

GERINOTES

SECTION ON GERIATRICS, AMERICAN PHYSICAL THERAPY ASSOCIATION

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PRESIDENT'S PERSPECTIVE: MEETING OTHER "2020" CHALLENGES

John O. Barr, PT, PhD



This Perspective is intended to be both a reminder and a call to action. In early December 2010, the U.S. Department of Health and Human Services unveiled yet another "2020" challenge—its Healthy People 2020 (HP 2020)—with updated 10-year goals and objectives for improving the nation's health. HP 2020 is the result of a multi-year process reflecting input from public health and prevention experts, government officials, a consortium of more than 2,000 organizations (including the APTA), and the public. This program, which can be accessed at www.healthypeople.gov, includes many public health initiatives that are important to our profession and the patients/clients we serve, such as the promotion of physical activity, the decrease of falls-related injuries, and the inclusion of persons with disability. Physical therapists are specifically mentioned under the newly created objective topic area of Older Adults¹ and are among a very short list of health professionals that have been given the goal of attaining a 10% increase in their members holding geriatric certification by 2020. In 2009, it was estimated that 0.6% of physical therapists held geriatric certification, as compared to 4.3% of psychiatrists, 2.7% of physicians, 1.4% of registered nurses, 0.3% of registered dietitians, and 0.2% of dentists. I'm confident that you'll share my consternation regarding these statistics for both our profession and these others. One should also wonder about the absence of goals for other important members of our supposedly multidisciplinary/interdisciplinary geriatric health care team.

Importantly, the Section on Geriatrics (SOG) has taken steps to enhance the number of board-certified geriatric

clinical specialists (GCS), which presently stands at about 1,100. Our Strategic Plan specifies that we will attain 2000 GCSs and 5 new clinical residency programs per year by 2020. Currently, our Home Study Course (HSC) series and a list of suggested readings² provide didactic content and resources that can be used to prepare for the American Board of Physical Therapy Specialties (ABPTS) certification examination. Our annual Residency 101 workshop at the Combined Sections Meeting continues to provide essential information for designing and implementing clinical residency programs. A somewhat dated list of references for residency development is available on our Web site.³ Under the leadership of Greg Hartley, PT, MS, GCS; Jason Hardage, PT, DScPT, NCS; and Cheryl Anderson, PT, PhD, GCS, we are in the process of developing a comprehensive on-line curriculum for geriatric clinical residency programs. This should greatly facilitate the development of residency programs in non-academic settings and ease the teaching demands on already over-burdened academic faculty.

Yet, I anticipate that these Section initiatives will not be enough to meet either the HP 2020 goals or the aims of our more aggressive Strategic Plan. YOU, as Section members will ultimately be responsible for our success! It is absolutely critical that you promote the engagement of your colleagues in this process, through a range of actions including the following:

1. Share your positive and vitally important experiences in working with older individuals with PT and PTA students and colleagues. Nurture active membership in the Section. This includes assuring that current GCSs are SOG members.
2. Mentor your PT colleagues to attain their GCS, and PTA colleagues to receive their PTA Recognition

of Advanced Proficiency.⁴ This will involve sharing your knowledge and resources [beyond old copies of HSC series modules], including conducting advising sessions and study groups. In my academic setting, one colleague has personally mentored 5 PTs towards taking their ABPTS-GCS exam this year. Once they have attained their certification, these individuals will be among a local group of 9 GCSs who might serve as preceptors for a future geriatric clinical residency program.

3. Establish a clinical residency or fellowship program in your setting. Among our current 7 credentialed residency programs, 2 emanate from primarily academic environments and 5 from clinical settings. Critically, those of you involved with larger corporate physical therapy service providers should challenge your organizations to see the merits of having a cadre of GCSs and fellows on staff. The SOG is proud to support Clinical Residency or Fellowship programs as they work through the APTA's credentialing process. The Section will fund up to 5 program applications per year, at up to \$1,000 each. Monies will be awarded on a "first come, first serve" basis, with an annual grant application deadline of December 31st. Grant applicants must be an SOG member. Detailed information about our Geriatrics Clinical Residency or Fellowship Program Grant application can be found on our Web site.⁵

I look forward to your active involvement in developing a significantly enhanced number of geriatric clinical specialists by 2020. In all likelihood, however, an increase of 10% won't be enough to meet the needs of our aging society.

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EDITOR'S MESSAGE: OPPORTUNITIES ABOUND

Melanie Sponholz, MSPT, GCS



If editing my first issue of *GeriNotes* is any indication, I am going to thoroughly enjoy this position! Reading all of the submissions from this great group of physical therapists

has definitely been thought provoking. I put off writing this message until all of the other articles were squared away. However, as the themes from the articles simmered in my subconscious, my message began to write itself, and John Barr's thoughts for this issue were the icing on the cake!

Maybe it's because I hit one of those milestone, ends-in-a-zero birthdays in April, but I have a new viewpoint on the importance of physical therapy for aging adults! I admit daily exercise used to be motivated largely by vanity. I'm not saying I don't want to fit in my skinny jeans, but now my workouts are motivated less by the mirror and more by less glamorous goals like managing my cholesterol, preventing metabolic syndrome, and keeping up with my children! Somehow, I've arrived at the age that I still imagine my parents to be, while they have managed to sneak into that "geriatric" cohort. That's a perspective-changer too, because my folks are anything but frail. My father and I recently ran a half marathon

together, and my mother can out-yoga women half her age! All of this suddenly made the topics in this issue, and the call to prepare for the future, much more personally relevant to me. How horrible to think that I might someday be on the receiving end of rehabilitation from a professional who did not have the knowledge, perspective, and expertise to give me optimal care.

As I read articles about preparing students for geriatric care, using the ICF, patient-centered care and education, the importance of understanding and using effective outcome measures, and the ability of physical therapists to recommend effective environmental modifications, I thought: I hope there are therapists like these authors when I need rehabilitation! Unfortunately, I agree with John's assessment that at the rate we are going, we will not keep up with the demand for Geriatric Certified Specialists for this fast-growing population of patients. What else can we do to change this trend? As Rita and John's update on Geriatric Competencies and Greg Hartley's update on advanced proficiency point out, we are moving to get the structures in place to prepare professionals for practice in geriatrics. The creation and implementation of guidelines for entry-level and advanced educational programs and residencies is crucial. But we will need to create a groundswell of interest in these opportunities. From a public relations

standpoint, how do we motivate clinicians to enter this specialty?

When I speak to groups of physical therapists, I always ask for a show of hands for how many of them had a truly inspiring and motivating course on geriatrics in graduate school. Unfortunately, I usually only see a few hands raised. I think we all need to take action to change this. Whether it's lecturing at schools, serving as a clinical instructor, or mentoring a new graduate, we need to seize the opportunity to show emerging professionals how rewarding and stimulating it is to work with our chosen patient population. Opportunities abound to make a real difference for our patients and contribute to the growing body of knowledge about how our interventions improve their quality of life. I hope everyone who reads this issue will get excited about the future and our role in recruiting and preparing the clinicians needed to care for this growing and deserving population.

RETOOLING TASKFORCE: GERIATRIC COMPETENCIES IN PHYSICAL THERAPY

Rita Wong, EdD, PT; John O. Barr, PT, PhD

The Section on Geriatrics's Retooling Taskforce is well underway on a project to validate a set of recommended competencies in the care of older adults that all physical therapists should possess at entry to the profession. The Section on Geriatrics (SOG) Retooling Taskforce was appointed in 2009 by SOG President, John Barr soon after the release of the Institute of Medicine (IOM) Committee Report *"Retooling for an Aging America: Building the Healthcare Workforce."*¹ The IOM report examined workforce shortages and educational preparation of health care providers across several health care fields. The report warned of a looming crisis based on inadequate numbers of practitioners choosing to work in geriatrics and inadequate preparation of the workforce; and made specific recommendations for steps to be taken to address these issues. For the most part, physical therapy was not included in the IOM report or its recommendations. The SOG leadership was concerned about this omission given the central role physical therapists play in addressing movement dysfunction in older adults, and the important impact physical therapy can have on activity participation and disability of older adults.

This spurred the SOG to establish our own Retooling Taskforce to examine the status of geriatric physical therapy and make recommendations for addressing our workforce needs. As anticipated, similar to the professions included in the original IOM report, the SOG Retooling Taskforce identified substantial shortages of physical therapy practitioners and specialists in geriatrics. Additionally, the SOG Taskforce noted a lack of concrete expectations or competencies against which practitioners could be assessed for readiness to work with older adults. Thus, one of the Taskforce recommendations to the SOG Board of Directors was to establish competencies for PTs and PTAs that could serve as a baseline

for assessing readiness for practice in geriatrics and, using these competencies as a baseline, prepare educational materials aimed at helping educators assure their graduates meet these competencies.

In a parallel timeline, SOG President John Barr was working with a multidisciplinary group initially convened by the American Geriatric Society and continued as a coalition identified as the Partnership for Health in Aging (PHA). The PHA brought together representatives from 10 different health-focused professions (Medicine, Nursing, Pharmacy, Social Work, Dentistry, Occupational Therapy, Physical Therapy, Physician Assistants, Nutrition, and Psychology) to develop a set of core competencies applicable across all 10 disciplines. The Section on Geriatrics represented Physical Therapy. Eighteen source documents (including criteria for accreditation of programs preparing each of the participating health professions) were reviewed by all participants and, through an iterative review process and series of conference calls, common themes and competencies were identified.

The final document, which included 23 competencies across 6 domains, was approved by the work group through a consensus process, and is deemed applicable across health care disciplines. This is a unique and important set of competencies. The final competency document was returned to the various parent professional organizations for official endorsement. Ultimately, endorsements were secured from 28 organizations (including APTA), in May of 2010. The PHA multidisciplinary competency statements themselves have been the subject of previous articles published in *GeriNotes*.²⁻⁴ These competencies can be accessed at: <http://www.geriatricspt.org/pdfs/PHA-Multidisc-Competencies.pdf>.

These core competencies are intentionally broad, to assure applicability across disciplines. The coalition expects each profession will add subcompetency

statements that are specifically tailored to various practitioners within each professional area. The SOG Retooling Taskforce is developing these subcompetencies for physical therapy, focusing on the physical therapist first, followed by the physical therapist assistant. The Taskforce members who have been working on these subcompetencies are Dale Avers, Cathy Ciolek, Dennis Klima, Mary Thompson, and Rita Wong. John Barr has worked closely with the Taskforce. The Taskforce members were chosen for their experience in the educational preparation of physical therapists, both at entry level and at advanced practice level.

In June of 2010, the Taskforce agreed to develop the subcompetency statements that would individualize the multidisciplinary competency document for physical therapy. A development and validation plan was put into place. The Taskforce members worked diligently between July 2010 and January 2011 to draft subcompetencies for each of the 23 PHA competency statements across the 6 different domains: health promotion and safety, evaluation and assessment, care planning, interdisciplinary and team care, caregiver support, health care systems and benefits. Taskforce consensus was reached in January 2011. In February 2011, at the APTA Combined Section's Meeting in New Orleans, the Taskforce hosted a 3-hour educational session for educators and geriatric-focused clinicians. The purpose of this session was to receive feedback and recommendations from our membership related to the subcompetencies developed by the Taskforce. This feedback would serve as the initial round of validation for the PT-specific competencies.

We had a very successful session at CSM. Forty-five individuals representing a variety of clinical and educational settings joined us for the afternoon. Each group of 6 to 10 people tackled two different domains, making recom-

mentations for content and wording of each subcompetency statement. At the end of the day, the Taskforce received a great deal of very useful and important feedback. Consensus had been achieved by each small group. We had both individual and aggregate feedback from each table.

Individuals agreed that the PHA multidisciplinary competencies were a good starting point for PT-specific subcompetencies. Although the Taskforce was initially considering the geriatric competencies primarily for use by academic programs that prepare practitioners for entry to the profession, many in the audience were excited about the possibility of having a set of competencies they could use to assess readiness of clinicians for working with older adults within their clinical facilities. Both groups encouraged the development of the competency document and hoped we could keep the final document simple and reasonably short to encourage broad use. This is a tall task given the complex role of the physical therapist in geriatrics, but the Taskforce is keeping this a priority.

The Retooling Taskforce is currently reviewing all the comments and recommendations made by the participants at the educational session at CSM. By early to mid April, we hope to circulate the revised subcompetency statements to the individuals who attended CSM for a second review. We will then incorporate that second round of feedback to finalize a definitive set of competencies for the physical therapist working with older adults. These competencies will then be available on the SOG Web site and circulated widely to educational programs and clinical facilities. The Taskforce plans to continue their work by using the validated competencies as a foundation for a manual on teaching strategies for helping students achieve each of the subcompetencies. This manual would be a collaborative effort across academic programs and would be made available to academic programs. Once the competencies have been finalized for the physical therapist, a similar process will be used to develop subcompetencies specific to the physical therapist assistant.

In an effort to further disseminate information about these competencies, two posters are being presented at the

16th International WCPT Congress to be held in Amsterdam, Netherlands, in June:

-Barr JO, Semla T, Wong R. Entry-level multidisciplinary competencies for health professionals caring for older adults in the United States: Implications for physical therapy

-Wong R, Avers D, Barr JO, Ciolek C, Klima D, Thompson M. Recommendations to address the growing physical therapy workforce shortage in geriatrics

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PROMOTING THE GROWTH OF BOARD CERTIFIED GERIATRIC PTS AND PTAS WITH ADVANCED PROFICIENCY IN GERIATRICS: PRACTICE COMMITTEE ACTIVITIES AND UPDATES

*Greg Hartley, PT, DPT, GCS
Practice Committee Chair*

Members of the Practice Committee spent much of 2010 developing new, more accessible, and affordable ways for members to participate in postprofessional residency education, as well as developing new mechanisms for achieving advanced proficiency in geriatrics for the PTA. The creation of content for residency education is meant to facilitate the development of new residency programs across the country and in areas or practice settings where didactic resources may be limited. The content created for the PTA is designed to meet new requirements for the achievement of advanced proficiency for PTAs in all areas, not just geriatrics. Both of these projects were substantial and involved the work of many members of the Committee, the Section, the Home Study Course Editors, and APTA staff. These two projects and their end products are summarized here.

STANDARD, ACCESSIBLE DIDACTIC CURRICULA FOR GERIATRIC RESIDENCY EDUCATION AND GCS PREPARATION

Postprofessional residency education involves both clinical training and mentoring and didactic training. In order for these programs to be credentialed by the American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE), programs must provide 75 hours of didactic training during the resident's matriculation. Furthermore, all training (both clinical and didactic) must be based on the most recent Description of Specialty Practice (DSP) for the specialty area, in this case, geriatrics. The DSP for geriatrics was updated in late 2009. In early 2010, Practice Committee members developed a "linking document" that linked existing Home Study Courses (HSCs) with the 2009 DSP for Geriatrics, in an attempt to see where the Section already had courses that could meet

the requirements for residency education, and where there were gaps. Subsequently, the Committee developed learning objectives for content in the DSP not covered by existing HSCs. This was followed by the creation of a HSC calendar that clustered topics logically and in a way that made financial sense for publication. This task was done in conjunction with the Home Study Course Editor. The result is a HSC topic list that addresses all areas of the DSP. The topic list will be rotated and updated on a 5-year cycle, thus ensuring the content of the HSC is always current and compliant with the prevailing DSP. The HSC Editor will use this list to find content experts and ensure the objectives of the HSC topic list are in compliance with the DSP for residency curricula. All courses will be offered online.

This merger of HSC content with DSP content has enabled the Section to assist developing (or existing) residency programs with meeting the criteria set forth by ABPTRFE. Since the material will be offered online, residency programs anywhere in the country (or even internationally) can have access to didactic material required for credentialing. Programs will be able to pick and choose content that they need to access. For example, a residency program might have local experts in musculoskeletal aspects of geriatric physical therapy, but lack resources in prosthetic and orthotic content. This program could access the didactic content for prosthetics and orthotics via the HSC topic that contains that module. Programs with few resources for any didactic teaching could potentially provide nearly all of the required didactic training via these HSCs. Postprofessional residency education is meant to prepare graduates to become specialists in geriatric physical therapy, with the primary measure of success being the graduates' attainment of the GCS. Thus, the matching of the HSC

content to the ABPTRFE criteria also makes the courses ideal for any clinician preparing for Board Certification. The content can be also be accessed by members and nonmembers alike, both PTs and PTAs, for continuing education credit in geriatric-related topics of interest.

It will take a number of years for all of the content to be available online via HSCs (see outline, below). Once all of this content is available, the topic list will remain constant, and module content will be updated every 5 years. When a new DSP for Geriatrics is published (typically every 10 years), the topic list will be updated and revised to ensure that all areas of the DSP are being addressed in HSCs. The current HSC topic list is outlined at the end of this article. This list is based on the 2009 DSP for Geriatrics, but some content is elective and can change in future cycles based on current trends or emerging practice areas.

ADVANCED PROFICIENCY FOR THE PHYSICAL THERAPIST ASSISTANT: GERIATRICS

At about the same time, the Practice Committee began working on the standard curriculum for residency education in geriatrics, the APTA was considering ways to improve the current process for Advanced Proficiency (AP) for PTAs. A Task Force for Career Pathways for PTAs was assembled by the APTA to re-vamp the AP process, and the process they recommended was analogous in many ways to residency education for PTs. Coursework (didactic training), taken as continuing education required for the Certificate of AP in Geriatrics, would need to cover defined content. Furthermore, the PTA would need to complete supervised clinical training (mentorship). Given the conceptual similarities with residency didactic training, the Practice Committee decided that a document

similar to the DSP was needed to define the PTA's scope of work in geriatric physical therapy.

The Section appointed a work group to revise the DSP to create the "Description of Advanced Proficiency for Physical Therapist Assistants: Geriatrics," aka the "DAP." This document is the first of its kind in the APTA, and is currently under final review prior to publication. The document is meant to serve as a guide to develop content areas for the AP process for PTAs. The Practice Committee took the DAP and determined that the vast majority of the content could be provided by editing FOCUS 2011 (see below) to make it applicable, useful, and meaningful for the PTA. This edit should be accomplished quickly, so the Committee and the Home Study Course Editor have decided that a PTA FOCUS issue will be issued in 2012. PTAs seeking AP in Geriatrics will have 100% of the courses necessary to achieve this designation available to them via HSCs online in 2012. The course content is included in the 5-year cycle of HSCs mentioned above. Once the content is available online, PTAs will be required to take these courses to achieve AP in Geriatrics. The clinical supervision component of the AP process for the PTA is to be determined later in 2011 by the APTA and the Sections (including Geriatrics).

The outline of courses on the new HSC calendar follows. Note that 2011 courses will be available in summer 2011. This is followed in 2012 by the new PTA FOCUS issue that will meet the requirements for AP in Geriatrics for PTAs. Subsequent years continue with courses in advanced geriatric physical therapy that also may serve as didactic content for postprofessional geriatrics residency education programs. Again, the cycle repeats every 5 years, ensuring content is current and relevant to the prevailing DSP and DAP.

2011 (Focus: *Physical Therapist Practice in Geriatrics 2011*)

1. Cardiovascular System: Age-related Changes and Common Problems
2. Pulmonary System: Age-related Changes and Common Problems
3. Integumentary System: Age-related Changes and Wounds
4. Musculoskeletal System: Age-related Changes and Common Problems

5. Neuromuscular System Lesions and the Older Adult
6. Diabetes Across the Physical Therapist Practice Patterns

2012 (Focus: *Physical Therapist Assistant Practice in Geriatrics 2012*)

1. Cardiovascular System: Age-related Changes and Common Problems
2. Pulmonary System: Age-related Changes and Common Problems
3. Integumentary System: Age-related Changes and Wounds
4. Musculoskeletal System: Age-related Changes and Common Problems
5. Neuromuscular System Lesions and the Older Adult
6. Endocrine System: Age-related Changes and Common Problems

2013 (Topics in Geriatrics: Volume 7)

1. Gait, Locomotion, Balance, and Fall Prevention: Implications for the Aging Adult
2. Biopsychosocial and Environmental Aspects of Aging: Successful Aging, Work, Community, and Leisure Activity
3. Ergonomics and Bariatric Geriatrics
4. Pharmacokinetics, Pharmacodynamics, and Disease Management
5. Ethics and End-of-life Issues
6. Mental Health Issues in the Older Adult Population

2014 (Topics in Geriatrics: Volume 8)

1. Assistive and Adaptive Devices, Electrically Powered Mobility Devices and Seating Systems, and Orthotic, Protective, and Supportive Devices
2. Reimbursement Issues in Health Care: Understanding the Medicare and Medicaid System
3. Lymphedema and Breast Cancer
4. Education, Advocacy, and Health Promotion in Geriatric Physical Therapy
5. Fitness Needs of and Exercise Prescription for Older Adults: An Evidence-based Approach
6. Examination and Management of the Patient with Amputation

2015 (Topics in Geriatrics: Volume 9)

1. The Aging Skeleton: Osteoarthritis and Osteoporosis
2. Understanding and Using Statistics in Clinical Decision Making
3. Clinical Management of Physical

and Chemical Restraints

4. Depression, Dementia, and Delirium in Physical Therapist Practice: Integrating Principles of Neurophysiology and Neuropsychology into Comprehensive Patient Care
5. The Differential Diagnosis of Dizziness and Vestibular Disorders in the Older Adult
6. Incontinence

The cycle repeats, beginning in 2016, with *Focus: Physical Therapist Practice in Geriatrics 2016*, with the course inventory updated on a fixed 5-year cycle.

The Practice Committee is pleased to have completed these two major tasks. The HSC Editor will now work on developing these courses and getting all content converted to an online format. A future *GeriNotes* article will discuss the Practice Committee's new structure and its goals and objectives for 2011--2013. If you are interested in participating in Practice Committee activities, please E-mail the Executive Director at the Section Office.

ACKNOWLEDGEMENTS

As Practice Committee Chair, I would like to applaud the efforts of Committee members Tamara Gravano, PT, DPT, GCS; Joseph Libera, PT, DPT, MPH, GCS; Home Study Course Editor, Jason Hardage, PT, DSc, GCS, NCS; and *PTA Advanced Proficiency Work Group Members*: Alice Bell, PT, GCS; Rubye Kendrick, PT, MS, GCS; and Karen Ryan, PTA. Their efforts and contributions to these projects are greatly appreciated.



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UTILIZING THE ICF TO INCORPORATE EVIDENCE-BASED PRINCIPLES IN CLINICAL PRACTICE

James K. Eng, PT, MS

INTRODUCTION

In order to achieve and sustain the highest level of functional outcomes for their patients, physical therapists must practice in compliance with the strongest evidence that guides evaluation and intervention. The well researched principles of skill acquisition and physical activity should be the foundational blocks of a rehabilitation program that yields effective and enduring results. The intent of this paper is to demonstrate how The International Classification of Functioning, Disability and Health (ICF) can provide therapists with a practical framework to develop comprehensive, evidence-based intervention strategies. This paper will describe the basic components of the ICF, review the evidence from the principles of skill acquisition and physical activity, and present a case study to integrate these concepts into an effective intervention program for an elderly patient.

THE INTERNATIONAL CLASSIFICATION OF FUNCTION, DISABILITY AND HEALTH (ICF)

The ICF has received much attention and endorsement in recent years as the preferred conceptual framework for clinical classification and guidelines (references).¹ It was highlighted and referenced in many presentations at the most recent Combined Sections Meeting (CSM) in New Orleans, and featured in the March issue of *PTJ* by Atkinson and Nixon Cave.² Published by the World Health Organization in 2001,³ the ICF offers a broad perspective of an individual's health status, viewing his or her functional limitations not simply as "consequences of disease," but as a product of multiple and interacting "components of health."

These components of the ICF are organized in 2 major parts:

Part 1. Functioning and Disability

- a) Body Functions and Structures (eg, strength, muscles and bones)

- b) Activities and Participation (eg, walking, cooking, being a spouse)

Part 2. Contextual Factors

- a) Environmental factors (eg, weather, lighting, social attitudes)
- b) Personal factors (eg, lifestyle, fitness, coping styles)

Figure 1 illustrates how the components interact in this framework.

tors." This is a powerful concept with practical implications for how physical therapists practice.

A critical concept of the ICF is that all components are expressed in positive or negative terms called *qualifiers*. A simple example of a qualifier is that of an individual's strength (considered a body function, and referred to as "muscle

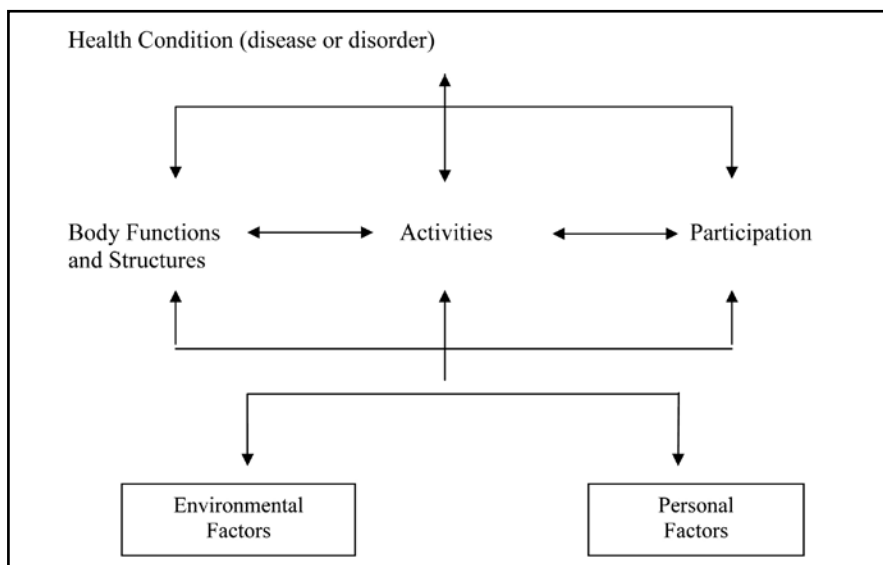


Figure 1

Note that the ICF positions activities at the *center* of the framework. Activities are affected by multiple components in an individual's life, and simultaneously they influence body functions, structures, health conditions, and participation. Health conditions such as pathologies clearly play a critical role in affecting activities, but they no longer occupy a primary, hierarchical position in this model. An injury or illness is only one of multiple components that may lead to disability, and the influence of any one component varies based on the dynamic circumstances of the individual's life. As the authors of the ICF state, "a person's functioning and disability is conceived as a dynamic interaction between health conditions (eg, diseases, disorders, injuries, traumas, etc) and contextual fac-

power" in the ICF). If strength is compromised, it is qualified as an "impairment," using a negative scale (0-100% impairment). Another straightforward example applies to activities. If an individual's ability to stand is compromised, it is qualified as a "difficulty," using the same negative scale (0-100% difficulty). This, of course, is common sense to physical therapists, and the basis for evaluation and intervention.

The ICF also assigns qualifiers to the individual's environmental and personal factors. The factor is qualified as a "facilitator," if it has a positive influence on the individual's function, and a "barrier," if it has a negative influence. A simple example is poor lighting in an individual's home that qualifies as a barrier to safe function. Physical therapists should be

cognizant of the negative effects of other more subtle but important factors such as societal attitudes towards the elderly, limited access to community settings, absence of sidewalks and walking surfaces, poor motivation, and limited presence of friends and caregivers.

PRINCIPLES OF SKILL ACQUISITION

For many elderly individuals, changes in their body functions and structures, functional abilities and environment necessitate that they learn new motor skills. Optimal rehabilitation employs the principles of motor learning, motor development, and neuroscience in assisting the patient to reorganize the body and brain to acquire new skills and functions. There are many important principles related to skill acquisition that have come from the research in neurology and neuroscience, but only 3 will be discussed for the purposes of this paper.

Frequency and Intensity of Practice

Many studies and publications suggest that higher frequencies (referred to as “intensity”) correlate with better functional outcomes.^{4,5} One of the most intensive regimens of therapy is Constraint Induced Movement Therapy,⁶ in which patients with hemiparesis have their less involved upper extremity physically restrained, thereby forcing practice and use of the paretic arm and hand. Encouraging changes in functional movement were achieved with the original protocol for this treatment, which included constraint and practice for a minimum of 6 hours per day, 5 days a week, for two to 3 weeks. Although more recent studies have suggested that time parameters may be modified, the principle continues to point to the necessity for continuous and frequent practice.

In the proceedings from the 2005 III Step Conference, sponsored by the American Physical Therapy Association, developmental psychologist Karen Adolph identified that typical infants and toddlers practice extensively in acquiring crawling and walker skills.⁷ Infants crawl on average 5 hours a day, taking approximately 1000 to 3200 steps and covering about 60 to 188 meters (two football fields). Once walking, infants spend an average of 6 hours per day walking, covering a minimum of 2700

meters, or the equivalent of 29 football fields. While, the clinical focus of this publication is the elderly population, Adolph's work stresses the importance of practice frequency beyond two to 3 days a week in therapy sessions.

“Optimal rehabilitation employs the principles of motor learning, motor development, and neuroscience in assisting the patient to reorganize the body and brain to acquire new skills and functions.”

Taxonomy and Specificity of Tasks

The conditions of any task vary circumstantially, and naturally affect its difficulty and skill requirements. Ann Gentile's well known task taxonomy⁸ matrix depicts the progression of task difficulty based on the individual's behavior and environmental conditions. An example of task with least difficulty is a “closed” task of a patient standing inside parallel bars, while an example of task with most difficulty is an “open” task of an individual wielding a quad cane to navigate a busy subway station.

As older individuals become more restricted in their activities and less exposed to dynamic conditions, they begin to gravitate towards simpler tasks on the taxonomy matrix, thereby jeopardizing their ability to accomplish more difficult tasks. Examples include the elderly woman who no longer goes to her church because she is afraid she will lose her balance negotiating through crowds, or the older man who moves into a single story residence so that he no longer has to negotiate stairs. Soon, these individuals lose advanced skills and confidence. If therapists believe that their patients are able to re-acquire advanced skills, they must incorporate the appropriate conditions in their intervention to elicit and develop these skills.

Additionally, it is important that therapists consider the growing body of research in the area of dual tasking that demonstrates how concurrent attention demands can compromise task performance (eg, an individual walks more slowly and less safely while she is distracted by a mental task).⁹ Therapists must be as comprehensive as possible in

considering all the environmental factors that affect an individual's performance when designing interventional strategies.

Motivation and Brain Plasticity

Studies from the field of neuroscience suggest that motivation is a powerful factor that changes in the brain during skill acquisition or motor re-learning. Nudo et al trained squirrel monkeys in novel reaching activities, and found that there was an expansion of the upper limb representation in the monkeys' motor cortex, particularly the fingers, after they acquired the skill.¹⁰ Kleim et al found similar changes after training rats in novel reaching activities, as well as increases in neuronal dendrite branching, spine density, and neuronal synapses.¹¹ What was the common condition for these studies? The animals were all reaching for food pellets, and were motivated by their desire to eat.

The take-home extrapolation is simply that therapists must ascertain what motivates their patients to improve in a skill, and design intervention activities accordingly. This will increase the likelihood of patient carry-over and compliance. It is helpful to consider the patient's current *as well as past* participation in life (eg, spouse, singer, church member), to derive activities that are relevant to the patient. This concept is extremely useful in working with patients with dementia, for whom the past is the current reality.

PHYSICAL ACTIVITY GUIDELINES FOR OLDER PEOPLE

In 2007, the American College of Sports Medicine and the American Heart Association published recommendations regarding dosage, intensity, and types of physical activity for older people,¹² based on evidence from multiple studies. Two of many important concepts are summarized below.

Aerobic Activity and Older People

The ACSM/AHA guidelines recommend that older adults should engage in at least 150 minutes (2 hours and 30 minutes) per week of moderate-intensity aerobic physical activity for “maximal health benefits.” The guideline definition of moderate-intensity is an individual's rating of 5 to 6 out of 10 (if sitting is 0 and all-out effort is 10) and a noticeable increase in heart rate. The

guidelines state that given the range of fitness for older adults, moderate intensity for some individuals is a slow walk, and for others, it is a brisk walk. Aerobic exercise should be performed in episodes of at least 10 minutes. Since walking at any speed tends to be the predominant means of aerobic exercise for the older patients, it is important to consider conditions and strategies that facilitate prolonged or frequent periods of walking that accumulate to 150 minutes a week.

Muscle Strengthening and Older People

Additionally, the guidelines recommend that older adults perform muscle strengthening at least twice a week to maintain or increase muscular strength and endurance. The guidelines recommend that 8–10 exercises be performed on at least two nonconsecutive days per week, using the major muscle groups. To maximize strength development, a resistance should be used that allows 10–15 repetitions for each exercise before noticeable fatigue or loss of technique. The level of effort for muscle-strengthening activities should be moderate to high.

PUTTING IT ALL TOGETHER WITH THE ICF

The following case study will demonstrate how therapists can use the ICF framework to incorporate the principles of skill acquisition and physical activity in the development of effective interventions.

Meet Ms. Quincy

Ms. Quincy is an 87-year-old widow who suffered a fall 6 weeks ago, when she fell backwards while attempting to stand up from her kitchen chair. She reports that she reached back for the chair while sitting down, the chair slid back, and she fell on the floor, sustaining bruises without serious injury. She reports that prior to the fall she was noticing progressive difficulty with standing up from any surface and walking. She lives alone in an apartment in a senior citizen high rise, where there is a community area on the first floor, busy with various organized and informal activities. Ms. Quincy reports that she has many friends in the building, with whom she spent much time in the community center regularly, but that since the fall she stays mostly in her apartment. She does not understand why she is feeling more fatigued

now that she does less. Ms. Quincy has a part time home aide for heavy house-keeping. Her two daughters live locally and provide her with food and staples. Her daughters and friends are concerned about her inactivity and isolation. Ms. Quincy is discouraged, misses her friends and states, “I think I want to get back to life, but maybe it’s too late.”

Her primary care physician has ordered physical therapy, 3 times a week for 8 weeks, for strengthening and gait training. She has multiple conditions that are being addressed medically, including Parkinson’s disease, which presents as stage 2 on the Hoehn and Yahr scale.

Highlights from the physical therapy evaluation include mild thoracic kyphosis, mild bradykinesia, gait deviation with small steps that do not shuffle, mild intention tremor, and 1/4 rigidity on the UPDRS rigidity scale. Standardized test results include: Functional Gait Assessment (FGA) = 13/30; Gait speed: .7m/sec; Six Minute Walk (6MW): 800 feet; 5 times sit-to-stand: unable without using arms from 17.5” chair. Patient performed all walking tests with a cane and required occasional contact guard for loss of balance backwards during the more challenging components of the FGA.

Ms. Quincy’s Body Functions and Structures and Activities

Ms. Quincy presents with classic body impairments and activity problems of an individual with early Parkinson’s disease. She demonstrates early signs of retropulsion, with loss of balance posteriorly. This is likely exacerbated by her posture. Gait speed and endurance are compromised, influenced by small strides, bradykinesia, and limited active range of motion in her hips. Weakness and limited awareness to weight shift forward affect her ability to stand from a 17-inch-high chair. Most physical therapists would agree upon a physical therapy program of strengthening, aerobic conditioning, postural correction, balance activities, and gait training.

Ms. Quincy’s Participation

Ms. Quincy has already expressed that she misses participating with her friends in the building in social activities. Further interviews with Ms. Quincy and her daughters reveal that Ms. Quincy at-

tended church and went shopping with her daughters regularly, until several months ago, when these activities became more difficult. Ms. Quincy also enjoys popular American music from the 40s and 50s, and would dance to swing music when she was younger. She’s afraid to dance now, but her demeanor brightens as she recollects her dancing days, and she shakes her head and body to demonstrate her dancing.

Ms. Quincy’s Environmental Factors

Ms. Quincy’s apartment is a small, uncluttered one-bedroom apartment. Maximum walking distance from any room to another is less than 150 feet. She has 4 chairs (no arm rests) that are 17 ½ inches high around her kitchen table. The kitchen is 15 feet in length, with a counter that takes up one wall. She usually sits in the living room, in a height-adjustable recliner with a power controller, and spends much of her time reading, watching TV, and sleeping. She owns a full size bed with a 22” height surface. It appears that she does not sleep in it regularly (sleeps in the arm-chair often), but she is able to complete sit-to-stand from the bed without using her arms, with difficulty, but without help. She has a raised commode in her bathroom and grab bars by the toilet. She sponge bathes at the bathroom sink regularly, and once a week she showers with the supervision of her health aide. She has a walk-in shower with grab bars and a shower chair.

Ms. Quincy’s third-floor apartment is approximately 100 feet from the elevator. It takes her about 5 minutes to walk from her apartment to the community room on the first floor (including the time in the elevator). The total distance is about 225 feet. The main halls on the each floor of the building are carpeted, wide enough for 3 people, and measure about 400 feet end to end. There are also two 6-step flights of stairs between each floor, separated by a landing, with bilateral railings. The steps are accessible through a heavy fire door at both ends of the hall.

Ms. Quincy only uses her cane when she is outside her apartment. In the apartment, she uses the walls and furniture for occasional support.

Ms. Quincy’s Personal Factors

Despite Ms. Quincy’s fear and dis-

couragement, she is a social person and motivated to re-engage in community activities with her friends in the building and at church. She would also like to go grocery shopping again with her daughter to take advantage of sales and coupons that her daughters usually neglect. The concepts of exercise and increased physical activity are foreign to her and do not resonate with her. She has never considered dancing exercise.

Applying the ICF Framework to Ms. Quincy

It is difficult to imagine how therapy 3 times a week can meet the requisites of intensity, frequency, task specificity, and dosage to optimize Ms. Quincy's function. An effective intervention program must reach beyond the constraints of the prescribed therapy. Additionally, the strategies of the intervention must be based on conditions that are personally valid to Ms. Quincy, so that post-therapy carry-over is sustainable.

This is where the ICF framework is extremely valuable, both as a diagnostic tool to assess the patient's problems more comprehensively, and as a framework to

identify opportunities for functional carryover and health promotion. The following figure captures Ms. Quincy's findings using the ICF framework. The (+) and (-) symbols depict whether the environmental and personal factors are facilitators or barriers.

Interventions and Strategies

Based on the multiple interacting factors that describe Ms. Quincy's health and functional status, the physical therapist might instruct and recommend the following strategies to Ms. Quincy, her friends in the building, and her daughters, to complement the interventions that occur during the physical therapy sessions. All activities are initially developed and reviewed during therapy sessions, and recommended after they are deemed safe without the therapist present:

1. Sit to stand from the bed, without use of arms, at least twice a day. Work up to 5 in row, ultimately to 12 in a row. Ms. Quincy should feel how much easier it is when she puts her "nose over toes" (skill acquisition and strengthening).
2. Practice sitting and standing, with-

out using hands, from the raised commode. The grab bar is there for safety. Ms. Quincy should feel the ease of forward weight shifting (skill acquisition and strengthening).

3. Stand at kitchen counter and "dance" to several favorite songs. Practice side stepping, back stepping, trunk rotation, weight shifting, holding the counter for safety. Use songs with zippy rhythms. Each song is usually about 2 ½ minutes long. Work up to 3 to 4 songs for a total of 10 minutes (balance, motivation and endurance).
4. Walk to the community room, working up to 3 times a day for total of 30 minutes per day. Ask friends to call her, pick her up on the way downstairs, and discuss current events while walking (endurance, motivation, and dual tasking).
5. Walk the distance of the halls alone, or better yet, with a friend. Reminder that bigger steps equals faster speed. Time how long a lap takes and work up to more laps in less time (skill acquisition and endurance).
6. Walk up and down one flight of stairs twice with aide or daughter, as instructed in therapy. Progress to 3 times a week (strength, range of motion, endurance).
7. Start going to church again. Use techniques for getting in and out of the car as instructed to daughters and Ms. Quincy (endurance and skill acquisition).
8. Start going to the store to get the best buys. Daughter points out sales items and calculates savings, while Ms. Q moves the store cart like a walker. Keep track of distance and time walking in store (motivation, endurance, and dual tasking).

Therapists must pursue all strategies to use environmental factors to facilitate functional activities. Clearly written, well placed reminders (eg, a note the bathroom or bedroom to practice sit to stand without using arms) are useful to remind the individual to follow through with recommended activities. Additionally, to increase Ms. Quincy's participation, she is provided with a simple grid of activities for easy reading and documentation (Figure 3). She is encouraged to document her activities between

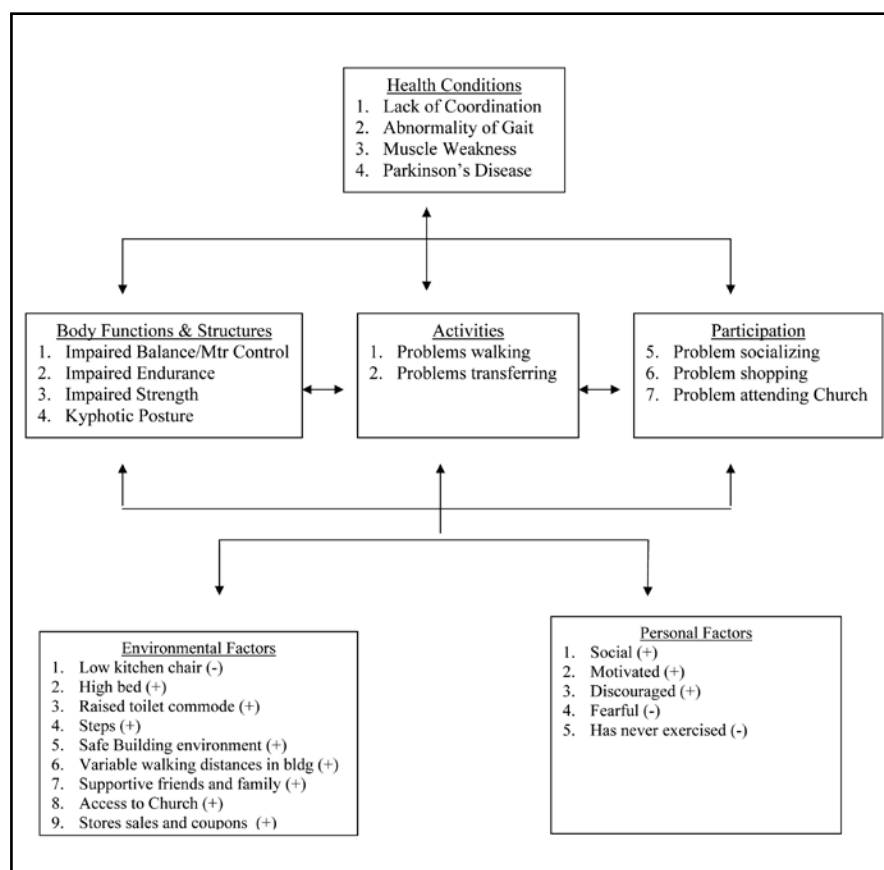


Figure 2

MS. QUINCY'S ACTIVITIES
Date: 3-6-2011

WRITE WHAT YOU DID THIS WEEK:

ACTIVITIES	SUN	MON	TUES	WED	THURS	FRI	SAT
Sit/ stand from bed	5 times	5 times twice	5 times			5 times	
Dance at counter			2 songs		3 songs with Ethel		
Walk to community room	1 time	3 times		1 time	3 times		1 time
Walk in hall	1 time		4 laps with Ethel		2 times	4 laps Ethel	
Stairs	1 time down						1 time down
Church	Yes						
Shopping							Yes
How do feel today?	Tired!	Good	Tired	Rest!	OK	OK	Tired

Figure 3

therapies for review at the beginning of each session. The grid can also serve as a guide for the content of each treatment session.

SUMMARY

This paper proposes a functional application of the ICF to incorporate evidence-based principles of skill acquisition and physical activity into a comprehensive plan of intervention. This was formulated from the perspective of a practicing clinician who sees patients in their home environment and has the opportunity to assess and use the patient's environmental and personal factors. By applying the ICF framework to the evaluation and intervention process, physical therapists may serve their patients more effectively and comprehensively.

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THE FOUR SQUARE STEP TEST

William H. Staples, PT, DHS, DPT, GCS, CEEAA

Falls and subsequent injury are a danger to all older adults and may compromise independent community living. Community dwelling individuals over the age of 65 have a greater than 30% chance of a fall every year,¹ and the risk for falls increases proportionally with age. According to the CDC,² falls are the leading cause of injury death for those aged 65 and older. In 2007, over 18,000 older adults died from unintentional fall injuries.² Falls are also the most common cause of non-fatal injuries and hospital admissions for trauma. In 2009, there were 2.2 million non-fatal fall injuries among older adults who were treated in emergency departments with more than 581,000 of those people being hospitalized.² Functional tests with objective measures of balance are an important component of the evaluative and assessment process to prevent falls. Functional tests can be used to show progress, and in the case of fall risk measures, may be used to determine risk. More than 10 years ago, *GeriNotes* published articles regarding functional tests including the Timed Up and Go (TUG), Functional Reach, Tinetti (POMA), and Berg Balance Scale, which are routinely used by therapists to assess balance in the clinic. This article will explain the Four Square Step Test, so that it can be used by practicing clinicians as an effective measurement tool.

In 2002, Dite and Temple³ developed a new test to identify community living adults at risk for multiple falls by incorporating a more complex, stepping test. Their study was designed to establish the reliability and validity of a new clinical test of dynamic standing balance, the Four Square Step Test (FSST), and to evaluate its sensitivity, specificity, and predictive value in identifying those older adults that fall. This study compared the FSST to 3 established and validated balance and mobility tests. They used a 3-group comparison of the TUG, the Functional Reach (FR), and the Step Test, and compared them to the FSST. The study used 81 community-dwelling

adults over the age of 65 years and age- and gender-matched them to form 3 groups: multiple fallers, non-multiple fallers, and healthy comparisons. The outcomes measured were: time to complete the FSST and TUG tests; and the number of steps to complete the Step Test, and the FR distance. Interrater and test-retest reliability were found to be high, with intraclass correlation coefficients (ICC) of = .99 and .98 respectively. Concurrent validity for the test was shown through correlation with the other balance tests. The FSST showed significantly better performance scores ($p < .01$) for the non-multiple fallers and healthy groups.

A cutoff score of 15 seconds was identified to differentiate multiple fallers from non-multiple fallers. For multiple fallers the FSST revealed a sensitivity of 89%, a specificity of 86% for non-multiple fallers, with a positive predictive value of 86%, and a negative predictive value of 94%. In conclusion, the authors determined that the FSST is a reliable, valid, easy to score, quick to administer test that requires little space, and needs no special equipment. The test is unique in that it involves stepping over low objects (2.5 cm, or about 1 inch) and movement in 4 directions with rapid weight-shifting. It also incorporates some higher level cognitive functioning in order to remember the proper sequencing. The FSST had higher combined sensitivity and specificity for identifying differences between groups in the selected sample population of older adults than the 3 balance and mobility tests with which it was compared.

Additional studies have also used the FSST to identify fall risk in different populations. Whitney et al⁴ found that the FSST was a reliable and valid tool to use with people who have balance deficits due to vestibular disorders, when measuring ability to perform multidirectional movements. They found a score of greater than 12 seconds was associated, with a sensitivity of 80% and a specificity of 92%, identifying those individuals with one or more risk for falls.⁴ Blennernhassett⁵ found that

the FSST was a valid dynamic balance test that was sensitive to change, as a measure during rehabilitation of individuals following stroke. In 2007, Dite⁶ employed the FSST with people following trans-tibial amputation, and found that scores greater than 24 seconds had a sensitivity of 92% and a specificity of 93% for risk of multiple falls.

In a systemic review of the literature of functional balance tests of older community dwellers, Langley and Mackintosh⁷ wrote that while the FSST is established in reliability and validity with the older population, they suggested that further testing needs to be performed using a gold standard test to validate it as a test of functional balance.

The changes in direction, rapid weight shifting, stepping over objects, and cognitive processing required during the FSST are also found in community ambulation, when navigating a sidewalk crack, small obstacle, or threshold. The equipment needed for the FSST is a stop watch and 4 canes laid in a cross pattern with tips touching in the middle (see photo). This equipment was used in the original study, but a one-piece, folding FSST tool can be purchased commercially from

www.thecenterofevidence.com, for approximately \$90.00. Another option would be to use four 30 to 36-inch-long $\frac{3}{4}$ or 1-inch diameter PVC pipes, connected with a cross joint (4-way flat), as a substitution for the canes, which is an inexpensive, light-weight, and portable alternative (about \$5.00 from local building supply store, see photo). A gait belt should be used for safety. A cane may be used by the person taking the test.

Instructions given to the patient are: "Try to complete the sequence as fast as possible without touching the canes (sticks). Both feet must make contact with the floor in each square. If possible, face forward during the entire sequence." The sequence is to start square one facing square two and move clockwise \rightarrow 2-3-4-1, then immediately move counter-clockwise \rightarrow 4-3-2-1, ending with both feet back where the patient started.

The procedures for performing the test are to first demonstrate the test, then allow one practice trial. Two trials are then performed, with the best time (in seconds) taken as the score. Repeat a trial if the subject fails to complete the sequence successfully, loses balance, or makes contact with a cane. Subjects who are unable to face forward during the entire sequence, and need to turn before stepping into the next square, are still given a timed score. The stopwatch starts when the first foot contacts the floor in square 2, and ends when the second foot returns to square 1.

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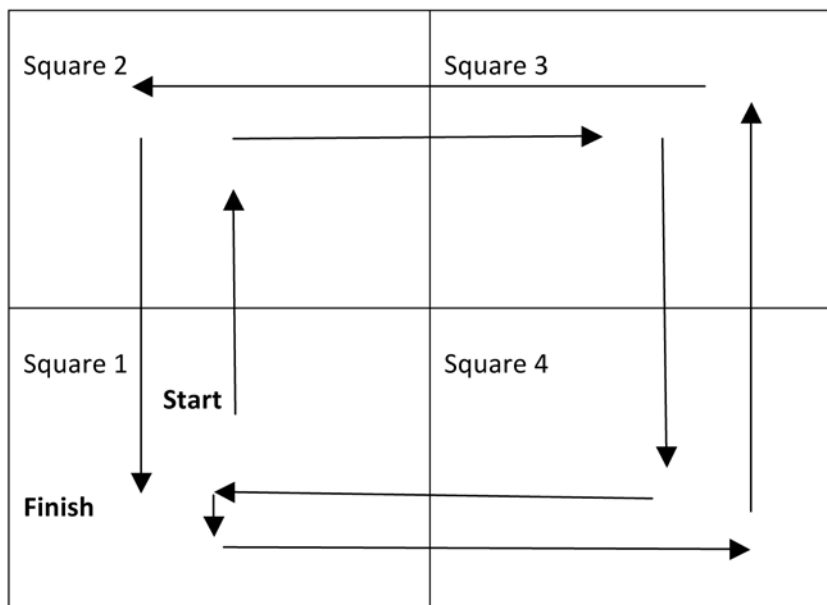


certification in 1995. He has served on the Board of Directors. Bill has lectured nationally on a variety of geriatric PT issues. Bill maintains his clinical skills by working part-time in home health care.

William "Bill" Staples is an assistant professor at the Krannert School of Physical Therapy at the University of Indianapolis. He received his specialist

Four Square Step Test scoring sheet

- Lay canes (pipe) in a cross
- Pt stands in box 1 facing box 2, remain facing forward throughout (if possible)
- Pt instruction:
 - ☐ Step from \rightarrow 1 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1
 - ☐ Both feet must touch in each square
 - ☐ Try not touch sticks
 - ☐ Gets one trial session
 - ☐ Can use cane, note if pt. changes direction (turns)
- Tell the patient go and time in seconds from the time the foot first touches square 2 until last foot returns and touches square 1



Date: _____ Date: _____
 Practice: Not measured Practice: Not measured
 Time 1: _____ seconds Time 1: _____ seconds
 Time 2: _____ seconds Time 2: _____ seconds
 Best time: _____ seconds Best time: _____ seconds
 Notes: (number of times that canes were struck by feet, if person turned, or loss of balance)

DESIGNING YOUR HOME FOR AGING IN PLACE

Patrice Antony, PT, GCS, CMC, CAPS

In the first article of this series, I talked about the growing need for aging baby boomers to start thinking about *how* they want to retire and more importantly *where* they want to reside as they age. The answer is almost unanimous that they want to remain in their homes for as long as possible. Ironically, despite this desire to age in place, very few new retirees are giving this much thought as they are purchasing and moving into their retirement homes, or making changes to the home that they currently live in.

UNIVERSAL DESIGN

This is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized redesign. Universal Design becomes a virtually invisible element of a home when well done. The home feels spacious and elegant, but is highly practical and functional, because it is well thought out.

There are 7 different principles of this type of design:

1. **Equitable Use:** It is useful and marketable to people with all levels of abilities.
2. **Flexibility in Use:** It accommodates a wide range of preferences and abilities.
3. **Simple and Intuitive Use:** It's easy to understand and obvious to the user.
4. **Perceptible Information:** The design communicates necessary information to the user.
5. **Tolerance for Error:** It minimizes hazards.
6. **Low Physical Effort:** It can be used efficiently and with a minimum of fatigue.
7. **Appropriate Size and Space for Use:** It provides adequate space for approach, reach, and use, regardless of user's body size, posture, or mobility.

“Despite this desire to age in place, very few new retirees are giving this much thought as they are purchasing and moving into their retirement homes, or making changes to the home that they currently live in.”

A good example of Universal Design is a kitchen that is designed with space that is adequate for the turning radius for a wheelchair, multiple counter heights for users of all sizes and abilities, and cabinets and appliances that afford easy access to everyone using that kitchen. To the casual observer, the kitchen is simply spacious and beautiful, but on closer scrutiny, the kitchen is actually highly functional for everyone. The design doesn't show any indication that it is specifically built for any particular population, but appeals to all.

ADAPTABLE DESIGN

This is a concept that addresses problems of individual differences and changes in capability over time. The construction is designed to change if needed. An example of this might be having an electrician add at least a 6 to 10-inch loop of wire at every outlet and light switch so that these key areas can be adjusted to accommodate the reach of a future wheelchair user, or the widening of a doorway to accommodate the use of a walker or wheelchair. Bracing a bathroom shower stall so that a grab bar can be added later is another example. The potential of change is incorporated to be called on when needed.

ACCESSIBLE DESIGN

This is a concept that addresses the specific functional needs of the occupant of the space. It is the type of design in which the builder or remodeler identifies and addresses specific barriers in the home for the disabled person. There are attempts to maintain future market-

ability for the structure, but the goal is to focus on what the person requires to live successfully in the space. It is unfortunate that this is what most disabled people have to do to be able to remain in their homes. Usually, there is very little thought given to the aesthetic impact on the value of the home. Function and cost are the determining factors for what is implemented, and the occupants simply have to hope that the end product looks acceptable and will be marketable to someone else with the same needs someday. Generally, the resale value of the home to the greater population is greatly reduced by the alterations, unless the alterations can be reversed.

VISITABLE DESIGN

This is a concept that allows for a minimum level of accessibility that will allow a disabled person basic access to the ground floor of the home. This is a design that may allow for wheelchair access to certain parts of the home, while the rest of the house may not be accessible. This involves planned thought with regards to the ground floor. An example would be having a guest bedroom and full bathroom downstairs to allow an aging parent a safe place to stay when visiting. Many houses built in the 60s and 70s were designed so that all the common areas were downstairs, and all the personal care and sleeping areas were upstairs. Many of these homes had powder rooms (toilet and sink only) downstairs. Only the upstairs bathrooms had bathing accommodations. People seemed to figure out how impractical this design is because homes built after this time period almost always have a full bath downstairs. It only takes a broken leg from a skiing mishap to quickly realize how awkward it is to live in a house that doesn't have ground floor sleeping and bathing accommodations!

Hopefully, residential builders will start using universal and adaptable design techniques as the new norm. The demand for this design is certainly go-

ing to increase. Perhaps having building codes that force this type of building would be helpful, but don't look for that to happen any time soon.

The bottom line for aging-in-place design is to think ahead. A carefully thought out home can be beautiful, functional, and very marketable to future buyers. Use your resources if you are in the process of building a home. Consult with professionals with skills in design and accessibility. A Certified Aging in Place Specialist (CAPS) can be located through your local chapter of the National Association of Home Builders. It is far more cost effective to build adaptability into a home than it is to try to make it accessible later. Having others help you think it through can save you a fortune. Being a professional CAPS consultant may be a new niche for physical and occupational therapists to consider.

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Patrice Antony has done extensive lecturing around the country on various topics relating to care and advocacy of the elderly and disabled. Patrice

is founder and President of Elder Advocates Inc., a care management company designed to meet the needs of the frail elderly and the medically complex client. She is also a founding partner of Adaptable Living Design, LLC, a company that provides Age in Place functional design consulting services to home builders and remodelers.

APTA Annual Conference & Expo and Capitol Hill Day

National Harbor, MD and Washington, DC

June 8—11, 2011
Programming Highlights

Issues on Aging - CES (6 sessions)



Rita Wong, PT, EdD; John Barr, PT, PhD; and Carrie Sussman, PT, DPT, at the US Capitol complex in 2009

Featured Speakers: Wendy Anemaet, PT, PhD, GCS; Alice Davis, PT, DPT; Amy S. Hammerich, PT, DPT; Larisa R. Hoffman, PT; Cameron W. MacDonald, PT, GCS, OCS; Marcia B. Smith, PT, PhD; Teresa M. Steffen, PT, PhD

- Aging Joints
- Mental Health and Aging
- Evidence-based Exercise Prescription for the Older Adult
- Optimizing the Physical Therapist's Role in Aging
- Measuring Ambulation and Mobility Outcomes in Adults

GETTING THE WHOLE PICTURE: INTRODUCING STUDENTS TO COMPREHENSIVE ASSESSMENT AND HEALTHY AGING

Kathryn Brewer, PT, GCS, MEd, CEEAA

Wellness and health promotions are becoming an important component of physical therapy practice and curriculums. Providing hands on experience with well older adults in interviews and skills testing is one way to introduce students to a true understanding of quality of life and function in this population. A comprehensive, multifactorial assessment is critical to our role as primary care practitioners and allows accurate detection of even subtle declines over time. This in turn supports our ability to be proactive in our interventions.

As clinicians, physical therapists have an opportunity to improve the sustainability of patient outcomes by providing specific instruction in fitness and health behaviors, designed to better manage chronic conditions or residual effects of recent illness or injury. Connecting patients to resources within the community and recommending physical activities or programs can be helpful. In geriatric physical therapy, experience with a variety of conditions and progressive or chronic diseases helps therapists identify realistic goals and prognosis for patients, leading older adults to maximal function, independence, and quality of life (QOL).

Research such as “Functional fitness normative scores for community-residing adults ages 60-94” (Rikli RE, Jones CJ; 1999) gives therapists credible normative values for function in community dwelling, independent older adults. However, therapists rarely have objective measures of prior functional status (PFS) when older individuals are referred for skilled physical therapy following illness or injury. If the patient has been treated in the physical therapy clinic during a prior episode of care, there may be some comparable data from previous functional testing available. This would be one reason to have some consistent measures included in the comprehensive assessment process for each admission,

as suggested by Gregory E Hicks, PT, PhD, MPT, et al in the 2011 Physical Therapy Combined Sections Meeting presentation titled “Challenging Ageism in Outpatient Physical Therapy Orthopedics: Applying Evidence to the Evaluation and Treatment of Older Adults with Low Back Pain.”

“As clinicians, physical therapists have an opportunity to improve the sustainability of patient outcomes by providing specific instruction in fitness and health behaviors, designed to better manage chronic conditions or residual effects of recent illness or injury.”

A clear take home message for clinicians was to “integrate geriatric tests (functional assessments) with orthopedic and special tests,” thereby creating a more comprehensive picture of the patient’s function and overall quality of life. Clinicians should be competent in selecting appropriate screening and functional assessment tools and self-report measures, as well as in interpreting objective measures for documentation of care in older adults.

Kathryn Brewer, PT, a geriatric clinical specialist at Mayo Clinic in Arizona and adjunct physical therapy faculty at A.T. Still University, has a unique opportunity to work with a defined population of older adults 62 years of age or older, living at a local continuous care retirement community. Ms. Brewer has initiated the annual administration of a functional fitness assessment for campus residents. The assessment includes questionnaires regarding current health status, QOL, and physical activity (PA) level, as well as several skills performance tests for objective measure of functions

such as balance, strength, flexibility, and walking speed. Results help identify risk areas for residents by comparing their results with normative data. Collaboration with the onsite wellness program and fitness coordinator helps direct residents to appropriate physical activity and fitness programs and track their participation and progress. Specific conditions identified in the initial assessment process may also result in referral for PT services.

Delivery and management of this project is further enhanced through collaboration with the DPT program at A.T. Still University. Cecelia Sartor-Glittenberg, Associate Professor in Physical Therapy at A.T. Still University, is collaborating with Ms. Brewer on this research, along with several third-year DPT students. Students are serving as research assistants under the Mayo Research program by assisting with resident interviews, test administration and data entry, and management. A grant from the A.T. Still University Strategic Research Fund provided resources for the initial supplies needed for testing protocols. Students performed competencies for all hands-on assessments as part of their preparation for participation in the project. Within the complete assessment database, each successive group of students defines their own clinical research question to investigate for their terminal project, securing an IRB through the university and ultimately presenting their own research results.

The project has been underway for just over a year, and a second group of students is entering the cycle. The program is succeeding in offering mentoring to students and helping them gain confidence in interviewing and conducting functional skills tests. The students have developed the ability to establish a rapport with this population of well older adults and deal effectively with the variety of conditions, abilities, and deficits they may have. The project and patient

population provide unique insight into measuring and documenting functional status, as well as the importance of understanding healthy aging when interpreting the results of outcome measures. The students involved in the first year of this project were asked to describe their experience. Here are some of their responses:



Danielle Rosen, DPT Student, A.T. Still Univ.

Danielle: "As a student, I felt I was adequately prepared to interact with active older adults during this project from my previous experience working with the older adult community as a cardiac rehab intern and as a private caregiver. It was surprising to see just how high functioning an older adult could be. There were some we tested who were on minimal medications, had few to no orthopedic complaints, and listed numerous activities they participate in daily such as hiking and biking. I also was surprised to see the uniqueness of each participants' abilities. I believe many health care professionals tend to assume a person's capabilities by only looking at their age.

This experience has helped to reinforce the fact that I should treat each patient, especially the older adult population, as an individual and to be optimistic with my goals during treatment."



Sara Lehmann, DPT Student, A.T. Still Univ.

Sara: While I have previous experience working with older adults in the medical realm, the population of individuals in my experience suffered from multiple impairments and co-morbidities. The difference during this project was that most of the individuals could be considered 'healthy' or 'well' in comparison to previous experiences with older adults. As students, we learn and discuss various pathologies and impairments that are common with the 'older adult' population. Working with this specific population gave us the chance to see individuals before impairments or pathologies interfered drastically with their quality of life. In addition, we were able to determine general areas of weakness for these individuals and learn where focus on interventions for prevention of future co-morbidities may be of most benefit.

This experience has taught me to continue to always be mindful of patient values. Discovering their ideals, perception of their own quality of life, and desires for their lives is of utmost importance. An individual who struggles mentally or emotionally for various reasons may need more than just weights and a theraband. Rather, our job as physical therapists is to be mindful of the whole patient, which further validates the importance of early intervention for the well older adult to prevent further co-morbidities, increased health care costs, and decreases in QOL.



Kathy Brewer currently practices at Mayo Clinic, Arizona in outpatient services and development of chronic disease management programs for older adults. The topic of Health Promotions is based on Kathy's personal experience in the public health arena in Arizona and her current efforts to address functional screening and early intervention for older adults. Kathy can be contacted via email at brewer.kathryn@mayo.edu.

WE NEED BOOTH VOLUNTEERS FOR ANNUAL CONFERENCE: PT 2011

Booth volunteers recruit new members, answer queries, and distribute lots of great information about PT and the aging adult. Can you spare an hour or two during this meeting? If you can, please contact Karen Oshman at the Section office:

Ph: 866/586-8247
Karen.oshman@geriatrics.org

Calling all Long-time Section Members

If you have been a Section on Geriatrics member for 10 or 25 years, stop by the Section booth during Annual Conference to receive a pin of recognition for continued membership. We appreciate you and your continued membership.

DESIGNING A SKILLED NURSING FACILITY VALUE-BASED PURCHASING PROGRAM

Ellen R. Strunk, PT, GCS, CEEAA

Do you currently work in a nursing home full-time or per diem? Do you have a loved one and/or family member who may have reason to spend time in a nursing home in the near future? If so, then you may want to take time to read this article and learn more about the Value – Based Purchasing (VBP) Program for nursing homes.

On March 10, 2011, the Centers for Medicare & Medicaid Services (CMS) hosted a Special Open Door Forum on designing a value-based purchasing (VBP) program for Skilled Nursing Facilities (SNFs). The purpose of the Special Open Door Forum was to solicit input from all parties interested in the development of the plan for implementing a VBP program in SNFs. This idea is not new. The plan has its roots in other CMS “pay-for-performance (P4P)” initiatives, such as the Five-Star Quality Rating System and the MDS Quality Measures – both of which topics have been covered in *GeriNotes* in the last three years.

In the January 2010 *GeriNotes*, this author wrote about the Nursing Home Value Based Demonstration project. Its aim is to improve the quality of care furnished to all Medicare beneficiaries in nursing homes. Under the demonstration, CMS proposes to either pay more to nursing homes that demonstrate delivery of high quality care or improvement in care OR...pay less to nursing homes who don't demonstrate delivery of high quality care or improvement in care. This is usually referred to as a “financial incentive” for better care. CMS anticipated that certain avoidable hospitalizations would be reduced as a result of improvements in quality of care in post-hospital settings. The demonstration began in July 2009. Forty one nursing homes in Arizona were selected to participate, 79 homes in New York, and 62 homes in Wisconsin. The demonstration project is supposed to go on for 3 years, which means providers won't know the results of the study until late 2012 at the earliest.

Section 3006 of the Affordable Care Act contained a provision that requires the Secretary of Health & Human Services to develop a plan to implement a value-based purchasing program for payments to SNF under the Medicare Program. The Secretary must submit a report with this plan to Congress no later than October 1, 2011. That means they must submit a report without having the results of the current demonstration project underway.

The CMS Special Open Door Forum for the provider community sought feedback on a number of topics defined in the Affordable Care Act:

1. The ongoing development, selection, and modification process for measures of quality and efficiency.
2. The reporting, collection, and validation of quality data.
3. The structure of value-based payment adjustments, including the determination of thresholds or improvements in quality, the size of such payments, and the sources of funding for the value-based bonus payments.
4. Methods for the public disclosure of information on the performance of Skilled Nursing Facilities.
5. Any other issues.

The 90-minute conference call allowed stakeholders to give CMS feedback related to each of these topics. What follows is a summary of the views and opinions expressed.

I. Populations for the SNF value-based purchasing plan. Medicare pays for only a relatively small portion of all the services provided by nursing facilities that are certified as Medicare skilled nursing facilities. The majority of services provided in these facilities are not skilled nursing services covered by Medicare. Non-Medicare coverage services are paid by Medicaid and/or private payers. So should the value-based purchasing program be limited to the performance of care for skilled nursing facility patients or all residents in the facilities?

That would be Medicaid, Veterans Administration (VA), and private-pay patients as well.

A representative of the Department of Veterans Affairs on the call shared her thought that it would be overstepping, or perhaps conflicting, to have CMS Medicare addressing the care delivered to veterans, when the VA is paying for that care and responsible for insuring the quality of care. Another listener from the American Healthcare Association stated their desire for Medicare to move away from basing payment on site of service and, instead, promote Medicare payments designed to meet the needs of the beneficiary. Payment adequacy was another concern of many listeners on the call. For instance, providers of care in nursing facilities understand the issues of coordination between Medicare and Medicaid, and the significant disparities in payment between the two. Many shared the view that before the concept of value-based purchasing could be advanced, payment adequacy must be addressed.

II. Quality measures. Ideally, CMS would like the set of measures used for payment to capture different elements of care. Currently, several types of measures are used by Medicare to measure skilled nursing facility performance. These measures include information based on health inspection, surveys, and staffing, in addition to physical and clinical quality measures. Taken together, these measures include a range of categories such as utilization, potentially avoidable events, and functional and clinical outcomes. CMS believes it has invested heavily in assessing the quality of care in nursing homes. Most of these efforts are data collected by the periodic inspections of facilities, the Minimum Data Set, and Medicare claims data. The question posed on the call was which type of quality measures should CMS consider when measuring skilled nursing facility performance under a value-based purchasing program?

Several listeners verbalized their confusion about how the various pieces of the Nursing Home Quality Initiative would be integrated, if at all. On March 3, 2011, the National Quality Forum (NQF) published their endorsed list of 21 measures for publicly reporting care in nursing homes. Many of the 17 measures that were previously endorsed were retired and/or replaced due to the transition to CMS' updated MDS 3.0. There were even opinions shared that the current list does not do enough to measure the quality of care for short-stay patients, and that more study needs to be given to this area. Some providers in homes that have a majority of private pay or managed care patients were also concerned about using the NQF measures, which for the most part are related to the MDS 3.0. If they have a very small number of patients for whom the MDS is completed, the decreased volume could skew their results.

The use of the state survey process brought many comments. Most listeners did not recommend using the survey process, because the survey process and frequency of surveys varies across the country, and most forum participants do not view the survey process as a measure of quality. Several listeners encouraged CMS to look at quality measures currently being used in other settings, and work towards aligning them, rather than having separate indicators for different sites of service. Since many patients move between and among various sites of service, it is important that everyone is working towards the same quality of care goals.

III. Single score payment versus composite score bonus. One of the ways that providers can be rewarded for higher quality care is through payment adjustments that serve as bonuses. Policy makers can provide separate payments or bonuses based on the score for each individual quality measure, or they can use a single composite score for a single payment adjustment or bonus. CMS asked stakeholders whether CMS should consider a single overall performance score or separate scores for each outcome process domain?

Listeners were concerned about the type of measures in the aggregate and whether or not it might be unfair to some facilities that don't have a large number of patients that qualify in any particu-

lar category. There was also agreement that whatever measures were chosen they must be risk adjusted.

IV. Attainment or improvement over time. In most value-based purchasing programs, single or multiple thresholds are used to identify providers that offer excellent rather than poor quality care. Typically, these thresholds determine which providers are eligible for bonuses and which owe penalties. Two key standards have been widely used to identify providers eligible for bonuses and penalties under value-based purchasing: attainment and improvement over time. Under an attainment standard, skilled nursing facilities would be eligible for a bonus payment if they perform at a specific objective standard. Under an improvement standard, skilled nursing facilities would be eligible for the bonus payment if they demonstrated specific levels of improvement relative to their performance in prior years. CMS posed the question to listeners: Should performance incentives be based on attainment, improvement, improvement with an attainment floor, or a combination of these?

There were only two listeners who responded to this question, but their answers were similar: Payments should be based on improvement with an attainment cap, and/or rewarding the high achievers in addition to those who demonstrate improvement in scores. There was concern expressed that as providers continue to show improvement, a ceiling effect may be encountered. Many providers don't think the "forced ranking" of the Five Star Quality Program is very fair, and urged CMS to develop a program where success, not failure, is assured.

V. Payment mechanisms. The question here is whether to make performance incentive payments or to collect penalties. A skilled nursing facility value-based purchasing program could feature a number of different structures and bonus payment methods. One option would be to pay bonuses to top-performing facilities. Another option would be to collect penalties from poor-performing facilities. These options could be combined with bonus payment made and penalties collected. Payment options could be implemented and paid annually or on a rolling basis.

The views expressed in response to this question highlighted the various opinions about whether or not penalizing poor behavior is an effective way to motivate better behavior. Many were concerned that fear and frustration that might be perpetrated in such a system. Listeners expressed concern about penalties, especially if the state survey process was used as a metric for quality performance. Since homes that perform poorly on state surveys are already subject to fines, admission holds, or denial of payments, further penalties were viewed as compounding the problems that struggling nursing homes face. Other listeners questioned where the money would come from if it didn't come from penalizing poorly performing homes.

VI. Data collection. The next question is about data collection. Skilled nursing facility data is currently available from Medicare claims, Minimum Data Set, data collection, health inspection citations, and the nursing home Consumer Assessment of Healthcare Providers & Services (CAHPS) survey. However, lack of data and late submission of quality information can reduce precision, which could influence performance measure calculations. Some potential skilled nursing facility value-based purchasing performance measures could not be implemented with current data sources. Additional data collection might be necessary. Also, lack of data and late submissions could introduce potential for manipulating a value-based purchasing program. The questions posed to listeners on the call were: How should new measures be calculated with current data collection systems? Should any new data collection be required?

In response to this question, there was discussion of the vast array of web-based technologies available today. Unfortunately they are quite expensive and complex. With data collection comes the need for administrative support so the real job of clinical care doesn't get lost in the shuffle. Listeners suggested that an investment in an information technology infrastructure in the country would pay for itself in the long run. Unfortunately, the post-acute sector was almost completely left out of the high-tech plans and the stimulus money issued by the federal government over the last two years. The point was made that

investment into computer-based capability must occur in order to integrate the post-acute sector with other sectors. One listener questioned how the nursing home community could even provide feedback without knowing what standards CMS is looking for and what data they want to create.

VII. Data burden. Nursing home facilities currently collect and report a wealth of data. This data can be enhanced to improve the measurement of quality of care and support incentive payments in a value-based purchasing program. While new data collection might enhance the range of performance measures possible for skilled nursing facility value-based purchasing, additional data collection would also add to the burden. CMS asked what should be done to reduce the burden of data collection and ensure timely and accurate data submission.

There were no comments from the listening audience to this question.

VIII. Should public reporting complement a value-based purchasing program? The rationale for public reporting on provider quality measures is that it would inform beneficiaries and discharge planners of agency quality, motivate skilled nursing facilities to improve their performance, and introduce new performance measures before they are used for payment. CMS asked how public reporting should complement a value-based purchasing program.

Listeners once again voiced their concern that CMS might be moving ahead too quickly. They cautioned that providers do not have the ability yet to start collecting the 21 proposed quality indicators just approved by the National Quality Forum, nor do they know what the results of those indicators will show. If CMS is struggling to put that whole piece in place, then it may be premature to talk about a value-based purchasing process. Providers expressed confusion about whether all the public reporting initiatives in place today will mesh effectively in the future. For instance, if a facility scores only two stars on the 5-star rating system, but does very well under the value-based purchasing program, what does that mean?

If there was one universal message to CMS from providers during this call, it was "slow down". There was the sense

that providers are overwhelmed with increasing expectations and decreasing payments. It was also clear that many providers are confused by the many quality initiatives going on, wondering how they these initiatives can be coordinated to avoid duplication of effort. While no one argues with the concept of providing incentives to nursing homes that deliver quality care, most providers do want clarity and purpose in the program.



Ellen Strunk, PT, GCS is President and Owner of Rehab Resources & Consulting, Inc., a company providing consulting services and training to providers in post-acute care settings with a focus on helping customers understand the CMS prospective payment systems. She also lectures nationally on the topics of pharmacology for rehabilitation professionals, exercise & wellness for older adults, and coding/billing/documentation to meet medical necessity guidelines and payer regulations.

UPCOMING APTA MEETINGS

Annual Conference: PT 2011

*June 8-11
National Harbor, MD*

National Student Conclave

*October 21-23, 2011
Minneapolis, MN*

Combined Sections Meeting 2012

*February 8-11, 2012
Chicago, IL*

SECTION ON GERIATRICS MEMORIAM FUND

The Section on Geriatrics has a memorial fund that is used to support research in the field of geriatric physical therapy. This fund is a superlative way of honoring or memorializing a friend, a patient, a family member, or even a cause. The donor and the person or family will be notified of the gift and the purpose for which it will be used.

Your support will bring us closer to our current goal: to build the fund until we are able to award at least one research grant every year. This will ensure that we are truly expanding evidence-based physical therapy practice and improving care for aging adults.

If you would like more information or to make a contribution, you may visit www.geriaticsppt.org, or contact us for a donation form at geriatrics@apta.org, 866/586-8247.

FALLS AND THE ELDERLY: DISPELLING COMMON MYTHS

Helen Cornely, PT, DPT

THE FACTS

The demographics and incidence of falls present with staggering statistics; one out of every 3 older adults in the United States falls each year. Falls are the leading cause of injury and death in older adults.¹ Approximately one in 10 falls among older adults results in a serious injury, such as a head injury or hip fracture. Falls are costly. Fall-related injuries among older adults, especially among older women, are associated with large economic costs. In 2000, over \$19 billion was spent in direct medical costs for fall related injuries.² In 2005, approximately 16,000 people 65 and older died from injuries related to unintentional falls. Almost two million people 65 and older were treated in emergency rooms for nonfatal injuries resulting from falls, and more than 433,000 of those individuals were admitted to hospitals.¹ Men are more likely to die from fall related injuries, while women are more likely to sustain fall-related fractures. Of those older adults falling, 20% to 30% suffer injuries serious enough to cause difficulties in performing basic activities of daily living and increase their chance of an early death.³

The number of falls by older adults is expected to increase in the coming decades. The world population is increasing, in large part due to the growing elderly population. Advances in medicine have significantly increased life expectancies.⁴ With this surge in the elderly population, the cost of falls is projected to be greater than \$32 billion by the year 2020.⁵ However, to individuals, families, and communities, the cost of falls is measured in terms of disability, loss of independence, increased risk of institutionalization, and diminished quality of life. So serious is the problem of falls among older persons, that the Centers for Disease Control (CDC) has incorporated a reduction in unintentional injuries among older individuals as one of the goals of the Healthy People 2010 initiative. To that end, the CDC is promoting

and supporting research and programs aimed at reducing falls and fall-related injuries in older adults.

A CASE STUDY

On a personal level, what do these statistics mean for the older adult? How do these statistics translate into real life? Meet Mrs. Moore. She is a 79-year-old woman who lives alone in her two-bedroom condominium. She fell in the morning as she was getting up from bed to use the bathroom. She got up with just a bruise on her knee, but she was very embarrassed by her loss of balance. She feared telling her daughter about the fall, because she would “make too much of it,” and not let her stay in her own place anymore. She certainly would not want to bother her physician with such silly information. “Anyway, old people fall. It is part of growing old. There really is not much one can do to prevent falls,” thinks Mrs. Moore. Mrs. Moore decides to be more cautious, fearing falling again. Mrs. Moore starts limiting her ambulation outside and around the house. She waits until her daughter comes to bring in the mail, instead of walking outside to retrieve it herself. She limits her water intake, so she does not have to get up to go to the bathroom as frequently. Her knees are arthritic, and it hurts when she tries to stand, so she starts spending more time in her easy chair watching television. Three weeks after the first fall and the self-imposed immobility, Mrs. Moore’s knees are getting even more painful, and it is getting more difficult to for her to stand up from her comfortable easy chair. Mrs. Moore attributes this difficulty to advancing arthritis. The doorbell rings, and Mrs. Moore rushes to get up to answer the door, not bothering to put on her glasses. Her knees are stiff and painful; she walks slowly and does not see the loose edge of the carpet. She trips, loses her balance, and falls. This time however, she sustains a hip fracture. Unfortunately, Mrs. Moore’s story is all too common.

What could have been done to prevent the second fall? Are falls preventable? What are the myths and realities of falls in older adults?

MYTHS

Myth 1

Falling is an inevitable part of the aging process.

Much can be done to prevent falls. They are not an inevitable consequence of aging. Research has shown that a fall is a complex occurrence and is the result of multiple factors.⁶ Factors associated with an increased risk of falls can be categorized as intrinsic or extrinsic, based on how they relate to the faller. Intrinsic factors include certain demographic parameters such as age, a decline in physical function, sensory and nervous function, chronic disease, medication use, cognitive/psychological state, and behaviors.^{6,7} Extrinsic factors include variables such as type of footwear, social support, and environmental hazards such as lighting, uneven surfaces, and slippery floors.⁶ Although it has not been determined which factor has the greatest impact on fall risk, it is clear that the risk of falling increases proportionally with the number of risk factors present.

Myth 2

Reporting a fall leads to a loss of independence and get your caretaker in trouble.

Disclosing a fall or near fall to medical professionals alerts them to evaluate the risk for future falls and implement fall reduction measures. Many seniors fear reporting a fall will put their caregiver or home health aide at risk for work reprimand. Here again, reporting the fall may help the caregiver get needed help from medical providers to prevent future falls. For example, a fall may be an indication of a new medical problem that needs attention, such as diabetes or changes in blood pressure. Physical therapy may

be recommended to improve balance, strength, and mobility.⁸

The risk of institutionalization as a result of a fall does increase with age.⁹ Adults 75 years of age and older who sustain 4 to 5 falls are more likely to be admitted to a long term care facility for one year or more.¹⁰ However, acknowledging and addressing potential problems after the first fall provides the best chance of preventing further falls and a loss of independence. If Mrs. Moore had reported her first fall, perhaps intervention could have prevented her second fall.

Myth 3

Limiting moving around one's home will prevent falls.

Self-restriction of mobility leads to an unfortunate sequelae of disuse atrophy and weakness, decreased joint mobility, increased pain, pressure ulcers, edematous lower extremities, and overall difficulty with initiation of motion. In fact, in all evidence-based fall prevention interventions exercise and activity are critical components for success. Self-induced restriction of mobility can also lead to depression from loss of function, pain, and loss of socialization. Fear of falling, a common consequence of falls among older persons, can lead older adults to significantly curtail their activities, actually increasing their chances for future falls as a result of their self-imposed activity restriction. In our example, Mrs. Moore's self-imposed inactivity resulted in a decline in functional mobility and set the stage for another fall.

Myth 4

Limiting water intake is good, because it reduces trips to the bathroom, during which a fall can occur.

Dehydration is a common problem with older adults. Many restrict water intake fearing having an accident by not being able to maneuver to the bathroom in time. Dehydration as a result of limiting fluid intake, is a risk factor for falls, because it may cause electrolyte imbalances, blood pressure fluctuations, cardiac arrhythmias, changes in mental status, and dizziness. The dehydration from limited fluid intake may occur as a result of intentional decreased consumption of fluids, a diminished thirst response, or

from diuretic medications.¹¹

Myth 5

Moving your joints will increase arthritic pain and cause a fall.

Actually, *not moving* your joints increases joint edema and causes pain and muscle weakness. A vicious cycle of immobility, pain, and weakness occurs, making it harder to rise from sitting to standing. Exercise for strength and mobility is an essential part of fall prevention and important for healthy joints.¹²

Myth 6

There are too many environmental fall risk factors to ameliorate them all and make an impact on fall reduction.

It is true that our environment is fraught with fall hazards. However, many hazards can be removed, reducing, if not eliminating, fall risk. Mrs. Moore's frayed carpet edge could have been secured. Of all the risk factors, environmental hazards are quite possibly the most modifiable and least intrusive variables to address in fall prevention.⁷ In addition, environmental modifications can have immediate benefits with strong implications for safety. The population as a whole faces environmental hazards every day. Stairs and steps caused more than 42% of falling deaths in 2002.⁶ Studies have indicated that modifying environmental hazards can be a viable, effective way to decrease the risk and incidence rate of falls.¹³ In these studies, environmental factors were found to be an independent contributor to falls, as well as a primary attributable risk factor.

Myth 7

Old people will fall, because they have poor vision.

Aging is associated with some forms of vision loss that further compound the risk of falling. People with visual impairments are more than twice as likely to fall as people without visual impairments. Analysis regarding the visual measures indicated that decreased edge contrast sensitivity and decreased depth perception were strongly correlated with an increased risk of falls. It was hypothesized that these measures could best predict falls due to the fact that edge contrast

sensitivity and depth perception play an integral role in detecting obstacles in the environment.¹⁴ While it is true our vision diminishes with age, this does not have to cause falls. Corrective eyewear can be a solution. To be effective, eyewear must be clean, and it must be consistently used. Mrs. Moore, rushing to answer the door, forgot her glasses and with her diminished vision did not see the carpet fray that caused her to trip.¹⁵

Myth 8

All falls result in hip fractures.

Although not completely true, this myth has some validity. More than 90% of hip fractures among adults ages 65 and older are caused by falls.¹⁶ These injuries can cause severe health problems and lead to reduced quality of life and premature death.¹⁷ The risk of sustaining a serious injury as a result of a fall does increase with age.⁹

Myth 9

Falls cannot be prevented.

Falls in older adults are a serious problem, but as noted above, much can be done to prevent them. There are many fall prevention tools available. The National Council On Aging (NCOA) is a good source of information on evidence-based community fall prevention programs and also offers the "Falls Free" electronic newsletter.¹⁸ The Fall Prevention Center of Excellence also provides information on evidence-based fall prevention programs.¹⁵ The HEROS® (Health, Education, Research, and Outreach for Seniors) program at Temple University aims to inform and educate older adults, educators, and students about the causes of falls in older adults, and the assessment, rehabilitative, and health promotion measures that can be used to reduce the risk of falls in this age group.¹⁹ "What You Can Do to Prevent Falls," is a two-page handout from the CDC, available online, that offers older adults information on fall prevention.²⁰

CONCLUSION

Falls are a major public health issue for older adults and society as a whole. They occur frequently, are a leading cause of morbidity and mortality, and incur huge costs in time, money, and

resources, despite the fact that many are preventable.²¹ Falls are not an inevitable part of aging, especially when we are effective in “myth busting” the common misconceptions about falls and what causes them. Understanding the facts about falls will prevent situations like that of Mrs. Moore. Further, many of the resources cited here are free and easy to share with patients, caregivers, and health care providers to help turn the tide of falls statistics for the growing senior population.

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Meet the 2010 San Diego Graduates: Certified Exercise Experts for Aging Adults

Submitted by Danille Parker, PT, DPT, GCS, CEEAA

The Section on Geriatrics would like to congratulate the second group of Physical Therapists that are now Certified Exercise Experts for Aging Adults (CEEAA)!

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If you are a facility interested in hosting the CEEAA series, please contact Danille Parker, Chair of the Regional Course Committee, at danille.parker@marquette.edu (414-288-3179).

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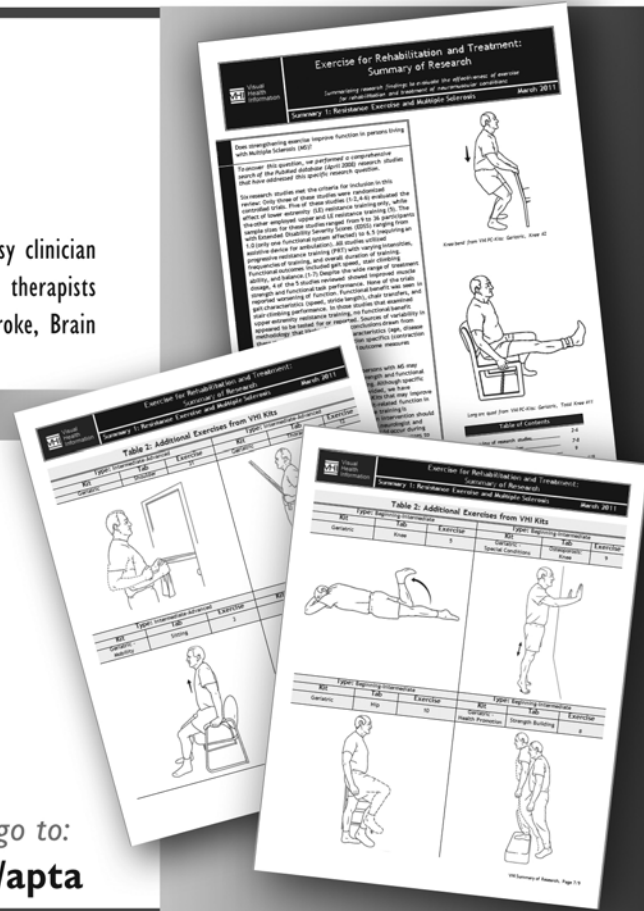
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