

ADVANCES IN GERIATRICS



Baby Boomers Come of Age: Implications for Healthcare

Today nearly every surgical and medical specialty has a substantial population of older patients, making the knowledge of geriatric principles of care imperative to achieving good clinical outcomes. Some 3 million Americans of the Baby Boom generation will reach retirement age every year over the next 20 years, shaping the healthcare system for decades to come.

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NewYork-Presbyterian Geriatrics ranks #7 in the nation.

“By 2030, one in five Americans will be over age 65, and not only are older adults comprising a larger portion of the overall population, but their life expectancy has also dramatically increased,” says **Mark S. Lachs, MD, MPH**, Co-Chief, Geriatrics and Palliative Medicine at NewYork-Presbyterian/Weill Cornell Medical Center. “Clearly this shift in demographics

impacts all facets of society and, most importantly, healthcare.”

According to the Office of Disease Prevention and Health Promotion, projections indicate that by 2030, more than 60 percent of the Baby Boom generation will be managing more than one chronic health



Dr. Mark S. Lachs

condition, placing a significant burden across all healthcare settings. “In order to address these additional demands on our resources, we are challenged to find new approaches in healthcare delivery,” says Dr. Lachs.

“This is the natural progression of having huge numbers of persons born between 1946 and 1964, and, therefore we are now facing huge numbers of persons who are becoming old,” says **Evelyn C. Granieri, MD, MPH, MSED**, Chief, Geriatric Medicine and Aging, NewYork-Presbyterian/Columbia University Medical Center. “Medical education has not taken this into account and consequently there are fewer geriatricians in 2017 than there were in 1992.”

To help bridge this gap, Dr. Granieri, a noted educator, believes it is important for geriatricians to share their expertise with younger clinicians.



Dr. Evelyn C. Granieri

“We have the content knowledge and clinical acumen to mentor and teach physicians in all specialties how to look at an older adult and determine what’s important, develop goals of care, and consider all arenas of health and wellness,” she says. “This involves more than just medicine – it also includes pharmacologic, social, environmental, cognitive, functional, and economic factors.”

“While we would certainly welcome an influx of geriatricians, we are heartened that more and more physicians in a range of specialties are pursuing research and incorporating new models of care in their practices to accommodate older adults,” says Dr. Lachs.

On the pages that follow are insights from a few of the physicians who have been guided in geriatric medicine by Drs. Granieri, Lachs, and their colleagues to the benefit of their older patients.

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Baby Boomers Come of Age: Implications for Healthcare *(continued from page 1)*

Cardiology In medical school, Parag Goyal, MD, MSc, leaned toward a career in pediatrics, but after several clerkships, he was clearly drawn to the complexities of adult medicine, and in particular, caring for older adults. “There is much more to taking care of adults that goes beyond the presenting medical problem,” says Dr. Goyal, who is completing a fellowship in advanced heart failure at NewYork-Presbyterian/Weill Cornell. “It also requires consideration of concurrent chronic conditions as well as patient-specific psychosocial stressors, which likely have a major impact on outcomes.”



“I believe, on the whole, we often underestimate the influence of conditions like frailty, cognitive impairment, and inadequate social support on patient outcomes.”

— Parag Goyal, MD, MSc

“That theme of complexity was critically relevant as I decided to subspecialize in cardiovascular disease and ultimately advanced heart failure,” continues Dr. Goyal. “A patient with cardiovascular disease rarely has a single cardiac problem. For example, among patients with heart failure, coronary artery disease and arrhythmia often coexist. Once you combine cardiac issues with non-cardiac conditions and consider the psychosocial milieu, it really starts to get interesting. My research over the past couple years has focused on exploring this complexity in greater depth, with the ultimate goal of improving post-hospitalization outcomes of older adults with heart failure.”

In delineating those outcomes, Dr. Goyal broadens the scope beyond longevity and mortality. “The first step is to understand what’s important to the patient. Is the most important priority when they leave the hospital that they live for the next year? Or, is it that they want to remain independent and functional at home? Or, could it be as simple as, ‘I no longer want to feel short of breath’? I don’t think we always fully appreciate what patients want after they leave the hospital. We do know that their prognosis is especially poor – after just one heart failure hospitalization, median survival is about two years; with each subsequent hospitalization that survival progressively declines.”

As part of his training, Dr. Goyal has benefitted from the mentorship of Dr. Mark Lachs. “Dr. Lachs has played a major role in helping me to develop an approach to managing older adults with cardiovascular disease through a geriatric lens,” says Dr. Goyal. “Cardiologists are skilled at managing a broad range of cardiac conditions, but I believe, on the whole, we often underestimate the influence of conditions like frailty, cognitive impairment, and inadequate social support on patient outcomes.”

Evelyn M. Horn, MD, Director of Heart Failure and Pulmonary Hypertension at the Perkin Heart Failure Center of Weill Cornell,

has also been important in Dr. Goyal’s development. “Dr. Horn is particularly sensitive to the psychosocial domain of heart failure patients, and has long emphasized its influence on patient outcomes,” says Dr. Goyal, who will join the advanced heart failure group at Weill Cornell in July with dual appointments in cardiology and general internal medicine.

“The emerging sub-discipline of geriatric cardiology infuses geriatric principles into the care of older adults with cardiovascular disease which, observationally, is a piece that is sometimes missing for patients,” says Dr. Goyal. “I think that bridging and integrating disciplines represents the future of medicine. I look forward to continuing to work with Dr. Lachs and the Division of Geriatrics and Palliative Medicine as my career unfolds at Weill Cornell.”

Nephrology The high prevalence of chronic kidney disease and end-stage renal disease in older adults is not surprising due to the increase of obesity, diabetes, and hypertension in younger and middle-aged adults. “We know that the number of people going on to dialysis is increasing – the fastest growing population is 75 years and older,” says Maya K. Rao, MD, Director of the Chronic Kidney Disease Program at NewYork-Presbyterian/Columbia.

“There is a bridge between geriatrics and nephrology because of the aging population that is developing kidney disease and then possibly going on to dialysis.”

— Maya K. Rao, MD



According to Dr. Rao, some studies show that patients who are 75 and older with comorbidities do not fare well on dialysis and suggest that they would do better with medical management of their kidney disease. “It’s not clear if their life expectancy is actually increased with dialysis when they fall into the subgroup of having comorbidities, frailty, poor functional status, dementia, and those types of issues,” she says. “Dialysis is thought to be a lifesaving treatment in the acute sense. For outpatients who have to do this for the rest of their life – especially if they are not a transplant candidate – I think it is legitimate to think about quality-of-life issues.”

Dr. Rao also notes that mortality on dialysis is quite high; about 50 percent at two years in patients with diabetes, and if a patient is in a nursing home and starting dialysis, about 75 percent at one year. “The mortality is worse than a lot of cancers, and yet we don’t really talk to our patients or even think about prognosis when we decide to start dialysis because we feel there is no other choice. We might even be doing harm by just dialyzing them.”

The alternative, says Dr. Rao, is medical management. “I have had several patients in their 80s who lived for two or three years at a point past, by their numbers, we would have started them on dialysis,” she

says. “It can be done. It just takes a lot of time and energy. You have to deal with concerns beyond just the kidney numbers – people’s pain, shortness of breath, fatigue. It’s more of a palliative approach.

“For my patients who have decided they don’t want dialysis, we focus on what we can do to make them feel better,” says Dr. Rao. “If they are anemic and very fatigued or short of breath we can give erythropoietin analogs and iron with the hope that by treating their anemia they’ll feel better. In terms of pain, we know that certain drugs in kidney disease aren’t good, like morphine, but other drugs like dilaudid and fentanyl can be better. Itching is a common complaint and gabapentin can help with that. If the patient is short of breath with fluid buildup, we give them a high dose of diuretics even if it makes their kidney function a little bit worse because the more important thing is for them not to feel short of breath.”

Emergency Medicine When is an injury from a fall really from a fall or from abuse? Emergency medicine physician **Tony Rosen, MD, MPH**, and colleagues at NewYork-Presbyterian/Weill Cornell who specialize in the care of older adults, are hoping to find out in partnership with the Division of Geriatrics and Palliative Medicine and Department of Radiology, as well as the Brooklyn District Attorney’s Office and New York City Elder Abuse Center.

“Child abuse is commonly identified in the Emergency Department, but elder abuse is almost never identified in the ED,” says Dr. Rosen, who was recently awarded the Paul B. Beeson Emerging Leaders Career Development Award in Aging by the National Institute on Aging and the American Federation for Aging Research to continue and expand his groundbreaking research in elder abuse. “Often child abuse concerns are raised in the ED first. We’ve known for decades that there are injury patterns that just shouldn’t happen in a child as a result of an accidental fall from the monkey bars. Looking for these injury patterns is a critical part of child abuse detection. Unfortunately, we don’t know nearly as much about how to identify injuries in older adults that are not accidental and distinguishing between accidents and abuse is much harder in this population.”

A number of elder abuse victims come to the ED for care, says Dr. Rosen, but they are difficult for medical providers to identify. “Older adults fall very commonly. They may have osteopenia and



“Many of us in our field are thinking about ways to improve the care that we provide to older adults and design interventions that we can use to focus on specific problems common to this vulnerable population.”

— Tony Rosen, MD, MPH

their bones are likely to break more easily. They have thinner skin and may be on warfarin, which leads to easy bruising. Therefore, frequently ED providers presume that injuries are accidental and don’t even consider physical abuse as a possible cause.”

Determined to change this paradigm, in 2012 Dr. Rosen and his colleagues set out to identify differences between injuries that present in the ED that are accidental and those that are not. “Very quickly we came upon a key problem: We weren’t finding any victims of elder abuse,” he says. “In fact, in that year alone we discovered our ED had cared for nearly 2,000 patients with falls and identified zero cases of elder abuse. So how do you investigate something that you’re not finding?”

The answer was to examine injuries of elder abuse victims identified by the Brooklyn DA’s office. “We looked at legal case files where the perpetrator was convicted or pled guilty, focusing on police photographs and subpoenaed medical records,” explains Dr. Rosen. “From a research perspective, looking at those cases helped us to determine the kinds of injuries common to abuse victims. But that’s not enough. We also wanted to know how these injuries differed from falls that are much more common. These differences will assist us in identifying injuries that really aren’t from a fall after all. Therefore, we’ve enrolled fall victims presenting to our ED to compare their injuries to these known abuse victims.

“We are also working with Weill Cornell radiologists to determine what kind of imaging findings might be suggestive of elder abuse and how radiologists can contribute to evaluation of potential elder abuse,” says Dr. Rosen. “We’ve also developed an imaging screening protocol for elder abuse which involves a CT scan of the maxillofacial area, X-rays of the forearms, and a reevaluation of the chest X-ray to look for old rib fractures.” **Veronica LoFaso, MD**, of the Division of Geriatrics and Palliative Medicine, has also been a key collaborator in this research.

In addition, Dr. Rosen, **Alyssa Elman**, Program Administrator, Emergency Medicine (pictured below), and their colleagues **Michael Stern, MD**, and **Mary Mulcare, MD**, emergency physicians with additional geriatrics training, have designed an ED-based Vulnerable Elder Protection Team in collaboration with New York City’s Adult Protective Services, the New York Police Department, Emergency Medical Services, and other relevant professionals, that launched in April. “There are thousands of child protection teams in EDs around the country, but as far as we know, there has never been the equivalent for older adult victims,” says Dr. Rosen. “With our program, an ED physician who suspects elder abuse can page the multidisciplinary team to help do further evaluation and ensure safety.”

Otolaryngology By the time Americans reach their 70s, two-thirds experience hearing loss. Indeed, age-related hearing loss is the third most common geriatric health condition and one that **Justin S. Golub, MD, MS**, an otologist/neurotologist at NewYork-Presbyterian/Columbia, often sees in his practice.

According to recent research, including by Dr. Golub’s team at Columbia, this troublesome and often inevitable condition in later life may also increase the risk of cognitive problems. “There is a growing interest in age-related hearing loss as a public health issue, particularly as several major studies have shown that older adults with hearing loss are more likely to develop Alzheimer’s disease and related dementias compared to those with normal hearing,” says Dr. Golub. “While it is not known whether hearing loss causes dementia, theoretical models propose a causal link. For example, hearing loss can result in social isolation or difficulty processing the

higher content of speech. Over time, this might reduce cognitive stimulation and render the individual more prone to dementia.”

A clinician-scientist, Dr. Golub is pursuing research to determine if this hypothesis is valid. “If we were to show that age-related hearing loss causes dementia and that we could treat it and reduce the risk of dementia, that would be a major finding,” says Dr. Golub. “Drawing on a longitudinal study of 1,881 participants that was developed at Columbia – the Washington Heights-Inwood Columbia Aging Project (WHICAP) – we conducted an investigation on aging and dementia in an ethnically diverse community.”



“Hearing loss has traditionally been considered a normal or benign byproduct of aging. But it’s not. It is a problem to be treated just like arthritis or high blood pressure.”

— Justin S. Golub, MD, MS

The results of their research were published in the March 2017 issue of the *Journal of the American Geriatric Society*. Hearing loss was associated with 1.69 times the risk of incident dementia, adjusting for demographic characteristics, cardiovascular risk factors, apolipoprotein E4 genotype, and stroke. The researchers concluded that hearing loss was associated with greater risk of incident dementia in a multiethnic cohort. “The next questions are how and why are these two conditions associated,” says Dr. Golub.

According to Dr. Golub, there are excellent treatments available for older adults with hearing loss, and yet little awareness of what otolaryngology can offer. “Today’s hearing aids are very sophisticated and cochlear implants are well proven for severe to profound hearing loss,” notes Dr. Golub. “Thirty years ago, these devices were considered experimental, but cochlear implants are now the standard of care for people who have severe hearing loss. A number of studies, including some from Columbia, have shown that they are very safe in the elderly – even those into their 80s and 90s.

“We are leading a paradigm shift here at Columbia,” adds Dr. Golub. “Hearing loss has traditionally been considered a normal or benign byproduct of aging. But it’s not. It is a problem to be treated just like arthritis or high blood pressure.”

Gastroenterology Heather L. Yeo, MD, MHS, a colorectal surgeon with Weill Cornell, is committed to improving surgical outcomes and patient quality of life in older adults. “My grandmother, who passed away at 102, and I were very close. Our relationship has had a great impact on my work and how I interact with my patients,” says Dr. Yeo, who is trained in surgical oncology and colon and rectal surgery with a particular focus on rectal cancer. “As we’ve become

better at treating disease, patients are living longer, and so quality of life is very important and the focus of much of my research. There are ongoing controversies as to the best treatment options for older adults with low rectal cancers. Obviously, these procedures can really affect quality of life.”

According to Dr. Yeo, GI cancers have a high rate of postsurgical complications and readmissions. “There is clear evidence that intense follow-up can reduce these problems, but few practices have the resources to do that. Older patients have the highest rate of complications. Many of their issues relate to maintaining nutrition or hydration status. We have found that these concerns can be addressed by using a mobile app.”

Working with Cornell Tech, the new technology campus of Cornell University, and with input from geriatricians and nurses, Dr. Yeo initiated a pilot study of an encrypted mobile app for patients with GI cancer following surgery. Prior to starting the study, the researchers conducted a survey to determine if older adults would see the benefits of such an app. “While older adults have a slightly lower rate of phone usage, the majority were more than willing to use the app if it would improve their postop recovery,” says Dr. Yeo. “We’ve tried to keep the app quite simple and easy to use with large fonts and big buttons that don’t require complex dexterity. It couldn’t take a lot of time or energy to use.”

With funding from the Center for Advanced Digestive Care and The Society for Surgery of the Alimentary Tract, Dr. Yeo and her colleagues developed the smart phone mHEALS app that includes reminders to drink water, monitors pain levels, and has

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— Heather L. Yeo, MD, MHS



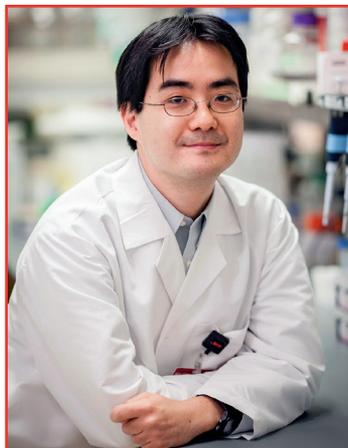
the ability to take a photo for a postop wound check. “Patients see this as an advantage in terms of cost and travel; for a lot of older adults, getting into New York to see their physician is no small task,” says Dr. Yeo. The researchers are also integrating mHEALS components with Fitbit to track postop mobility recovery. They have finished a successful feasibility pilot and are now enrolling for a randomized controlled trial of mHEALS versus usual care.

Dr. Yeo believes that the face-to-face interaction between a patient and physician and the use of mobile technology are not mutually exclusive. “The app serves as an adjunct to care, and it also gives patients a sense of self-empowerment,” she says. “Patients tend to be more active in recovery and in their own care if they know it is partly dependent on them. As physicians, we need to let them know we care about them and that our focus is not only on their quantity of life, but also their quality of life and how they recover.”

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Neurology Makoto Ishii, MD, PhD, a neurologist and physician-scientist at NewYork-Presbyterian/Weill Cornell, could see the signs of Alzheimer's in his grandmother before she started to display cognitive issues. "I noticed that she began losing weight," says Dr. Ishii. "It was clear that well into the disease this was unintentional. That really struck me. It's one thing to read about it in a patient's record, but when you actually see this in someone who's close to you, I had to ask, 'are these signs related?'"



"You can learn about Alzheimer's, Parkinson's, or stroke, but it's really when you start taking care of patients that you begin to understand what's going on."

— Makoto Ishii, MD, PhD

At the time, Dr. Ishii was pursuing a residency in neurology at Weill Cornell, with a particular interest in biomedical research on neurodegenerative and neuroendocrine disorders. After residency, he received a Leon Levy Neuroscience Fellowship to conduct research studies in molecular mechanisms underlying the body weight and neuroendocrine deficits in Alzheimer's disease. "I was particularly fascinated about weight loss in patients with neurodegenerative disorders, particularly in Alzheimer's disease, that seemed to correlate and progress with their disease," says Dr. Ishii, who is now pursuing research at the Feil Family Brain and Mind Research Institute at Weill Cornell. "The more severe the disease, the more weight they tended to lose, and by the time they were at the terminal stage of dementia, they had almost no body fat."

Trained in molecular genetics, Dr. Ishii sought to find out if amyloid-beta, a major pathogenic factor in Alzheimer's disease, starts to accumulate and damage neurons that regulate body weight before it impacts the memory centers which, classically, are the first brain regions that are thought to be affected. His studies were the first to demonstrate in animal models that amyloid-beta can disrupt specific brain cells in the leptin pathway, an essential regulator of body weight, leading to body weight and metabolic deficits prior to any cognitive dysfunction. In a comprehensive review published last year, Dr. Ishii found that non-cognitive manifestations of Alzheimer's disease, including weight loss, have been reported to occur some five or 10 years earlier. "We can attribute them to a brain region called the hypothalamus; examples would be sleep disorders, endocrine hormonal changes, agitation, and bone loss," he says. "These early signs suggest that whatever is triggering the Alzheimer's disease, whether it's amyloid-beta or tau, is, we think, affecting the hypothalamus early. It's been woefully understudied on a clinical level and much less on a molecular level. We want to better understand this manifestation on a molecular level. And, by

doing so, can we somehow intervene with something that may be beneficial to our patients?"

In 2015, Dr. Ishii was awarded the Paul B. Beeson Emerging Leaders Career Development Award in Aging from the National Institute on Aging and the American Federation for Aging Research. With the five-year grant, Dr. Ishii will continue to investigate the mechanisms underlying weight loss in Alzheimer's disease by combining detailed molecular studies in mice with studies using clinically relevant human samples. "I'm hopeful that these studies reveal weight loss as an important clinical aspect of Alzheimer's disease and may lead to the development of novel therapeutic agents and diagnostic tools," he says.

Urology While in medical school, Bilal Chughtai, MD, became drawn to the plight of older adults who cope with so many health issues. "Then during residency I spent a lot of time caring for older patients," he says, "and I have always been focused on helping them to maintain their dignity and quality of life."

Incontinence in later life can be especially trying, physically as well as emotionally, and treatments that would be offered to younger patients often do not serve an older population well. "As a result, incontinence in older patients requires coordinated care and understanding in order to develop solutions that address the underlying urological complaint," says Dr. Chughtai, a urologist at NewYork-Presbyterian/Weill Cornell who specializes in voiding dysfunction, female urology, and neurourology. "Unfortunately, when it comes to conditions like urinary incontinence in both men and in women, many times patients don't want to bring their problem to the attention of their doctors, and so they suffer silently. The average time before seeking help is about seven years. Part of our goal is to make patients comfortable with talking about their symptoms and discussing options for treatment that work best for them and their caregivers."

"During residency I spent a lot of time caring for older patients, and I have always been focused on helping them to maintain their dignity and quality of life."

— Bilal Chughtai, MD



Dr. Chughtai stresses the importance of individualizing a treatment plan for each patient. These may include novel approaches from lifestyle modifications to nerve modulation. He also prospectively follows these patients in order to monitor their improvement and any complications that may occur. "I coordinate care with their respective physicians to ensure treatments support their total care plan," says Dr. Chughtai. "One of my main goals is to come up with individualized solutions for patients that will really allow them to benefit in a meaningful way."

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“I’m very excited for what my future holds, in part, because of the support and the mentorship that Dr. Evelyn Granieri has given to me.”
 — Mark P. Abrams, MD

Mark P. Abrams, MD, now a cardiology fellow at NewYork-Presbyterian/Columbia, credits the mentorship of Dr. Evelyn Granieri during his residency as critical to his career goals in medical education.

“My interest in teaching is atypical in that I am not focused on the science component of curriculum, but rather on the more intangible training that relates to the development of emotional intelligence and professional identity of what it means to become a physician,” says Dr. Abrams. “Dr. Granieri is an expert educator with vast experience not only in teaching, but also in teaching people how to teach. As a geriatrician, she is especially attuned to the emotional needs of patients and fostering an awareness and sensitivity in her students to these needs. I knew she would be an ideal mentor for me as I developed a curriculum in this realm for internal medicine residents. In keeping with Dr. Granieri’s own philosophy, I want to help improve the way that we teach new doctors in areas such as empathy and bedside manner that are more abstract and difficult to teach, but crucial to excellent patient care.”

Three years ago during his residency, Dr. Abrams developed a small group, topic-based curriculum facilitated only by peers and without faculty present. “It addresses the overarching theme of physician burnout,” he says. “We talk about topics pertinent to residents in training such as difficult patient encounters, stressful situations in the hospital, and disagreements with attendings. In other words, we focus on concerns that all residents experience as they learn to become better doctors, but have little opportunity to talk about.”

What began as a pilot program is today a sustainable curriculum entitled The READ-SG Program (Reflect, Empathize, Analyze, and Discuss in Small Groups), for which Dr. Granieri serves as faculty advisor. The group is provided monthly for interns, as well as for second and third year internal medicine residents. “We believe that by teaching peer support as a coping mechanism and enhancing advanced emotional maturation that this program can help to reduce symptoms of burnout, increase empathy, and improve the sense of professional development among doctors in training,” say Drs. Granieri and Abrams.

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