

Division of Gerontology



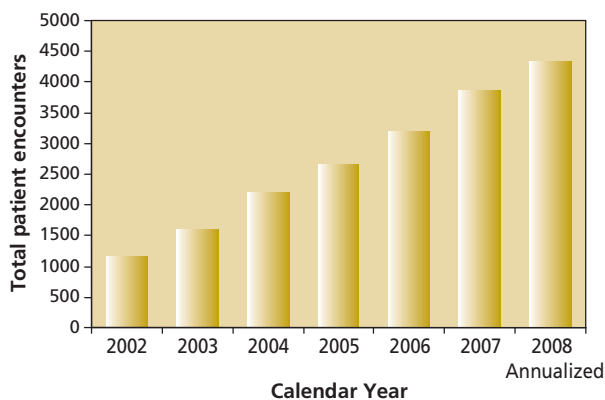
Lewis A. Lipsitz, MD,
Chief

● Overview

The Division of Gerontology is one of the oldest and largest academic programs in aging in this country. In addition to faculty at Beth Israel Deaconess Medical Center, it includes clinical and research faculty from Hebrew SeniorLife, one of the nation's leading clinical research centers in gerontology, providing multilevel long-term care and rehabilitation services for seniors. The Division's research, education and clinical activities are spread among a number of sites in the Boston area. Suzanne Salamon, MD is Associate Chief for Clinical Geriatrics; Douglas Kiel, MD is Director of Medical Research and Senior Scientist at Hebrew SeniorLife; and Robert Schreiber, MD is Physician-in-Chief at Hebrew SeniorLife.

● Clinical Activities

Senior Health @ BIDMC – Under the leadership of Dr. Suzanne Salamon, the ambulatory geriatrics practice at BIDMC increased the number of patient encounters by 22% over FY 2007. This growth was accompanied by a decrease in wait time for new and follow-up appointments. The clinic staff was recognized for their excellence in customer service, despite



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- Gerontology ambulatory clinic growth of patient encounters by year

the challenges of working with elderly patients who have complex medical and social problems. In the *US News & World Report* "Best Hospitals" for 2007, BIDMC Geriatrics ranked 10th among the nation's 5,462 hospitals.

Dr. Julie Moran founded the Aging and Developmental Disabilities Clinic, which serves the increasing population of aging adults with developmental disabilities. Dr. Moran was awarded the 2008 Provider of the Year award from Growthways Inc., a community agency serving this patient population.

The Hebrew SeniorLife (HSL) Department of Medicine supports many of the Division's faculty who provide rehabilitative, long-term, and acute care for a population of nearly 4,000 elderly patients. Five major areas of academic and clinical activities include:

1. Evidence-based Health Care and Community Wellness Programs
2. Evidence-based Quality of Care Initiatives in Long-Term Care Populations
3. Research involving Multi-drug resistant Organism Transmission in Long Term Care Facilities
4. Hebrew SeniorLife and BIDMC Transitional Care Program
5. Hebrew SeniorLife Palliative Care and Hospice Initiative

Geriatric Consult Service – Under the leadership of Dr. Julie Moran, this multidisciplinary service is building partnerships with the surgical subspecialties in an effort to improve the perioperative care of elderly patients.

Geriatric Inpatient Unit – Under the leadership of Drs. Howard Nachamie, John Jainchill and Melissa Mattison, a 15-bed inpatient geriatric unit has been established to provide

age appropriate, evidence-based care; prevent common complications of hospitalization such as falls, pressure ulcers, catheter infections and loss of function; and assist patients and their families with making safe transitions to appropriate post-hospital settings.

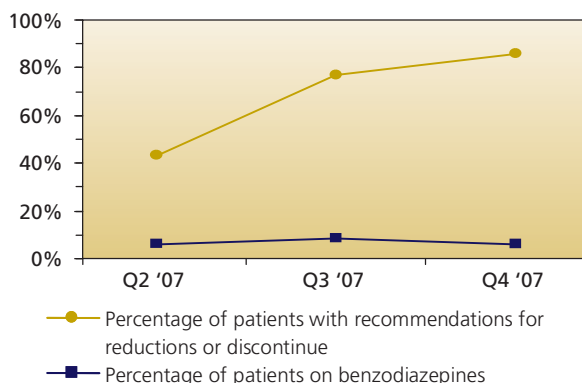
● *Quality Improvement*

Because of the increased risk of fracture in older age, the outpatient geriatrics practice has made osteoporosis screening a high priority for quality improvement. The chart below demonstrates increased attention paid to this problem:

Osteoporosis and Osteopenia Screening F/u visits with 2 or more visits in the last 12 months (excluding new patients and consults)	Q2 '07	Q3 '07	Q4 '07
Number of follow up visits	574	596	703
Sample size	100	100	100
Percentage of patients receiving calcium	47%	59%	70%
Percentage of patients receiving dietary calcium	46%	21%	34%
Percentage of patients receiving Vitamin D	54%	74%	66%
Percentage of patients receiving biophosphonates	13%	16%	19%
Percentage of patients who had Bone Density Screening	44%	58%	70%
% Bone Health Addressed*	79%	86%	90%

*At least 1 of the above items was mentioned in the last 12 months

Benzodiazepines have side effects that are potentially harmful for elderly patients and increase the risk of falls and cognitive changes. As new patients enter the practice, our Geriatricians recommend discontinuation or reduction in the dosages of benzodiazepines. The chart below shows that the number of patients on benzodiazepines who receive recommendations for their dose reduction or discontinuation has increased from 43% to 86%.



● *Educational Programs*

The Reynolds Advancement of Geriatrics Education (AGE) Project at Harvard Medical School and Beth Israel Deaconess Medical Center was officially launched in July 2006 with the support of a \$2 million dollar grant from the D.W. Reynolds Foundation and a \$1 million dollar cost match from BIDMC. The project, which is directed by Drs. Lewis Lipsitz, Principal Investigator; Zaldy Tan, Director of Postgraduate Education; and Anne Fabiny, Director of Medical Student Education and Chief of Geriatrics at Cambridge Health Alliance, consists of three main activities:

● **Medical Student Training:** Harvard Medical School courses are being modified to incorporate more geriatric content and high-fidelity patient simulators are being used to enhance the geriatrics education of medical students.

● **Internal Medicine, Emergency Medicine, and Surgery Residency training:** Enhancement of the BIDMC electronic medical record system is automatically guiding and tracking resident performance in the care of elderly patients; 'geriatrics scholarships' are training BIDMC hospitalists to practice and teach geriatric medicine; and geriatrics faculty are providing consultation and training for emergency medicine and surgery residents.

● **Continuing Medical Education:** Web-based, interactive, case-based educational modules are being produced on important geriatrics topics, including dementia, delirium, pain management, wound care, blood pressure management, and ethical issues in the elderly.

The HMS Geriatric Medicine Fellowship program, accredited at BIDMC and partially supported by Hebrew SeniorLife and other HMS-affiliated hospitals, is one of the largest and most successful in this country, having trained 198 fellows since 1980. During AY 07-08, the program trained six one-year clinical fellows and two second-year fellows who are committed to careers in geriatrics research or education. The program was awarded a three year Geriatric Training Grant from the Health Resources and Services Administration to support the interdisciplinary education of Geriatric Medical, Psychiatry, and Dental Fellows.

For the past decade, the Gerontology Program at Harvard Medical School has been designated a Hartford Center of Excellence in Geriatric Medicine (COE). During the 07-08 academic year, the COE provided research or educational leadership fellowships for 3 talented Senior Research Fellows (Drs. Angela Botts, Jane Driver, and Anupama Gangavati) and career development grants for 3 promising junior faculty members (Angelo Volandes, David Lombard, and Tamara Fong). In addition, the COE supported the development of a novel central educational session for the Patient-Doctor II course, during which all second year medical students visited Hebrew SeniorLife to practice history-taking and physical exams with elderly patients.

● *Research Activities*

Research Funding • AY'07

Federal Direct (BIDMC)	995,259
Federal Direct (HSL)	6,334,596
Federal Indirect (BIDMC)	78,896
Federal Indirect (HSL)	1,827,368
Other Direct (BIDMC)	605,202
Other Indirect (HSL)	403,891
Other Indirect (BIDMC)	68,842
Other Direct (HSL)	69,070

The Division of Gerontology research program spans BIDMC and Hebrew SeniorLife's Institute for Aging Research, where projects range from basic studies of mitochondrial mutations to genetic epidemiology and health policy. Dr. Douglas Kiel, who directs the Musculoskeletal Research group received a five-year R01 grant from NIA to continue the Framingham Osteoporosis Study, which has been continuously funded for the past 15 years. This grant supports genome wide association studies to discover genes related to osteoporosis. Dr. Marian Hannan received a continuation of her R01 from NIA that supports her studies of foot disorders and disability in seniors, as well as a junior investigator who received a minority supplement to study balance and falls. Dr. David Karasik received a 2-year R21 from the NIAMS

that uses comparative genomics in mice to discover genes that influence bone in humans.

Dr. Sharon Inouye, the Director of The Aging Brain program, was awarded a 3-year award from the Retirement Research Foundation to evaluate the success of her internationally renown program to reduce delirium in the hospital setting, called the Hospital Elder Life Program.

The Palliative Care Research program at HSL, directed by Dr. Susan L. Mitchell, MD, MPH is currently funded by two large NIH R01s to study the end-of-life care of nursing home residents with advanced dementia and their families. Dr. Mitchell and colleagues have published new work on the relation between antimicrobial utilization patterns among nursing home residents with advanced dementia, demonstrating a high prevalence of multiple drug-resistant organisms emerging during end of life treatments.

● *Awards and Honors*

Dr. Sharon Inouye was elected to the prestigious Association of American Physicians in recognition of her research accomplishments. Dr. Ihab Hajjar received a K23 Mentored Career Development Award from the NIA to study the neurocognitive effects of renin-angiotensin system inhibition in elderly patients with hypertension. Dr. Eran Metzger received a prestigious 2-year "Practice Change Fellows Award" sponsored by Atlantic Philanthropies and the Hartford Foundation focused on "Improving Collaborative Care Treatment of Depression in the Frail Elderly." Dr. Lewis Lipsitz received a Senior Leadership Award from the Association of Directors of Geriatric Academic Programs.

● *Selected Publications*

Kiel DP, Ferrari S, Cupples L, Karasik D, Manen D, Imamovic A, Herbert A, Dupuis J. Genetic variation at the low-density lipoprotein receptor-related protein 5 (LRP5) locus modulates Wnt signaling and the relationship of physical activity with bone mineral density in men. *Bone* 2007; 40:587-596.

D'Agata E, Mitchell SL. Antimicrobial utilization patterns among nursing home residents with advanced dementia. *Arch Int Med* 2008; 168:357-362.

Mitchell SL. Clinical Crossroads: A 93-Year Old Man with Advanced Dementia and Eating Problems. *JAMA* 2007; 298:2527-2536.

Hannan MT, Litman HJ, Araujo AB, McLennan CE, McLean RR, McKinley JB, Chen TC, Holick MF. Serum 25-Hydroxyvitamin D and bone mineral density in a racially and ethnically diverse group of men. *J Clin Metab Endocrinol* 2008; 93:40-46.

Metzger, ED. Depression among older adults with dementia: double trouble. *Geriatrics & Aging* 2008; 11:31-6.

Last D, Alsop DC, Abduljalil AM, Marquis RP, de Bazelaire C, Hu K, Cavallerano J, Novak V. Global and regional effects of type 2 diabetes mellitus on brain tissue volumes and cerebral vasoreactivity. *Diabetes Care* 2007; 30:1193-9.

Hu K, Peng CK, Huang NE, Wu Z, Lipsitz LA, Cavallerano J, Novak V. Altered phase interactions between spontaneous blood pressure and flow fluctuations in type 2 diabetes mellitus: Nonlinear assessment of cerebral auto-regulation. *Physica A* 2008; 387:2279-2292.

Rudolph JL, Jones RN, Rasmussen LS, Silverstein JH, Inouye SK, Marcantonio ER. Independent vascular and cognitive risk factors for postoperative delirium. *Am J Med* 2007; 120:807-813.

Leslie DL, Marcantonio ER, Zhang Y, Leo-Summers L, Inouye SK. One-year health care costs associated with delirium in the elderly. *Arch Intern Med* 2008; 168:27-32.

Hajjar I, Lackland DT, Cupples A, Lipsitz LA. Association between concurrent and remote blood pressure and disability in older adults. *Hypertension* 2007; 50:1026-1032.

● Faculty

Angela Botts, MD	Melvin Hecht, MD	David Karasik, MD	Patricia O'Sullivan, MD
Jennifer Brinkerhoff, MD	Li Hsiang Hsu, ScD, MPH	Konstantin Khrapko, PhD	Madhuri Reddy, MD
Madalena Costa, PhD	Kun Hu, PhD	Edward Marcantonio, MD	Elizabeth Samelson, PhD
Irene Crofton, MD	Sharon Inouye, MD	Melissa Mattison, MD	Jorge Serrador, PhD
Virginia Cummings, MD	John Jainchill, MD	Susan Mitchell, MD, MPH	Zaldy Tan, MD
Anu Gangavati, MD	Richard Jones, ScD	Howard Nachamie, MD	David Tsai, MD
Ihab Hajjar, MD	Susan Kalish, MD	Vera Novak, MD, PhD	San Wang, MD
Marian Hannan, ScD, MPH	Ruth Kandel, MD	Erin O'Fallon, MD	