Celebrating Innovation and Discovery at Baystate Medical Center

ACADEMIC WEEK
MAY 20-24, 2013

“The principal goals of research and education are to create people who are capable of doing new things, not simply of repeating what other generations have done—people who are creative, inventive and discoverers.”

JEAN PIAGET
Welcome from Kevin T. Hinchey, MD, FACP ..................................................1

Awards .................................................................2

Schedule of Events ................................................3

Presenting Speakers ................................................4

Academic Week Abstract Awards

Comparison of Clonidine versus Phenobarbital as an Adjunct Therapy for Neonatal Abstinence Syndrome. A Prospective Randomized Clinical Trial ...............9

Contraceptive Options Postpartum Education (COPE): A Pilot Study .................10

Evaluation of Dyspnea Severity Assessment Methods ..............................11/12

Impact of the 2008 USPSTF Recommendation on PSA Screening in Elderly Men ......13

Mitochondrial Antioxidant Manganese Superoxide Dismutase (MnSOD)
Up-regulated Human Mesenchymal Stem Cells (MSCs) Reduce Inflammation in High Glucose (HG) Exposed Adipocytes ................................................14

Resident Case Logs in the Era of New ACGME Work Hours: Impact of a Night Float Experience at a Single Institution ...............................................15

Significance of Common Bile Duct Dilatation After Cholecystectomy ..........16

The Effect of Controlled Aerobic Exercise on Endothelial Dysfunction in Patients with Pre-diabetes: A Crossover Pilot Study .................................17
Dear Colleagues,

Welcome to Baystate Medical Center’s Academic Week 2013! For the past fourteen years, Academic Week demonstrates that Baystate is an institution where the high quality of research and teaching tangibly contributes to the practice of providing high quality patient care.

Baystate’s strategic goal of advancement of knowledge is woven throughout the fabric of the institution and Academic Week activities. Interprofessional practice and scholarly activities from our physicians, residents, advanced practitioners, nurses, coordinators, allied health professionals and others contribute to this goal. The collection of work accomplished by these individuals is celebrated during the week.

Please review the week’s daily schedule. Visit, learn and recognize the breadth of scholarly contributions made by your Baystate colleagues to the field of medicine.

Thank you for attending Academic Week 2013.

Sincerely,

Kevin T. Hinchey, MD, FACP
Chief Academic Officer
Chair, Academic Week Steering Committee
2013 Award for Outstanding Achievements in Clinical Research

This award recognizes the outstanding contribution of a research staff member to either the conduct of clinical research within Baystate Health (systems contribution) or to the field (regional or national recognition).

Lori Kozikowski, RN, BSN, CCRC
Program Manager
Critical Care Research

2013 Excellence in Teaching Award

This award recognizes an employee who has helped advance the mission of Baystate by making significant contributions towards engaging and motivating learners.

Maura Brennan, MD
Division of Geriatrics and Post Acute Medicine

Honorable Mention:

Gladys Fernandez, MD
Department of Surgery

Susan Scott, RN
Critical Care Nursing
<table>
<thead>
<tr>
<th>MONDAY 5/20</th>
<th>TUESDAY 5/21</th>
<th>WEDNESDAY 5/22</th>
<th>THURSDAY 5/23</th>
<th>FRIDAY 5/24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GALA AM</strong></td>
<td><strong>COMMUNITY DAY</strong></td>
<td><strong>RESEARCH DAY</strong></td>
<td><strong>EDUCATION DAY</strong></td>
<td><strong>CAPSTONE</strong></td>
</tr>
<tr>
<td>8:00–8:30am</td>
<td>12:00–12:30pm</td>
<td>12:00–12:30pm</td>
<td>12:00–12:30pm</td>
<td>12:00–1:00pm</td>
</tr>
<tr>
<td>“Wounds in the Hospitalized Patient: It’s not always what you think” (0.5 CEUs available)</td>
<td>“The Palliative Care Team: Interdisciplinary Teamwork” (0.5 CEUs available)</td>
<td>Research Panel: “Resources at Baystate” (0.5 CEUs available)</td>
<td>Learning Lunch Series for Preceptors: “Teaching Millennials” (0.5 CEUs available)</td>
<td>Awards Luncheon</td>
</tr>
<tr>
<td>Kathleen Gibson Tierney, RN, MSN, CWOCN Armando Paez, MD</td>
<td>Diane Dietzen, MD</td>
<td>Loretta Grikis, MLS AHIP Judy Pride, RN, CCRC Paul Visintainer, PhD Garry Welch, PhD</td>
<td>Arlene Kruzel, RN-BC, MSN, CNRN</td>
<td></td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
</tr>
<tr>
<td>12:45–1:15pm</td>
<td>12:45–1:15pm</td>
<td>12:45–1:15pm</td>
<td>12:45–1:15pm</td>
<td></td>
</tr>
<tr>
<td>“Diabetes Care in the Ambulatory Setting” (0.5 CEUs available)</td>
<td>Research Mentor and Mentee Partnerships: “High Efficacy &amp; Low Risk Collaborations!” (0.5 CEUs available)</td>
<td>Learning Lunch Series for Preceptors: “Evaluating Students” (0.5 CEUs available)</td>
<td>Learning Lunch Series for Preceptors: “Evaluating Students” (0.5 CEUs available)</td>
<td></td>
</tr>
<tr>
<td>Andrew Balder, MD Yolanda DaCosta-Nwosu, RN</td>
<td>Lucienne Luffy-Clayton, MD, FACEP Joan Roche, PhD, RN, GCNS-BC Howard Smithline, MD Eileen Theroux, RN, MA, MSN Maripat Toye, RN, ACRN, MS, CCRP</td>
<td>Rebecca Blanchard, PhD</td>
<td>Rebecca Blanchard, PhD</td>
<td></td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
</tr>
<tr>
<td>3:30–5:00pm</td>
<td>4:00–5:00pm</td>
<td>5:00–6:00pm</td>
<td>5:30–6:30pm</td>
<td></td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
<td><strong>PM</strong></td>
</tr>
<tr>
<td>4:00–5:00pm</td>
<td>5:00–6:30pm</td>
<td>4:00–5:00pm</td>
<td>5:30–6:30pm</td>
<td></td>
</tr>
<tr>
<td>“Interprofessional Education Moves Systems to Synergy” (1.0 CEUs available)</td>
<td>Allied Health Career Fair Tours of Baystate’s Simulation Center &amp; Goldberg/Surgical Skills Lab</td>
<td>Community Event: “Baystate and the Fight against Childhood Obesity”</td>
<td>Community Event: “Baystate and the Fight against Childhood Obesity”</td>
<td></td>
</tr>
<tr>
<td>Kevin Hinchey, MD, FACP Cinnamon Desgres, RN, MSN</td>
<td></td>
<td></td>
<td>Chrystal Wittcopp, MD</td>
<td></td>
</tr>
</tbody>
</table>
Presenting Speakers

Andrew H. Balder, MD is the Senior Medical Director of Boston Medical Center HealthNet Plan, an Attending Physician at Baystate Mason Square Neighborhood Health Center and Assistant Professor of Medicine and Pediatrics at the Western Campus of Tufts University School of Medicine. He completed his residency at the University of Rochester and holds specialty certifications in Internal Medicine and Pediatrics. Dr. Balder is very active in the community and serves on numerous Boards of Directors and Committees, including Partners for a Healthier Community, Holyoke-Chicopee-Springfield Head Start and Bay Care Health Partners and was the recent recipient of the Paul Winske Access Award – Stavros Center for Independent Living.

Rebecca D. Blanchard, PhD is Assistant Professor of Education Research in Academic Affairs and an Assistant Professor of Medicine with Tufts University School of Medicine. Dr. Blanchard received her PhD in education research and statistics and specializes in cultivating collaborative and innovative educational projects. Dr. Blanchard’s ongoing research contributes to Baystate’s mission of providing quality patient care and promotes Baystate as a leader in medical education. While Dr. Blanchard works to improve many aspects of the teaching and learning at Baystate, much of her focus is on individual and program evaluation, interprofessional education, and promoting rigorous educational research.

Thomas Chirdo is a board certified chaplain with the National Association of Catholic Chaplains (NACC) and a Supervisor with the Association for Clinical Pastoral Education (ACPE). He earned a Bachelor of Engineering from Stevens Institute of Technology and worked for five years as an engineer/manager at Nynex Mobile Communications Company in New York. Tom then pursued a calling to ministry and received a Masters of Divinity from Washington Theological Union. He completed a CPE residency at Johns Hopkins Hospital, and then served for six years as the chaplain of Inova Loudoun Hospital in Leesburg, VA. In 2005, he earned a Diversity Leadership Certificate from NTL Institute in Alexandria, VA. In 2007, he began ACPE Supervisory education with the Healthcare Chaplaincy in New York. He has supervised CPE programs at North Shore University Hospital, Manhasset, NY and New York Hospital Queens, Flushing, NY. He currently manages the Spiritual Services Department and oversees the CPE program at Baystate Medical Center.

Yolanda Da Costa-Nwosu, RN attended the University of Massachusetts Amherst where she earned a bachelors degree in nursing. Currently she is a RN patient care coordinator at Baystate Mason Square Neighborhood Health Center for the last seven years. She currently serves as the nursing team leader for the diabetes patient centered medical home initiative.

Cinnamon A. Desgres RN, MSN, C is a Nurse Education Specialist in Nursing Practice and Professional Development and an Adjunct Clinical Nursing Instructor at UMASS Amherst. Cinnamon’s professional development projects include using Simulation as an education and competency tool for students and staff, leadership development courses and inter professional education. She collaborates with health care professionals to develop and implement practice improvements such as documentation and medication safety. Cinnamon is dedicated to mentoring others to reach their full potential.
Diane L. Dietzen, MD is Director, Palliative Medicine Service at Baystate Medical Center and Assistant Professor of Medicine, Tufts University School of Medicine. She completed her Internal Medicine Residency at Temple University Hospital/Temple University School of Medicine. Dr. Dietzen is a reviewer for the Journal of General Internal Medicine and a member of the American College of Physicians, Society of General Internal Medicine, and Academy of Hospice and Palliative Medicine. Her research interests include symptom management and preventing readmissions in palliative care and palliative care education in nursing homes.

Kathy Gibson-Tierney, MSN, RN, CWOCN is a Nurse Clinician at Baystate’s Wound Care and Hyperbaric Medicine Program. She is a specialist in the care of patients with selective disorders of the gastrointestinal, genitourinary, and integumentary systems. She is a member of the Wound, Ostomy and Continence Nurses Society and is a member of the Board of Directors of the Ostomy Association of Greater Springfield.

Loretta Grikis, MLS AHIP is the Reference and Instruction Librarian for the Health Sciences Library. In this role, she performs approximately 600 medical literature searches for Baystate clinicians every year, and provides database searching instruction on-demand and in classrooms settings on a daily basis all over the Baystate Health System.

Kevin T. Hinchey, MD, FACP serves as Baystate Medical Center’s Chief Academic Officer as well as the Dean of the Western Campus of Tufts University School of Medicine. He completed his residency at Baystate Medical Center and was Chief Medical Resident prior to joining the medical staff in 1992. Dr. Hinchey is a Fellow of the American College of Physicians, a member of Hampden County Medical Associates and the Massachusetts Medical Society. Dr. Hinchey has won many awards in the areas of education and innovation and has presented workshops across the country.

D. Joseph Jerry, Ph.D. is Scientific Director of Pioneer Valley Life Sciences Institute, Co-Director of the Rays of Hope Center for Breast Cancer Research, and Professor of Veterinary and Animal Science at the University of Massachusetts Amherst. He received his PhD from Pennsylvania State University and completed his Postdoctoral Training at Jackson Laboratory and Baylor College of Medicine. His research interests are focused on mechanisms regulating susceptibility and, more importantly, resistance to breast cancer. Using mouse models, his lab has identified genetic pathways and hormonal exposures that protect from breast cancer even when the p53 tumor suppressor gene is mutated. Mutation of p53 is a common feature of breast cancer. A renowned geneticist, Dr. Jerry has authored more than 50 scientific papers and a member of NIH review panel for Cancer Genetics.
**Mark A. Keroack, MD, MPH,** Executive Vice President & Chief Operating Officer, Baystate Health. As chief operating officer, Dr. Keroack provides clinical and operational oversight for all patient care activities at Baystate Health. These include care at Baystate’s tertiary care academic medical center in Springfield, Baystate’s 2 regional hospitals in Greenfield and Ware and Baystate Medical Practices, with its 600 providers in 75 practices across the region. He also oversees Baystate’s research and educational programs.

Dr. Keroack came to Baystate Health in June 2011 from University HealthSystem Consortium (UHC) in Oak Brook, Illinois where he served as senior vice president and chief medical officer. At UHC, a national alliance of 112 academic medical centers, he oversaw programs for clinical and operational performance improvement, faculty group practice management and patient safety. He also led UHC’s research to define the leadership and management practices associated with top organizational performance in quality care.

Prior to his national work, Dr. Keroack served on the faculty of the University of Massachusetts for 12 years. During that time, he was a busy infectious disease specialist focusing on HIV and AIDS care and won 5 annual teaching awards. Beginning in 1995, Dr. Keroack took on a more administrative role, serving as the first president of the 700-physician UMass Memorial Medical Group and the vice president of Medical Management for UMass Memorial Health Care. He has authored over 50 publications.

Dr. Keroack is a graduate of Amherst College and Harvard Medical School and received his MPH from Boston University. He trained in internal medicine and infectious diseases at Brigham and Women’s Hospital in Boston, Mass.

**Arlene M. Kruzel, RN-BC, MSN, CNRN** is a Clinical Nurse Educator in Nursing Practice and Professional Development at Baystate Medical Center. She has over 20 years experience as a clinical nurse and over 5 years experience in professional development. Her areas of interest include general medical/surgical and neuroscience care, and nursing staff education. She is a member of the Academy of Medical-Surgical Nurses, American Association of Neuroscience Nurses, American Association of Critical Care Nurses and National Nursing Staff Development Organization. She has presented in a variety of topics including brain tumors, craniotomy, stroke, neurological assessment, seizures, and external ventricular shunts.

**Alice P. Leveston, LICSW, BCD** is a member of the Baystate Inpatient Palliative Care Services as the Clinical Social Worker. She retains licensure in Massachusetts, Connecticut and Florida. Ms. Leveston has extensive experience working with patients and families facing chronic or serious illness and end of life issues through her employment as both a Hospice Social Worker and Social Worker at the Hospital for Special Care, a long term acute care facility in Central Connecticut. Leveston is a Board Certified Diplomate in Clinical Social Work, a Diplomate in Clinical Social Work through NASW and a member of the Academy of Certified Social Workers. She graduated summa cum laude from the University of Vermont and received her Master’s Degree in Social Work at the University of Connecticut.

**Lucienne Lutfy-Clayton MD, FACEP** is Emergency Medicine Clerkship Director, Co-Director of Emergency Medicine Simulation, and an Attending Emergency Physician at Baystate Medical Center and Assistant Professor of Emergency Medicine at Tufts University School of Medicine. She completed her residency in Emergency Medicine at Baystate Medical Center prior to joining the medical staff in 2009. Dr. Lutfy-Clayton has authored numerous publications and is an invited speaker throughout New England. She is dedicated to education and has received several awards, including 2013 Tufts University School of Medicine Excellence in Teaching Award.
Grace Makari-Judson, MD is Chair of the Baystate Health Breast Network, Co-Director of the Rays of Hope Center for Breast Cancer Research and Associate Professor of Medicine, Tufts University School of Medicine. She was Chief Resident, Department of Medicine, Memorial Sloan-Kettering Cancer Center and completed her Fellowship in Hematology-Oncology at New York Hospital prior to joining Baystate Medical Center in 1988. Dr. Makari-Judson is a nationally recognized speaker and author on breast cancer and was recently named to the 2012-2013 US News and World Report “Top Doctors” and has been listed as one of the “Best Doctors in America” since 2002.

Armando Paez, MD is Fellowship Program Director, Wound Care Specialist and Associate Clinical Research Director at Baystate Infectious Diseases. He began his career in wound care while working as a physical therapist prior to medical school. He completed his Residency at the Cleveland Clinic Foundation and his Fellowship at Baystate Infectious Diseases prior to joining the medical staff in 2006. Dr. Paez is board certified in internal medicine and infectious diseases by the American Board of Internal Medicine, physician certified in wound care by the Council for Medical Education and Testing (CMET), and has presented and been published in both the United States and the Philippines.

Judy Pride, RN, CCRC is an Education and Compliance Specialist for the Human Research Protection Program (HRPP). She develops and implements training and educational programs for investigators, research staff and the Institutional Review Boards (IRB) and performs quality assurance monitoring of research protocol and IRB activities to ensure that the conduct and oversight of human subject’s research is in compliance with regulations and in accordance with professional standards. Prior to joining the HRPP, Judy was Manager of Heart and Vascular Research and a Clinical Trials Coordinator at Baystate Medical Center. She is currently pursing a Masters Degree in Clinical Research Administration at George Washington University.

Dr. Joan Roche, PhD, RN, GCNS-BC is an Associate Clinical Professor at the University of Massachusetts Amherst and holds a joint appointment as a Clinical Nurse Specialist at Baystate Medical Center. Dr. Roche is the senior partner in a 10 year clinical practice partnership focused on clinical research, professional development, and Evidence Based Practice in the clinical setting. Her program of research is on Human Patient Simulation, healthcare systems and patient safety. Her research is focused on the relationship between the healthcare system and patient outcomes; and the use of human patient simulation (HPS) in Nursing Education. She is a board certified gerontological clinical specialist and her population of interest is the elder adult in all settings.

Howard A. Smithline, MD is Chief of Emergency Medicine Research, Department of Emergency Medicine at Baystate Medical Center and Associate Professor of Emergency Medicine of Tufts University School of Medicine. He completed his Emergency Medicine Residency and Research Fellowship at Henry Ford Hospital before joining Baystate in 1994. Most recently, he has received grants to study magnetic resonance imaging methods for measuring energy metabolism and to study methods for quantifying the sensation of breathlessness. His goal is to use information from these studies to test novel interventions aimed at improving the care we provide patients presenting with acute heart failure.

Paula C. Squires, SPHR is Senior Vice President for Human Resources and oversees human resources functions for the organization's 10,000 employees throughout the region. Prior to joining Baystate Health in 2006, Ms. Squires had been Vice President for Human Resources at Maine Medical Center. Ms. Squires earned her bachelor's degree from Bridgewater State College, and earned her status as Senior Professional in Human Resources (SPHR) from the Human Resources Certification Institute (HRCI). She has more than 25 years of extensive experience in health care human resources management.
Presenting Speakers continued

Eileen Theroux, RN, MA, MSN is Nurse Care Manager for Baycare Health Partners at Baystate Medical Center. She has 20 years of professional experience in ambulatory and community health settings and her background includes clinical research, staff education and quality improvement projects. She has served as guest lecturer at local colleges and volunteers at a free health clinic. Her particular interest is the relationships between religion, spirituality and health. She is on the Pastoral Advisory Council and Nursing Research Council at Baystate Medical Center.

Maripat Toye, RN, ACNP, MS, CCRP is a Clinical Nurse Specialist in Nursing Practice & Professional Development at Baystate Health System and Project Director for Training and Education for the International Maternal, Pediatric, and Adolescent HIV/AIDS NIH AIDS Clinical Research Trials (IMPAACT) Network. Toye has over twenty years of clinical trials experience and has served as a regulatory specialist, research nurse, study coordinator and principal investigator in clinical research. She serves on the IMPAACT Executive Committee as a reviewer for NIH Clinical Trial protocols and on the NIH panel to review grant submission proposals for Clinical Trial Networks. She has extensive experience in training domestic and international clinical research unit personnel. She has been adjunct faculty at UMass, Amherst and the AIC Schools of Nursing. She presently serves on the Longmeadow Board of Health and the Head Start of Springfield, Chicopee & Holyoke Health Advisory Board.

Paul Visintainer, PhD is the Director of Epidemiology and Biostatistics Research Core at Baystate Medical Center and Professor of Medicine at Tufts University School of Medicine. He received his doctorate in Epidemiology in 1986 from the University of Pittsburgh School of Public Health. After receiving his doctorate, he spent four years with the Henry Ford Health System in Detroit as a research epidemiologist. In 1993, he joined the faculty of New York Medical College and in 2003 became Department Chair in Epidemiology and Biostatistics. He has been with Baystate since 2008, collaborating with clinicians on clinical research. He has published more than 90 research articles, book chapters, and technical reports.

Garry Welch, PhD is director of Behavioral Medicine Research at Baystate Medical Center and Associate Professor of Psychiatry, Tufts University School of Medicine. Welch is working to develop practical, theory-driven clinical assessments and interventions for common chronic medical conditions. This work has ranged from basic psychometric and quality of life assessment studies, meta-analyses and systematic reviews, software and clinical dashboard development, behavior change skills training for clinicians, usability studies of telemedicine systems, culturally-sensitive clinical care strategies, and clinical trials testing novel behavioral and clinical interventions. Welch has served as a permanent member of the National Institutes of Health (NIH) Behavioral Medicine Interventions and Outcomes (BMIO) study section and has been an ad-hoc reviewer on a range of other national and local scientific review committees.

Chrystal Wittcopp, MD is the Medical Director of the Baystate Children’s Hospital Pediatric Weight Management Program and Assistant Professor of Pediatrics at Tufts University School of Medicine. She completed her residency at the University of Rochester in Internal Medicine and Pediatrics and has been at Baystate for the last 10 years. She created the MIGHTY (moving, improving and gaining health together at the Y) Program which is a multidisciplinary treatment program for obese children located the Springfield YMCA and actively serves many local and regional organizations aimed at the prevention and treatment of obesity.
Comparison of Clonidine versus Phenobarbital as an Adjunct Therapy for Neonatal Abstinence Syndrome. A Prospective Randomized Clinical Trial

Rachana Singh, MD, MS; Paul Visintainer, PhD; Susan Chamberlain, MSN, RNC-nic; Kathleen Kopcza, PharmD, BCPS; Bhavesh Shah, MD

BACKGROUND
Phenobarbital is a commonly used as an adjunct to neonatal morphine sulfate (NMS) for neonatal abstinence syndrome (NAS) therapy but may cause neurocognitive delays. Clonidine as an adjunct has been shown to be safe and effective.

OBJECTIVE
To compare phenobarbital versus clonidine as an adjunct to NMS for NAS therapy.

METHODS
A prospective, non-blinded, RCT was conducted at BCH NICU. Infants meeting eligibility criterion were block randomized and stratified for polydrug exposure. Both groups were dosed based on initial Finnegan scores for initiation and weaning of the NMS. Data collected included maternal and infant characteristics, maternal drug history, length of therapy with NMS, mean total dose of NMS, therapy failures and adverse events.

RESULTS
Both the study groups had a shorter length of NMS therapy days when compared to 25 days average prior to the clinical trial. After adjusting for clinical variables infants treated with phenobarbital had shorter inpatient therapy days with NMS (4.6, 95%CI: 0.3, 8.9; p = 0.037). The average total dose of NMS was similar between the two groups (1.1 mg/kg, 95%CI: -0.1, 2.4; p = 0.069). Cox regression showed that the phenobarbital group had a 2.27-fold increase in the rate of treatment completion (HR = 2.27, 95%CI: 1.22, 4.17). 2 infants in the clonidine group failed therapy requiring change to phenobarbital and there was a trend towards greater sedation in phenobarbital group but none of these reached statistical significance. No adverse events were noted in the clonidine group.

CONCLUSIONS
Therapy with phenobarbital as adjunct had a shorter inpatient therapy time as compared to clonidine. The clonidine group however had overall shorter duration of NAS therapy as no outpatient therapy was required. Also, clonidine use was safe and effective with reduced risks for poor neurocognitive and behavioral effects that is of concern with long term phenobarbital exposure.

PRESENTATIONS
Submitted to Pediatric Academic Society meeting to be held in May 2013 and ESPR March 2013.
BACKGROUND
Prenatal contraceptive counseling is recommended by ACOG but may occur inconsistently or be delayed until the postpartum visit. The immediate postpartum period is ideal for contraceptive counseling; many women are highly motivated then to avoid or delay future pregnancies. Long-acting reversible contraceptive (LARC) methods (IUD, implant, injection) in particular have great potential to reduce the risk of a rapid repeat pregnancy.

OBJECTIVE
Our objective was to assess the feasibility and impact of a structured educational intervention on contraceptive choice in the immediate postpartum period.

METHODS
This prospective cohort study enrolled women 18 years of age or older within four days postpartum. Participants were guided through an educational pamphlet with three sections: interactive questions about contraceptive preferences, a comparative effectiveness table, and detailed information about specific methods. We asked participants which method they had planned (before delivery) to use, and which method they now wanted after the intervention. The primary outcome was change in method selection after the intervention; secondary outcomes included intervention feasibility and selection of long-acting reversible contraceptive methods.

RESULTS
Participants (n=134) were young (mean age 24 years, SD 5.3) and minority (64% Hispanic, 17% Black). Most participants (58%) had at least one other child (median parity 2, range 1-6). Most participants wanted an intrauterine device (40%) or were unsure (22%) what method they wanted before the intervention. Most participants (55%) who were initially unsure chose some method of contraception after the intervention; 82% of them chose a LARC method. Thirty-one participants (23%) changed their contraceptive choice after the intervention; of those, 94% chose a LARC method. The intervention took an average of eight minutes (SD 2.4); most of the time, research staff had no difficulty in obtaining time (75%) or privacy (87%) with participants.

IMPLICATIONS
Our study demonstrated the feasibility and effectiveness of a guided educational pamphlet on contraceptive choice, in particular the choice of long acting methods, during the immediate postpartum period.

PRESENTATIONS
Oral Presentation: ACOG Annual Clinical Meeting, New Orleans, LA
May 2013
Evaluation of Dyspnea Severity Assessment Methods
Howard Smithline, MD; Alexander Knee, MS; Michael Donnino, MD; Fidela Blank, RN;
Richard Barus, BS; Ryan Coute, BS; Paul Visintainer, PhD

BACKGROUND
Dyspnea is a primary symptom of acute heart failure (AHF) and has been proposed as an outcome measure for AHF clinical trials. Traditionally, dyspnea severity (DS) is measured by asking the subject to rate the symptom on a Likert or visual analog scale (VAS) while sitting upright. This method is insensitive to mild but clinically important DS. To address this, a Provocative Dyspnea Assessment (PDA) scale was developed. For the PDA, DS is measured repeatedly while stepwise increasing respiratory stress. It is unknown how to best analyze the PDA scores or if the PDA is superior to the traditional method.

OBJECTIVES
The objective was to compare traditional DS (DSTRAD) with four methods of evaluating PDA DS data (DSPDA1-4).

METHODS
This was a planned secondary analysis of a prospective clinical trial. Patients admitted with AHF had their DS measured at three time points. At each time point a VAS score (0 indicating no dyspnea) was obtained in each of 3 sequential steps: sitting upright on O2, sitting upright off O2, and lying down offO2. DS was calculated using five methods.

DSTRAD: raw score while sitting upright.
DSPDA-1: scaled score at the last step tolerated.
DSPDA-2: scaled score at the step with the greatest raw score.
DSPDA-3: 3 scaled scores summed across steps.
DSPDA-4: 3 individual raw scores.

These were then modeled with time as the independent variable controlling for treatment status. Model fit was assessed using signal to noise ratio (SNR; mean divided by model root mean square error) as well as Akaike and Bayesian Information Criterion (AIC and BIC). The analysis was repeated on data restricted to subjects adjudicated to having primarily AHF.

RESULTS
Of 131 subjects randomized, 118 were evaluable and 89% were adjudicated as having primarily AHF. Between 11% and 29% of subjects unexpectedly improved their VAS scores with progressively difficult PDA steps. Model fit was best for DSPDA-3 (SNR) and DSTRAD (AIC and BIC). Restricting the analysis did not change these findings.

CONCLUSIONS
Many patients had VAS scores that changed seemingly inconsistent with AHF physiology. The model fit analysis conflicted regarding a single best DS method. To address these findings, a multi-symptom assessment will be incorporated into future VAS studies and clinical trial outcome measures will be used in models using these DS methods.

continued
Table 1

Percent of Subjects with a Decrease in Raw VAS Scores Across PDA Steps

<table>
<thead>
<tr>
<th>Time</th>
<th>PDA Step 1 to Step 2</th>
<th>PDA Step 2 to Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Dataset</td>
<td>Restricted Dataset</td>
</tr>
<tr>
<td>Baseline</td>
<td>24% (13% - 37%)</td>
<td>24% (13% - 38%)</td>
</tr>
<tr>
<td>Time 1</td>
<td>29% (17% - 44%)</td>
<td>26% (14% - 40%)</td>
</tr>
<tr>
<td>Time 2</td>
<td>16% (6% - 31%)</td>
<td>11% (3% - 27%)</td>
</tr>
</tbody>
</table>

Data are presented as percent with 95%CI.

Table 2

Model Fit

<table>
<thead>
<tr>
<th>Dyspnea Severity Method</th>
<th>SNR*</th>
<th>AIC**</th>
<th>BIC**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Dataset</td>
<td>Restricted Dataset</td>
<td>Full Dataset</td>
</tr>
<tr>
<td>DSTRAD</td>
<td>1.49</td>
<td>1.53</td>
<td>2890</td>
</tr>
<tr>
<td>DSPDA-1</td>
<td>1.42</td>
<td>1.41</td>
<td>3705</td>
</tr>
<tr>
<td>DSPDA-2</td>
<td>1.29</td>
<td>1.33</td>
<td>3752</td>
</tr>
<tr>
<td>DSPDA-3</td>
<td>7.87</td>
<td>7.91</td>
<td>3695</td>
</tr>
<tr>
<td>DSPDA-4</td>
<td>1.55</td>
<td>1.59</td>
<td>6127</td>
</tr>
</tbody>
</table>

*Modeled with generalized least squares random effects regression.
**Modeled with linear mixed model with maximum likelihood estimation.

PRESENTATIONS

Oral Presentation: Society for Academic Emergency Medicine, Atlanta, GA
May 2013

Oral Presentation: New England Regional SAEM Meeting, Providence, RI
April 2013
Impact of the 2008 USPSTF Recommendation on PSA Screening in Elderly Men
Shin Yin Lee, MD; Jennifer Friderici, MS; Mihaela Stefan, MD; Reva Kleppel, MSW, MPH; Michael Rothberg, MD; Maura Brennan, MD

BACKGROUND
Prostate-specific antigen (PSA)-based prostate cancer screening is controversial due to questionable benefit and risks of overdiagnosis. In 2008, the US Preventative Services Task Force (USPSTF) recommended against PSA screening in men ≥75 years old. This was expanded to include men of all ages in the 2012 guideline. Our study evaluates the impact of the 2008 recommendation on screening frequency in elderly men. We hypothesized that screening for men aged ≥75 would decrease, but rates in men aged 65-74 would not change.

METHODS
We included men ≥65 years old with ≥1 annual physical at 15 Baystate Medical Practice clinics between 1/1/06 and 12/31/10. They were stratified into 2 age groups: 65-74 and ≥75. Screening PSA was assumed if a result was recorded within 30 days of the appointment. Subjects were excluded if they had a prior abnormal result (≥4ng/mL). Overall testing patterns were examined using Poisson regression with robust variance estimates to account for repeat visits by a given patient. The proportion of all appointments resulting in PSA testing was calculated on a quarterly basis for each age stratum. Using the 3rd quarter of 2008 as the center point, piecewise regression models were built to examine immediate pre-to-post changes in testing rates, as well as difference in slopes. Alpha was set to 0.05 for all comparisons.

RESULTS
Of the 5204 appointments logged over the study period, 58% were in men aged <75. In men ≥75, the estimated testing rate (TR) increased from 12.9% in the quarter preceding the recommendations to 21.2% immediately after (RR 1.64, 95% CI 1.10, 2.48, p=0.02). The quarterly TR had declined over time in the interval prior to the recommendations (RR 0.91, 95% CI 0.86, 0.97), but stabilized afterwards (RR 1.02, 95% CI 0.97, 1.08, p-value for test of equal slopes=0.006). Similar, but less pronounced trends were seen in men aged 65-74; the TR increased from 40.1% in the quarter immediately preceding the recommendations to 43.3% after (RR 1.08, 95% CI 0.86, 1.35). The quarterly TR declined before the guidelines (RR 0.96, 95% CI 0.93, 0.99), but increased afterwards (RR 1.07, 95% CI 1.04, 1.10, p-value for difference in slopes<0.001).

CONCLUSION
The 2008 recommendation did not reduce PSA testing rates in men aged ≥75 in this study; rather, testing patterns were similar to the younger (65-74 year old) control group. Reasons for guideline failure warrant further study.

PRESENTATIONS
Oral Presentation: American College of Physicians Internal Medicine Conference, San Francisco, CA April 2013
Poster Presentation: American Geriatrics Society Annual Scientific Meeting, Grapevine, TX May 2013

PREVIOUS AWARDS
Winner - 2013 American College of Physicians National Associates Competition (Named in February 2013)
Selected for Honors Presidential Session – AGS Annual Scientific Meeting (Named in February 2013)
Mitochondrial Antioxidant Manganese Superoxide Dismutase (MnSOD) Up-regulated Human Mesenchymal Stem Cells (MSCs) Reduce Inflammation in High Glucose (HG) Exposed Adipocytes

Sabyasachi Sen, MD, PhD; Cyril Chou, BS; Nagendra Yadava, PhD

BACKGROUND
Primary MSCs can differentiate into mature adipocytes, osteocytes or chondrocytes. Behavior of MSCs in HG concentrations is largely unknown. HG exposure of MSCs led to increased intracellular lipid and superoxide accumulation in mitochondria that promotes inflammation and adipogenic differentiation which increases CVD risk. We hypothesized that intra-cellular antioxidant upregulation may reduce reactive oxygen species (ROS) accumulation, reduce associated inflammation and adipogenic differentiation of MSC in HG.

METHODS
We exposed MSCs to HG (25mM) and normal glucose (NG, 5.5 mM). In HG, increased ROS was noted particularly in mitochondria using Mitosox-Red stain. We interrogated mitochondrial respiration (Seahorse) and complexes 1 & 2 protein by BN-PAGE and SDS-PAGE. Next, we transduced hMSCs with Adenovirus containing MnSOD, CAT or control gene GFP (green fluorescent protein) genes at 100 MOI, prior to HG exposure. In-vitro co-culture of adipocytes and transduced MSCs (3:1 ratio) were set up in NG and HG.

RESULTS
HG increased lipid accumulation (3.5 fold), increased Superoxide accumulation in both cytosol and mitochondria. HG increased adipogenic gene expression of Leptin (8-fold), Perilipin (4-fold), CREBPα (10-fold), PPARG (16 fold) while it reduced bone formation markers Alkaline Phosphatase (4 fold), osteocalcin (1.6 fold) and osteopontin (4 fold) mRNAs. HG increased TNFα (Tumor Necrosis Factor), IL6 (interleukin6) and Endothelin1, inflammatory marker gene expressions, significantly. Mitochondrial complex analyses indicated impaired mitochondrial respiration and suppressed complex 1 protein expression in HG exposed MSCs. MnSOD much more than CAT up-regulation, reduced adipogenic and inflammatory gene expressions and rescued suppressed Complex-1. Mature adipocytes when co-cultured with MnSOD upregulated MSC, reduced fat in adipocytes.

CONCLUSIONS
Upregulation of mitochondrial anti-oxidant (MnSOD) much more than cytosolic antioxidant (CAT) reduced inflammation, adipogenic differentiation and improved mitochondrial respiration of stem cells in HG. Therapeutic role of MnSOD upregulated MSC in a setting of HG associated obesity, inflammation and CVD risk in obese diabetic db/db mouse is currently being conducted.

PRESENTATIONS
Poster Presentation: American Heart Association Annual Scientific Sessions
November 2012
Background
The purpose of this study was to compare the number of general surgery resident-reported logged cases before and after establishment of a night float (NF) system at our institution in response to new ACGME resident work hour rules implemented in 2011.

Methods
Blinded ACGME resident case log totals for major (primary and secondary) categories and patient care encounters were reviewed for each post-graduate (PG) level for academic years 2010-2011 (AY2010) and 2011-2012 (AY2011). Total number of cases performed by teaching faculty was obtained from annual departmental fiscal reports. Data consisted of the total case number for all residents per AY and the number of cases for designated category per resident per AY. Comparisons between AY2010 and AY2011 were made by paired t-tests for each PG level and for all resident years combined. To account for teaching faculty turnover, the average number of faculty per month was compared between AY2010 and AY2011 as well.

Results
Data on 27 residents in AY2010 and 30 in AY2011 were reviewed. The number of teaching faculty over the course of the two years remained approximately the same (50 ± 2 vs 49 ± 2, respectively). Similarly the total number of cases performed per year remained approximately the same (10,120 vs 9,742). Surgical resident-logged cases increased from a total of 4,593 in AY2010 to 6,245 in AY2011. Total logged cases per resident in all designated categories for all PG years increased between AY2010 and AY2011 (170.1 vs 208.1). Paired comparison of case numbers per designated category per resident revealed similar increase in spite of the increase in resident complement (p<0.001). When designated categories were examined by PG level, case numbers were significantly higher for AY2011 for PG2, PG3, PG4 levels. PG1 cases per resident did not change significantly. Total PG5 cases increased between AY2010 and AY2011 (1,459 vs 1,484), however, when normalized for resident number cases decreased in the face an n=1 complement increase (365 vs 270; p=0.005).

Conclusions
Despite new ACGME work hour regulations that prompted our adoption of a new NF call system, the total number of cases logged by surgical residents increased, except where an important PG level complement increase occurred. It is not clear whether these results were influenced by the creation of new work-day operative opportunities afforded by the NF experience, but further investigation of both qualitative and quantitative impact of this change is warranted.
Dilation of the common bile duct (CBD) after cholecystectomy has been a matter of controversy in the surgical, gastrointestinal, and radiologic literature. This is significant for the following reason: assuming that the preoperatively normal CBD does not dilate postoperatively, such dilation could indicate undiagnosed disease such as ampullary tumor, pancreatic cancer, sphincter of Oddi dysfunction, or retained CBD stones. The aim of this study is to test the hypothesis of whether the CBD dilates after cholecystectomy in asymptomatic patients; these patients are usually never seen and imaged after the initial post-operative visit if all is well.

This is a prospective cohort study. Patients who had a preoperative abdominal ultrasound with measurement of CBD diameter and who underwent cholecystectomy for a nonmalignant indication were prospectively enrolled to have a follow-up ultrasound at 6 months if they remained asymptomatic after the surgery. Patients were excluded if they had had a previous ERCP. Demographics, symptoms, and ultrasound-related data were collected. Technologists were blinded to the preoperative ultrasound findings.

A total of 60 patients were prospectively enrolled, only of which 40 (24 women, 16 men) completed the study. Most of the remaining 20 were lost to follow-up. Others could not schedule a convenient time within the allocated follow-up period or have not remained asymptomatic. With all patients together, the average CBD diameter before cholecystectomy was 3.9 mm and 3.2 mm after (p = 0.01). For the male patients, the average diameter before cholecystectomy was 4.2 mm and 3.5 mm after (p = 0.02). In the female patients, the average diameter before cholecystectomy was 3.7 mm and 2.9 mm after (p = 0.05). Demographic data and surgical indications yielded no significant findings other than the greater number of female patients, which is expected with the condition. There was no statistical difference between body mass index before and after surgery.

At 6 months after cholecystectomy in all asymptomatic patients, there is a significant decrease in CBD diameter and is not greater than the patient’s age decade in millimeters. The significance is that CBD diameter in patients with CBD dilation after cholecystectomy may be wrongly labeled as “normal,” with the resultant potential for missing important disease. Based on these findings, larger longitudinal study can be created to assess CBD diameter trends over future years after cholecystectomy.
The Effect of Controlled Aerobic Exercise on Endothelial Dysfunction in Patients with Pre-diabetes: A Crossover Pilot Study

Sabyasachi Sen, MD, PhD; Cyril Chou, BS; Nicole Pollard, MS; Pragathi Saligram, MD; Ashequl Islam, MD

INTRODUCTION
At least 57 million US adults have pre-diabetes. Pre-diabetes has the potential to cause endothelial dysfunction by altering function and gene expression of endothelial progenitor cells as well as mature endothelial cells. We hypothesize that aerobic exercise will reduce endothelial inflammation and improve function of endothelial progenitor cells (EPC) in pre-diabetes. Though life-style modification has been shown to prevent progression from Pre-diabetes to overt diabetes, this hypothesis has not been tested.

METHODS
This is a crossover study of 16-week duration, using exercise-naive pre-diabetes patients, aged 45-65 yrs with a BMI of 25-39.9. We studied their vascular reactivity by flow mediated dilatation (FMD), EPC function and gene expression and serum endothelial inflammatory levels after 6 weeks each of aerobic exercise (150min/week) and non exercise phase, in a cross over design with 4 week wash-out period between the 2 phases. The functional assays of EPCs noted were migration in response to chemotactic factors such as Vascular Endothelial Growth Factor (VEGF-A, 0-50ng/ml) and Stromal Cell-Derived Factor-1(SDF1, 0-100 ng/ml) and tube formation assays. Adherence to exercise regimen was confirmed by regular phone calls and downloadable accelerometers.

RESULTS
FMD studies (undertaken by 3 observers) showed mean FMD in non-exercise group of 5.7+0.6%. It improved to 11.2+0.9% post-exercise. There was no statistically significant weight loss noted between the 2 groups, however, biochemistry showed significant reduction in leptin, IL-6, TNF, hs-CRP, Triglyceride, and ApoB levels. Insulin sensitivity (HOMA) and ApoA1 improved post exercise. CD34/VEGFR2 + cells increased post-exercise. EPC gene expression analysis showed decrease of eNOS (5 fold) and increase of PECAM-1 (4-fold), Endothelin-1 (3-fold), IL-6 (2-fold), TNF (3-fold) in non-exercise which improved significantly following exercise, with no change in von-Willebrand’s factor. EPC migration improved post exercise, particularly in response to SDF-1.

CONCLUSION
In this pilot study we demonstrate that pre-diabetic state is associated with poor vascular reactivity and impaired endothelial progenitor cell function. Pre-diabetes may be a clinical window of therapeutic intervention opportunity when intervention such as aerobic exercise allows significant improvement of vascular reactivity, endothelial inflammation and EPC function despite no statistically significant weight loss.

PRESENTATIONS
Late Breaking Poster presentation at Endocrine Society Annual Sessions, Houston, TX June 2012

PUBLICATIONS

PREVIOUS AWARDS
Poster Session Winner
American Association of Clinical Endocrinologists, Annual Scientific & Clinical Congress May 2012