



PULMONARY, CRITICAL CARE & SLEEP MEDICINE

J. Woodrow Weiss, MD, Chief — The Division of Pulmonary, Critical Care and Sleep Medicine provides clinical services including oversight of the Medical Critical Care Service, inpatient and ambulatory pulmonary consultations, and inpatient and ambulatory sleep medicine evaluations and treatment. Division members also occupy leadership positions in undergraduate (Harvard Medical School), graduate (Beth Israel Deaconess Medicine Residency, Harvard Fellowship in Pulmonary and Critical Care Medicine, Beth Israel Deaconess Sleep Medicine Fellowship) and post-graduate education.

Members of the Division conduct active research programs in the following areas: pathogenesis of pulmonary vascular disease, causes and consequences of sleep disordered breathing, mechanisms of breathlessness, treatment of interstitial lung disease, basic mechanisms of innate immunity in the lung in opportunistic infections, effectiveness of critical care therapy, eosinophil biology, leukocyte trafficking in the lung and control of hypoxic chemosensitivity.

Highlights

This year, the Division of Pulmonary, Critical Care and Sleep Medicine again received national recognition for its clinical and educational achievements while Division members continued to produce novel research discoveries. The active medical intensive care program implemented new pathways to promote patient- and family-centered care while continuing efforts to reduce hospital-acquired infections. Numerous individual faculty

members received recognition for excellence as teachers, receiving awards for excellence in teaching both undergraduates (medical students) and graduates (medical residents and fellows in pulmonary and critical care medicine and sleep medicine). Among the research accomplishments, both Drs. Michael Howell and Michael Donnino continued their studies defining optimal therapy for septic shock.

Efforts led by Dr. Howell, Division faculty member and hospital Director of Critical Care Quality, resulted in the medical center receiving the Sustained Improvement Award as part of the 2011 National Awards Program to Recognize Progress in Eliminating Healthcare-Associated Infections, awarded by the U.S. Department of Health and Human Services. BIDMC was one of only ten hospitals in the country and the only hospital in New England to earn this honor.

As has been true in prior years, numerous Division faculty won teaching awards this year. Dr. Donnino received the Teacher of the Year



Asha Anandaiah, MD

Top: Praveen Akuthota, MD

Award from both Internal Medicine and Emergency Medicine residents. He was also recognized as National Teacher of the Year by the American College of Emergency Physicians. Dr. Howell was awarded the Robert C. Moellering Award for Faculty Excellence in Teaching from the Department of Medicine, and David Roberts received a Class Day Award for Best Clinical Instructor at BIDMC from the class of 2010.

In critical care research, Dr. Donnino and colleagues continued their work attempting to stratify patients with sepsis on presentation to the hospital. These investigators showed that common laboratory values such as white blood cell count did not predict bacteremia in patients suspected of infection on presenta-

tion, but lactate levels measured at point of care do have prognostic value. Dr. Howell and his collaborators developed and validated a sepsis staging system – Predisposition, Infection, Response Organ failure (PIRO) – to further assist patient risk stratification. Dr. Howell also published a study of teamwork and leadership in early cardiopulmonary resuscitation, and Dr. Donnino served on the American Heart Association committee that drafted the 2010 guidelines for post-CPR care.

Faculty

Praveen Akuthota, MD
Amit Anand, MD
Asha Anandaiah, MD
Robert Banzett, PhD
Douglas Beach, MD
Jacqueline Chang, MD
Peter Clardy, MD
David Delaney, MD
Michael Donnino, MD
Armin Ernst, MD
Diana Gallagher, MD
Norma Gerard, PhD

Sean Gilman, MD
Geoffrey Gilmartin, MD
Michael Howell, MD, MPH
Henry Koziel, MD
Peter LaCamera, MD
Adnan Majid, MD
Gaetane Michaud, MD
Dilip Nataraj, MD
Carl O'Donnell, ScD, MPH
Michael Parker, MD
Naimish Patel, MD
Sanjay Patel, MD

Melanie Pogach, MD
Susan Redline, MD, MPH
David Roberts, MD
Laura Rock, MD
Richard Schwartzstein, MD
Ronald Silvestri, MD
Amy Sullivan, EdD
Souvenir Tachado, MD
Robert Thomas, MD
Mourad Toporsian, PhD
J. Woodrow Weiss, MD
Joseph Zibrak, MD



The Division is committed to improving the experience of patients and families during stays in the intensive care unit, and our Patient and Family Advisory Council has identified communication as one of the most important determinants of the experience. To improve communication, Drs. Laura Rock, Richard Schwartzstein, David Roberts, Melanie Pogach and Peter Clardy have implemented a novel program among resident physicians. Using simulations to help the residents learn principles of good communication in family meetings, the program engages volunteers to play the roles of patients' family members while the residents discuss prognosis, patients' wishes and treatment options, including end-of-life care. The program is being formally evaluated, but preliminary feedback from nurses and families suggests that it is effective.

Laura Rock, MD

Selected Publications

Akuthota P, Xenakis JJ, Weller PF. Eosinophils: Offenders or general bystanders in allergic airway disease and pulmonary immunity? *J Innate Immun* 2011; 3:113-9.

Anandaiah A, Dheda K, Keane J, Koziel H, Moore DA, Patel NR. Novel developments in the epidemic of HIV and TB coinfection. *Am J Respir Crit Care Med* 2011; 183:987-97.

Donnino MW, Carney E, Cocchi MN, Barbash I, Chase M, Joyce N, Chou PP, Ngo L. Thiamine deficiency in critically ill patients with sepsis. *Journal Crit Care* 2010; 25:576-81.

Zhang X, Schmudde I, Laumonier Y, Pandey MK, Clark JR, König P, Gerard NP, Gerard C, Wills-Karp M, Köhl J. A critical role for C5L2 in the pathogenesis of experimental allergic asthma. *J Immunol* 2010; 85:6741-52.

Hunziker S, Johansson AC, Tschan F, Semmer NK, Rock L, Howell MD, Marsch S. Teamwork and leadership in cardiopulmonary resuscitation. *J Am Coll Cardiol* 2011; 57:2381-8.

Chang WC, Hartshorn KL, White MR, Moyo P, Michelow IC, Koziel H, Kinane BT, Schmidt EV, Fujita T, Takahashi K. Recombinant chimeric lectins consisting of mannose-binding lectin and L-ficolin are potent inhibitors of influenza A virus compared with mannose-binding lectin. *Biochem Pharm* 2011; 81:388-95.

Bell SK, Krupat E, Fazio SB, Pelletier SR, Schwartzstein RM, Roberts DH. Writing community: a humanism curriculum with an academic lens. *Med Ed Devel* 2011; 1:8-11.

Guo D, Peng CK, Wu HL, Mietus JE, Liu Y, Sun RS, Thomas RJ. ECG-derived cardiopulmonary analysis of pediatric sleep-disordered breathing. *Sleep Med* 2011; 12:384-9.

Honors and Awards

Laura Rock, MD – Named the 2011 Putnam Program Scholar by the American Academy on Communication in Health care.

Michael Donnino, MD – Received National Teacher of the Year Faculty Award from the American College of Emergency Physicians, and Teacher of the Year Award from Internal Medicine Residents and from Emergency Medicine Residents.

Michael Howell, MD, MPH – Awarded the Robert C. Moellering Award for Faculty Excellence in Teaching from the Department of Medicine.

David Roberts, MD – Received a Class Day Award for Best Clinical Instructor at BIDMC from the class of 2010.



Patient Spotlight

Millicent Jick – *My mother's team consisted of nurses, technicians, physical therapists and physicians. Each played a critical role in managing both the physical and emotional aspects of her health. The medical center became a sanctuary of personalized medical care, emotional security, and a protector of her dignity for her and our family. In particular, Dr. David Roberts, Dr. Sara Fazio and Claudia Levenson truly kept my mother ticking for many of those 30 years.*

– Dan Jick, Millicent's son