Our mission is to enhance the health of older adults by providing superb clinical care, by training others to do the same, and by conducting research to ensure that tomorrow’s care is better than today’s.

In the past year, we made substantial progress in each area. Clinically, our ambulatory-based Patient-Centered Medical Homes received NCQA’s highest level of certification (level 3), two of only a handful designed to meet the complex needs of geriatric patients. We also further developed our center of excellence in acute care. Based on the belief that good geriatric care is good for patients of all ages, our system-level changes improved metrics not only on our own service but also hospital-wide, one of the first such examples of the power of system-based change. In long-term care, Dr. Handler continued to develop a novel way to detect and prevent adverse drug events in real time. We also collaborated with UPMC to reduce unplanned admissions from its SNFs by 33% which led to our being named one of just seven centers nationally to receive a major award ($19 million) from CMS’ Innovation Center.

Educationally, with funding from both the Josiah Macy Foundation and the Jewish Healthcare Foundation, we expanded our interdisciplinary training programs for medical, pharmacy, and nursing students. We also launched one of only a half dozen residencies in geriatric pharmacotherapy. And under Dr. Weiner’s leadership, we were just designated and funded by NIH as a National Center of Excellence in Pain Education.

In research, several of our faculty received new funding and prestigious awards, many served on editorial boards, some were asked to serve on the national advisory boards of NIH, CMS/CMMI, and the Institute of Medicine, and Dr. Hanlon helped to revise the influential “Beers Criteria” for medications. As a result, the Hartford Foundation renewed our designation as a National Center of Excellence, and U.S. News and World Report again ranked the Division among the nation’s top 10 in both its Best Hospitals and Best Graduate Schools issues.

Such recognition reflects the Division’s depth and breadth of expertise as well as its commitment to enhancing and integrating the clinical, training, and research missions—a vision in which each of these efforts can inform and leverage the others. It also reflects the strategic collaborations that we have built with the rest of the University, UPMC, long term care facilities, and our VA GRECC to address critical geriatric problems. These efforts have allowed us to continue to respond in innovative ways to national declines in reimbursement and research funding.

The Division’s success creates opportunities related to health care reform and the need to improve the quality and efficiency of geriatric care in every setting. This need, which exists both locally and nationally, is growing daily under the crush of spiraling demand and costs. Moreover, there is increased appreciation that simply working faster will not suffice. New care models, training, and research will be required. The Division’s expertise, coupled with its close ties to other key departments, makes it well-positioned to respond.

CLINICAL ACTIVITIES

Our faculty—more than a dozen of whom are included in America’s Top Docs and/or Best Doctors in America—focus on prevention and management of the complex medical and psychosocial problems that afflict older adults. Excluding our VA efforts, we are annually responsible for nearly 17,000 ambulatory visits, 1000 admissions, and 7,000 long term care visits at 13 different facilities. In addition to our clinical volume, which is large for an academic geriatric division, our effort comprises several special features:

- **Vertically-Integrated Care, Across the Entire Care Spectrum.** This is provided by each of our four primary bases: UPMC Presbyterian, Shadyside, St. Margaret, and Magee Women’s Hospital.
• **Group Visits.** Dr. Towers leads one of the first such programs in an academic center.

• **Integrated Geriatric Subspecialty Care.** Consultative care is provided by fellowship-trained geriatricians, many of whom have additional training in: chronic pain, gait and mobility, sarcopenia, falls, osteoporosis, sleep disorders, voiding dysfunction and incontinence, rheumatology, depression, dementia, and palliative care. Bone densitometry is also provided by a dually-trained geriatric endocrinologist (Greenspan).

• **Geriatric Pharmacists.** Our on-site geriatric pharmacists review medications, provide education, and counsel patients. This service is especially important for patients recently discharged from the hospital and those being anticoagulated with warfarin.

• **Hospitalist Services:** At UPMC Magee, Shadyside, and St. Margaret we staff a hospitalist service for our own patients and for others over age 65. Metrics are excellent. For instance, at Magee our ALOS was 4.5 days with a readmission rate of just 8%. For results of another of our programs, see Sorbero JAGS 2012.

• **HELP Program:** Based on Dr. Inouye’s program and led by Drs. Rubin and Hassan, this service continues to prevent delirium and has saved >$7 million/year since 2008 at UPMC Shadyside (Rubin, JAGS 2011).

• **Readmission Prevention Program:** All of our patients are contacted within 48 hours of discharge to review their progress, medications, unanticipated problems, and plans for medical follow-up.

• ** Provision of Non-Reimbursable Services.** These include the readmission prevention service, an anticoagulation program for frail patients, Lifeline® even for those unable to pay, health screening clinics, 55 Alive (to assess driving safety), respite care, and “town meetings” for seniors’ education.

• **Program for All-Inclusive Care of the Elderly (PACE),** allowing frail elderly to remain at home. We staff all 3 UPMC-affiliated bases (Homestead, E. Liberty, and Tarentum).

• **Nursing Home (NH) Care:** Our geriatricians and nurse practitioners provide integrated and comprehensive care to long term care residents. We also provide training and medical leadership to more than a dozen facilities to improve care quality and reduce unnecessary admissions.

**CLINICAL SITE LOCATIONS**

1. **Senior Care, Shadyside-Senior Care Institute (SCI), Shadyside**
   5200 Centre Avenue
   Shadyside Medical Building

2. **UPMC Senior Care, Benedum Geriatric Center (BGC)**
   3459 5th Avenue

3. **UPMC Senior Care St Margaret**
   100 Delafield Road, Suite 105

4. **UPMC Senior Care, Magee-Womens Hospital of UPMC**
   300 Halket Street

5. **Asbury Heights, Outpatient Clinic**
   700 Bower Hill Road

**RESEARCH ACTIVITIES**

Our research goals are to: (1) conduct cutting edge research that improves the health and health care of older adults and (2) train the next generation of investigators to do the same. We utilize a multi-system, multidisciplinary, and translational perspective that integrates biology, physiology, clinical medicine, behavior, social support, community, and health systems. Areas of inquiry include biology of longevity, successful aging, mobility/falls, sarcopenia, chronic
pain, frailty, adverse drug effects, osteoporosis, illness recovery/rehabilitation, incontinence, and long term care. Our funding contributed to the university’s being among the nation’s top recipients of NIH funding in aging research.

In FY2012, despite the difficult funding climate, we secured >$1 million in newly-committed funding: competitive renewal of our Hartford Foundation Center of Excellence in Geriatric Medicine, 3 NIH-R01s (effects of insulin-like signaling, aging, and ubiquinone on C. elegans muscles [Fisher], chronic low back pain [Weiner], and neural resilience in mobility impairment [Rosano/ Studenski/Hanlon]), an NIH funded National Pain Consortium Center of Excellence in Pain Education (Weiner), a CMS/CMMI Innovation Center award to fund clinical innovation (Resnick), a grant from the Mary Campbell foundation grant to continue development of our Geriatric Center of Excellence at Magee Women’s Hospital (Resnick), and an NIH-conference grant to establish guidelines for sarcopenia (U13, Studenski). The Division showcased its research with ~40 presentations at the annual meetings of the American Geriatrics Society and the Gerontological Society of America. In addition, several Division faculty and post-doctoral scholars received major awards and served as visiting professors and keynote speakers at national and international meetings.

Ongoing research comprises numerous NIH-funded projects. These include a P30 Claude Pepper Older American’s Independence Center (Studenski) and a Leadership K07 to create a Center of Excellence in Geriatric Pharmacotherapy (Hanlon), as well as R01s focusing on CNS and peripheral mechanisms mediating therapeutic response in overactive bladder (Resnick), the epidemiology of incontinence in the Nurses’ Health Study (Resnick), the impact of CNS drugs on common geriatric syndromes (Hanlon), the regulation of the AIRAP/aip-1 pathways in metabolic stress (Fisher), the efficacy of zolendronate for osteoporosis in institutionalized elderly (Greenspan, Nace, Resnick), and racial disparities of Medicare Part D (Hanlon). An AHRQ-funded R01 focuses on adverse drug events in nursing homes (Handler, Hanlon, Studenski), and a VA study focuses on osteopuncture for severe knee pain (Weiner). Three faculty members have federal-career development awards: Dr. Hardy’s NIH-Beeson award focuses on functional recovery after hospitalization. Dr. Tadic’s K23 investigates the brain’s role in bladder control and incontinence, and Dr. Wright’s K01 Geriatric Academic Career Award supports creation of a long term care curriculum for interprofessional training. With state funding, we are evaluating an innovative homecare program (Rodriguez/ Resnick). Industry funding supports a study of the impact of a high dose influenza vaccine in nursing home patients (Sanofi; Nace) and a study of the effects of anticholinergics on brain-bladder control (Pfizer, Tadic). Additional NIH-funded projects, conducted with other departments, include care of Alzheimer’s patients (Rodriguez), gait disorders (Brach, Rosano, Studenski, Hanlon), the Women’s Health Study-SWAN (Hanlon), the effect of anticholinergic drugs and white matter hyperintensities on gait and balance (Studenski), exercise to prevent disability (the LIFE study [Studenski/Nadkarni]), immunologic aging (Studenski), the effect of brain white matter on step initiation (Perera), aging and gait variability (Perera), molecular basis of COPD heterogeneity (Perera), intervention to reduce dietary sodium in dialysis patients (Hanlon), the effectiveness of a mind-body program for older adults with chronic low back pain (Weiner), improving care for older adults with both low back pain and depression (Weiner), and acupuncture for back pain (Weiner).

Finally, our training grants support junior faculty, fellows, and medical students. Our NIH-funded T32 supports 6 summer positions for medical students, 4 year-long research positions for medical students, and 5 postdoctoral positions. We also offer a VA-funded special fellowship in geriatrics. Dr. Studenski’s former NIH K07 Leadership Award allowed her to create a Concentration in Aging Research for the Clinical Research Training Program, and this continues. Finally, our Pepper Center includes a Research Career Development Core led by Dr. Greenspan.
**TEACHING ACTIVITIES**
Division faculty teach extensively, educating trainees at every level, from high school to practicing physician. We also teach trainees in pharmacy, nursing, psychology, chaplaincy, physical/occupational therapy, and social work.

**Medical Students**
We teach a required 20+ hour course in geriatrics for all MS-3 students. Led by Dr. Studenski, we also offer a novel *Geriatrics Area of Concentration* that spans all four years; 3 students graduated from the AoC in 2012 with a Certificate in Geriatrics. We also sponsor 4-8 students per year in their scholarly projects. Finally, led by Dr. Nace—and with support from both the Josiah Macy Foundation and the Jewish Healthcare Foundation—this year we enhanced our required MS-3 geriatrics course. We developed an interdisciplinary curriculum by adding a track to provide a team-based learning experience for medical, nursing, and pharmacy students. The track improved students’ knowledge, attitudes, and beliefs (manuscript in preparation). Our hope is to expand the scope of the course next fall by also including social work students.

**Medical Residents**
In addition to a required month-long rotation in the clinic, home, hospital, and nursing home settings, we offer an innovative Geriatrics Track, which is led by Dr. Wright and allows 5-9 residents to “major” in geriatrics. This year, led by Drs. Fisher, Wright, Rossi, and Gennari, we extensively re-vamped the month-long rotation at each of our Magee, Presbyterian, and Shadyside bases. Although initiated in response to the mandated reduction in residents’ work hours, the revision also allowed us to strengthen the rotation and to add residents from the UPMC Mercy program.

**Fellowship**
Dr. Weiner continues to enhance the fellowship, which attracts 3-4 excellent new fellows/year.

**Graduate Students**
Drs. Studenski and Hardy each direct courses within the Concentration in Aging. Comprising 4 courses, the program was created by Dr. Studenski to help investigators better understand how the unique issues associated with aging research require adaptation of clinical epidemiological approaches. The program is now a permanent track within the Clinical Research and Training Program sponsored by CTSI and ICRE.

**Physician Assistant Students**
With Anne Kisak’s (CRNP) leadership, we teach a month-long geriatrics rotation for all second-year students in Pitt’s Physician Assistant program.

**High School Students (University of Pittsburgh Health Scholars Academy)**
The Division supports a highly competitive summer program on aging for 30 elite high school students who are selected from across the state for the Pennsylvania Governor’s School.

**Continuing Medical Education (CME)**
Recognized by a national award from AGS, this year our annual CME course attracted 500 attendees from 17 states and 5 countries. The course now includes the national HELP course on delirium which was transferred from Harvard to Pitt but is still co-taught by Dr. Sharon Inouye. Drs. Schaefer and Griffiths continue to teach courses globally for the International Continence Society. Dr. Greenspan continues to teach programs on osteoporosis which she helped to create for the American Academy of Family Medicine, ISCD, and the National Osteoporosis Foundation. Several faculty lead “Meet the Professor” sessions at national meetings of ACP, AGS, etc.

**Other**
Division faculty author chapters on aging for major medical textbooks, including *Harrison’s* (Studenski), *Cecil’s* (Resnick), and *UpToDate* (Weiner), and Dr. Studenski co-edits the major geriatrics text (“Hazzard”). Division faculty
have also developed curricula for several surgical subspecialties and were recently asked to help revise the U.S. Preventive Services Task Force guidelines for older adults.

QUALITY INITIATIVES
Our initiatives focus on each relevant setting. Some highlights of the past year include:

Ambulatory Care
Patient-Centered Medical Home (PCMH): Under the leadership of Drs. Gennari and Visiou, both our Benedum and Shadyside practices received level 3 NCQA certification this year. With <72 hour access guaranteed for all new patients, both sites also improved their interventions for diabetes, hypertension, and osteoporosis. Each intervention is tailored to the individual's life expectancy, functional status, and goals, and outcomes improved for all. In addition, Press Ganey patient satisfaction scores exceeded 90% at both bases, and Shadyside received the Pacemaker award for achieving the best scores throughout UPMC for the year.

Inpatient Care
Magee Acute Care and Transitions Program (ACT): The program is based on 2 tenets: optimal geriatric care involves anticipating problems and preventing them, and improved systems can help to accomplish this. Thus, in this second year, we continued to develop geriatric resource nurses, bedside teaching rounds, interdisciplinary patient-focused conferences, a geriatric sensitivity program, new order sets, and new protocols and IT tools. Working with Magee’s Chief of Medicine, and supported in part by Dr. Resnick’s CMS Innovation Advisor’s award, we also began a QI project focused on 30 day readmissions of both our patients and others. This led to implementation of a new discharge protocol that provided better discharge instructions, pre-discharge scheduling of PCP followup visits within 7 days, and an RN followup call 2 days after discharge. In addition, we launched a Geriatric Consult Service and also worked with orthopedics on a new protocol for fracture patients. Metrics remained strong: despite expanding our volume by 20%, ALOS for our patients declined to 30% below predicted; complications such as pressure ulcers, injurious falls, and aspiration remained extremely low; and our readmission rate was just 8%. Equally gratifying, ALOS, complications, and costs declined for the rest of the medical service as well.

Supportive Services Program: This program was developed in partnership with UPMC Health Plan. Initiated at UPMC Presbyterian in January 2011, it’s staffed by a nurse who is backed up by faculty from geriatrics (Dr. Tadic) and palliative care. By identifying and consulting proactively on high risk patients, the goal is to minimize complications, ensure a seamless post-discharge transition, and reduce readmissions. Formal analyses of its impact are in progress, but it has already led the Health Plan to provide enhanced home health services.

Home Care
Staying at Home (Dr. Rodriguez, Medical Director): This proactive, team-based preventive program comprises advanced care coordination, patient empowerment, medication management, and health maintenance. Having demonstrated improved outcomes and cost savings in a trial of high risk community-dwelling elderly, in fall 2011 SAH began a collaboration with UPMC Health Plan and Senior Communities to enhance care for HP enrollees who meet Special Needs Population criteria. With Dr Ahuja as Medical Director, the program aims to improve medication adherence, PCP follow-up, and avoidable ED and hospital utilization. To date, 41 high-risk patients have enrolled.

Long-Term Care (LTC)
Reducing Unplanned Admissions: Led by Drs. Nace and Handler, and in collaboration with the Aging Institute and Senior Communities, we have established a comprehensive program to reduce unplanned admissions from nursing facilities to the hospital. It focuses on four key phases: a) improved understanding of patients’ care goals, b) earlier detection of changes in condition, c) improved communication among team members, and d) use of clinical care pathways. The program reduced unplanned admissions across UPMC-owned facilities by 33% (from 4.9/1000 patient days in 2010 to 3.3/1000 in 2012). Program elements are being adopted by UPMC Health Plan for use in its other facilities and also provided support for UPMC Senior Community’s successful response to CMS’ Innovation RFA.
RISE Program: Under Dr. Nace’s leadership, the Division continues to direct a nationally recognized long-term care influenza prevention and management program. The program has reduced influenza incidence in LTC settings regionally and, using an enhanced voluntary model, has achieved some of the nation’s highest healthcare worker influenza immunization rates: all facilities reached the 60% rate set by the US Surgeon General in Healthy People 2010; the majority reached 80%, and one in five reached 90% (J Am Med Dir Assoc. 2012; 806-10)

HIGH IMPACT PUBLICATIONS
Among the Division’s high impact publications that appeared in FY 2012 are the following:


The majority of Medicare patients suffer from at least two medical conditions. Yet nearly all evidence about prevention, diagnosis and treatment is based on studies of one condition at a time, impeding the ability to assess competing risk-benefit. The growing interest in comparative effectiveness research as a pathway to convert evidence into clinical practice will not impact most older patients until we can design studies that account for multiple chronic conditions. This article proposes several solutions, including the use of “universal outcomes” related to function and global health that incorporate critical tradeoffs in diagnosis and management.


Dr. Fisher’s group used the nematode C. elegans to identify new genes involved in the universal loss of muscle mass and muscle function during aging (sarcopenia). They found 17 genes which normally act to prevent sarcopenia in worms and most of these genes function specifically in muscle instead of nerves or other tissues. Notably, 16 of these genes have a human homolog so some of these genes may play similar roles in people.


Dr. Hanlon and colleagues examined the wide variations in regional spending under Medicare Part D. Although such variation may reflect differences in health status or the use of effective treatments, instead the group found that it results largely from selection of branded drugs over lower-cost generics. Thus, a reduction in branded-drug use through modification of Part D plan benefits may lower costs without reducing quality of care.