-making process, this patient was not seen at the time of consult. It was determined, that at the time of the initial consultation, Mr. Sugars was still in the acute stage of HHS, with elevated glucose levels and ketones present in the urine. The risks associated with physical activity with elevated blood glucose levels when ketones are present indicated no intervention at the present time. Since one of the chief complaints of the patient is leg pain and weakness, it is important to

gain an accurate assessment of functional status and determine the true source of his symptoms. Therefore, the clinical decision was made to refrain from physical therapy evaluation at this time. However, the nursing staff was educated on the importance of minimal physical activity until blood glucose levels return to a safe range of less than 240 mg/dl and a note was made to complete a physical therapy evaluation once glucose levels did return to safe levels for physical activity. This is all completed in an attempt to maintain safety for the patient and to provide an accurate view of the patient's physical abilities upon discharge to the appropriate setting for the patient's current needs.

### DISCUSSION

Hyperosmolar hyperglycemic state is a life threatening and emergency situation among our elderly individuals with a diagnosis of DM. As nonphysician primary care practitioners practicing in various clinical settings, it is important to recognize and understand the signs and symptoms associated with this condition and the effects physical activity can have on an individual in the acute stages. Regardless of the clinical practice setting, the clinician must be able to recognize the signs and symptoms associated with HHS and understand when a referral to the emergency department is necessary and when to refrain from physical activity. This is why assessment and documentation of clinical signs and symptoms are vital in this population, particularly blood sugar levels in those with documented diagnosis of DM.

In the acute care setting, often clinicians receive a referral for therapy services prematurely and initiate the physical examination without a thoughtful diagnostic process. The repercussions of this include an inaccurate account of functional status with drastic improvements made due to improved stage of the disease and not necessarily a direct impact of the therapy intervention. Also, the dangers of physical activity with a patient such as the case report discussed here have serious detrimental health implications. Once the patient is no longer in the acute stages of HHS and blood sugar levels are below 240 mg/dl, the individual would be a much better candidate for physical therapy. The clinical presentations will more accurately por-



tray the true physical abilities and a more accurate account of their functional status can be made. This is particularly important with the geriatric population due to the repercussions of incorrect documentation of functional status and plans for discharge from a hospital setting. For this particular case, if functional status was documented during the acute stages of HHS, the patient would likely be documented at a functional level requiring additional care after discharge, when prior to admission, patient was ambulatory in the community with a single point cane. However, if the true functional status of the patient is assessed when acute signs and symptoms have resolved, it is likely the patient would present at a level closer to their true functional status, and the appropriate recommendations can then be made to best serve the patient.

## CONCLUSION

Physical therapists must remain vigilant in proper execution of clinical decision making in order to best serve and advocate for our patients and their best interests and safety.

## ACKNOWLEDGEMENT

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# THE FOX GERIATRIC RESIDENCY PROGRAM

*Program Director: Mimi Jacobs, PT, MPT, GCS, OCS*

*Current Resident: Heather Fletcher, PT, DPT*

The Fox Geriatric Residency Program was established in 2008 and accredited by the APTA's American Board of Physical Therapy Residency and Fellowship Education in 2009. Nationwide, it was the sixth geriatric residency program, and the first geriatric residency to be housed in a private practice. It was also the first residency program of any specialty area in New Jersey.

The mission of the Fox Geriatric Residency Program is to develop physical therapy professionals who demonstrate clinical expertise in geriatrics, and are prepared to be leaders, contributors, and advocates for the physical therapy profession and the geriatric community. Our program goals include:

- Support the mission of Fox Rehabilitation by providing a formalized, credentialed program to develop

clinicians who provide the highest quality rehabilitation to the geriatric community.

- Develop physical therapy clinicians who demonstrate clinical expertise in geriatrics.
- Cultivate physical therapy professionals who contribute to the profession and to the geriatric community through leadership, advocacy, teaching, and consultative activities.

Our Residency Program is a key element in Fox's commitment to the lifelong professional development of our clinicians, in a suite of programs that include our Student Program, New Graduate Program, and PACE (Professional, Academic & Clinical Excellence) Program.

Our current resident, Heather Fletcher, PT, DPT, is in the final stages

of completing the 12-month residency program. The case report she presents in this issue occurred while working one-on-one with a Mentor in the acute care setting, and highlights the critical thinking and clinical decision making process that is essential to the physical therapist's role as a nonphysician primary care practitioner on the collaborative interdisciplinary team.

Mimi Jacobs is the Geriatric Residency Program Director at Fox Rehabilitation. Additionally, Ms. Jacobs coordinates professional development opportunities including continuing education and active participation in professional associations and conferences for Fox Rehab's clinical staff of 400+ physical therapists in 7 states.

# PHYSICAL THERAPISTS HELP SHAPE NATIONAL FALLS PREVENTION POLICY

Lynn Beattie, PT, MPT, MHA

## INTRODUCTION

Spurred by the growing number of older adult falls and fall-related injuries and deaths, 7 physical therapists representing various practice constituencies were invited to participate in a U.S. Centers for Disease Control/National Center for Injury Prevention and Control<sup>1</sup> (NCIPC) Fall Prevention Experts' Panel in Atlanta. The meeting was held in December 2010.

Along with physician practices, occupational therapists, researchers, health plans, the Centers for Medicare & Medicaid Services (CMS), other CDC Centers, and the aging services network, participants explored both the opportunities and challenges of disseminating evidence-based practices in falls prevention.

The NCIPC hosted the Experts' Panel to solidify partnerships, stimulate dialogue, and promote the broader dissemination of 3 evidence-based community falls prevention programs—Tai Chi: Moving for Better Balance, Stepping On, and Otago. The NCIPC has recognized these 3 programs in its *Preventing Falls: What Works. A CDC Compendium of Effective Community-based Interventions from Around the World*.<sup>2</sup>

More importantly, NCIPC was seeking recommendations on how to best integrate evidence-based models with a community practice model, such as the Connecticut Collaboration for Fall Prevention Program.<sup>3</sup> The NCIPC will use feedback from the two days of group discussion, presentations, and spirited interaction to develop an action plan with clear, immediate strategies and steps for stakeholder groups.

## KEY RECOMMENDATIONS

Panel members noted a lengthy list of barriers to dissemination, including lack of program awareness, little understanding of the aging services network, and a shortage of funding. They also noted how current activities and policy opportunities could be leveraged to advance this agenda.

Participants discussed several recommendations, including identifying best practices that already demonstrate linkages between health care and community programs, and developing tools and resources to support broader dissemination.

Another important recommendation was educating health care providers about the aging services network and how the estimated 29,000 community-based organizations providing older adult programs and services can facilitate more integrated and comprehensive falls prevention activities.<sup>4</sup> The importance of physical therapy as both a gatekeeper to community programs and as a provider of programs (such as Otago and Stepping On) also was discussed. Key recommendations included seeking to strengthen linkages between physical therapy practice and effective community programs.

In addition to offering recommendations, the action plan will serve as an advocacy function to bring greater awareness to this growing public health issue, and promote policies and funding strategies that will advance the practice of evidence-based falls prevention in communities across the country.

The American Geriatrics Society/British Geriatrics Society joint Clinical Practice Guideline, *Prevention of Falls in Older Persons*,<sup>5</sup> published in December 2010 and the more recent U.S. Preventive Services Task Force (Agency for Health Care Research and Quality) report, *Primary Care-Relevant Interventions to Prevent Falling in Older Adults: A Systematic Evidence Review for the U.S. Preventive Services Task Force*,<sup>6</sup> both underscore the evidence for clinical assessment, physical therapy interventions, and community programs—giving further impetus to the NCIPC initiative. The new National Prevention Strategy,<sup>7</sup> put forth by the US Surgeon General and a broad-based federal prevention council, further underscores the need for national attention to this issue.

## ACTION IN THE STATES

A key to dissemination is the active participation of the State Coalitions on Fall Prevention Workgroup,<sup>8</sup> a peer network of 38 states facilitated by the National Council on Aging (NCOA) as part of the National Falls Free<sup>®</sup> Initiative.<sup>9</sup> The American Physical Therapy Association (APTA) is an active member of the National Falls Free<sup>®</sup> Coalition, joining 70 other organizational members in addressing the growing number of injurious and fatal falls among older adults. Physical therapists have been very active in their state coalitions, working collaboratively with public health, aging services, and health care providers to bring evidence-based solutions to bear.

The National Falls Free<sup>®</sup> Initiative is led by Lynn Beattie, PT, MPT, MHA, Vice President, Injury Prevention, NCOA, who represented national and state constituencies at the meeting. In many states, the state physical therapy chapter is an active partner seeking to bring awareness and training to members. In Montana, Dr. Mindy Oxman Renfro, PT, GCS, served as the co-lead and founding member of the Montana Fall Prevention Coalition that helped to bring Stepping On into local communities. Renfro recently relocated to Nevada as an Assistant Professor at Touro University, Nevada School of Physical Therapy, where she is forming a Nevada Fall Prevention Coalition. She was invited to participate in the Experts' Panel meeting.

In North Carolina, two physical therapists also holding academic positions are working in different ways to promote falls prevention in collaboration with the North Carolina Fall Prevention Coalition. Leslie Allison, PhD, PT, Assistant Professor, East Carolina University, in collaboration with her colleague Jane Painter, EdD, FAOTA, OTR/L, an ECU Occupational Therapy faculty member, has been working to promote training of local community health care provid-

ers, emergency room staff, and others in the delivery of evidence-based screening and appropriate referral. Allison also is frequently found presenting continuing education courses on falls prevention to therapists. Tiffany Shubert, PT, PhD, Research Scientist at the UNC Center for Health and Aging, developed and is presenting a falls prevention curriculum for geriatric residents at the UNC School of Medicine. She has co-located a physical therapy clinic within a senior center to bring falls prevention screening and balance to older adults and has developed, tested, and disseminated a best-practice falls prevention exercise program at 5 senior centers in North Carolina. Both Allison and Shubert participated in the Experts' Panel. Shubert also presented a framework for integration of clinical and community services to create a continuum of falls prevention.

In Wisconsin, members of the Wisconsin Fall Prevention Coalition are building strong program infrastructure and technical assistance. Terry Shea, PT, GCS, NCS, a senior physical therapist in outpatient neuro-rehabilitation at the University of Wisconsin Hospital and Clinics, has been collaborating closely with NCIPC in her efforts to translate the New Zealand Otago Program, delivered by physical therapists, to a U.S. venue in a ready-for-dissemination format. Shea is also a coinvestigator on a 4-year, NCIPC-funded grant on translating Stepping On for national dissemination. She specializes in vestibular and balance rehabilitation, is a member of the multidisciplinary Geriatrics Falls Clinic, and is a strong force in the Falls Free® Coalition. She brought a wealth of experience to the Experts' Panel discussions.

The New York Fall Prevention Coalition is strengthened by an NCIPC-funded pilot of Stepping On and Tai Chi: Moving for Better Balance. The NCIPC is using this two-year experience—as well as funding a small pilot in California and providing support to Oregon and Wisconsin—to develop and test program dissemination resources to hone its efforts. New York is further strengthened by the investment of the Western and Central New York Health Foundation, which is working to advance falls prevention in its service areas. Physical therapists are very active in the work of the foundation.<sup>10</sup> In addition,

both the APTA Section on Geriatrics and the New York Fall Prevention Coalition are fortified by home care activities and the work of Judy Daniels, MSPT, GCS, Therapeutic Services Program Manager at HCR Homecare, who represented the home health constituency on the Experts' Panel.

APTA itself was well represented on the Experts' Panel by Nate Thomas, PT, DPT, MBA, Associate Director, Federal Government Affairs, who also represents the practice and reimbursement of physical therapy services on the National Falls Free® Coalthe Falls and Balance Special Interest Group of APTA, representing clinical practice in a variety of venues.

Priti Shah, PT, MPH, Aging Services Program Specialist, U.S. Administration on Aging (AoA), represented the aging services network. The AoA has a long history of promoting evidence-based health promotion programs through those community-based organizations providing older adult programs and services. This includes falls prevention programs such as Stepping On and Tai Chi: Moving for Better Balance and the fear-of-falling program, A Matter of Balance.<sup>11</sup>

### THE ROLE OF MEDICARE POLICY

Prior to the Fall Prevention Experts' Panel, Thomas, Shah, Beattie, and others participated in a September working meeting of the joint American Occupational Therapy Association(AOTA)/NCIPC discussion of AOTA's *Analysis of Medicare Policy in Relation to Preventing Falls Among Older Adults*.<sup>12</sup> The report outlines issues and recommendations for enhancing reimbursement for clinical interventions to prevent falls.

The AOTA identified the influence of Medicare policy on practitioners who address falls risk, analyzed these policies, and identified potential areas for policy enhancement or change. Researchers conducted comprehensive interviews with individuals representing federal government agencies, providers, and nonprofit organizations concerned with falls prevention in the elderly. As the primary payer for health care for older adults, Medicare bears the greatest share of financial costs and wields the greatest influence on health care services directed toward preventing falls. As both a payer and regulator, Medicare policy can require, permit, incentivize, or prohibit

provider actions related to falls prevention. Other federal and state policies, such as Medicaid, also have influence, as do issues such as care coordination, community program accessibility, and research. The AOTA and APTA are working collaboratively to address key identified barriers to timely care and reimbursement. In addition, the Falls Free® Advocacy Workgroup is exploring opportunities to strengthen services and reimbursement within the new Affordable Care Act and the Prevention and Wellness Fund.

The AOTA study spurred the work of the Palmetto GBA, a subsidiary of BlueCross BlueShield of South Carolina in Columbia, SC, to clarify and strengthen reimbursement policies for home health physical therapy and falls prevention services. Palmetto GBA is committed to timely care for older adults at risk of falling and fair reimbursement for those services. Dr. Harry Feliciano, in collaboration with APTA and AOTA, has been championing this work, which sets a path for broader, more consistent CMS reimbursement strategies. Dr. Feliciano collaborated with Terry Shea in developing two illustrative case studies to serve as reimbursement models for clinicians. Dr. Feliciano as well as AOTA representatives also participated on the CDC/NCIPC Experts' Panel.

### PHYSICAL THERAPISTS AT WORK

National, state, and local activities are underway to bring evidence-based programs and services to communities across the country, helping to promote safe aging and older adult engagement to stem the growing number of falls and fall-related injuries and deaths. Individuals aged 65+ are important resources—acting as caregivers, grandparents, volunteers, and community leaders and stewards. In these economic times, we need to preserve these resources while reducing the growing costs of injurious falls. A single hip fracture can adversely affect not only the individual, but also families, employers, and entire communities.

There is a clear need to integrate health care and aging services initiatives, promote best practices, and facilitate behavior and practice change for all stakeholders. The premise of the Falls Free® Initiative is that within one's own sphere of influence, everyone in a community can make a contri-



bution to reducing the growing number of injurious and fatal falls.

Physical therapists can make a difference through clinical practice, promoting the issue with colleagues and patients, learning more about the aging services network and how its programs and services can augment or supplement treatment plans, and participating in state coalitions.

Following the panel meeting, therapists formed a working group to continue to promote the important role Physical Therapy can play in addressing this growing public health issue. Subject areas of ongoing interest to this working group include promoting standardized falls prevention education and practice competencies, identifying best practices of engagement between PT practice and aging, and bringing national attention to growing opportunities for PT practice in addressing this growing public health issue.

We invite readers to look for future articles in this publication and PT in Motion reflecting effective strategies for collaborating with the aging services network, using an algorithm for referring your falls clients to evidence-based programs, and discovering work to prepare the New Zealand falls prevention program, Otago for broader dissemination.

## RESOURCES

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2. <http://www.cdc.gov/ncipc/preventingfalls>
3. <http://www.innovations.ahrq.gov/content.aspx?id=2207>
4. <http://www.nhpf.org/library/details.cfm/2626>
5. [http://www.americangeriatrics.org/health\\_care\\_professionals/clinical\\_practice\\_guidelines\\_recommendations/2010](http://www.americangeriatrics.org/health_care_professionals/clinical_practice_guidelines_recommendations/2010)
6. <http://www.uspreventiveservicestaskforce.org/uspstf11/fallsprevention/fallsprevart.htm>
7. <http://www.healthcare.ogve/center/councils/nphpphc>
8. <http://www.healthagingprograms.org/content.sp?sectionid=113&ElementID=746>
9. <http://healthagingprograms.org/content>

sp?sectionID=69&ElementID=847

10. <http://www.chfwch.org/Tools/Broadcaster/frontend/item.asp?ItemID=13>
11. [http://www.mmc.org/mh\\_body.cfm?id=432](http://www.mmc.org/mh_body.cfm?id=432)
12. <http://www.aota.org/Practitioners/Practitioners/PracticeAreas/Aging/Falls/Key/Analysis.aspx>

(Bonita) Lynn Beattie is the Vice President for Injury Prevention, National Council on Aging and is working on many national projects to reduce falls and fall-related injuries in older adults.

Most notably she is leading the National Falls Free<sup>®</sup> Initiative including a national coalition and the growing 38 member State Coalitions on Fall Prevention Workgroup. Achievements have included passage of federal legislation, increases in federal investment in falls prevention and annual Senate proclamations of Fall Prevention Awareness Day. Lynn also serves on numerous advisory panels addressing older adult issues including healthy aging, arthritis, and physical activity. She can be reached at [bonita.beattie@ncoa.org](mailto:bonita.beattie@ncoa.org)



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# FLEXIBILITY, BALANCE, AND ENDURANCE: HOW DO YOU MEASURE UP?

*Ellen R. Strunk, PT, MS, GCS, CEEAA*

Wow, what a busy spring, summer, and now fall 2011 is shaping up to be! As I am writing this article, it is September 22, 2011, and there is a flurry of activity in Washington, DC, as well as in every state, while we all prepare for estimated and actual budget cuts to the Medicare and Medicaid programs. Since April, therapists have been trying to figure out what an Accountable Care Organization (ACO) is. Since June, long-term care providers have been studying the prospective payment system updates for skilled nursing facilities. Since July, home health therapists have been studying the home health prospective payment system proposals while still trying to operationalize the Functional Reassessment requirements. We all got to watch the budget impasse unfold this summer only to see the birth of a so-called “super committee.” And just last month, we began hearing the term “bundle” return to the conversation. CMS put out a request for proposals in late August, seeking providers who are willing to jump into the fray with their ideas and proposals for one of 4 bundling models. And of course, the roller coaster ride is not over yet, as we anxiously await a resolution to the Therapy Cap, the physician fee schedule fix and the multiple procedure payment reduction (MPPR) policy.

If your head is swirling right now, don't worry! You are not the only one. The business and the culture of health care are changing before our eyes. Many of these changes are needed, and possibly even welcomed. Other changes are more questionable and, as a result, instill a deep anxiety in providers. The pace of change is very fast right now, and so our goals must be to (1) not get run over and (2) not get left behind.

Where does physical therapy fit in? How do we remain relevant--to both consumers and policymakers? Unfortunately, that answer won't be found in one succinct sentence, paragraph, or short

story. As times change and new models of care are developed, it is necessary that we--as a physical therapy community--remain flexible, balanced, and have endurance for the long road.

## **FLEXIBILITY: LEARN AND BE AWARE**

Physical therapists must learn and be aware of the models of care being discussed. We need to insure that physical therapy is a mandated benefit. Most of the initiatives being discussed center around the integration of health care delivery. The common goals are to

- Reduce the cost of health care delivery
- Improve the quality of care
- Re-examine how we pay for care
- Improve patient experiences

Physical therapy services are at risk of being cut in all settings: hospital, home health, skilled nursing facility, and outpatient. Through renewed focus on the goals of health care reform, we can insure our place in the new marketplace.

1. Can we reduce the cost of physical therapy? Are we constantly striving to learn new treatment methods and new treatment techniques that are proven to be effective and efficient? Do we understand the patient's health care benefit well enough that we make smart decisions? It isn't easy to approach each patient every day with a fresh perspective so we don't repeat what we have already done, we don't repeat what hasn't worked, and we always measure to insure progress is made. Reducing costs may require better collaboration and communication with the physical therapy providers who provided care to the patient in the setting before us, and increased communication with the physical therapy providers who will be providing care in the setting after us.

That will take more 'time' perhaps, and that 'time' may not have a CPT code attached to it, but it will be necessary.

2. Can we improve the quality of physical therapy? Of course we can. The first step is to measure it. That of course leads to the question – how? There are various ways: performance metrics, satisfaction metrics, functional outcome metrics, and/or process metrics. Each and every practitioner and practice has to start somewhere with some measure. Have you made that commitment yet? There are several demonstration projects happening right now that are developing quality metrics for settings where physical therapy is provided. For example, the Hospital Value Based Purchasing Program set to be implemented in 2013;<sup>1</sup> the Nursing Home Value Based Purchasing Program that is in the final stages of its demonstration;<sup>2</sup> the Value-Based Purchasing program for Physician & Other Professional Services;<sup>3</sup> and the Home Health Pay for Performance demonstration.<sup>4</sup> To be a part of the discussion, we must have an idea of what works and what doesn't. Only then will we be prepared to contribute, and not have to worry with what system may be placed on us.
3. Re-examine how we pay for care. There are several different models of paying for care that are beginning to gain traction. On the one end of the extreme is to continue with fee for service, but with payment reductions as volume increases. Another is bundled payments for conditions or sites of service. Shared savings plans allow providers to receive a part of the savings if costs are less than target. Even the term capitation is back in vogue; it

is a system that puts all the savings and all the risk on the provider of care. CMS has solicited input from APTA on the development of new Evaluation/Assessments and Intervention codes that could potentially serve as an alternative to our cumbersome CPT codes and rules.<sup>5</sup> Although it is daunting to think of replacing our current system of multiple codes with a new system, think of the freedom that could potentially come with that! Rather than counting visits, days, or minutes, we could concentrate on the care being delivered and the outcome that must be achieved.

4. Improve patient experiences. How do we do this? By examining how providers coordinate services and communicate between sites of care. Care must be efficient so that patients receive the right care in the right setting at the right time.

#### BALANCE: QUALITY, COST, & SCRUTINY

In recent years, the level of scrutiny and doubt cast over health care providers has increased exponentially. It seems as though the Office of Inspector General (OIG), the Department of Justice (DOJ), Zone Program Integrity Contractors (ZPICs), and many other agencies, look at health care providers as potential felons or abusers of federal health care dollars. There is a significant lack of trust and partnership that results in interactions that are more adversarial than collaborative. As more and more rules and regulations are imposed upon us, the result is a stifling of creativity or innovation in how therapy services are delivered.

However, we have to accept the facts, and those facts are that there is a lot more focus on insuring health care dollars are spent appropriately. The Recovery Audit Contractor (RAC) program is on pace to increase its total corrections by 850% over Fiscal Year 2010.<sup>6</sup> Physical therapy accounts for approximately 75% of the outpatient therapy services billed to the Medicare system. As a result, the frequency of audits on physical therapy services will continue to increase.

Audits will increase the scrutiny on what we do and force us to really think about why we do it. Is that a bad thing?

No. That is where balance becomes important. The key is to believe in the services you offer, and to document the services you deliver in terms that describe the complexity of what it is you offer. There is no doubt that documenting skilled services is a challenge, and often interferes with patient care time. As a profession, however, we have got to stop complaining about it and just do it. Our care must be defensible, and if it is, then the risk of a denial is less. If you are unfortunate enough to get an overzealous auditor looking at your claims, counter their argument with documented evidence and logic supporting your decisions.

*<sup>6</sup>Centers for Medicare & Medicaid Services Report as of June 2011. Between October 2009 and September 2010, \$92.3 million of total corrections was made. Between October 2010 to June 2011, \$289.3 million of total corrections has been made*

As we know with our patients, balance is a tricky skill to learn and to train. As professionals, we must have it. We must be able to balance the clinical needs of the patient with the intellectual knowledge of how we will get paid for those services, and how we can justify those services being delivered. Without this proper balance, we risk either not getting paid for appropriate services we provide or providing services that cannot be justified.

Within new models of care, there may be a bright light of possibility on the horizon. In other words, health care reform could be a key to changing relationships with Medicare and other health care payers. As more integrated care organizations are developed, there may be more opportunities for collaboration and education on the value physical therapy brings to beneficiaries.

#### ENDURANCE: DON'T GIVE UP

This may be the toughest part of all. But it is also one of the most important. "Consumers will have direct access to physical therapists in all environments for patient/client management, prevention, and wellness services. Physical therapists will be practitioners of choice in patients'/clients' health networks and will hold all privileges of autonomous practice."<sup>7</sup>

We can't lose sight of the reason for our services and that is to render evidence-based services and improve the quality of life for all members of society. Each of us will get tired at one time or another. These times may be increasingly challenging and overwhelming, we must continue to persevere. Don't give up. Don't be afraid to provide the service the patient/client needs. Just make sure you are in top shape: providing appropriate care and documenting those services so well that no one can argue its necessity.

Flexibility, balance, and endurance are 3 key indicators of health we are accustomed to measuring in our patients. So take a minute and consider: How does yours measure up? Will you lead, follow, or resist?

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# HEALTH REFORM, PHYSICAL THERAPY, AND PREVENTION

Michael J. Shoemaker, PT, DPT, PhD(c), GCS

*The author was the keynote speaker at the Michigan Physical Therapy Association's 2011 Student Conclave on April 1, 2011, which was focused on the role of physical therapists and physical therapist assistants in health care reform, prevention, and wellness. He has submitted his keynote speech to help physical therapists and physical therapist assistants begin to think about prevention and wellness opportunities for older adults in the context of health care reform.*

Thank you to all of you for attending the MPTA 2011 Student Conclave. The fact that you are here demonstrates that you are committed to developing yourselves as professionals, which, I believe, is the most critical ingredient to our success as a profession in the coming decade. In order to position ourselves to be successful in the health care system as it undergoes potentially drastic reform, we must embrace a higher standard of professionalism that requires us to utilize the full scope of our practice, including new and innovative methods for engaging in preventive health care and demonstrating our ability to be cost effective.

The theme of today's conference is prevention, which is a timely topic. As we speak, leaders in our profession are planning for opportunities that will allow physical therapy to continue growing and succeeding in an ever-changing health care environment. A month ago, I attended the Future of Physical Therapy Conference in Atlanta, GA where leaders in our profession gathered to discuss the findings of the Physical Therapy and Society Summit and the Vitalizing Practice through Research and Research through Practice Conference to brainstorm opportunities and threats related to health reform. All of the ideas and concepts I will discuss this morning reflect the latest about our profession's future and role in prevention and wellness.

However, in order to put prevention and physical therapy into perspective, we need to take a broader look at health

care reform and the basics of health care systems. But first we need to review some definitions. Primary prevention is preventing the onset of a condition. Secondary prevention is decreasing the duration or severity of a condition and its sequelae. Tertiary prevention is the restoration of function and limiting the degree of disability in those with chronic and irreversible conditions. Wellness is a state of positive health across a variety of dimensions that result in quality of life and a sense of well-being.

Next, we need to review the 4 basic components of any health care system: financing, insurance, payers, and providers. While the insurance and payer functions are often one in the same, they need not be. When we think of exciting possibilities in prevention and wellness, patients and clients willing to pay out of pocket are a promising target population.

There are several central, defining characteristics of our current health care system that we need to discuss in order to understand the radical and transformational potential of health care reform. First, our current health care system is a quasi-free market. Despite claims by some that it is a true free market, the general consensus is that health care delivery in the United States does not follow the principles of a free market for two reasons: the role of insurers and the nature of health care as a consumer product. In a free market, the consumer should be the one choosing a provider based on cost and quality. However, insurers and payers often dictate the choice of providers for a given consumer. And, the price of health care is not driven by supply or demand; it is often driven by what insurers want to pay. The insurers determine pay rates, regardless of the fee schedule set forth by a provider. Furthermore, insurance insulates consumers from pricing's influence on demand because the care they seek and receive is largely covered under a set fee, typically the insurance premium.

A second characteristic of our health care system is that it follows a medical model that emphasizes the treatment of already diseased conditions using high-cost, high-technology interventions. This is in stark contrast to a health and wellness model that proactively applies broad, population-based interventions to prevent the most common and costly diseases.

The third characteristic of our health care system is that it is a patchwork of entitlement and privilege-based programs with maligned incentives. The goal of private payers is to minimize expenditures until the insured individual reaches the age of eligibility for an entitlement program such as Medicare. For example, private insurers, as a business, seek to minimize expenditures on the individuals they cover until those individuals are no longer covered. It is a "punt" strategy of sorts. Why pay now to prevent problems that Medicare will ultimately have to pay for? Private insurers do not have any incentive to prevent or minimize factors that would contribute to diseases that would not appear until those individuals are covered under Medicare. Another example of maligned incentives is the fact that government and private payers alike have reimbursement structures that are highly variable among clinical settings that either incentivize procedures without accountability to outcome or incentivize movement to the next level of care in the continuum, but none incentivizing restoration and maintenance of health. I should note that Medicare's "break it you buy it" program may be a step in the right direction. Hospitals do not receive payment to care for problems they create, such as infections, pressure ulcers, and readmissions for patients with heart failure.

Finally, the fourth characteristic of our health care system is that of excessive administrative burden. Our government sponsored entitlement programs and private payers are highly variable in their eligibility criteria, their benefits, and the



regulations that providers must follow. For example, we have Medicare, Medicaid, the Military Health Service, Tricare, CHAMPVA, SCHIP, the Indian Health Service, and worker's compensation, and none are similar with regard to their benefits, payment structures, and provider requirements. Large practices must hire several full-time employees just to handle billing and claim denials. This results in administrative costs in excess of 25%. That is, 25% of our health care costs are wrapped up in complex paperwork and procedures to adhere to multiple payment methods and requirements.

Managed care was a product of the 1990s as the solution for rapidly escalating health care costs. It was designed to oversee and direct care and hold providers accountable to outcomes, but their incentives focused on financial and not health and clinical outcome metrics.

In summary, the United States stumbled upon the best recipe for cost ineffectiveness. We rank 14<sup>th</sup> in the world for preventable deaths, 45<sup>th</sup> for infant mortality, 29<sup>th</sup> for life expectancy, but we spend the greatest amount of our GDP in the world on health care, fully 15.2%. It is in this context that the United States must begin to seriously implement health reform to improve our performance on all three foundational objectives: reduce cost, improve access, and improve quality. Fixing any one of the three is easy. Access can be improved by increasing cost. Cost can be reduced by compromising quality. But increasing access and improving quality without increasing cost? That is the goal of health reform. While many details have not yet been determined, there are some broad concepts about which we can be quite sure:

- Groups of disciplines throughout the continuum of care will provide care to a defined population. This might be patients within a health system, a large provider practice, or health plan beneficiaries.
- Long-term cost and patient-centered clinical outcomes of this population will be measured and tracked throughout the lifespan.
- Providers will be selected to participate only at the appropriate points within the continuum of care and only if they can prove they have value. That is, does the provider's

care contribute to cost savings and good outcomes of the population they serve?

- And finally, providers will be incentivized through cost effectiveness and share in the cost savings for providing good care.
- What I have just described is the ACO, an Accountable Care Organization. Get used to this term, as it is the central component of health care reform.
- The ACO will be the think-tanks of innovation in patient-centered health and wellness because we know that a fragmented, provider-centered, disease-based model of health care is guaranteed to fail.

There is one more aspect of health reform legislation of which we need to be aware. Health care reform legislation ensured that rehabilitation was a minimum benefit that must be offered by the insurance exchanges that will help pay for the care of the 32 million newly insured individuals. But, this legislation also included a provider nondiscrimination clause, which means that it would pay for treatment by any eligible rehabilitation provider, and the list of eligible providers is likely to grow. With regard to the role of physical therapists then, health reform is a land of opportunity for our profession in general and for our role in prevention and wellness. But, know this: It is also the land of opportunity for other disciplines. We don't own exercise, and "the game is on" for those whose practice is based on movement and exercise. It may be a fight for survival, but it may also be a catalyst for unprecedented interprofessional collaboration.

So, let's now talk more specifically about physical therapists and their role in prevention and wellness. I would suggest that there are 6 things we need to consider to best position physical therapy for the future of health care. First, we need to clearly define ourselves and what we bring to the table. I think we truly are the only exercise- and movement-based discipline that combines in-depth knowledge of disease and pathophysiology, skills in exercise- and movement-based interventions that can be used across the entire continuum of care and across the entire life span. Furthermore, we are able to contextualize that knowledge and skill within a framework and understanding of human function

through the use of The International Classification of Functioning.

Second, we need to define our target population. It should be individuals who can most benefit from our services and who are the most costly: heart disease, diabetes, lung disease, low back pain, and osteoarthritis. This target population may pay out of pocket, or it may be a population as defined by an ACO. Successful strategies will be those that find financiers and payers who believe in what we have to offer, and you can be sure they will be looking for those disciplines that have the most to offer to the heaviest consumers of our precious health care dollars.

Third, we need to define the expected outcomes. This may perhaps be the most challenging for us as we are most familiar with a rehabilitative and restorative model of care. And, we need to be clear: These need to be patient-centered outcomes. These need to be meaningful to the patient, and they need to have value. They need to be cost effective. If there is one certainty about the future of health care, it is that we will not be paid for just providing a procedure, we will not be paid for ill-defined, unmeasured outcomes, and we will not be paid for poor outcomes. Gone are the days when we get paid for just showing up and doing something and not measuring the effect of what we did.

Physical therapists and physical therapist assistants are well-positioned for not only primary prevention, but for secondary and tertiary prevention of impairments, activity limitation, and participation restriction throughout the lifespan. Therefore, we must examine the fourth consideration, which requires that we re-examine how we develop a plan of care. Accountable Care Organizations, and certainly the populations they serve, are interested in long-term outcomes. A plan of care may span years, and it may take as much to demonstrate the value of what we have to offer.

Fifth, we need to understand human behavior and behavior change theory. It has been said that "health is not valued until it is lost." Therefore, how will we motivate our clients to make changes before they notice an immediate impact? We only need examine the Center for Disease Control's series of maps about obesity among the states to realize that Americans are clearly not motivated by



the threat of disease and disability, and that addressing obesity and its numerous sequelae is far more complex than just making ourselves available to tell people how to exercise. I think it is clear that understanding and addressing this epidemic is beyond the scope of any one discipline. We will need to collaborate with our colleagues in other disciplines to effectively address such perplexing issues.

This leads me to the sixth and final consideration about physical therapy's role in prevention and wellness. The fight among disciplines with overlapping scopes of practice to which I alluded earlier may not be a fight at all. It may be that patient-centered outcomes are maximized by identifying the most appropriate provider for an intervention, and we may have to accept that it might not be just us. Or, it may be that the benefit of our interventions is maximized only when our care is provided in collaboration with other disciplines. Remember, this is a patient-centered endeavor, not a provider-centered endeavor. And, it is an outcome-driven endeavor. If our

outcomes in terms of value and cost effectiveness are not superior, we have no claim to a given patient or procedure.

In summary, the future of physical therapy in this era of health reform provides many opportunities and challenges, especially with regard to our role in prevention and wellness, and, there are no certainties or specifics about how this will all play-out. But there are some things we can do to prepare. We can engage the most creative parts of minds and begin to dream and envision how we want it to be. We can engage in active dialogue about our ideas, barriers to their implementation, and methods to overcome those barriers. Finally, we can unite as members of our professional association to form a single, clear voice about what physical therapists and physical therapist assistants have to offer to help the health of our nation "Move Forward."

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## Section on Geriatrics, APTA

# **Essential Competencies in the Care of Older Adults at the Completion of the Entry-level Physical Therapist Professional Program of Study**



# Essential Competencies in the Care of Older Adults

Anticipating an impending health care crisis, the Institute of Medicine charged its Committee on the Future Health Care Workforce for Older Americans to determine the health care needs of Americans over 65 years of age and to analyze the forces that shape the health care workforce for these individuals. The resulting 2008 report, *Retooling for an Aging America: Building the Health Care Workforce*,<sup>1</sup> noted that as the number of older adults grows to comprise almost 20% of the population in the U.S., they will face a health care workforce that is too small and critically unprepared to meet their health needs. The most recent analysis of practice in physical therapy confirms that 40%-43% of patient care activity of physical therapists across a wide variety of practice settings are for individuals 66 years of age or older.<sup>2</sup>

One action taken as a result of the *Retooling for an Aging America* report was the formation of the Partnership for Health in Aging (PHA) by the American Geriatrics Society. A PHA workgroup comprised of 10 health care disciplines, including physical therapy, developed a set of overarching multidisciplinary competencies in the care of older adults across six different domains of practice.<sup>3</sup> Each competency is deemed essential for practitioners to achieve by the completion of an entry-level health professional program of study. The Section on Geriatrics of the American Physical Therapy Association (APTA) was involved with the development of these PHA overarching multidisciplinary competencies. The competencies have been endorsed by 28 national organizations, including the APTA (in May of 2010).

The Partnership for Health in Aging expects each professional group to individualize the overarching competencies to elucidate the specific skills representing competence in their field. A Taskforce of the Section on Geriatrics, using the PHA document as a framework, identified specific statements (we've termed 'subcompetencies') that clarify the skills essential for a physical therapist to provide competent physical therapy care to older adults within each domain and for each PHA competency.

Section on Geriatrics taskforce members, all experienced educators with substantial expertise in geriatric physical therapy, developed an initial list of subcompetencies; first, working in pairs and then as a committee of the whole. Review and revisions continued until all taskforce members agreed on all subcompetency statements. The resultant first draft document was brought to the 2011 Combined Sections Meeting of APTA where a group of 35 physical therapist volunteers attending the convention participated in a validation activity, providing feedback on the content and face validity of the document. Further revisions were

made based on this participant feedback. The revised second draft document was circulated via e-mail to each individual who attended the validation activity. Their feedback was incorporated into the final review by the Taskforce. Final taskforce consensus and approval of the *Essential Competencies in the Care of Older Adults at the Completion of the Entry-level Physical Therapist Professional Program of Study* document was achieved in May 2011 and then prepared for distribution to our membership. The following document represents the final work of this Taskforce. Section on Geriatrics strongly encourages accredited physical therapist educational programs to assure that their graduates demonstrate competence in each of the competencies described below.

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# Essential Competencies in the Care of Older Adults

## DOMAIN 1: Health Promotion and Safety

- A. Advocate to older adults and their caregivers about interventions and behaviors that promote physical and mental health, nutrition, function, safety, social interactions, independence, and quality of life.**
  - 1. Identify and apply best available evidence to advocate to older adults and caregivers about interventions and behaviors that promote physical and mental health, nutrition, function, safety, social interactions, independence, and quality of life across domains and care delivery settings.
  - 2. Value the advocacy role of the physical therapist in promoting the health and safety of older adults.
- B. Identify and inform older adults and their caregivers about evidence-based approaches to screening, immunizations, health promotion, and disease prevention.**
  - 1. Translate best available evidence about screening, immunizations, health promotion, and disease prevention to patient/client/caregiver(s) in a culturally appropriate manner using health literacy principles.
  - 2. Implement disease prevention, health promotion, fitness and/or wellness education programs that incorporate best available evidence targeted to older adults and their caregivers.
- C. Assess specific risks and barriers to older adult safety, including falls, elder mistreatment, and other risks in community, home, and care environments**
  - 1. Perform health, fitness and wellness screens (e.g., screens for fall risk, elder mistreatment, environmental hazards) that identify older adults at risk of injury.
- D. Recognize the principles and practices of safe, appropriate, and effective medication use in older adults.**
  - 1. Locate best up-to-date medication resources clarifying common uses, side-effects, and signs and symptoms of under and over dosing of prescription and non-prescription medications commonly used by older adults.
  - 2. Discuss common pharmacokinetic factors that should be considered when providing physical therapy interventions to older adults.
  - 3. Describe the influence of age and polypharmacy on pharmacokinetics and drug interactions.
- E. Apply knowledge of the indications and contraindications for, risks of, and alternatives to the use of physical and pharmacological restraints with older adults.**
  - 1. Define physical and chemical restraints as they relate to physical therapist practice.
  - 2. Identify regulatory agencies responsible for monitoring and enforcing restraint policies across health care settings.
  - 3. Cite evidence that validates the impact of physical and chemical restraint use on the restrained individual, the restrained individual's caregiver(s), and society.
  - 4. Describe and advocate alternatives to physical and chemical restraint use that are safe and least restrictive (e.g., positioning devices, enabling devices, environmental adaptation, caregiver/careworker supervision or intervention).

## DOMAIN 2: Evaluation and Assessment

- A. Define the purpose and components of an interdisciplinary, comprehensive geriatric assessment and the roles individual disciplines play in conducting and interpreting a comprehensive geriatric assessment.**
  - 1. Describe the concept of, and various formats for, interdisciplinary, comprehensive geriatric assessment and explain the benefit of this approach over single discipline assessment for complex older adults.
  - 2. Describe the role and contributions of each member of a typical comprehensive geriatric assessment team (such as geriatrician, geriatric nurse practitioner, pharmacist, physical therapist, social worker, case manager, occupational therapy, speech therapy).
  - 3. Explain the role of the physical therapist as the movement specialist on the geriatric assessment team.
- B. Apply knowledge of the biological, physical, cognitive, psychological, and social changes commonly associated with aging.**
  - 1. Incorporate knowledge of normal biological aging across physiological systems, effects of common diseases, and the effects of inactivity when interpreting examination findings and establishing intervention plans for aging individuals.
  - 2. Describe, identify, and appropriately respond to normal biological changes of somatosensation and the special senses that commonly occur with aging and as a result of diseases common in older adults.
  - 3. Interpret a patient/client's behavior within the context of various psychological and social theories of aging; selecting appropriate action including referral.
  - 4. Recognize the differences between typical, atypical, and optimal aging with regards to all systems; develop appropriate recommendations to reflect the person's goals, needs, and environment.
- C. Choose, administer, and interpret a validated and reliable tool/instrument appropriate for use with a given older adult to assess: a) cognition, b) mood, c) physical function, d) nutrition and e) pain.**
  - 1. Select and administer valid and reliable tests for cognition and depression (e.g., MMSE, Geriatric Depression Scale, Clock Drawing Test); and determine need for referral.
  - 2. Administrate and interpret functional tests that can identify risk for falling and mobility deficits (e.g., Berg Balance Scale, Timed Up and Go, Timed Walk Tests, Gait Speed, Balance Confidence scales); communicating the findings, and making recommendations to the health care team.
  - 3. Objectively assess pain in any older person regardless of cognitive or communication abilities.
  - 4. Administer a basic nutritional assessment including key questions regarding protein, calcium, Vitamin D, and fluid intake; taking appropriate action as indicated including referral.

*Domain 2 continued on next page*



# Essential Competencies in the Care of Older Adults

## DOMAIN 2: continued from previous page

### D. Demonstrate knowledge of the signs and symptoms of delirium and whom to notify if an older adult exhibits these signs and symptoms.

1. Differentiate between depression, delirium, and dementia based on presentation and related conditions; and refer as appropriate.

### E. Develop verbal and nonverbal communication strategies to overcome potential sensory, language, and cognitive limitations in older adults.

1. Identify and assess barriers to communication (e.g., hearing and/or sight impairments, speech difficulties, aphasia, limited health literacy, cognitive disorders).
2. Analyze how patient/client attributes and limitations, health care professional and family attitudes, and societal and cultural perspectives may impact communication during the rehabilitation process.
3. Modify communication, including the use of adaptive equipment, to deliver effective patient management for older adults with depression, dementia, anxiety, or for older adults who are in bereavement.
4. Develop alternative communication methods to deliver effective patient management for older adults with limited health literacy, hearing, sight impairments, or speech difficulties.
5. Consult other disciplines and make referrals where appropriate.

## DOMAIN 3: Care Planning and Coordination Across the Care Spectrum (Including End-of-Life Care)

### A. Develop treatment plans based on best evidence and on person-centered and person-directed care goals.

1. Develop evidence-based and patient-centered physical therapy interventions for conditions commonly encountered with older adults, utilizing enablement-disablement frameworks, emphasizing functional movement, and considering principles of optimal aging across physiological systems:
  - a. Musculoskeletal (e.g., osteoarthritis, spinal stenosis, spinal disc disease, fractures, joint arthroplasty, amputation, disuse atrophy, incontinence).
  - b. Neuromotor (e.g., stroke, Parkinson's disease, Alzheimer's disease, DJD with spinal nerve compression injuries, vestibular disorder).
  - c. Cardiopulmonary (e.g., post-myocardial infarction, post-coronary artery bypass surgery, cardiomyopathy, COPD, pneumonia, aerobic deconditioning).
  - d. Integumentary (e.g., cellulitis, pressure ulcers, vascular insufficiency ulcers, lymphedema, burns).

2. Develop evidence-based prevention and risk reduction programs for conditions prevalent in older adults (e.g., skeletal demineralization, sarcopenia, flexibility restrictions, falls, cardiopulmonary disorders, impaired integumentary integrity, postural deficits).
3. Develop a plan of care for the physical therapy management of patients/clients with complex medical profiles (e.g., frailty, heart failure, mechanical ventilation dependency, multiple chronic health conditions, dementia, malignant neoplasm, multiple traumatic injuries).
4. Adapt plan of care to address disabling psychosocial factors (e.g., depression, learned helplessness, anxiety, fear of falling).

### B. Evaluate clinical situations where standard treatment recommendations, based on best evidence, should be modified with regard to older adults' preferences & treatment/care goals, life expectancy, co-morbid conditions, and/or functional status.

1. Synthesize and recommend intervention modifications based upon patient/client values and lifestyle, life expectancy, co-morbid conditions, pharmacological profile, lab values, domicile setting, and financial resources.
2. Suggest environmental modifications to the clinical practice settings that better meet the needs of older adult (e.g., equipment adaptations, privacy, lighting, climate control, accessibility).

### C. Develop advanced care plans based on older adults' preferences and treatment/care goals, and their physical, psychological, social, and spiritual needs.

1. Define advance directives and discuss implications for physical therapy management.
2. Develop physical therapy plan of care for older adults receiving end-of-life care which integrates the:
  - a. Patient/client goals
  - b. Treatment setting
  - c. Functional and palliative needs of the patient/client

### D. Recognize the need for continuity of treatment and communication across the spectrum of services and during transitions between care settings, utilizing information technology where appropriate and available.

1. Identify methods used to communicate among health care professionals regarding the status and well-being of geriatric clients (e.g., team meetings, electronic documentation and review of medical records, discharge summaries, falls surveillance tools, community visit sessions).
2. Identify relevant evidence/literature guiding best practice regarding continuity of treatment across services and during transitions between care settings.
3. Value continuity of treatment across services and during transitions between care settings.

*Continued on next page*

# Essential Competencies in the Care of Older Adults

## DOMAIN 4: Interdisciplinary and Team Care

- A. Distinguish among, refer to, and/or consult with any of the multiple healthcare professionals and providers who work with older adults, to achieve positive outcomes.**
  - 1. Differentiate and choose appropriate healthcare professional or provider for referral or consultation to best meet the specific needs of an older adult.
  - 2. Communicate appropriately and in a timely manner with each individual provider the reason for referral or consultation.
  - 3. Provide consultation within the scope of practice of the physical therapist.
- B. Communicate and collaborate with older adults, their caregivers, healthcare professionals, and direct care workers to incorporate discipline-specific information into overall team care planning and implementation.**
  - 1. Select, prioritize, and communicate essential physical therapy findings to contribute to a team care plan.
  - 2. Adapt communication to accommodate learning styles and cultural, social, and educational perspectives and stressors effecting:
    - a. Older adults
    - b. Caregivers
    - c. Healthcare providers
    - d. Direct care workers

## DOMAIN 5: Caregiver Support

- A. Assess caregiver knowledge and expectations of the impact of advanced age and disease on health needs, risks, and the unique manifestations and treatment of health conditions.**
  - 1. Effectively assess caregiver knowledge and perceptions of the functional impact of advanced age and health conditions on optimal aging.
  - 2. Determine caregiver expectations of the health needs of his or her patient/client/family member; and caregiver ability to recognize and manage manifestations of the patient's common health conditions.
  - 3. Communicate with caregivers in a culturally competent and age-appropriate manner.
- B. Assist caregivers to identify, access, and utilize specialized products, professional services, and support groups that can assist with care-giving responsibilities and reduce caregiver burden.**
  - 1. Assess caregiver and patient goals for the care-giving relationship, identify potential areas for conflict, and refer to other providers as appropriate.
  - 2. Analyze needs and recommend products, services, and support systems to provide ADL and IADL assistance, considering individual needs of the patient and caregiver, with sensitivity to resource constraints.
  - 3. Advocate for caregiver access to appropriate services and products that reduce caregiver burden and support effective care.

- C. Know how to access and explain the availability and effectiveness of resources for older adults and caregivers that help them [the patient] meet personal goals, maximize function, maintain independence, and live in their preferred and/or least restrictive environment.**
  - 1. Identify options for least restrictive environment that maximizes physical functional ability and independence.
  - 2. Educate caregiver in accessing and using resources for optimal functioning in least restrictive manner.
- D. Evaluate the continued appropriateness of care plans and services based on older adults' and caregivers' changes in age, health status, and function; assist caregivers in altering plans and actions as needed.**
  - 1. Monitor and adjust the plan of care in response to changes in the patient, caregiver capacity, or care-giving environment.

## DOMAIN 6: Healthcare Systems and Benefits

- A. Serve as an advocate for older adults and caregivers within various healthcare systems and settings.**
  - 1. Take history and ask questions regarding unmet needs of older adults and caregivers.
  - 2. Assist in obtaining needed services through referral or consultation to facilitate optimal functioning of the patient/client.
  - 3. Provide information on best practice/evidence-based practice to older adults, caregivers, colleagues, and health care providers and agencies.
- B. Know how to access, and share with older adults and their caregivers, information about the healthcare benefits of programs such as Medicare, Medicaid, Veteran's Services, Social Security, and other public programs.**
  - 1. Describe the various public programs for healthcare available to older adults and the physical therapy services available within each (e.g., Medicare, Medicaid, Veterans Services, Social Security).
  - 2. Utilize information technology to obtain information on eligibility for services; effectively communicate these resources with older adults and caregivers; and/or refer patient to appropriate healthcare professional/social services as indicated.
- C. Provide information to older adults and their caregivers about the continuum of long-term care services and supports - such as community resources, home care, assisted living facilities, hospitals, nursing facilities, sub-acute care facilities, and hospice care.**
  - 1. Discuss appropriate care settings available to extend geriatric rehabilitation services (e.g., sub-acute rehabilitation, home health care, skilled nursing facilities, assisted living centers, senior centers, hospice care).
  - 2. Identify resources available to facilitate community-dwelling older adults' ability to live independently (e.g., meal delivery, home care resources, social services, electronic alert devices, community support groups, transportation services, home modifications, adaptive equipment).



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*For age is opportunity, no less than youth itself,*

*though in another dress, and as the evening twilight fades away, the  
sky is filled with stars, invisible by day*

- Henry Wadsworth Longfellow

Section on Geriatrics - APTA

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