

# Geriatric UPDATE

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From the Division of Geriatric Medicine



## Message from the Chief

Dear Colleagues,

I am pleased to share our latest issue of *Geriatric Update*. We begin with **Dan Forman, MD**, who, like many of our faculty, is dually-trained in geriatrics and another specialty — in Dan's case, cardiology. This background enabled him to understand the need for each discipline to inform the other. Many cardiologists agree and have joined him to create a geriatric cardiology section within the American College of Cardiology and American Heart Association. They are now calling for more relevant studies as well as revision of guidelines to make them more relevant to older adults.

Next is **Steven Handler, MD, PhD**. Like Dr. Forman, Dr. Handler is also dually-trained in geriatrics and, in Steve's case, biomedical informatics. As noted in a past *Update*, Steve was funded by AHRQ to create a new approach to reducing adverse drug events in nursing homes. He also has been a pioneer in telemedicine, especially in long-term care, where he's partnered with our faculty to develop an innovative new approach to SNF care. Believing that scaling of this approach would be best facilitated by commercialization, UPMC has funded the initiative as a startup (Curavi Health) for which Dr. Handler serves as CMIO.

The last article features work from the **Continenence Team**, led by a geriatrician with additional training in urology whose work informed the MDS as well as guidelines from AHRQ and WHO. The focus is on the form of geriatric incontinence that is the most common, least understood, and most refractory. A novel approach promises new insights.

Some quick additional updates:

- We are proud that **15 of our geriatricians** were included in **Best Doctors in America**.
- **Leslie Scheunemann, MD, MPH**, is our newest faculty member. Dually-trained in geriatrics and pulmonary-critical care, she attends on our Geriatrics Trauma service, which admits > 2000 seniors/year. Her research focuses on improving shared decisionmaking between ICU teams and families, and on post-ICU syndrome.
- Our interprofessional geriatrics course, mandated for both our medical students and students in other disciplines, added occupational therapists to the five disciplines already represented. Now led by **Rollin Wright, MD, MS, MPH**, this innovative course is in its 11th year. We will feature it in a future issue.
- Finally, **Anne B. Newman, MD, MPH**, is the new editor of the *Journal of Gerontology*. Dually-trained in geriatrics and epidemiology, Dr. Newman serves as Katherine Detre Professor and Chair of the Department of Epidemiology, and director of the Center for Aging and Population Health.

If the innovative approaches to geriatrics discussed in this issue appeal to you, we hope you will consider joining us! We seek individuals who share our commitment. Whether your interests lie in direct care, new clinical models, training, and/or research, I look forward to hearing from you.

**Neil M. Resnick, MD**

*Division Chief and Thomas Detre Professor of Medicine  
Associate Director, Aging Institute of UPMC Senior Services and the University of Pittsburgh  
Director, Hartford Center of Excellence in Geriatrics*

# The Changing Landscape of Cardiovascular Care for the Geriatric Patient



**Daniel Forman, MD**, is both a geriatrician and cardiologist, and professor of medicine with dual appointments. As a clinician, Dr. Forman prefers a holistic perspective of each patient, taking into account multimorbidity, frailty, nutrition, and other factors in addition to the patient's underlying cardiovascular condition or problem.

Dr. Forman's research focus is on cardiovascular disease and function, from a translational to systems approach, including skeletal muscle atrophy and aging and its impact on functional decline, frailty, and disability. He is also interested in how to improve clinical care in terms of the cellular approach to body composition, and overall systems of care — most notably cardiac rehabilitation.

He is currently NIH-funded to study the utility of oral nitrite capsules to diminish fatigue and improve function in older adults with heart failure. He is VA-funded to investigate the ability of various training regimens to change skeletal muscle morphology and gene expression, and improve functional capacity.

In addition to his research and clinical efforts, Dr. Forman has spearheaded creation of a new section of Geriatric Cardiology within the American College of Cardiology. As part of these efforts, Dr. Forman has co-authored several recent papers on this evolving field, which seeks to establish new paradigms of care for cardiovascular patients.

## The Evolution of Geriatric Cardiology

In this recently published paper, "What to Expect From the Evolving Field of Geriatric Cardiology,"<sup>1</sup> Dr. Forman and colleagues from several institutions have laid the groundwork for better understanding the geriatric patient with cardiovascular disease. The "rationale and vision for geriatric cardiology [is to become] a melding of primary cardiovascular and geriatrics skills, thereby infusing cardiology practice with expanded proficiencies in diagnosis, risks, care coordination, communications, end-of-life, and other competencies required to best manage older cardiovascular patients."<sup>1</sup>

Geriatricians understand that treating the older adult is a much different enterprise than treating younger patients. Older adult care is usually a complex endeavor that takes into account age-related physiological changes, as well as multimorbidity, polypharmacy, frailty, and a host of other biopsychosocial factors that contribute to complex care requirements. Dr. Forman and his colleagues argue

that the field of geriatric cardiology must evolve into a more rigorously trained discipline if it is to better care for the millions of individuals who will require cardiovascular care. As he and his colleagues indicate, "We see the mandate to integrate principles of geriatrics with those of cardiology, and to formalize geriatric cardiology as a manifestation of 'patient-centered' care for older adults who now constitute our dominant patient group... The practice of geriatric cardiology is developing toward a distinct subspecialty with specific skills and services to further advance care of the older patient."<sup>1</sup>

This "mandate" requires addressing the older cardiovascular patient from many perspectives and must incorporate the concept that "aging has a transformative bearing on cardiovascular disease. Standards applied to younger adults become less reliably aligned with the preferences of geriatric patients." These standards of care for aspects such as risk assessment, quality-of-life, and even doctor-patient communication need to be addressed in a different way if overall quality of care and patient outcomes are to improve.

Developing a "framework in which to apply these principles is also a critical goal of the new discipline of geriatric cardiology."<sup>1</sup> Yet, because such a framework is not formally defined or endorsed by the American Board of Internal Medicine, getting "buy-in" will be important to moving subspecialty geriatric cardiology forward as a field.

## Identifying the Knowledge Gaps

2016 also saw the publication of "Knowledge Gaps in Cardiovascular Care of the Older Adult Population," a joint statement from the American Heart Association (AHA), American College of Cardiology (ACC), and the American Geriatrics Society (AGS). Dr. Forman was part of the panel of distinguished clinicians and researchers from 10 medical centers that developed this call-to-action. The effort sought to elucidate current best practices, as well as deficiencies in the knowledge base for informed decision making, and to offer recommendations for research as it relates to cardiovascular care of older adults (> 75 years of age).<sup>2</sup>

The practice of geriatric cardiology is developing toward a distinct subspecialty, with specific skills and services to further advance care of the older patient.

Since individuals over the age of 65 account for “more than half of all cardiovascular hospitalizations and procedures in the United States, as well as ~80% of deaths,” the impact on utilization and cost is substantial. So too must be the guidelines of cardiovascular care from the ACC, AHA, and American Stroke Association. The authors identified gaps in the knowledge base specifically related to the older adult. They point out that, “In general, the studies on which the guidelines are based enrolled few older adults or included older patients with few comorbidities who were not representative of the older population treated for CVD in the community. The importance of assessing relevant domains beyond chronological age, such as frailty and cognitive function, and the incorporation of patient preferences into shared decision making have not been assessed adequately. The utility of all cardiac preventative measures, diagnostic tests, and therapeutic interventions, including medications, invasive procedures, and other programs (e.g., cardiac rehabilitation) in the management of older patients with CVD warrants careful scrutiny, especially in the context of multimorbidity, polypharmacy, functional limitations, and frailty.”<sup>2</sup>

Dr. Forman and colleagues compiled a list of recommendations to address these gaps and also tackled issues in some specific disease states.

Among the general guidelines are seven distinct items, including better representation of older adults in clinical cardiovascular research, more research into cost-effectiveness and resource utilization in diagnosis and treatment, development of prognosis and life expectancy models, and evaluations of rehabilitative therapies for improving outcomes, among others.

The panel’s recommendations and analysis of the knowledge gaps were divided into broad categories of:

- Coronary Artery Disease
- Stable Ischemic Heart Disease, PCI, and Coronary Artery Bypass Graft Surgery
- Heart Rhythm Disorders
- Ventricular Arrhythmias and Prevention of Sudden Cardiac Death
- Device-Based Therapy for Cardiac Rhythm Abnormalities
- Valvular Heart Disease: Aortic Stenosis
- Heart Failure
- Peripheral Arterial Disease
- Cerebrovascular Disease and Stroke
- Perioperative Management for Non-Cardiac Surgery

For each category, the authors systematically reviewed current guidelines and proposed recommendations to address the knowledge gaps. Within certain categories, specific sub-conditions or variants — for example, ST-Elevation Myocardial Infarction and Non-ST-Elevation Acute Coronary Syndromes — are addressed in more detail.

The authors conclude, “There is a critical need for large population-based studies and clinical trials using novel study designs that incorporate patient-centered outcomes relevant to older patients.” Studying the older adult specifically, and including larger populations of them in clinical studies and trials, is the only way to empirically assess and validate treatment proposals and create effective guidelines for the care of this unique and growing population of patients.

Dr. Forman’s leadership has helped to catalyze interest in geriatric cardiology in the ACC, AHA, AGS, and the National Institutes of Health. Related initiatives in education, clinical care, research, and advocacy are burgeoning. Whereas the focus of cardiologists has traditionally been on cardiovascular disease, geriatric cardiology is essentially prompting a patient-centered shift now focusing on patients and treating cardiovascular disease in relation to each patient’s individual needs and priorities.

## References

- 1 Bell SP, Orr NM, Dodson JA, Rich MW, Wenger NK, Blum K, Harold JG, Tinetti M, Maurer MS, Forman DE. What to Expect From the Evolving Field of Geriatric Cardiology. *J Am Coll Cardiol*. 2015; 66: 1286-99.
- 2 Rich MW, Chyun DA, Skolnick AH, Alexander KP, Forman DE, Kitzman DW, Maurer MS, McClurken JB, Resnick BM, Shen WK, Tirschwell DL; on Behalf of the American Heart Association Older Populations Committee of the Council on Clinical Cardiology, Council on Cardiovascular and Stroke Nursing, Council on Cardiovascular Surgery and Anesthesia, and Stroke Council; American College of Cardiology; and American Geriatrics Society. Knowledge Gaps in Cardiovascular Care of the Older Adult Population: A Scientific Statement From the American Heart Association, American College of Cardiology, and American Geriatrics Society. *J Am Coll Cardiol*. 2016; 67: 2419-40.

## Perspectives on Telemedicine Use in the Skilled Nursing Facility



The rise of telemedicine has steadily progressed in the last decade, particularly in the acute care environment. UPMC has been a leader in the field, both in using its facilities as a testing ground to validate the technology's efficacy under real-world conditions and to develop new telemedicine technologies to extend its use in patient care and communication.

**Steven Handler, MD, PhD**, associate professor of geriatric medicine, biomedical informatics, and clinical and translational research, as well as director of geriatric telemedicine programs, has been at the forefront of this effort at UPMC. He has focused on telemedicine application, design, and research, particularly in skilled nursing and rehabilitation facilities.

Most recently, Dr. Handler has joined Curavi Health as its chief medical and innovation officer. Curavi Health is a newly launched, wholly owned subsidiary of UPMC. Curavi is providing nursing homes with telemedicine solutions through a proprietary hardware and software platform that was conceived, refined, and implemented at UPMC. This technology was further tested in 17 of UPMC's partner nursing homes as part of a \$19 million Centers for Medicare and Medicaid Services (CMS) Innovation Award received in 2012 and renewed for another \$20 million in 2016.<sup>1</sup>

The expertise gained in the development and implementation of telemedicine through these two endeavors led Dr. Handler to help launch Curavi Health in September 2016. His role in

this new startup is to translate the technical and patient care innovations he helped to develop at UPMC into solutions and services that Curavi can provide to nursing homes across the United States. For more information about Curavi Health, its services, and key clinical and administrative staff, please visit [CuraviHealth.com](http://CuraviHealth.com).

### New Research on the Benefits of Telemedicine

Two recently published studies by Dr. Handler and his colleagues sought to understand perceptions of the use and implementation of telemedicine in the nursing home from key clinical and administrative staff. The first study, "Perceived Benefits, Barriers, and Drivers of Telemedicine From the Perspective of Skilled Nursing Facility Administrative Staff Stakeholders,"<sup>2</sup> surveyed high-level SNF administrative staff (chief executive officers, chief information officers, etc.) to gauge perceptions on a number of attributes related to the provision of telemedicine in nursing homes.

Survey respondents ranked improving care quality and the ability to better manage potential hospital readmissions highest in terms of perceived benefits. Of those factors perceived to drive adoption of telemedicine in the SNF environment, hospital telemedicine requirements ranked first, followed by requirements of managed care and those of affordable care organizations.

Perhaps not surprisingly, among survey respondents, the biggest perceived obstacles to implementation of telemedicine are the initial capital expenditures and training needed to integrate a telemedicine system into a facility's work flow and processes.

### Understanding Provider Perceptions of Telemedicine

A corollary study by Dr. Handler and colleagues, and likely the first survey to compile results from a national representation of nursing home providers, was entitled "Nursing Home Provider Perceptions of Telemedicine for Reducing Potentially Avoidable Hospitalizations."<sup>3</sup> The study sought to understand, from a pool of physicians and advanced practice providers (428 respondents), perceptions of telemedicine's efficacy in assisting with the management of avoidable hospitalizations. The survey included two banks of questions. The first question set, dealing with provider perceptions, contained 22 questions about various aspects of telemedicine's utility. The second set of 16 questions focused on specific clinical attributes of a telemedicine system.

Survey respondents indicated strong agreement that telemedicine "may fill an existing service gap"; "improve the timeliness of appropriate resident care"; and that "a step toward successful implementation of telemedicine is addressing potential workflow and process challenges."<sup>3</sup>

Survey respondents ranked improving care quality and the ability to better manage potential hospital readmissions highest in terms of perceived benefits.

When assessing which attributes of a telemedicine system are most important in reducing potentially avoidable hospitalizations, the top three<sup>3</sup> scored by nursing home providers were:

1. Able to hear the resident without delay, chopiness, or interruption in sound quality
2. Able to see the resident without delay, chopiness, or interruption in video quality
3. Able to hear heart, lung, and bowel sounds using an electronic stethoscope

Additionally, survey respondents indicated that whatever the telemedicine system, it should be specifically designed for and tested in the nursing home.

### The Future of Telemedicine in the Nursing Home

While nursing homes generally have lagged in the adoption of telemedicine compared to other health care environments, it is clear that recognition of its potential

benefits, as well as its adoption and implementation, continue to grow, albeit at a slow pace. Solutions providers, such as the Curavi Health endeavor noted above, tailored to the specific needs of the skilled nursing and long-term care environments will drive the advancement of this technology, and at the same time improve its efficacy for a variety of patient care scenarios.

### References

- 1 See Raven.UPMC.com for details about the CMS Award and its telemedicine component, operating partners, and partner nursing facilities.
- 2 Driessen J, Castle NG, Handler SM. Perceived Benefits, Barriers, and Drivers of Telemedicine From the Perspective of Skilled Nursing Facility Administrative Staff Stakeholders. *J Appl Gerontol*. 2016; June 5. Epub ahead of print.
- 3 Driessen J, Bonhomme A, Chang W, Nace DA, Kavalieratos D, Perera S, Handler SM. Nursing Home Provider Perceptions of Telemedicine for Reducing Potentially Avoidable Hospitalizations. *JAMDA*. 2016; 17:6 519-524.

## SELECTED RECENT PUBLICATIONS

Below is a selection of recent publications from Division faculty members.

Orr NM, Boxer RS, Dolansky MA, Allen LA, Forman DE. **Skilled Nursing Facility Care for Patients With Heart Failure: Can We Make It "Heart Failure Ready"?** *J Card Fail*. 2016; Dec: 22(12).

Despite the prevalence, suffering, and cost of heart failure, little is known about how to address it in institutionalized elderly. Thus, this collaborative effort by experts in geriatrics and cardiology is particularly important. Their conclusion: Although there are no evidence-based standards, much can be done to improve outcomes, especially by better coordinating care of cardiac and non-cardiac problems, increasing physical activity, improving care transitions, training SNF staff, and addressing modifiable factors within facilities; policy considerations are also discussed. The authors hope that this prominent review will galvanize support for these immediate and long-term changes.

Tyagi S, Perera S, Clarkson BD, Tadic SD, Resnick NM. **Nocturnal Polyuria in Older Women With Urge Urinary Incontinence: Role of Sleep Quality, Time in Bed, and Medications Used.** *J Urol*. In Press.

Nocturnal polyuria (NP) is common in the elderly and contributes to insomnia, falls, and fractures. To better evaluate modifiable contributors to NP, we analyzed primary data from two prospective studies involving 284 women aged 60-93. Body mass index, use of angiotensin converting enzyme inhibitor/angiotensin receptor blockers, and duration of sleep before first awakening were independent contributors. Thus, in addition to addressing factors associated with edema, methods to improve sleep should be explored to reduce NP in this population.

Thorpe JM, Thorpe CT, Gellad WF, Good CB, Hanlon JT, et al. **Dual Health Care System Use and High-Risk Prescribing in Patients With Dementia: A National Cohort Study.** *Ann Intern Med*. 2016; Dec 6. Epub ahead of print.

Recent federal policy changes expand veterans' access to providers outside the Department of Veterans Affairs (VA). The resulting receipt of prescription medications across unconnected systems of care may increase the risk for unsafe prescribing, particularly in persons with dementia. To examine the potential impact, Dr. Hanlon and colleagues conducted a retrospective cohort study to investigate the association between dual health care system use and prescription of potentially

unsafe medications (PUM). They found that, among veterans with dementia, rates of PUM prescribing were nearly double among dual-system users compared with VA-only users.

Prasad C, Greenspan SL, et al. **Risedronate May Preserve Bone Microarchitecture in Breast Cancer Survivors on Aromatase Inhibitors: A Randomized, Controlled Clinical Trial.** *Bone*. 2016. Sep; 90: 123-6.

Women on an aromatase inhibitor for breast cancer face increased risks of bone loss and fracture. Dr. Greenspan's group previously found that the bisphosphonate risedronate maintained bone density in this population. This two-year RCT included 109 women (mean age 70 years) and aimed to determine if a bisphosphonate (risedronate) also preserved bone microarchitecture as measured by trabecular bone score (TBS). TBS declined in the placebo group but remained stable in the treatment group. These results suggest that, in addition to maintaining bone density, risedronate helps preserve skeletal integrity in women with breast cancer on an aromatase inhibitor.

Nadkarni NK, et al. **Cortical Amyloid-beta and Slow Gait in Older Adults Without Dementia: Influence of Cognition and APOE Genotype.** *JAMA Neurol*. In Press.

Although walking speed declines early in the course of Alzheimer's disease, it is unclear whether brain amyloid, a pathological finding in Alzheimer's disease, is associated with slow gait, and whether APOE-4 and cognition influence this relationship. In 183 non-demented older adults, including 144 cognitively normal older adults (mean age 85), brain amyloid was assessed by PET, using Pittsburgh compound B, and compared with walking speed. Greater amyloid burden correlated with slower gait in both groups, and APOE-4 status and cognition attenuated the relationship. Amyloid and APOE-4 are important contributors to declining gait speed with age, even among elders with normal cognition.

## Advancing the Understanding and Treatment of Urge Urinary Incontinence in Older Adults



Common, morbid, and costly, urge urinary incontinence has proved remarkably refractory to therapy, with few therapeutic advances in decades. Thus, it has also proved to be a source of frustration for **Neil M. Resnick, MD**, chief of the Division of Geriatric Medicine and Thomas Detre Professor of Medicine, who founded the country's first Continence Center and has investigated geriatric incontinence for years.

Recently, Dr. Resnick, along with Becky Clarkson, PhD, and Derek Griffiths, PhD, took an innovative new tack, utilizing a standard treatment for incontinence as a physiological probe to reveal the causes. Their goal was to disentangle

the causes of incontinence from abnormalities due to normal aging or to coexisting but unrelated conditions. They reasoned that only the factors causing incontinence should be altered if the incontinence improved, and they should not change if it didn't. Moreover, the direction and magnitude of such changes should be biologically plausible. Employing this novel approach, the team conducted two recent studies. The first focused on the

lower urinary tract, and the second focused on the brain. Biofeedback was used as the physiological probe because it is the evidence-based treatment most commonly recommended for urge urinary incontinence by national and international organizations and meta-analyses.

### UUI and its Response to Biofeedback

Published in the journal *Neurourology and Urodynamics*, the first study was entitled "What Predicts and What Mediates the Response of Urge Urinary Incontinence to Biofeedback."<sup>1</sup> It examined community-dwelling older women (> 60 years of age) who had suffered from urge incontinence (UUI) for at least six months. To its surprise, the team found that clinical improvement did not correspond to any change in lower urinary tract physiology. No correlation was found between clinical improvement and change in bladder sensation, warning, capacity, or strength. Nor did improvement correlate with sphincter innervation, length, strength, or coordination. Moreover, bladder overactivity — in the half of subjects in whom it could be demonstrated — was likely to persist regardless of clinical improvement. The only factor that did correlate with clinical response was the severity of the overactive bladder; patients with more severe overactivity were less likely to respond and, when they did, the severity of the overactivity seemed to decline. Of the many clinical predictors examined, only baseline incontinence frequency was significant: those with mild-moderate incontinence were more likely to improve.

The surprising lack of correlation between clinical improvement and improved lower urinary tract physiology suggested that, while the vast majority of incontinence investigation to date has focused on the urinary tract, the role of the brain may be more important than previously believed. Although the brain clearly plays a central role in achieving continence in childhood, researchers have paid little attention to its role in maintaining continence, nor to the way its mechanisms of controlling the bladder change, either with aging or among older adults who become incontinent. Thus, Dr. Resnick and his group redoubled their focus on the brain.

### Searching for the Causes of UUI in the Brain

The team was well-positioned to apply its new experimental approach to the brain, having investigated the brain's role in incontinence for nearly a decade. The result of their new effort was their second recent study, entitled "Brain Mechanisms Underlying Urge Incontinence and Its Response to Pelvic Floor Muscle Training."<sup>2</sup>

Again relying on biofeedback as the physiological probe, this study examined more community-dwelling women with urge urinary incontinence. Subjects underwent detailed evaluation, including urodynamic testing and functional magnetic resonance imaging (fMRI), both at baseline and following three months of therapy. As in the team's previous study, subjects were then divided into those who responded to treatment and those who did not.

To the team's gratification, this time results clearly differentiated responders and non-responders: the fMRI scans revealed two distinct brain activation patterns, with little overlap. At baseline, those who would subsequently respond to therapy had a different pattern of brain activation than those who would prove refractory to therapy. In addition, their baseline brain response changed following treatment and the changes were appropriate, both in direction and magnitude. By contrast, no change in brain activation was seen after therapy among those whose incontinence did not improve.



At baseline, among those whose incontinence improved with biofeedback, the brain reacted to bladder filling by activating the dorsal anterior cingulate cortex and the adjacent supplementary motor area (dACC/SMA).<sup>2</sup> Following biofeedback, activation in this area dramatically declined, and deactivation was seen in a different part of the brain, the medial prefrontal cortex (mPFC).

By contrast, prior to biofeedback, the brains of those who would not respond to therapy did not react to bladder filling with an increase in dACC/SMA activation; instead, they showed strong baseline deactivation of the mPFC. In addition, among this group no changes were seen in brain response to bladder filling, even after three months of treatment.

As Dr. Resnick explains, the findings of this study suggest that urge urinary incontinence may comprise at least two groups of patients: one whose response to biofeedback is mediated by deactivation

of the prefrontal cortex, and another group that — already having maximally deactivated their mPFC — may be resistant to biofeedback but respond better to pharmacotherapy. These results, combined with findings from the group's ongoing studies, also suggest a structural/functional correlation between white matter damage and brain activation. Hopefully, their findings will lead to new insights into the brain's role in incontinence, as well as new therapeutic approaches in the future.

## References and Additional Reading

- 1 Resnick NM, Perera S, Tadic S, Organist L, Riley MA, Schaefer W, Griffiths D. What Predicts and What Mediates Response of Urge Urinary Incontinence to Biofeedback? *Neurourol Urodyn.* 2013; 32: 408-15.
- 2 Griffiths D, Clarkson B, Tadic SD, Resnick NM. Brain Mechanisms Underlying Urge Incontinence (UI) and Its Response to Pelvic Floor Muscle Training. *J Urol.* 2015; 194: 708-715.

**Save the Date: April 6-8, 2017**

## 25th Annual Clinical Update in Geriatric Medicine

**Marriott Pittsburgh City Center**

The Division of Geriatric Medicine is again pleased to host the Annual Clinical Update in Geriatric Medicine. This year marks the 25th anniversary of the event and features an array of lectures, symposia, and discussions from some of the nation's foremost experts in geriatric medicine. **Stephanie Studenski, MD, MPH**, will give the keynote presentation discussing updates on frailty in the elderly. Dr. Studenski currently serves as Chief of the Longitudinal Studies Section at the National Institute on Aging.

### Some featured topics and speakers:

- **What's New in Osteoporosis** – Susan Greenspan, MD
- **Practical Diabetes Management (Choosing the Right Medication)** – Mary Korytkowski, MD
- **Approach to Aspiration** – Jonas Johnson, MD
- **Top 5 Articles That Could Make a Difference in Your Long Term Case Practice** – David A. Nace, MD, MPH
- **Delirium and Palliative Care** – Sharon K. Inouye, MD
- **Positive Approach to Dementia** – Rollin Wright, MD, MS, MPH
- **Geriatric Cardiology Symposium on Pulmonary Hypertension in the Elderly** – Jennifer Gonzalez McComb, MD, MPH, FACP
- **Controversies in Hypertension** – William B. Applegate, MD, MPH, MACP, AGSF, Editor-in Chief, *Journal of the American Geriatrics Society*
- **Ask the Cardiologist** – Krishnamurthy V. Tummalapalli, MD
- **Conducting the Home Visit** – Christine Herb, MD
- **Sleep Disorders in Older Persons** – Daniel J. Buysse, MD

For more information about the conference, please contact the Division of Geriatric Medicine at 412-692-2360.

## Continuing Medical Education

A wide range of continuing medical education courses in geriatrics and gerontology are available for free by visiting **UPMCPhysicianResources.com/Geriatrics**. A selection of the topics currently available for credit include:

### Breaking Falls

Rollin Wright, MD, MS, MPH

### Geriatrics and Cardiovascular Disease: Bench to Bedside

Daniel Forman, MD, and Sruti Shiva, MD

### Geriatrics: Bench to Bedside to Policy

Neil M. Resnick, MD

### Drug Rounds: Inappropriate Medications in the Elderly

Joseph T. Hanlon, PharmD, MS

### Geriatric Urinary Incontinence

Neil M. Resnick, MD

### Incomplete Response in Late-Life Depression:

#### Getting to Remission

Charles F. Reynolds III, MD

### The Difference an Age Makes: What's So Special About Seniors?

Neil M. Resnick, MD

### Preoperative Evaluation of Elderly Patients in 2015

Fred Rubin, MD

### Negotiating Diabetes Management in the Elderly

Mary Korytkowski, MD



# UPMCPhysicianResources.com/ Geriatrics

## About the UPMC Division of Geriatric Medicine

Ranked among the nation's top hospitals for geriatric care by *U.S. News & World Report*, UPMC offers older adult patients access to a multidisciplinary network of comprehensive clinical care. Our geriatricians, all specialists in internal medicine, have additional subspecialty training in geriatrics.

- We focus on the prevention, diagnosis, and treatment of geriatric syndromes, including:
  - Memory loss/dementia
  - Falls or unsteadiness
  - Decreased appetite or weight loss
  - Multiple medical issues
  - Osteoporosis
  - Depression or agitation
  - Incontinence
  - Generalized weakness
  - Multiple medications with possible side effects
  - Functional decline
- Our physicians provide integrated care to patients in acute care, ambulatory care, home and community-based care, and long-term care.
- Each year, the Division hosts the *Clinical Update in Geriatric Medicine*, a three-day seminar featuring timely, relevant topics from a range of experts in geriatric medicine.

**Neil M. Resnick, MD**  
*Division Chief*

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please call UPMC's 24-hour  
physician OnDemand service  
at **1-866-884-8579**.

A \$13 billion world-renowned health care provider and insurer, Pittsburgh-based UPMC is inventing new models of patient-centered, cost-effective, accountable care. It provides nearly \$900 million a year in benefits to its communities, including more care to the region's most vulnerable citizens than any other health care institution. The largest nongovernmental employer in Pennsylvania, UPMC integrates 65,000 employees, more than 25 hospitals, more than 600 doctors' offices and outpatient sites, and a more than 3 million-member Insurance Services Division, the largest medical and behavioral health services insurer in western Pennsylvania. Affiliated with the University of Pittsburgh Schools of the Health Sciences, UPMC ranks No. 12 in the prestigious *U.S. News & World Report* annual Honor Roll of America's Best Hospitals. UPMC Enterprises functions as the innovation and commercialization arm of UPMC, while UPMC International provides hands-on health care and management services with partners in 12 countries on four continents. For more information, go to UPMC.com.