

# GERINOTES

SECTION ON GERIATRICS, AMERICAN PHYSICAL THERAPY ASSOCIATION

## IN THIS ISSUE

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President's Perspective: Opportunities for Involvement Abound

Editor's Message: CMS 2009  
Dynamic People, Dynamic Information, Dynamic Section

## ARTICLES

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Therapeutic Effects of Neuromuscular Electrical Stimulation on Quadriceps of an Elderly Patient Following a Total Knee Arthroplasty

Subarchnoid Hemorrhage

What's Old is New Again: The Patient Centered Medical Home Model

Head Over Heels for Balance Examination: Common Balance Examination Tools

## CSM HIGHLIGHTS

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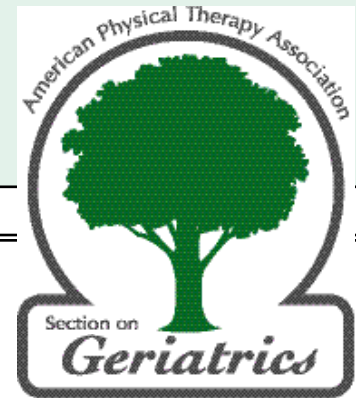
The Lights of Las Vegas Call Physical Therapists

CSM 2009 Las Vegas

SOG 2009 Awardees

# TABLE OF CONTENTS

President's Perspective: Opportunities for Involvement Abound....3 <i>John O. Barr</i>	CSM 2009: The Lights of Vegas Call Physical Therapists ..... 17 <i>Jill Heitzman</i>
Editor's Message: CSM 2009 ..... 4 <i>Carol Schunk</i>	CSM 2009 Las Vegas, NV: Photo Collage ..... 18
Therapeutic Effects of Neuromuscular Electrical Stimulation on Quadriceps of an Elderly Patient Following a Total Knee Arthroplasty ..... 5 <i>Garry Garcia, Suzanne Brown</i>	Head Over Heels for Balance Examination Common Balance Examination Tools ..... 20 <i>Randy Tarr, Mark Drnach</i>
Subarchnoid Hemorrhage ..... 10 <i>Krystal Csuk, Meri Goehring</i>	Section on Geriatrics 2009 Awardees ..... 23
What's Old is New Again: The Patient Centered Medical Home Model..... 13 <i>Matthew A. Mesibov</i>	



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All advertisements that appear in or accompany *GeriNotes* are accepted on the basis of conformation to ethical physical therapy standards, but acceptance does not imply endorsement by the Section on Geriatrics, APTA.

The Section on Geriatrics would like to thank all our outgoing Board and Committee Chair members for their time and dedication.

## Outgoing Board Members:

Anne Coffman, PT, MS, GCS	Vice President	2003-2009
Alice Bell, PT, GCS	Director	2007-2009

## Outgoing Committee Chairs:

Jean Reynolds, PTA	PTA Advocate	2007-2009
Michelle Criss, PT, MS, GCS	Regional Course Chair	2002-2009
Priscilla Raasch-Mason, PT	Health Promotion and Wellness Special Interest Group	2007-2009
Susan Wenker, PT, MS, GCS	Home Study Course Editor	2007-2009
Cathy Ciolek, PT, DPT, GCS	Listserve Moderator	2000-2009
Judith Canfield, PT, EdD	Nominating Committee Chair	2006-2009

# PRESIDENT'S PERSPECTIVE: OPPORTUNITIES FOR INVOLVEMENT ABOUND

John O. Barr, PT, PhD



Reports provided by Section leaders during the CSM Members Meeting are a testament to the vitality of our organization and also demonstrate the importance of professional association involvement to our members' personal and professional growth. Although approximately 150 of you were able to join us for this meeting, I wanted to share a slightly expanded list of current Section volunteer opportunities, which include the following:

## ADVANCED CLINICAL PRACTICE COMMITTEE MEMBER

Promoting advanced practice activities to PT and PTAs, including, but not limited to, assisting those individuals pursuing geriatric clinical specialization, advanced clinical proficiency recognition, pursuing or developing clinical residency programs, and/or pursuing any other advanced education related to the aging adult.

## ADVOCATES TO THE STATES

Working at the grassroots state level to promote physical therapy for aging adults to consumers, PTs, PTAs, and students. Current vacancies exist in CA-Southern, CA-Northern, CT, DC, DE, HI, IN, LA, MD, ME, MN, MO, PR, TX, UT, VA, WA, WI, WY. If there's no vacancy in your state, contact your state's Advocate to get involved in their efforts!

## E-NEWS EDITOR

Gathering and organizing material for a quarterly e-newsletter that provides valuable information to members about Section news and items relevant to physical therapy and the aging adult.

## GERINOTES CONTRIBUTOR

This award-winning Section news magazine is continually in search of PT, PTA, student, and consumer authors for a wide range of articles embracing clinical practice,

research, reimbursement, legislation/political action, and human interest topics. Please contact Editor, Carol Schunk, PT, PsyD at [carolschunk@earthlink.net](mailto:carolschunk@earthlink.net).

## JOURNAL OF GERIATRIC PHYSICAL THERAPY MANUSCRIPT REVIEWER

Our National Library of Medicine-referenced journal is seeking to expand its cadre of reviewers for manuscripts, books, and media submitted for peer review. Previous experience as a reviewer or journal author is preferred, but not mandatory. Please contact Editor, Michelle Lusardi, PT, PhD at [lusardim@sacredheart.edu](mailto:lusardim@sacredheart.edu).

## MEMBERSHIP COMMITTEE MEMBER

Promoting membership in the Section on Geriatrics, and also working to promote the retention of current members.

## PTA ADVOCACY COMMITTEE MEMBER

Representing the interests of physical therapist assistants (PTAs) to the Section Board of Directors; promoting the Section to PTAs; facilitating best physical therapist assistant practice for the older adult.

## REIMBURSEMENT & LEGISLATION COMMITTEE MEMBER

Monitoring federal legislation, reimbursement policies, and other issues that influence practice and reimbursement for physical therapy services for the aging adult.

## WEB COMMITTEE MEMBER

Helping to manage content on [www.geriaticspt.org](http://www.geriaticspt.org) so that it is an outstanding evidence-based resource for Section members, students, and consumers.

## FEDERAL ADVOCACY FORUM PARTICIPANT

This year's Federal Advocacy Forum will be held May 17-19 at the Crowne Plaza Old Town Hotel in Alexandria, VA, one block from APTA headquarters. PTs, PTAs, and students of physical therapy will receive advanced advocacy training,

hear from Congressional leaders, and lobby their members of Congress on issues important to the physical therapy profession. I strongly encourage Section members to participate in the Forum to better assure that issues related to aging and physical therapy for older adults are being acted on by our senators and representatives. Forum registration and hotel information are available at [www.apta.org](http://www.apta.org), or by calling 800-999-2782, extension 8533. The deadline to secure a room at the special rate is **April 15, 2009**.

The vast majority of what is accomplished by our Section is done by volunteers. I suggest that you periodically review volunteer and elected positions, including more detailed job descriptions, on our website at [www.geriaticspt.org/vol/index.cfm](http://www.geriaticspt.org/vol/index.cfm). Opportunities for meaningful involvement in the Section on Geriatrics do abound!

*Dr. Barr is a Professor in the Physical Therapy Department at St. Ambrose University, Davenport, IA. He also serves on the Editorial Board for the Journal of Geriatric Physical Therapy.*

*When you volunteer  
it means you give  
yourself without  
any regression,  
without condition,  
but with  
full devotion...*

Faith Tomaquin

## EDITOR'S MESSAGE:

### COMBINED SECTION MEETING 2009

Dynamic People, Dynamic Information, Dynamic Section

Carol Schunk, PT, PsyD



Once again the Combined Section Meeting was great. The dynamics of 8400 therapists has to have an impact on your sense of being part of a profession and the pride of the dynamic flow of the educational sessions. As I have mentioned in previous years, I am always impressed with the give and take of information. Maybe because we always have at heart the best interest of our patients or clients. What can we learn to improve patient care, to provide the best rehabilitation in our own clinical settings? The Section on Geriatrics sessions as master minded by SOG program Chair, Jill Heitzman and her crew were the best. The SOG preconference course and the main conference sessions covered a wide spectrum of topics of interest to therapists in the numerous settings where we work with older adults. Jill has written a summary of

2009 CSM, in addition we have added photos of various activities during the conference to wet your appetite for 2010. Remember attending the conference is one way to participate but another way is to be a presenter. Many of us have special clinical programs or have done research or written an interesting paper that can be translated into a platform or poster presentation or an educational session. There is nothing more exhilarating than sharing your programs or research with colleagues. The article in the January 2009 issue of *GeriNotes*, *Disseminating Evidence by a Presentation at a Professional Conference*, can lead you painlessly through the process.

One of my main pleasures at CSM is the opportunity to meet with the *GeriNotes* Editorial Board. They are pictured below and I issue a hearty voice of appreciation to all of them for the help and contributions in making *GeriNotes* a great publication. The members have the responsibility to solicit or to write 2 articles a year but most do much more than the basic obligation by sending in student articles. In addition, they serve

as consultants to the Editor (me) when I need another set of eyes or advice on content or layout. At this meeting we decided to do another CEU issue in keeping with the November issue of Cardiovascular and Pulmonary. The response to this issue has been very good. The decision was made to follow the APTA Guide to Practice, Practice Patterns. Later in 2009 we will do a second CEU issue on the Musculoskeletal Practice Pattern. Members are encouraged to consider submitting an article or ideas about content.

In this issue are many great articles in addition to the 2009 Section on Geriatrics Awards. The Award Ceremony is a very special event at CSM. There are so many outstanding people who contribute in different ways to the application of physical therapy to older people. This can be through research or advocacy or leadership or teaching. The end result is always the same, enhanced therapy to our patients or clients. I definitely encourage you all to take the time to read about the award recipients. They are our Section heroes, we honor and praise them one and all.



“...a hearty voice of appreciation to all of them for the help and contributions in making *GeriNotes* a great publication.”

#### **GeriNotes Editorial Board Members**

Top Row: Bill Staples, Carol Schunk, Nora Francis, Jill Heitzman

Front Row: Neva Greenwald, Patricia Antony, Sandy Levi, Helen Cornely

Not pictured: Kathy Brewer



# THERAPEUTIC EFFECTS OF NEUROMUSCULAR ELECTRICAL STIMULATION ON QUADRICEPS OF AN ELDERLY PATIENT FOLLOWING A TOTAL KNEE ARTHROPLASTY

Garry Garcia, PT; Suzanne Brown, PT, MPH

## INTRODUCTION

Each year, approximately 300,000 total knee arthroplasty (TKA) surgeries are performed in the United States for end-stage arthritis of the knee joint.<sup>1</sup> While TKA reliably reduces pain and improves function in patients with knee OA, quadriceps weakness and arthrogenic muscle inhibition (AMI) persists after surgery.<sup>2</sup> Arthrogenic muscle inhibition is the most frequent clinical problem encountered in patients with knee OA. It is the inability to achieve full voluntary activation of the quadriceps muscles and an ongoing reflex inhibition after distension or damage to the structure of the knee joint to protect the joint from further damage by restricting its use. This protective mechanism however, restricts full muscle activation and therefore prevents restoration of strength.<sup>3</sup> Sprague<sup>4</sup> believed that this reflex weakness is one of the causes of extensor lag at the knee joint. Wadsworth<sup>5</sup> discussed the importance of obtaining a good contraction of the whole quadriceps mechanism particularly to control the last 15° extension and also added that the greater electrical activity was recorded in the vastus medialis oblique (VMO) which means it is working at its greatest mechanical and physiological disadvantage at the end of extension. This extension lag compromises the quality and efficiency during the final rise of sit to stand transfers, reduces quality of ambulation during terminal swing of the leg, shortening the affected leg's step length versus the unaffected leg disrupting the execution of an efficient gait cycle.

These strength-related impairments are thought to be reversible by the use of neuromuscular electrical stimulation (NMES). Muscle contraction is activated by nervous stimulation that evokes an action potential releasing calcium ions. The calcium binds with troponin to reposition the tropomyosin molecules, so the receptor sites on the actin molecules are free to react with myosin. The

heads of the myosin molecules move out perpendicular to their core and attach to the actin, forming cross bridges.<sup>6</sup> As the amount of contractile proteins is increased, the number of cross bridges that are formed is also increased. The force produced by the activation of muscle is directly proportional to the number of cross bridges that form which accounts for the marked increase in muscle activity to generate tension in response to high-level activation. Both volitional activation and electrical stimulation are capable of inducing a rise in the amount of muscle fiber contractile proteins.<sup>7</sup> Lewek et al<sup>8</sup> reported an increased of quadriceps femoris muscle force from 50% to 93% following 11 sessions of NMES to a 66 year old man who had a TKA.

Mintken et al<sup>9</sup> reported an improvement of quadriceps torque of the involved side by 16%, 2%, and 50% from 75% and activation to 93.4%, 94.6%, and 93.5% from 72.9% at 3, 6, and 12 weeks after NMES was initiated 48 hours postsurgery and continued twice a day for the first 3 weeks, and once daily for 3 additional weeks to a 65 year old female who had a TKA. The patient also made substantial improvements in functional outcomes. Piva et al<sup>10</sup> reported an increased in lean muscle mass, muscle strength, and physical function in those patients with rheumatoid arthritis (RA) who completed the 16 weeks of NMES and volitional exercises.

The purpose of this case report is to investigate the effectiveness of NMES in combination with volitional exercise in improving the quadriceps strength and its influence in functional outcomes to an elderly female patient who is over 80 year who had a (L) TKA due to OA. Patient's range of motion (ROM), pain level, girth, and strength were assessed at 1, 2, and 3 weeks using the standardized outcome measurements. Patient's functional outcomes were assessed using the Barthel Index and Berg balance test.

## CASE REPORT

JB, an 81-year-old female, was admitted to the Skilled Nursing Facility (SNF) on post-op day 21 following a (L) TKA due to OA. Prior to the TKA, the patient reported that pain in the left knee gradually worsened over the previous 2 years, becoming severe in the last 2 months. After undergoing multiple injections of cortisone and synvisc to the left knee as well as arthroscopic surgery, her symptoms did not improve. The increased pain affected her ability to rise from a chair and to safely ambulate due to the left knee buckling when ascending and descending the steps. The patient used a quad cane prior to surgery to assist in balance and prevent limping.

Prior to surgery, JB was able to live alone in a one story house with 3 steps to enter without railings. She was able to drive a car, walk community distances, and participate independently in social activities. Her goal was to return home and go back to driving again.

## Current Medical History

In addition to the osteoarthritis, the patient has been diagnosed with hypertension and hypothyroidism. Her current medications are synthroid 25 mg OD daily to improve level of thyroid hormone, lisinopril 10 mg OD daily for her hypertension, Coumadin 3 mg OD daily to prevent postsurgical blood clot with PT/INR once a week, and Vicodin 500 mg every 8 hours daily to control the pain.

Physical therapy was started on post-op day 2 and continued until post-op day 17. This post-op physical therapy consisted of active-assistive exercises, isometric exercises, and assisted weight bearing activities, ie, standing and ambulation using a wheeled walker.

## Evaluation

Evaluation in the SNF facility showed the patient was alert oriented x 3 with no apparent cognitive difficulties and was able to follow complex commands. Blood

pressure was 130/80 mmHg, sitting. Lower extremities were grossly intact as to light touch and pin-prick sensations. Homan's test was negative. The left knee was warm to touch with 2+ pitting edema and an approximately 6 inch vertical incision centered on the patella. Staples have been removed with incisional site healing with no drainage. Mild erythema was noted distal to the incision. Bilateral knee girth measurements were recorded midpatella as 35.5 cm on the right and 40 cm on the left. Patient rated her pain at 5/10 using a visual analog scale (VAS).

**Range of Motion.** Active and passive goniometric measurements of the knee have high intratester reliability.<sup>11,12</sup> JB's active knee flexion/extension on the right was 0 to 115° and -30 to 90° on the left. Passive knee flexion on the left was -27 to 94°. All measurements were taken by a single person.

**Muscle Strength.** Manual muscle test on right lower extremity was graded as 5/5. Her strength on left hip flexors, extensors, abductors, adductors, ankle dorsiflexors, and plantarflexors were grossly 4 minus. Left knee extensors were 3 minus and flexors were 3 plus.

**Balance.** Patient's balance was tested using the Berg Balance assessment. With a maximum score of 56, JB scored 45 indicating she was a low risk for falling. The Berg balance scale was the most efficient measure (effect size > 1) to statistically discriminate between subjects according to their use of each type of mobility aide (walker, cane, no aids).<sup>13</sup>

**Activities of Daily Living and Mobility.** With a maximum score of 100, JB scored 55 in the Barthel Index. The Barthel Index has been shown to be reliable for the measurement of ADLs and physical functions covering feeding, bathing, grooming, dressing, bowels, bladder, toilet use, transfers, mobility, and stairs. Inter-tester correlation coefficient was .86-1.00 and the test-retest comparisons was .57-1.00.<sup>14</sup>

**Gait.** JB ambulated 120 feet using a wheeled walker with a wide based and a left antalgic gait. She was provided standby assistance for safety. Her steps were uneven with decreased step length and swing height on the left leg.

**Transfers.** JB demonstrated difficulty with sit to stand transfer needing extra time and minimal assistance due to lack of extension force from left quadriceps.

## Assessment/Practice Pattern

Based on the evaluation, it was determined that the patient was classified in the Musculoskeletal Preferred Practice Pattern H: Impaired Joint Mobility, Motor Function, Muscle Performance, and Range of Motion Associated with Joint Arthroplasty as explained in the *Guide to Physical Therapist Practice*.<sup>15</sup> The diagnosis was based on the limited range of motion, decreased muscle strength, presence of pain and swelling around the knee joint, and functional limitations. The goals of treatment were to decrease pain and swelling on left knee, increase ROM on left knee, increase strength on left leg, and improve sit to stand transfers to independence. Patient's prognosis in achieving these goals was good based upon her previous level of function and high level of motivation. The primary concern for intervention was determined to be the patient's left quadriceps weakness resulting in functional limitations. This concern was consistent with the evidence about the presence of quadriceps weakness and decrease volitional activation before and after total knee arthroplasty on patients with osteoarthritis.<sup>16,17</sup> A strong muscle contraction and activation of the quadriceps is needed to reverse the weakness and activation failure seen in patients post TKA.

The treatment of choice to address the quadriceps weakness was NMES in conjunction with volitional strengthening exercise program. The objective was to improve the left quadriceps terminal extension force to lock knee in extension which is needed during sit to stand transfers and improve joint stability by preventing the left knee from buckling during ambulation especially when negotiating steps. Neuromuscular electrical stimulation has been used in combination with volitional strength training in a younger (62 y/o), athletically active patient with quadriceps strength impairments following total knee arthroplasty. The NMES treatment was shown to produce a greater quadriceps maximal volitional force output than volitional strength training alone.<sup>18</sup> Although JB was two decades older and had existing hypothyroid disease, it was hypothesized that the use of NMES could maximize the volitional force of the quadriceps so she can function independently and return home within a reasonable amount of time. In addition to NMES, the plan of treatment included a traditional post-TKA protocol including AROM to isotonic strengthening exercise to increase ROM, recumbent bike to improve endur-

ance, transfer training to improve sit to stand and car transfers, gait training over all surfaces to achieve independence in ambulation without the use of assistive device, pulsed ultrasound to left knee to decrease pain and swelling, standing balance to decrease risk for falls, cold pack to left knee to reduce exercise induced soreness, and patient education with home exercise program to maintain functional ability, strength, and ROM of the affected extremity.

## INTERVENTIONS

The patient was treated 5x /week for 3 weeks for a total of 14 treatment sessions. Details of conventional interventions, progression of intensity, and goals during each treatment session were shown are shown in Table 1. Treatment session 1 included the initial evaluation of the patient as well as the interventions shown.

Neuromuscular electrical stimulation was applied with the patient in the sitting position. Two large electrodes measured 2.25" x 4" were used and placed over the upper thigh targeting the rectus femoris, vastus intermedius, and vastus lateralis muscles and lower thigh for the vastus medialis oblique (VMO) muscle. The Omnistim FX2 was used and selected the sequential isometric 10 seconds protocol at 50 Hz, 10 seconds "ON" time and 50 seconds "OFF" time. This protocol provided 7 to 8 maximal contractions for each target muscle group during the 15-minute treatment duration. Patient was instructed to extend left knee and hold for 10 seconds during stimulation ON time. While performing isometric contractions, patient was also instructed to count out loud from 1 to 10 seconds to prevent a Valsalva maneuver and an increase in blood pressure.

## OUTCOMES

The patient showed consistent progress in achieving goals throughout the 14 treatments. Pain, swelling, ROM, strength, balance, transfers, and ambulation were improved by the 5<sup>th</sup> treatment session. By discharge at the 14<sup>th</sup> treatment session, 39 days after her surgery, the patient's left knee pain was reduced to 1/10 with pain meds taken on a PRN basis. Strength of the left knee quadriceps was a 4-/5 grade. Her Berg Balance Scale test improved to a score of 52/56 which indicated low risk for falling. She scored 95 out of 100 in the Barthel Index including independence in car transfers and ambulation within the community distance over all surfaces. Patient was discharged to home on the 40<sup>th</sup> post-op day.

**Table 1. Interventions**

Goals	Interventions	Day 1	Days 2-5	Days 6-8	Days 9-10	Days 11-13	Days 14
Increase (L) knee ROM	Therapeutic exercise LLE all planes of movement	AROM 10 reps x1	AROM 10 reps x 2	1.5 lb resistance 10 reps x 2	2 lb resistance 10 reps x 2	2.5 lbs resistance 10 reps x 2	X
Increase (L)LE strength	Recumbent Bicycle		10 min level 3	15 min level 4	X	15 min level 5	X
Increase endurance							
Decrease (L) knee pain and swelling	Pulsed Ultrasound x 1 w/cm <sup>2</sup> x 5min	X	X	X	X	—	—
Increase (L) quadriceps strength	Cold pack x 10 minutes to left knee	X	X	X	X	-----	----
	NMES to left quadriceps x 15 min	X	X	X	X	X	X
Improve transfers	Transfer training	Bed to chair, sit to stand	X	X	---	car	car
Ambulation with wheeled walker on even surface	Gait training	Wheeled Walker (WW) Even surfaces (ES)	WW ES, and uneven surfaces (UES)	Narrow based Quadcane (NBQ) even surfaces	NBQ, ES, UES, stairs	No assistive aid ES, UES, and stairs	X
Improve balance	Standing Balance Activities		Static Strategies	X	Dynamic Strategies	X	—
Demonstrate knowledge of home exercise program	Patient education with home exercise program	X	X	X	X	—	—
X=continued treatment							

**Table 2. Goals and Outcomes**

Goals	Assessment	Baseline	Outcome	Day Achieved
Increase (L) knee ROM	Goniometry Active ROM	-30 ° extension 90° flexion – 44% of normal (0-135 °)	-6 ° extension 110 ° flexion – 77% of normal	
Increase (L)LE strength	Manual Muscle Strength		Knee extensors 4 minus/5 Hip extensors & flexors 4/5 Ankle dorsiflexors & planterflexors 5/5	13/14
Increase endurance	Duration , intensity, level of dyspnea		Recumbent cycle 15 minutes at level 5 Ambulation 500 ft without fatigue or SOB	13/14
Decrease (L) knee pain and swelling	Visual Analog Pain Scale Girth measurements	5/10 moderate to constant deep throbbing (R) 35.5 inches; (L) 40 inches	1/10 mild, highly tolerable (R) 35.5 inches; (L) 36 inches	10/14
Increase (L) quadriceps volitional strength in functional activities	Sit to stand transfers Gait		Independent transfers Independent gait without assistive device all surfaces including stairs	14/14
Improve Balance	Berg Balance Test	45/56 –low risk for falls	52/56 – low risk Independent dynamic standing	
ADLs & transfers	Barthel	55/100	95/100	14/14
Functional and safe Ambulation	Home ambulation ability	120 ft wheeled walker, antalgic (L) standby assistance	Independent gait without assistive device all surfaces including stairs	14/14
Demonstrate knowledge of Home exercise program	Ability to perform activities unsupervised		Independent performance all components of home exercises	10/15

## DISCUSSION

The main purpose of this case report is to discuss the effectiveness of NMES in combination with volitional exercise in improving the strength of quadriceps muscles within a reasonable amount of time in an older patient. Aside from NMES and isotonic exercise, the patient received other conventional post-TKA treatments to reduce pain and swelling, increase range of motion, functional activities, and endurance. JB started receiving NMES at 3 weeks after surgery. During the 1<sup>st</sup> treatment session, her (L) quadriceps strength was 3-. By the 14<sup>th</sup> session at 5<sup>th</sup> week postsurgery, it had improved to 4-. Her (L) knee pain and swelling have decreased to a very mild level. Improvements in ROM, balance, and transfers were also noted. She achieved independence in ambulation within community distances on even and uneven surfaces. The mean length of stay of 87 patients with knee or hip replacement surgery treated in SNFs in a study done by Walsh and colleague<sup>19</sup> was  $20.0 \pm 10.8$  days, compared to 18 days for JB. At discharge, the mean ambulation distance was of  $289 \pm$  feet, compared to 500 feet without assistive device for JB. Given the patient's age of 81 years, her progress was excellent in all areas, and has resulted in superior outcomes compared to the study of Walsh and colleagues. A potential limitation of this case report is the unavailability of EMG machine in the clinic, an integral source for a more factual result of quadriceps activation measurement. It is difficult to tell whether the addition of NMES to volitional exercise is responsible for improving the quadriceps strength within a short period of time, or if the combination of treatments promoted the improvements. Further controlled clinical studies are needed to investigate the potential benefits of NMES alone and in combination with other interventions contributes to the improvement of the quadriceps strength at a greater rate.

## CONCLUSION

Quadriceps weakness following TKA presents as numerous functional limitations. This case report reveals that the early use of NMES after TKA to improve quadriceps volitional contraction improved the patient's functional outcomes. JB, who was mobility dependent on admission to the SNF on postsurgical day 21, was chosen for this approach due to her high level of motivation to be independent again.

The use of NMES in combination with volitional exercise improved JB's left quadriceps extension force during the final rise of sit to stand transfers and terminal swing of the leg which resulted in an efficient and steady gait cycle. She achieved independence in all ADLs and functional mobility during an 18-day SNF admission, and was discharged home on her 39<sup>th</sup> postsurgical day. The addition of NMES to the conventional TKA protocols has the potential to reverse the strength related impairments following TKA resulting in greater functional gains. This approach was tolerated well in an elderly female patient.

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## In Memoriam Fund

Each of us as we pass through life is supported, assisted, and nurtured by others.

There is no better way to make a lasting tribute to these individuals than by making a memorial or honorary contribution in the individual's name. The Section on

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NMES FOLLOWING TKA

# SUBARCHNOID HEMORRHAGE

Krystal Csuk, SPT; Meri Goehring, PT, PhD

*This student paper was written for a course in the MPT program at Northern Illinois University taught by Dr Meri Goehring. The course is entitled Medical Issues in Neurological Physical Therapy.*

## Course Objectives:

1. Design, prioritize, and describe the components of a neurological examination for selected neurological problems incorporating elements of the Guide to Physical Therapist Practice as appropriate.
2. Compare and appraise the various types of medical management of neurological disorders commonly seen by physical therapists, such as cerebrovascular accident, traumatic brain injury, neurological disorders in specific populations, peripheral neuropathies, Parkinson Disease, vestibular deficits, central nervous system neoplasms, and other central and peripheral nervous system disorders.
3. Propose and discuss common co-morbidities of individuals with conditions listed above, including changes in level of consciousness, cognitive abilities, pain, and seizure.
4. Compare and analyze various examination tools such as imaging and lab tests that may be used in the medical management of individuals with neurological disorders.
5. Appraise and assess the potential effects and side-effects of medications commonly used in the treatment of neurological disorders.
6. Identify and compare common surgeries used for individuals with neurological disorders, such as shunts, vascular surgery, tumor resection, and other surgical procedures.
7. Effectively participate in on-line discussions regarding specific topics related to medical aspects of neurology.
8. Provide appropriate and current evidence to support your views as you participate in on-line discussions.

## INTRODUCTION

Subarchnoid hemorrhage (SAH) can be a catastrophic event associated with various outcomes. It is postulated that unruptured intracranial aneurysms oc-

cur in approximately 6% of the population.<sup>1</sup> Some of these aneurysms are asymptomatic leaving people unaware of their presence. However, ruptured aneurysms can often be fatal and are a medical emergency. Subarachnoid hemorrhage, which is often a result of intracranial aneurysms, literally means bleeding into the subarachnoid space of the brain.<sup>2</sup> Subarchnoid hemorrhage has a high mortality rate that is estimated to range from 50% to 65% of individuals occurring within the first few days of hemorrhage.<sup>1,2</sup> Subarchnoid hemorrhage can be classified as an acute stroke. Approximately 6% of all strokes that occur are due to SAH.<sup>8</sup> A classic symptom of SAH is simply the sudden onset of a new headache (HA) that is generalized, but often more severe than a previous HA the patient may have experienced.<sup>1-8</sup> Since a symptom as simple as an HA can signify a severe problem, it is imperative for a health care clinician to understand the pathophysiology, clinical presentation, statistics, and treatments recommended for subarachnoid hemorrhage.

## ETIOLOGY

Subarchnoid hemorrhage can occur from a spontaneous or traumatic etiology. The pathophysiology of a SAH is often a result of a vascular aneurysm. An aneurysm is dilation of the wall of an artery or vein that leads to susceptibility for the vessel to rupture. Intracranial aneurysms can be classified into the 3 following categories: saccular, fusiform, and dissecting.<sup>1</sup> Spontaneous SAH is often caused by 2 specific types of aneurysms known as cerebral arterial aneurysms and arteriovenous malformation (AVM).<sup>2</sup> Cerebral artery aneurysms (often called "berry or saccular" aneurysms) can be attributed to congenital predisposition that results in weakness of the vessel wall. Saccular aneurysms are specifically a result of defects in the tunica muscularis of the arterial wall.<sup>1,6</sup> Approximately 70% to 90% of SAHs are due to saccular aneurysms.<sup>6</sup> These defects lead to weakening of the vessel wall making it more susceptible to rup-

ture. Saccular aneurysms generally occur at sites of bifurcation where there is increased pressure and shearing forces in the vessel wall.<sup>2,6</sup> The most common aneurismal locations include the following: the internal carotid artery, the anterior communicating artery, the bifurcation of the cerebral artery, and other arterial connections.<sup>6</sup> The second most common condition associated with SAH is an AVM. Arteriovenous malformations consist of abnormal vascular formations that allow arterial blood to enter the venous system bypassing the capillary bed.<sup>2</sup> Arteriovenous malformations are commonly located in the middle cerebral artery distribution. Other causes of SAH that are not as common include the following: mycotic aneurismal rupture, angioma, neoplasm, and cortical thrombosis.<sup>7</sup>

## CLINICAL PRESENTATION

A patient with SAH may initially present clinically with mild symptoms before full rupture of the aneurysm. As stated previously, it is not uncommon for mini-aneurysm symptoms to remain unnoticed until the patient experiences complete rupture of the vessel. A study was performed on 111 patients with unruptured aneurysms. The patients experienced the following acute and chronic symptoms from intracranial aneurysm: severe HA, noncatastrophic HA of a different character than previous HA, changes in vision, oculomotor nerve palsy, optic neuropathy, facial pain, motor weakness, and cranial neuropathy not involving the eye.<sup>3</sup> A headache is usually a defining symptom of SAH because rupture of an intracranial artery will elevate intracranial pressure and activate pain-sensitive structures, producing a HA.<sup>2</sup> According to *Clinical Neurology*, "absence of a HA essentially precludes the diagnosis."<sup>2</sup> Typically the duration of hemorrhage may be brief, but the actual intensity of HA may be apparent for days. In contrast, patients who experience ruptured AVMs may experience hemiparesis, aphasia, or visual field defects.<sup>2</sup> Overall, the common

presentation for SAH is a mild to severe HA that may or may not be accompanied with loss of consciousness, neck stiffness, and possibly LBP secondary to meningeal irritation, nausea, vomiting, and neurological symptoms.<sup>2,4</sup>

### CLINICAL SEVERITY RATING

Acute SAH can be rated by clinical severity. It is common to rate clinical severity by the *Hunt and Hess scale*.<sup>2,6</sup> The *Hunt and Hess scale* defines 5 grades (I being least severe) of how a patient may appear clinically. A patient who presents with grade I symptoms may be asymptomatic, have mild HA, have a stiff neck, and have slight nuchal rigidity. A patient with grade II symptoms will have a moderate to severe HA, nuchal rigidity, and minimal neurologic deficits such as cranial nerve palsy in some cases. Patients who experience grade I and II deficits typically have a normal level of consciousness.<sup>2,6</sup> Patients who present with grade III SAH will often experience a confusional state of consciousness with focal neurologic deficits in certain cases. Patients who present with grade IV symptoms will be in a state of stupor with the possibility of focal neurologic deficits and moderate to severe hemiparesis. Finally, patients who demonstrate grade V symptoms will be in a state of coma with a moribund appearance and decerebrate posturing.<sup>2,6</sup> Patients who are

### HUNT AND HESS SCALE

<b>GRADE I</b>	Symptoms may be asymptomatic, have mild HA, have a stiff neck, and have slight nuchal rigidity.
<b>GRADE II</b>	Symptoms will have a moderate to severe HA, nuchal rigidity, and minimal neurologic deficits such as cranial nerve palsy in some cases. Patients who experience grade I and II deficits typically have a normal level of consciousness. <sup>2,6</sup>
<b>GRADE III</b>	Patients will often experience a confusional state of consciousness with focal neurologic deficits in certain cases.
<b>GRADE IV</b>	Patients will be in a state of stupor with the possibility of focal neurologic deficits and moderate to severe hemiparesis.
<b>GRADE V</b>	Patients will be in a state of coma with a moribund appearance and decerebrate posturing.

classified in grades I-III are considered to be possible surgical candidates, whereas, patients in a state of stupor or coma are not considered to be eligible.<sup>2</sup> Furthermore, the treatment initiated will also be dependent on the clinical severity.

### PREVELANCE

Statistical information helps to provide imperative insight regarding the prevalence and incidence of intracranial aneurysms that lead to SAH. The prevalence of intracranial saccular aneurysms is estimated to be .2% to 6.8% in the general population (actual percentage varies from article to article).<sup>1,5,7</sup> The incidence of SAH is reported to range from 6-25 people per 100,000/year.<sup>5,6</sup> This leads approximately 27,000 to 30,000 people to be effected annually.<sup>5-7</sup> Incidence of SAH is reported to be higher in women with a mean age of 50 years old.<sup>6,7</sup> It is also reported that there is approximately a 2:1 ratio of African American ethnicity as compared to Caucasian ethnicity.<sup>7</sup> The risk of rupture appears to be higher in vessels of larger diameter with increased vascular pressure, or patients who have a history of SAH. Subarchnoid hemorrhage secondary to vessel rupture is associated with high morbidity and mortality rates with a fairly poor prognosis. It is estimated that 30% to 40% of people with SAH die before making it to the hospital. The mortality rate within the 30 days post-SAH is 50%. It is estimated that 50% of patients who survive often experience neurological symptoms.<sup>5</sup> Morbidity and mortality rates also appear to be related to the degree of rebleeding and vasospasm that can occur with patients and lead to further complications.

### RISK FACTORS

Studies have shown that there are various risk factors that increase the prevalence of intracranial aneurysm associated with SAH. Risk factors vary from lifestyle to familial that predisposes one to the possibility of vessel rupture. Lifestyle risk factors include the following: cigarette smoking, age over 50 years, cocaine use, high cholesterol, high blood pressure, alcohol intake, arteriosclerosis, and the use on nonsteroidal anti-inflammatory medication.<sup>5,6</sup> Hemorrhage has been linked closely to chronic hypertension due to the increase in pressure of the vessels.<sup>8</sup> It has been reported in some

articles that there is an increase in occurrence in SAH in females.<sup>6</sup> It has also reported that there may be a genetic cause for intracranial aneurysms. Familial intracranial aneurysms are reported at a 4-fold increase in prevalence.<sup>5</sup> Inherited risk factors for SAH include the following: autosomal dominant polycystic kidney disease, heredity hemorrhagic telangiectasia, coarctation of the aorta, antitrypsin deficiency, and fibromuscular dysplasia.<sup>1</sup> If a person has familial traits that predispose them to the possibility of intracranial aneurysms, it is imperative to practice healthy lifestyle choices to avoid further risk.

### MEDICAL MANAGEMENT

Medical management of SAH varies based on the status of the patient's level of consciousness. The primary goals include identification of the causative lesion and prevention of further bleeding. Primary medical treatment is focused on preventing elevation of intracranial pressure that could lead to re-rupture of the involved vessel. A patient will often be on absolute bed rest with the head of the bed elevated to 15° to 20° to decrease intracranial pressure and support venous drainage.<sup>2</sup> Treatment will consist of analgesics as necessary for HA, reduction of blood pressure, supplemental oxygen as necessary, intravenous fluids with caution (important not to exacerbate cerebral swelling), and management of electrolyte balance.<sup>2,7</sup> Intubation may be required for grade III-V levels of consciousness. Surgical management may be necessary for aneurysms and AVMs if the patient has a grade I-III level of consciousness.<sup>2</sup> Surgical therapy of a ruptured aneurysm involves clipping the neck of the aneurysm or placement of an endovascular coil to help with clotting.<sup>2,5</sup> Patients who are at grade III-V level of consciousness will not be candidates for surgical intervention. Therefore, primary medical management will incorporate a multidisciplinary team that will focus on the medical stability of the patient.

### PHYSICAL THERAPY INTERVENTION

Once a patient is medically stable, physical therapy intervention may begin. It has been reported that FIM scores increase in patients with SAH from a rehabilitation program.<sup>6,8</sup> Physical therapy in the primary stage will consist of an ex-



amination to determine deficits followed by low intensity rehabilitation.<sup>8</sup> Patients who have SAH a vast variety of mild to severe residual impairments that can include the following: neurological deficits, changes in joint mobility, a decrease in motor function, gait impairments, a decrease in aerobic capacity, a decrease in postural control, and other impairments. The primary goal is to determine the deficits and create a plan of care accordingly. Therefore, physical therapy intervention may focus on a plethora of different strategies to improve neurological and sensory function, motor function, flexibility, strength, functional mobility, aerobic capacity, gait, and ADLs.

Many patients who experience SAH are on bed rest for a few days in order to gain medical stability. Early intervention may focus on joint mobilization and ROM exercises in order to maintain joint integrity, increase mobility, and prevent joint contractures.<sup>8</sup> The PT may focus on positioning strategies and sustained low-load stretching to maintain soft tissue length and prevent ulceration or bedsores. Once the patient is medically stable, inpatient care will also focus on more dynamic activities such as transfers, gait, ADLs, decreasing neurologic deficits, and regaining muscular strength. Transfers often include bed mobility, rolling, supine-to-sit, sit-to-supine, sitting, bridging, sit-to-stand, and other transfers.<sup>8</sup> The primary goal of transferring is to get the patient as independent as possible without cueing. Patients who have experienced SAH may also present with fractionated abnormal movement patterns due to bed rest and residual effects.<sup>8</sup> Therefore, it is important to address normal postural alignment and functional use of extremities in transfers, gait, and ADL training. Once a patient is able to transfer, he or she may begin gait training. The PT will determine the necessity for an assistive device, such as a walker, for gait training. Finally, muscle weakness is common following SAH; therefore, many different types of exercise modalities may be used to restore strength.<sup>8</sup> In the hospital setting, generalized therapeutic exercise often consists of a series of exercises that can be performed in bed to increase strength. As a patient progresses in functional mobility and strength, the plan of care can be determined. A patient who has a successful prognosis may be referred to outpatient or home health care to continue to regain functional mobility.

## CONCLUSION

The outcome of a patient who has SAH will vary based on the severity of the bleeding, location of the aneurysm, and their level of consciousness following hemorrhage. Subarchnoid hemorrhage is often fatal in approximately one-third of patients despite treatment, and 50% of patients who survive will experience neurologic deficits.<sup>4</sup> Although SAH has been studied extensively, the morbidity and mortality rates remain high. Therefore, it is imperative for a health care practitioner to identify signs and symptoms of SAH in order to increase the probability of recovery. Physical therapy intervention will incorporate a variety of different strategies that focus on addressing the neurologic deficits and regaining functional mobility. In retrospect, a key component is prevention via the recognition of and modification of possible risk factors to decrease the incidence of intracranial aneurysms.

## Summary of SAH:

- SAH is bleeding into the subarchnoid space that commonly results from a saccular or "berry" aneurysm primarily or AVM secondarily.
- A classic symptom of SAH is simply the **sudden onset of a new headache** (HA) that is generalized, but often more severe than a previous HA a patient may have experienced.<sup>2</sup>
- Overall, the common presentation for SAH is a mild to severe HA that may or may not be accompanied with loss of consciousness, neck stiffness, and possibly LBP secondary to meningeal irritation, nausea, vomiting, and neurological symptoms.<sup>4</sup>
- The *Hunt and Hess scale* is used to define level of consciousness and associated symptoms that a patient may experience.
- Hemorrhage has been linked closely to chronic hypertension due to the increase in pressure of the vessels as well as familial genetic predisposition.
- There is a poor prognosis for patients with SAH; however, physical therapy intervention will often focus on regaining neurologic function via a variety of therapeutic modalities.

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# WHAT'S OLD IS NEW AGAIN: THE PATIENT CENTERED MEDICAL HOME MODEL

Matthew A. Mesibov, PT, GCS

**Vision 2020** is coming, what are you doing to prepare? As Physical Therapists, regardless of our practice setting, we seek opportunities to market our services. We seek collegial relationships with other medical professionals and a trusting relationship with society so that we will be viewed as the *Practitioner of Choice*. We live in a time of declining reimbursement for our services and seek other sources of opportunity. One answer to being prepared may exist with participating in the Patient Centered Medical Home.

## WHAT IS A PATIENT CENTERED MEDICAL HOME?

The original concept of the Medical Home was introduced in 1967 by the American Academy of Pediatrics. Simply put, a "Patient Centered Medical Home" (PC-MH) or "Medical Home Model" is a health care model where a medical care team provides care including both physical and psychosocial care, available 24 hours per day/7 days per week. The PC-MH addresses acute and chronic episodes of illness as well as preventative medicine for a patient who may be at risk for a certain pathology/dysfunction based on the epidemiology of the community. It is a patient centered approach whose goal is to treat the "whole person." According to the Institute of Medicine, a nongovernmental and nonprofit organization who advises the nation on matters of health, in their "Envisioning the National Healthcare Quality Report," "Patient Centered" care refers to health care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they require to make decisions and participate in their own care.

According to the Centers for Medicare & Medicaid Services (CMS), practices that include both medical doctors (MDs) and doctors of osteopathy (DOs) become medical homes by demonstrat-

ing they have the capabilities to provide medical home services which fall into 6 domains. The domains are: continuity of care, clinical information systems, delivery system design, decision support, patient/family engagement, and care coordination.<sup>1</sup>

## WHY IS THE PC-MH BEING INVESTIGATED AS A NEW CARE PARADIGM?

One reason is that "current statistics reveal that 86% of the over 40 million Medicare beneficiaries have one or more chronic conditions and 23% have 5 or more chronic conditions. The current health care system is ill-equipped to handle a rapidly growing population of senior-aged baby boomers who will enjoy increased longevity, as well as increased chronicity. It is estimated that, by the year 2015, 150 million Americans will have at least one chronic condition. This wave of new chronically ill patients will further tax an already strained system of health care provision and payment. At a time of increased demand on the system, there is strong evidence that there is a countervailing force at work on the delivery side. Fewer newly educated physicians are entering primary care and seasoned physicians, feeling pressure to see more patients in less time, are retiring or moving to other fields."<sup>2</sup>

A second reason is health outcomes in the United States continue to fall behind those of other developed countries despite unrivaled spending.<sup>3-5</sup> Large chunks of our population go without insurance and access to health care. The variables behind the decline in our health outcomes and rising costs for care are at least in part the motivation for the soon to be initiated PC-MH Medicare demonstration project in January 2010.

## CORE FEATURES OF PC-MH

From the perspective of the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, American

Osteopathic Association and reflected in a report from the Robert Graham Center which brings a family medicine perspective to health policy deliberations in Washington, there are 7 core features of the Medical Home which include:<sup>6</sup>

1. **Personal Physician** – each patient has an ongoing relationship with a personal physician trained to provide first contact, continuous and comprehensive care.
2. **Physician Directed Medical Practice** – the personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients.
3. **Whole Person Orientation** - the personal physician is responsible for providing for all the patient's health care needs or taking responsibility for appropriately arranging care with other qualified professionals. This includes care for all stages of life, acute care, chronic care, preventive services, and end of life care.
4. **Care is Coordinated and/or Integrated** - integration occurs across all elements of the complex health care system and the patient's community. Care is facilitated by registries, information technology, health information exchange, and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner.
5. **Quality and safety** - this is achieved thru several actions including practices advocating for patients, evidenced-based practice with clinical support tools to guide decision making, physicians are accountable for continuous quality improvement, active patient participation in decision making and to ensure expectations are being met, use information technology to support optimal patient care/performance measurement/patient education and enhanced communication, practices undergo

a voluntary nongovernmental recognition process to ensure they have the capabilities to provide patient centered services and patient/families participate in quality improvement at the practice level.

6. **Enhanced Access** - enhanced access to care is available through systems such as open scheduling, expanded hours and new options for communication between patients, their personal physician, and practice staff.
7. **Payment Reform** - the payer for services (eg, CMS) appropriately recognizes the added value provided to patients who have a PC-MH. The payment structure should be based on the following framework:
  - reflect the value of physician and nonphysician staff patient centered care management that falls outside of face-to-face visits;
  - provide payment for services associated with coordination of care both within a given practice and between consultants, ancillary providers, and community resources;
  - support the use of health information technology for quality improvement;
  - support the provision of enhanced communication access (eg, secure e-mail, telephone consultation);
  - recognize the value of physician work associated with remote monitoring of clinical data using technology;
  - separate fee-for-service payments for face-to-face visits (payments for care management outside face-to-face visits should not result in a reduction in payments for face-to-face visits);
  - recognize case mix differences;
  - allow physicians to share in savings from reduced hospitalizations associated with physician-guided care management in the office setting; and
  - payments for achieving measurable and continuous quality improvements.

*(It is this author's opinion that there is overlap between CMS's 6 domains of a Medical Home as described earlier and the 7 core features of a Medical Home. However, the 7 core features more specifically outline that the physician directs the medical practice and it addresses payment reform.)*

## HAS THE PC-MH PROVEN ITSELF?

Community Care of North Carolina (CCNC) is one working example of a PC-MH. The CCNC has 15 not-for-profit health networks that coordinate care among physicians, local health departments, hospitals, social service agencies, and other community programs. This network cares for 74% of North Carolina's eligible Medicaid beneficiaries. It was found by 2 independent evaluations that the PC-MH program saved North Carolina \$195 to \$215 million in 2003 and between \$230 and \$260 million in 2004 when compared to historic fee for service programs.<sup>7</sup> Physical therapists do provide services to patients of the PC-MH for CCNC. The physical therapists who are participating in the various insurances (eg, Medicaid, Medicare) are reimbursed at the usual and customary rates by the payer. There is a care manager employed by the PC-MH network, and along with the primary care physician, they coordinate care, ensure compliance with a care plan, and identify needed resources according to Betty West of CCNC.<sup>8</sup>

## THE MEDICARE MEDICAL HOME DEMONSTRATION PROJECT

Medicare is currently in the preparation stage of a 3-year demonstration project slated to begin January 2010 with the geographic areas to be announced early 2009. The goal of the project is to assist in redesigning the health care delivery system to provide targeted, accessible, continuous, and coordinated, family-centered care to high need populations. High need populations are defined as individuals with multiple chronic illnesses that require regular medical monitoring, advising, or treatment.<sup>9</sup> Physician practices who participate in the project will be assigned to 1 of 2 tier groups with tier group 1 being a typical medical home with 17 basic capabilities (eg, uses a health assessment plan, tracks tests and provides follow up, reviews all medications). Tier group 2 or "enhanced" medical home practices will meet tier 1 guidelines as well as have electronic medical records, coordination of care (including follow-up of inpatient and outpatient care), and an additional 3 of 9 "enhanced" capabilities.

Patient eligibility will include those covered under Medicare A & B. All eligible beneficiaries must have at least one

qualifying diagnosis from the "Hwang list."<sup>10</sup> Many of these diagnoses are conditions and impairments that physical therapists treat in many areas of practice. Patients who enter a nursing home while participating in the project will remain eligible in the program as long as primary care services continue from the medical home. The same is true for beneficiaries who "recover" from a qualifying chronic condition while participating in the demonstration project. Persons excluded from participating include beneficiaries enrolled in a Medicare Advantage plan, current hospice or nursing home patients, end-stage renal disease patients and those already participating in other Medicare demonstration projects.

The benefits to being a participating provider according to CMS include:<sup>11</sup>

- Care Management fees (based on relative values scale update committee (RUC) in addition to activities already reimbursed by Medicare and a risk adjusted, based on hierarchical condition categories (HCC) score of the patient)
- Share in savings
- Ability to provide better quality care to patients
- Improved practice work flow
- Improved job satisfaction

## WHAT ARE THE BENEFITS AND ISSUES FOR PHYSICAL THERAPISTS?

Depressed patients are 3x more likely than nondepressed patients to be non-compliant with treatment recommendation.<sup>12</sup> Patients who have depression after a myocardial infarction have recurrent events and die sooner.<sup>13</sup> In the PC-MH model, the whole person is treated and this includes psychosocial issues. As an example, a physical therapist treating a geriatric client may refer to psychological counseling with a licensed professional when the client's emotions contribute to faulty judgment leading to a fall which in turn may lead to a better outcome. Being part of the PC-MH team would allow the physical therapist to be part of a team committed to treating the whole person.

Along with 9 other nonphysician professional associations, APTA signed a letter<sup>14</sup> addressed to the Senate Finance Committee on May 23, 2008 with the following 3 points of concern regarding the PC-MH:

1. The associations encouraged congress not to expand the Medical Home demonstration project from 8 sites to some 500 sites.
2. The demonstration project should not be exclusive to physicians but rather include all health professionals that provide primary care services to beneficiaries.
3. The associations encouraged congress to include language to insure that this medical home model is not simply used as a way to funnel health services to facilities owned and operated by physicians for financial gain. The APTA Board of Directors meeting minutes of June 7, 2008<sup>15</sup> noted areas of both concern and of growth opportunities for physical therapists in the PC-MH. They include developing guiding principles to provide direction for advocacy activities that emphasize both the important role of physical therapy as well as preventative services and wellness care.

In this author's opinion, if the medical home model is to succeed, it must not recreate the "gate keeping" of managed care of the 1980s where cost containment was sometimes achieved by limiting a patient from needed care.

Finally, the PC-MH may be one vehicle helping us to achieve Vision 2020. Acting as an advocate for the patient is part of what defines "Professionalism" and "Evidence-Based Practice" is part of "Quality and Safety," a core feature of the PC-MH. If we become true team members of the Patient Centered Medical Home, it should follow that our medical colleagues and patients will build trust in our services which will help them to view the Physical Therapist as the "Practitioner of Choice" with neuromusculoskeletal impairments and dysfunctions.

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*Matt Mesibov has been in practice since 1984 and resides in southern New Jersey. Currently he works at Fox Rehabilitation in Cherry Hill, NJ. His areas of interest include geriatric balance deficits, home safety assessments, orthopedics, and issues of quality assurance and improvement. Matt is active in APTA New Jersey on the Payer Relations Advisory Group and the SOG Reimbursement and Legislation Committee. Matt can be reached @ Mattkadima@comcast.net.*

## WANTED ARTICLES FOR GERINOTES

#### TOPICS:

ANYTHING RELATED TO  
OLDER ADULTS

#### CLINICIANS:

SEND ME AN ARTICLE OR AN  
IDEA

#### STUDENTS AT ANY LEVEL:

SEND ME PAPERS YOU WROTE  
FOR CLASS

#### EDUCATORS:

SEND ME STUDENT PAPERS

**EVERYONE** LOVES TO  
PUBLISH AND IT IS EASY!

CONTACT CAROL SCHUNK,  
GERINOTES EDITOR

[carolschunk@earthlink.net](mailto:carolschunk@earthlink.net)

# Certified Exercise Expert for Aging Adults (CEEAA)

The evidence for the benefits of an effective exercise program for the full spectrum of aging adults is overwhelming and the unique role of the physical therapist (PT) is unequivocal. Additional and intensive education is needed for PTs to incorporate evidence into practice in order to appropriately examine and to provide the quality of exercise that will provide optimal benefits for the aging adult. The Section on Geriatrics, in adopting the position that physical therapists should be THE exercise experts for aging adults, will be a leader in providing physical therapists with a mechanism to develop and demonstrate expertise in the design and delivery of effective exercise programs for aging adults.

Exercise Certification Series Course 1 .....Introduction and Examination (Tests and Measures)  
Exercise Certification Series Course 2 .....Exercise Prescription, Consensus Guidelines  
Exercise Certification Series Course 3 .....Special Populations, Complementary Exercises, Motivation, Drug and Nutritional Considerations, Marketing

All PTs with the CEEAA credential will demonstrate expert clinical decision-making and skill in designing and applying an effective examination and exercise prescription and in measuring the effectiveness of exercise for all aging adults reflecting current evidence. The process to attain the credential of "Certified Exercise Expert for Aging Adults" is to complete a formal didactic education, supervised and mentored skills development, and home-based reflection and critical thinking. Three courses of 2 days each will address 3 different and increasingly complex aspects of exercise design and delivery. The 3 courses are designed to build on each other; however Courses 1 and 2 can be taken out of sequence.

There will be a home-based examination for Courses 1 and 2. A skills test for the content of the first 2 courses will be preformed on-site during Course 3. Following completion of all 3 courses, there will be a final, comprehensive, home-based examination. All home-based assessments must be completed within 6 weeks of taking the related course. A participant must achieve minimum criteria in both the skills and didactic assessments to progress to the next level. However, a person can elect to take a course without being tested.

## The Upcoming Course Dates are:

### Montgomery, Alabama:

Course 1: March 28-29, 2009

Course 2: August 29-30, 2009

Course 3: October 17-18, 2009

### San Diego, CA:

Course 1: July 18-19, 2009

Course 2: December 5-6, 2009

Course 3: CSM 2010

### Boston, Massachusetts:

Course 1: Location and Dates in 2009 to be Determines

Course 2: Location and Dates in 2010 to be Determined

Course 3: Annual Conference 2010

For More Information Please Visit: <http://www.geriatricspt.org/> for or contact the Section Office at [geriatrics@apta.org](mailto:geriatrics@apta.org)  
Browse the website. Read the Journal. Look through our course offerings or newsletter. Everything produced by the SoG has been created by volunteers. You ARE the Section on Geriatrics. We welcome your interest in getting involved, and invite you to read about available positions.

## DEADLINE EXTENDED . . . COMPLETE THE GERINOTES CEU MODULE NOVEMBER ISSUE OF GERINOTES—CARDIOVASCULAR & PULMONARY

To obtain CEUs for the November 2008 issue GeriNotes continuing education module, participants must read the module articles and complete the post-test on page 7, as well as the evaluation form on page 8. A processing fee of \$15 for SOG members and \$30 for nonmembers is required. To apply for CEUs, send the post-test and the evaluation form to the Section on Geriatrics along with payment. Applications for CEUs will be accepted until December 2009. Upon submission of materials and a passing score of 80% or higher on the post-test the Section will mail you a continuing education certificate for .4 CEUs. Those with incomplete submissions will be notified via email.



# COMBINED SECTIONS MEETING 2009

## THE LIGHTS OF VEGAS CALL PHYSICAL THERAPISTS

*Jill Heitzman, PT, DPT, GCS, FCCWS*

Another record breaking attendance of over 8400 Physical Therapists, Physical Therapist Assistants, and Students came to CSM 2009 for the mentoring, education/clinical development, and socializing with others. With the exhibit hall full to capacity and over 600 education sessions to choose from, what happens in Vegas will definitely NOT stay in Vegas. Skills, knowledge, mentors, and more will be shared across the country/world as these professionals head home to care for their patients, clients, and colleagues.

The week began for the Section on Geriatrics with 3 preconferences that continue emphasizing the development of clinical residencies in geriatrics and help therapists learn what to do if they are involved in a lawsuit. The week continued with the opening ceremonies for our newly certified geriatric specialists where everyone was challenged to be a leader and mentor; sharing their knowledge and expertise with others. Throughout the entire conference, education programs presented ways to help patients live with lifelong disabilities, improve their function, and promote wellness as we age. A highlight of the Section on Geriatrics is always the Welcoming/GCS celebration breakfast and the Members Meeting. Both provide ample time to socialize, meet the leaders, and provide input into the direction of

the Section. A highlight of the Members Meeting was the announcement of the Advanced Proficiency for the PTA. After years of developing this recognition, PTAs who work with the aging adult can now achieve recognition for this accomplishment. More information on this can be found on the APTA Web site and elsewhere in this issue of *GeriNotes*. Encourage the PTAs that you work with to proceed with this Advanced Proficiency. Of course, no CSM is complete without the Section's Awards recognition for therapists who have promoted physical therapy and advocated for the aging adult. This year's recipients are an outstanding group who have represented the Section on Geriatrics by living the mission of the Section in their various fields of practice. We encourage everyone to nominate those with who you live and work for future awards.

As CSM 2010 is beginning to be planned, we invite everyone to submit proposals for the education sessions and abstracts for poster/platform presentations. These can be submitted through the APTA website, via ScholarONE. Please refer to the *GeriNotes* issue, November 2008 or contact me if you have questions on this process. Sharing knowledge is the goal of CSM. All of the planning and execution of the Section on Geriatrics 15 education programs and platform/poster presen-

tations could not be achieved without the hard work of the Section's program and research committees. Those on the committees who worked in each of these rooms and helped in various ways in the planning of CSM 2009 include: Alice Bell, Reenie Euhardy, Missy Criss, Rubye Kendrick, Ellen Strunk, Greg Hartley, Tsega Mehreteab, Jessie Van Swearingen, MaryBeth Brown, Judy Daniel, Priscilla Raasch-Mason, Carleen Lindsey, Rebecca Crocker, Kathy Brewer, Cathy Ciolek, Helen Cornely, Jane Bernotovich, Patty Brick, and Bill Staples. A big thank you to all of them. If you are interested in joining these committees, please contact me. Plans are already underway for CSM 2010.

**COME JOIN US AT CSM 2010  
IN SAN DIEGO FEBRUARY 17-20  
DON'T MISS THE FUN!  
MARK YOUR CALENDARS NOW.**



*Jill Heitzman is Section on Geriatric Program Chair. She can be reached at [jheitzpt@aol.com](mailto:jheitzpt@aol.com). For Section members interested in presenting at 2010 CSM please refer to the January issue of *GeriNotes* (16/1) article; *Disseminating Evidence by Presenting at a Professional Conference* by Smith and Crist.*

## Thank you CSM Booth Volunteers



Section booth with volunteers, Karen Kemmis and Rubye Kendrick

**Sincere thanks to everyone who volunteered at the CSM 2009 Section booth! Because of their efforts, we recruited more new members than ever before, and distributed lots of great information about PT and the aging adult.**

Rubye Kendrick  
Ron Chadwick  
Ann Wilson  
Kerri Bednarcik  
Jennifer Sidelinker  
Carmen Cooper Oguz

Joseph Libera  
Judy Daniel  
Ellen Strunk  
Karen Kemmis  
Veronica Southard  
Meryl McCormack

Sherri Betz  
Jan Meiers  
Sue Griffin  
Matt Mesibov  
Sandra Cothran  
Christy Ross

And others who did not sign in

# CSM 2009

## Las Vegas

**Section Officers—Ruybe Kendrick, Secretary;  
Bill Staples, Treasurer; Anne Coffman, Outgoing  
Vice President; John Barr, President**



**Newly installed Section on Geriatrics Officers:  
Directors--Ellen Strunk, Violet Acuna-Parker;  
Vice President--Alice Bell; President--John Barr;  
Nominating Committee--Rita Wong**



**Marilyn Moffat speaking at the GCS and  
newcomers breakfast**



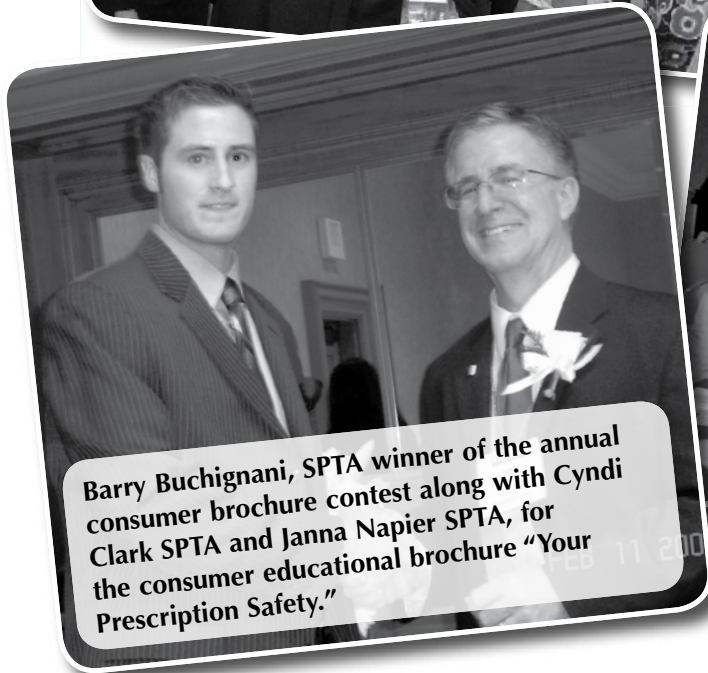
**Northern Arizona State students at member meeting**



**Ohio State University students  
at member meeting**



**Barry Buchignani, SPTA winner of the annual  
consumer brochure contest along with Cyndi  
Clark SPTA and Janna Napier SPTA, for  
the consumer educational brochure "Your  
Prescription Safety."**







**Section Board of Directors Meeting**



**Joan Mills Award recipients in attendance at SOG member meeting**



**Round table discussions at member meeting**



**GCS and Newcomers Breakfast**



**Breakfast speaker**



**Section Nominating Committee: Rita Wong, Lucy Jones, Carol Schunk**

# HEAD OVER HEELS FOR BALANCE EXAMINATION

## COMMON BALANCE EXAMINATION TOOLS

Randy Tarr, PT, DPT; Mark Drnach, PT, DPT, MBA, PCS

*"Head Over Heels for Balance Examination Tools" was published September 2008 in PT Products magazine. Reprinted with permission.*

Balance is a comprehensive task involving the reception and the processing of sensory input and the ensuing musculoskeletal actions needed to maintain an upright posture during a variety of developmental positions, including sitting, static bipedal stance, or locomotion. The ever-changing internal and external environmental conditions that a person experiences on a daily basis stress the systems responsible for maintaining balance essentially from birth until death.

The concomitant integration of various types of sensory input namely, vestibular, proprioception, and vision plays an integral role in the maintenance of balance during the daily activities that require the body to move or maintain a certain posture. The importance of any one system should not be devalued. The vestibular system supplies input that allows for the maintenance of proper head and body alignment in relation to the surrounding supporting environment and/or body position. The proprioceptive system (tactile and pressure receptors, joint receptors, muscle spindles, and Golgi tendon organs) provides input regarding environmental surface conditions, and the general position of the body, in whole or in part, needed in anticipation of environmental interactions or responses to it. The visual system provides critical information on spatial orientation with regard to objects and the environment in which the person is interacting. All of these subsystems of motor control are necessary in the maintenance of appropriate balance skills needed to perform basic activities of daily living.

### BALANCE EXAMINATION

Impairments in balance, particularly while standing, can be devastating to a person's psyche and motor skills, limiting the execution of basic functional activities that are critical to independent living and self-sufficiency. Physical therapists

are routinely involved in the examination of a person's balance, gathering objective data to aid in the identification of impairments in one or more of the major body systems.

Examination information also can identify certain predictors related to the risk of falling, including the fear of falling. Fear of falling can be a significant problem among people with balance impairments and can lead to activity and participation restrictions, which in turn can decrease an individual's level of autonomy. A fear of falling has been reported to occur in up to 65% of older adults (those in the sixth decade of life or older) who live independently and do not have a history of falling.<sup>1</sup> In those individuals who have fallen, the fear of another fall is as high as 92%.<sup>1</sup>

### WHO IS AT GREATEST RISK?

Balance issues commonly arise with increasing age, and for a good reason; partial losses in vestibular, visual, and proprioceptive functioning all are seen in normal aging. For people ages 65 years and older, falls are the most common cause of nonfatal injuries and hospital admissions for trauma and the leading cause of death due to injury.<sup>2</sup>

Often, community-dwelling elderly individuals consider falls to be preventable and understand the importance of fall-related risk factors, yet they do not consider themselves susceptible to falling.<sup>3</sup> The total cost of all fall-related injuries for people ages 65 years and older in 2000 was slightly more than \$19 billion.<sup>3</sup> By 2020, the annual direct and indirect cost of fall injuries is expected to reach \$43.8 billion.<sup>2</sup> Even more concerning is that the US population age 65 years and over is expected to double in size within the next 25 years, and by the year 2030, almost 1 out of 5 Americans—an estimated 72 million people—will be 65 years old or older.<sup>4</sup> Currently, Florida (17.6%), Pennsylvania (15.6%), and West Virginia (15.3%) are the top three states with the highest percentages of aged adults ( $x > 65$ ).<sup>4</sup>

### CLINICAL BALANCE EXAMINATION TOOLS

Many different clinical balance examination tools are available for a PT to use depending on a multitude of factors concerning patient appropriateness. A reliable and valid standardized test that measures balance performance greatly increases a PT's ability to predict who has balance difficulties and may be at risk for a fall. Five common clinical balance examination tools are the Berg Balance Measure, the Timed "Up and Go" (TUG) Test, the Five Times Sit to Stand Test (FTSST), the Tinetti Assessment Tool, and the Activities-Specific Balance Confidence (ABC) Scale. Each balance examination tool is individualized, but all are aimed at a common goal of objectively evaluating balance.

### BERG BALANCE MEASURE

The Berg Balance Measure (BBM) is a reliable and valid performance-oriented examination designed to test the elderly person's level of balance and predict future fall risk.<sup>5</sup> The BBM is a list of 14 tasks that the patient is asked to perform. The areas tested are simple mobility tasks (transfers, unsupported standing, and sit-to-stand abilities) and more complicated tasks (tandem standing, 360° turning, and single-leg stance). Equipment required for testing are a stopwatch, a step stool, and a 12-inch ruler. The items are scored on a 5-point ordinal scale, where 0 indicates the person's inability to perform the task and 4 represents independence. The individual points are then summed up to achieve a total score. Higher scores are indicative of more independence. The highest attainable score is 56. People with a score of less than 45 have an increased risk of falls. The average time to administer the scale is 10 to 15 minutes.

### THE FIVE TIMES SIT TO STAND TEST

The Five Times Sit to Stand Test (FTSST) is regularly used to determine both lower-extremity strength and balance simultaneously.<sup>6,7</sup> The person is instructed to cross his arms across his chest and start



by sitting at the back of the chair. Next, the person is asked to stand 5 times as quickly as possible. The stopwatch is started when the examiner says “go” and stopped when the person sits completely in the chair after the fifth repetition. Scores of 15 seconds or less can be expected in older adults if they are healthy.

### THE TINETTI ASSESSMENT TOOL

The Tinetti Assessment Tool is a reliable and easily administered task-performance test that has been used to assign risk of falls to elderly individuals. The test is scored on the person’s ability to perform specific tasks regarding balance and gait. Scoring of the Tinetti is done on a 3-point ordinal scale with a range of 0 to 2. A score of 0 represents a high level of dependence with the given task, while a score of 2 represents total independence with the task. The individual scores are then combined. A score of 24 or higher indicates a low risk of falls. A score of 19 to 23 is classified as moderate risk. A score of less than 19 indicates a high risk of falls.

The Tinetti Assessment Tool has been shown to be highly predictive of falls and future recurrent falls among nursing home residents.<sup>8</sup> Items required to complete the test are a hard armless chair and a 15-foot walkway. The average time to administer the gait and balance subscales is 10 minutes.

### THE TIMED “UP AND GO” TEST

The Timed “Up and Go” (TUG) Test is a reliable test of basic functional mobility for frail, elderly individuals. The test requires the person to stand up from a chair, walk 10 feet (3 meters), turn around, and walk back and sit down. The score is the time taken to complete the task. People who complete the task in less than 20 seconds have been shown to be independent in activities of daily living. In contrast, those requiring 30 seconds or more to complete the task are more likely to be dependent in activities of daily living and generally require assistive devices for ambulation.<sup>9</sup>

Recent research suggests that the TUG test has the ability to identify individuals with hip fractures at risk for new falls.<sup>10</sup> This is important considering the fact that following the first hip fracture, less than 50% of patients will regain their prior level of function following the fracture and are 3 times more likely to be functionally dependent, and 4 times less likely than those

who have not fallen to return to walking in the community.<sup>11</sup> Currently, 10% to 13% of patients will later sustain a second hip fracture that will further impact their mobility and social independence.<sup>12</sup> The TUG test is very brief and takes only minutes to complete.

### THE ACTIVITIES-SPECIFIC BALANCE CONFIDENCE SCALE

In an effort to measure fear of falling based on the concept of self-efficacy, the Activities-Specific Balance Confidence (ABC) Scale can be used. Self-efficacy refers to a judgment of one’s capability to accomplish a certain level of performance or desired outcomes.<sup>13,14</sup> The ABC Scale is a reliable 16-item questionnaire that asks a person to score his level of confidence in performing situation-specific activities, such as standing on tip-toes and reaching for something overhead, getting into or out of a car, and walking up or down a ramp without losing one’s balance or becoming unsteady.

Each item on a scale is scored from 0% to 100%, with 0% being no confidence at all and 100% being absolute total confidence in performing the activity questioned. The total ABC Scale score is the average sum of the individual item scores. ABC scores of less than 50 indicate low physical functioning. Scores above 50 and below 80 indicate moderate levels of physical functioning. Scores above 80 are expected for highly functioning older adults.<sup>15</sup> The ABC scale takes only minutes to complete.

### CONCLUSION

Clinical balance-examination tools are extremely valuable in evaluating a person’s balance and identifying people at risk for falling. The ability to better predict a fall and therefore possibly prevent a fall from occurring is important for both the person’s physical and psychological health.

Having objective data that rates an individual’s balance can directly point out balance deficits that can allow the PT to incorporate interventions aimed at correcting balance dysfunctions prior to an injury occurring. The ultimate outcome is delaying the onset of disability and prolonging the health and functioning of older individuals by preventing a fall. Many clinical balance examination tools are available, and choosing the most appropriate is a decision based on the individual patient or client, the clinical setting, and the PT’s

knowledge of, and competence with, the tools available.

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## ADVANCED PROFICIENCY FOR THE PTA GERIATRICS



Recognizing that the field of Geriatrics crosses all four categories of work, the APTA Board of Directors approved the addition of geriatrics as a category of work for Advanced Proficiency at their November 2008 annual meeting. Recognition is given to PTAs for their education, leadership and outstanding contribution to the PT/PTA team in their chosen field.

The benefits of attaining Recognition of Advanced Proficiency in a given area of work include:

1. Increased confidence in the provision of patient care
2. External recognition from APTA
3. Reinforcement of life-long learning
4. Distinction that assists with career advancement

All applicants must provide evidence of a minimum of 60 hrs of continuing education with 75% (45 contact hours) of the education within the selected category of work (musculoskeletal, neuromuscular, geriatric, pediatric, integumentary, and cardio-pulmonary). The Advance Proficiency in Geriatrics requires that these continuing education contact hours be directly related to the older adult and should include content in two or more of the following areas: musculoskeletal, neuromuscular, integumentary, cardiopulmonary.

Successful applicants will receive a Certificate of Advanced Proficiency suitable for framing and a lapel pin. This achievement will be recognized publicly in PT Magazine and at the PTA Recognition Reception held at APTA's Annual Conference. Should you have questions, contact:

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Alexandria, VA 22314  
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# SECTION ON GERIATRICS

## 2009 Awardees

This year's Section on Geriatrics Awards Ceremony was held at the Mandalay Bay Resort in Las Vegas, Nevada during the CSM Business Meeting. Awards are a chance to pause and give recognition to those individuals who go above and beyond for their patients, their students, their colleagues, and our profession. This year we had the opportunity to show our gratitude for these individuals who exemplify the meaning of excellence. Following are the 2009 award recipients. We congratulate them all.



John Mills and 2009 Joan Mills Award Recipient, Bill Staples

### JOAN M. MILLS AWARD

#### BILL STAPLES

As the Section's first President, Joan M. Mills had the vision, determination, and dedication to unite physical therapists, physical therapist assistants, and students in their commitment to excellence in physical therapy care for older adults. Her years of leadership and participation

have led to the growth and development of the Section, and of new leaders who continue to promote the mission of the Section. The intent of this award is to recognize a member who has followed in Joan Mills' footsteps, generously contributing their time, talents, and efforts to the development of the Section on Geriatrics.

It is my pleasure to present this year's award to **Bill Staples, PT, DPT, GCS**. His ongoing contributions of time and energy to tirelessly promote the clinical practice of geriatrics and Section management of fiscal resources to better serve our membership are perfect examples of Joan Mills' vision and service to the profession.

Bill has been actively involved in the Section on Geriatrics for over a decade. First serving on the Awards Committee from 1996-2001, and then on the Government Affairs Committee from 1997-2002. A frequent author in *GeriNotes*, Bill went on to join its Editorial Board in 1998, a position he continues to hold. Importantly, Dr. Staples encourages students to publish. He served as Guest Editor for the focus issue on students in 2007.

Dr. Staples found his true calling when he joined the Finance Committee in 1999, demonstrating his commitment to financial stability and viability that enabled the Section to survive the financial crisis following the Balanced Budget Act and the significant membership fluctuations that ensued.

Bill went on to serve one term as Director, from 2001-2004, and then to use his financial background as Treasurer from 2004-2007, and is now in his second term until 2010. During his tenure, the Section budget has been opened to the membership through the posting of draft budgets on our Web site for review and comment--creating a more transparent process by which we allocate our funds. Also during his terms, the Section was able to continue its substantial contributions to the Foundation for Physical Therapy despite these being rebuilding years for our Section.

Dr. Staples is, however, not just a money manager! He received his board specialist certification in 1995 and recertification in 2005. During that decade, he served on the Specialization Academy of Content Experts (SACE) from 1996-1997, then was appointed to the Geriatric Specialty Council for a 3-year term in 1997. After completing that term, Bill joined the American Board of Physical Therapy Specialties as a Board member from 1999-2003, serving as chair from 2001 to 2002.

Meanwhile, Bill pursued his postprofessional DPT degree, completed in 2005, and then entered the Doctor of Health Science program in 2006. Bill has used his doctoral studies and teaching experience at the University of Indianapolis to increase awareness of physical therapy utilization for patients with Alzheimer's Disease. Dr. Staples is a frequent speaker at CSM, working to educate us on the best practices in geriatric physical therapy.

Dr. Staples reflects the passion for promoting geriatric physical therapy that was the vision of Joan Mills...from presenting our public face as the speaker at CSM for the Specialist Awards Ceremony to cutting a rug at the SOG parties and all the "re-sponse" activities in between.

Please stand and show your appreciation for Dr. Staples' sustained and outstanding service to the Section on Geriatrics!

### PRESIDENT'S AWARD

#### MICHELLE CRISS AND ANNE COFFMAN

The President's Award recognizes individuals who have provided outstanding service to the President of the Section on Geriatrics while fostering the mission and goals of the Section on Geriatrics. This year, there are 2 recipients of this award.



#### Michelle (Missy) Criss, PT, MS, GCS

Goal #2 of the Section is to facilitate members' utilization of best practice physical therapy for optimal aging. A primary mechanism to achieve this goal is through onsite continuing education programs. Missy has been an active member of our Program Committee for the past 10 years. Importantly, since

2002 she has chaired the Regional Course Committee that provides affordable and professionally meaningful CE courses to our members in various locations around the country. Unless you've organized and conducted one of these courses, you



can't appreciate the attention to detail that is required to offer successful programming. Over the past 6 years, Missy and her committee, have done this time and time again. Missy, thank you for your work on behalf of our members and for allowing me more restful nights knowing that our regional CE activities were under control.



**Anne Coffman, PT, MS,  
GCS**

Anne has been vitally active in the Section for over 13 years, serving initially as an Editorial Board member for *GeriNotes* in 1995. She has been chair of the Program Committee and co-chair of Awards Committee. Anne has been a dedicated, insightful, and passionate member of our Board of Directors since 2003. Most critically, she has been Section Vice President since 2003, serving as my unflappable go-to counsel and sounding board on a range of matters important to the Section. Recently she has been our Board liaison to our Exercise Taskforce, the Certified Exercise Expert for Aging Adults Committee and its upcoming course series, and the International Council on Active Aging. Anne, your calm demeanor and unfailing organizational memory have served to keep me on track and the Section moving forward.



**Cecelia Grillo  
Outstanding PTA Award**

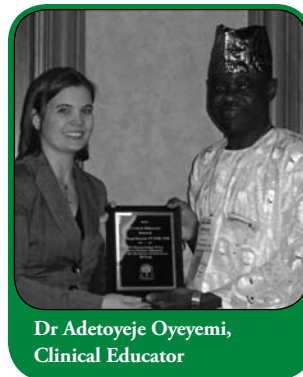
#### **OUTSTANDING PHYSICAL THERAPIST ASSISTANT AWARD CECELIA GRILLO**

The Outstanding Physical Therapist Assistant Award is to recognize a physical therapist assistant who has significantly impacted physical therapy care in geriatric practice. This year's recipient, Cecelia Grillo, is currently a physical therapist assistant at Therapy and Living Consultants in Northfield, New Jersey. Patricia Brick passionately described Cecilia in her nomination letter. "Cecilia is a lifelong learner, she is always eager to investigate diagnosis and intervention techniques. She understands the needs of older adults and is dedicated to their successes. She is the clinician that every teacher hopes for and every employer prays for. Watching her in the clinic can easily be described poetry in motion."

#### **CLINICAL EXCELLENCE DR. FLORENCE GARCIA**

The award for Clinical Excellence is to recognize a physical therapist for outstanding clinical practice in geriatric health care settings. This year's recipient, Dr. Florence Garcia is currently a physical therapist at Rivergate Terrace in Riverview, Michigan. Arlene Fritz had the following to say about Florence in her nomination letter. "Florence has distinguished herself as a professional who is compassionate and respectful in her approach to both her patients and their loved ones. Florence gives all to every aspect

of her life, carrying out her responsibilities with grace and good humor. Anyone considering the profession of physical therapy would do well to emulate Florence Garcia."



**Dr Adetoyeje Oyeyemi,  
Clinical Educator**

#### **OUTSTANDING CLINICAL EDUCATOR DR. ADETOYEJE OYEYEMI**

The award for Outstanding Clinical Educator is to recognize a physical therapist or physical therapist assistant for outstanding work as a clinical educator in the geriatric health care setting. This year's recipient, Dr. Adetoyeje Oyeyemi is currently the Associate Director of Hospitals and Director of Physical Therapy at Dr. Susan Smith McKinney Nursing and Rehabilitation Center and serves as the Coordinator of Clinical Education for physical therapy, occupational therapy, and speech language therapy. Anne Meyerzon, a former student of Dr. Oyeyemi, eloquently stated the following: "Dr. Oyeyemi has always instilled in us the value of hard work, scholarship, excellence, and social responsibility. As an embodiment of sterling qualities and attributes for which many of us strive, he has always enjoined us not just to tell the truth, but to be truthful. Through his exemplary behavior, his students have imbibed the higher ethics that honesty is not enough, we must have integrity."



**Dr. Deb Kegelmeyer,  
Distinguished Educator**

#### **DISTINGUISHED EDUCATOR DR. DEB KEGELMEYER**

The award for Distinguished Educator is to recognize a Geriatric Section member for excellence in teaching. This year's recipient, Dr. Deb Kegelmeyer is currently an Associate Professor of Clinical Allied Medicine in the Physical Therapy Division at The Ohio State University. Jackie Metro, a former student and current geriatric resident at Ohio State, had the following comments about Dr. Kegelmeyer's teaching skills. "Dr. Kegelmeyer undoubtedly exemplifies excellence as an educator in the academic, professional, and community setting. Dr. Kegelmeyer has an unparalleled ability to integrate hard factual evidence from the literature with captivating stories from her clinical practice in long-term care facilities. By incorporating funny stories, unique intervention strategies, and personal accounts, she keeps her students engaged and illustrates how rewarding, interesting, and enjoyable working with older adults can be."

#### **LYNN PHILLIPPI ADVOCACY AWARD PATRICE ANTONY for ELDER ADVOCATES Inc.**

The Lynn Phillippi Advocacy Award is to recognize projects or programs in clinical practice, educational, or administrative settings which provide strong models of effective advocacy for older adults by challenging and changing ageism. This year's recipient, Patrice Antony who founded Elder Advocates over 10 years ago with the purpose of assisting and supporting





adult children in obtaining care management services for their parents. An individual whose grandmother was a client of Elder Advocates had the following words to share, "Elder Advocates played an important role in allowing my grandmother to embrace opportunities that she either would not have realized were available or might not have had the courage to undertake on her own. In an age when family are often scattered around the country and the world, organizations like Elder Advocates are essential to maximize the quality of life of older adults. Patty has developed a program that is a model for how we should optimize the quality of life of older adults to promote the positive aspects of aging."

## RESEARCH POSTER

### ADDISON ANDREWS

The best research poster was awarded to Addison Andrews and colleagues at Elon University for their poster entitled *Impact of Large Retail Establishments on Community Ambulation Distance*.



Adopt-A-Doc Scholarships - Awarded to Dennis Klima PT, MS, GCS, NCS

## ADOPT-A-DOC SCHOLARSHIPS

### DENNIS KLIMA, WILLIAM THOMPSON, DAVE WERT

Three Adopt-A-Doc Scholarships were awarded to Dennis Klima PT, MS, GCS, NCS working on his PhD from Temple University on age-related differences in physical performance and fear of falling in community-dwelling older adults; William Thompson, PT

working on his PhD at the University of Delaware studying molecular and genetic mechanisms impacting musculoskeletal physiology in aging; and Dave Wert, PT, MPT at the University of Pittsburgh studying relations and modifiers of stance time variability, energy cost of walking, and mobility disability in older adults.



Excellence in Research for a recently published research report went to Paul LaStayo, PT, PhD

## EXCELLENCE IN RESEARCH

### PAUL LaSTAYO

The award for Excellence in Research for a recently published research report went to Paul LaStayo, PT, PhD and his colleagues for the paper, *Elderly Patients and High Force Resistance Exercise - A Descriptive Report: Can An Anabolic, Muscle Growth Response Occur Without Muscle Damage or Inflammation*. J Geriatr Phys Ther. 2007;30:128-134.



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\* East Course Classes Will Also Be Offered Next Year

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Age is an issue of mind over matter.

If you don't mind it, it doesn't matter.

- Mark Twain

Section on Geriatrics - APTA

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