

Volume 92 No. 9 September 2009

Medicine  Health
RHODE ISLAND

PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY



Medical Education



We're not LIKE A Good Neighbor,
WE ARE
The Good Neighbor Alliance



Specializing in Employee Benefits since 1982

Health Dental Life Disability Long Term Care
Pension Plans Workers' Compensation Section 125 Plans



The Good Neighbor Alliance Corporation

The Benefits Specialist

Affiliated with

**RHODE ISLAND
MEDICAL SOCIETY**



**RIMS-INSURANCE
BROKERAGE
CORPORATION**

401-828-7800 or 1-800-462-1910

P.O. Box 1421 Coventry, RI 02816

www.goodneighborall.com

UNDER THE JOINT
EDITORIAL SPONSORSHIP OF:
The Warren Alpert Medical School of
Brown University
Edward J. Wing, MD, Dean of Medicine
& Biological Science

Rhode Island Department of Health
David R. Gifford, MD, MPH, Director

Quality Partners of Rhode Island
Richard W. Besdine, MD, Chief
Medical Officer

Rhode Island Medical Society
Vera A. DePalo, MD, President

EDITORIAL STAFF

Joseph H. Friedman, MD
Editor-in-Chief

Joan M. Retsinas, PhD
Managing Editor

Stanley M. Aronson, MD, MPH
Editor Emeritus

EDITORIAL BOARD

Stanley M. Aronson, MD, MPH

John J. Cronan, MD

James P. Crowley, MD

Edward R. Feller, MD

John P. Fulton, PhD

Peter A. Hollmann, MD

Anthony E. Mega, MD

Marguerite A. Neill, MD

Frank J. Schaberg, Jr., MD

Lawrence W. Vernaglia, JD, MPH

Newell E. Warde, PhD

OFFICERS

Vera A. DePalo, MD
President

Gary Bubly, MD
President-Elect

Nitin S. Damle, MD
Vice President

Alyn L. Adrain, MD
Secretary

Jerald C. Fingerhut, MD
Treasurer

Diane R. Siedlecki, MD
Immediate Past President

DISTRICT & COUNTY PRESIDENTS

Geoffrey R. Hamilton, MD
Bristol County Medical Society

Herbert J. Brennan, DO
Kent County Medical Society

Rafael E. Padilla, MD
Pawtucket Medical Association

Patrick J. Sweeney, MD, MPH, PhD
Providence Medical Association

Nitin S. Damle, MD
Washington County Medical Society

Jacques L. Bonnet-Eymard, MD
Woonsocket District Medical Society

Cover: "Weekapaug Storm," photograph, by Norm Langlois, a Westerly-based freelance photographer who belongs to the Photographic Society of America and the National Association of Photoshop Professionals. The image was shot with a Canon 40D digital SLR. Website: www.langloisimages.com. e-mail: nlphoto@cox.net

Medicine Health RHODE ISLAND

VOLUME 92 No. 9 September 2009

PUBLICATION OF THE RHODE ISLAND MEDICAL SOCIETY

COMMENTARIES

290 Neurology Requirements At Brown
Joseph H. Friedman, MD

291 The Ignoble Fate of the Peppered Moth
Stanley M. Aronson, MD

CONTRIBUTIONS

SPECIAL ISSUE: Medical Education

Guest Editor: Philip A. Gruppuso, MD

292 The Warren Alpert Medical School of Brown University: Class of 2009
Philip A. Gruppuso, MD, Eileen Palenchar, and Janice Viticonte

297 Medical Student Education In Refugee Health and the Concept of a Medical Home
Carol Lewis, MD

300 Redesigning the Clinical Curriculum at the Warren Alpert Medical School of Brown University
Jeffrey Borkan, MD, PhD, Edward Feldmann, MD, Richard Dollase, EdD, and Philip Gruppuso, MS

307 Physician Intervention For Intimate Partner Violence
Sonia Aneja, MD, Amy S. Gottlieb, MD, and Edward Feller, MD

310 Barriers To Healthcare Access In the Southeast Asian Community of Rhode Island
Margret Chang, Edward Feller, MD, and Jayashree Nimmagadda, MSW, PhD, LICSW

COLUMNS

314 IMAGES IN MEDICINE: Upper and (old) Lower Facial (VII) Nerve Palsies On Opposite Sides
Joseph H. Friedman, MD

315 GERIATRICS FOR THE PRACTICING PHYSICIAN: Update On Myelodysplastic Syndrome
Christine M. Ho, MD, and James N. Butera, MD

317 PHYSICIAN'S LEXICON: Epochs, Eras, and Eons
Stanley M. Aronson, MD

318 HEALTH BY NUMBERS: Resettlement of Refugees From Africa and Iraq In Rhode Island: The Impact of Violence and Burden of Disease
Maria-Luisa Vallejo, MA, MEd, MPH, Peter Simon, MD, MPH, and Jiachen Zhou

320 September Heritage

Medicine and Health/Rhode Island (USPS 464-820), a monthly publication, is owned and published by the Rhode Island Medical Society, 235 Promenade St., Suite 500, Providence, RI 02908, Phone: (401) 331-3207. Single copies \$5.00, individual subscriptions \$50.00 per year, and \$100 per year for institutional subscriptions. Published articles represent opinions of the authors and do not necessarily reflect the official policy of the Rhode Island Medical Society, unless clearly specified. Advertisements do not imply sponsorship or endorsement by the Rhode Island Medical Society. Periodicals postage paid at Providence, Rhode Island. ISSN 1086-5462. POSTMASTER: Send address changes to *Medicine and Health/Rhode Island*, 235 Promenade St., Suite 500, Providence, RI 02908. Classified Information: RI Medical Journal Marketing Department, P.O. Box 91055, Johnston, RI 02919, phone: (401) 383-4711, fax: (401) 383-4477, e-mail: rimj@cox.net. Production/Layout Design: John Teehan, e-mail: jtteehan@ff.net.



Commentaries

Neurology Requirements At Brown

Although the “decade of the brain” has come and gone, the Warren Alpert Medical School of Brown University still does not require a rotation in neurology as a requirement for graduation. It stands alone among medical schools in New England, joining only the University of New England School of Osteopathy as an institution without that curricular requirement. The University of Vermont is increasing its required neurology rotation from three to four weeks. Students certainly have been welcomed into the fourth year neurology electives at Brown, but they need not participate. Last year 19 of 90 students took neurology electives.

Some medical schools have a third year required rotation of 4 weeks. Some require its students to take a 4th year “elective” in neurology and some make neurology merely a 2 week rotation, assigning the other part of the month to ophthalmology.

Several years ago I wrote a column for the American Parkinson’s Disease Association entitled, “Why Parkinson’s Disease Patients Should NOT Go To The Emergency Room,” which was distributed to 25,000 families. I got some irate calls from **emergency medicine (EM)** doctors, generally family members of people with PD who had received my column. The column was, and remains, a great service to the PD community, pointing out that the **emergency department (ED)** is useful for medical problems but not for problems directly due to PD. When a patient has a PD-related problem the primary neurologist or whoever is managing the patient should be called. Problems in PD are usually related to clinical fluctuations in motor function, delirium or psychosis. These are arcane to the physician who does not deal with them regularly. The ED physician is put in the difficult position of a doctor with insufficient background to deal with a patient whose problem requires great expertise, yet forced to do something, anything, to help the patient. Often the doctor does the wrong thing. Often the patients’ problems fluctuate: by the time

they are evaluated in the ED, the patients are better and sent home.

It is uncommon for the patient to benefit from this interaction; this was the theme of my article. I stressed, of course, the utility of the ED for evaluating chest pain, cough, fever, falls, etc, but noted that PD-specific problems were rarely addressed adequately by an ED doctor.

My PD colleagues who read the column and my PD patients applauded. The patients especially, since my column was based on their reports over the course of 15 years and simply mirrored their less-than-satisfactory experiences. They continue to tell me how often they had been to the ED before they read my column and learned better.

When the ED doctors contacted me, however, they were less sanguine. How could I say that they were not adequate to the task? So before I responded, I talked to my local ED doctors, all board-certified in EM, and I learned that EM did not require a neurology rotation during residency training. Evidently most training programs, including Brown’s do, but someone could complete an EM residency without any neurology training beyond what was learned in medical school, which was not a lot. I then realized that there are medical schools, not many, but some like Brown, that do not require clinical neurology at all. I was shocked to realize, as I noted to the EM doctors who had complained, that I had perhaps misjudged the situation, and that the doctors were even less qualified than I had thought.

This is not to disrespect Emergency Medicine doctors, or their treatment. It is to point out that lack of training in a discipline leads to lack of expertise. And while it is certainly true that we can’t learn everything about everything, and that we need to prioritize training, one can hopefully believe that neurology is sufficiently important to justify clinical training for all physicians.

Brown has a great pre-clinical course in neurology. It’s recently been revamped, and represents an integrated teaching ef-

fort of basic scientists, neurologists, radiologists, neurosurgeons, pathologists, but it’s a far cry from reading and hearing about a disease to actually caring for patients.

So why does Brown not include neurology as a requirement for graduation? Did the university not think of it? I know for a fact that that it has been discussed. Is it that the Medical School decided that clinical neurology is not sufficiently important? Obviously it wasn’t important enough to require it, but why not? A potential explanation comes from my medical school days when I represented my class at P & S on the school’s Curriculum Committee and got to see course directors up close with their “gloves off.” Some directors would not give up any time to allow someone else to expand theirs. This explanation is unlikely at Brown since a neurology requirement would reduce elective time, which no one would defend with a “do or die” motivation. No, at Brown, the problem has been lack of support. There simply aren’t enough university-affiliated neurologists to take on additional teaching responsibilities. The staff is stretched thin providing services to patients, teaching the residents in neurology, psychiatry, internal medicine and emergency medicine as well as the students who do choose a neurology elective. Like most things, in the end it is about money.

The “human condition” is really the brain. We are our brains. Aristotle thought the soul resided in the pineal gland. He was close but too specific. It resides in our whole brain, in its circuitry, its chemistry, in its gene expression. We need doctors who can appreciate what our brain does, how it does it, and how to best protect it.

Before we lose too much time in this new millennium, before a second decade passes since the end of the “decade of the brain,” I hope that the medical school of Brown University will update its clinical requirements to mandate neurological training.

— JOSEPH H. FRIEDMAN, MD

Disclosure of Financial Interests

Joseph Friedman, MD, Consultant: Acadia Pharmacy; Ovation, Transoral; Grant Research Support: Cephalon, Teva, Novartis, Boehringer-Ingelheim, Sepracor, Glaxo; Speakers’ Bureau: Astra Zeneca, Teva, Novartis, Boehringer-Ingelheim, GlaxoAcadia, Sepracor, Glaxo Smith Kline, Neurogen, and EMD Serono.

The Ignoble Fate of the Peppered Moth

The reasons why men and women enter the profession of medicine are almost as numerous as the numbers of medical school entrants. And it is said with some statistical justification that once these students have completed their formal education, passed their licensure examinations and finally entered the health-care arena, few ever leave medicine for alternative careers. The average graduating physician today is so deeply in debt that the fleeting thought of becoming an itinerant poet or a Zen theologian causes little more than vertiginous panic.

Yet some do leave; and while most in this small group merge into a sea of anonymity precious solely to their kith and kin, there are nonetheless a handful who have left an enduring impression upon the larger society by their non-medical accomplishments. Indeed, some are so famous that their earlier medical careers are obscured or forgotten. Certainly the names of Nostradamus, Rabelais, Marat or Clemenceau elicit no thoughts of medicine except amongst their zealous biographers. And considering Marat's lethal role in France's Reign of Terror - and his well-publicized murder by Charlotte Corday - it is hard to think of him as having once been a healer.

Then there are those physicians who, after decades of diligent medical practice, have ventured beyond medicine to pursue a hobby, and, in doing so, have left an indelible mark upon what we know about the world around us.

Such a person was Henry Bernard Davis Kettlewell (1907 – 1979). Few today remember his name but for a single series of biological experiments appearing in virtually all textbooks on evolutionary biology. And so, in the tranquility of academic circles, Kettlewell has achieved a small measure of well-deserved immortality.

Kettlewell was born in Yorkshire, England, attended Cambridge University and received his medical doctorate from St. Bartholomew's Hospital (Barts), London, in 1929. Until the onset of World War II he practiced medicine in the Surrey district. During the war, he worked fulltime in emergency medical services. In 1949 Kettlewell emigrated to South Africa, leaving the practice of clinical medicine to pursue a lifelong interest in insects, particularly butterflies and moths (lepidopterology).

Following a series of successful investigations regarding suppression of predatory locusts in the southern tier of Africa, particularly Congo and Mozambique, Kettlewell returned to Oxford as the recipient of a research grant to explore the genetics of peppered moths (*Biston betularia*). Somehow, investigations into the ecological influences upon the peppered moth do not stir the souls or the passions of many humans, particularly those who write science stories for daily newspapers. So for the next few years Kettlewell pursued his inquiries on the lives of the English peppered moth unmolested or distracted by journalistic scrutiny.

Kettlewell chose the Deanend forest neighboring upon the industrial city of Birmingham, England, as the base for his investigations. In consecutive censuses of the resident moth population undertaken in the three decades beginning in 1952, he noticed a region-based concentration for the dark-colored

peppered moths. Thus, in the moth populations in forest groves closest to the city (and thus closest to its air-polluting factories) the dominant body coloring of the moths was dark gray or black (a phenomenon he called melanism.) In samplings of moths living on groves more distantly situated from the urban factories, the dominant body color was a pale tan. Kettlewell was aware, too, that the resident moths of the Birmingham region, prior to the 18th Century (and the onset of major industrialization), had been largely pale. He verified the relationship between survival of peppered moths and the color of their wings by releasing large numbers of peppered moths into aviary cages filled with insectivorous birds. The birds ignored dark-colored moths alighting upon dark surfaces and light-colored moths alighting upon light-colored surfaces; but if a dark-colored moth alighted upon a light-colored surface (or vice versa) the birds promptly consumed them.

Kettlewell speculated that the gradually darkening of the moths (melanism) coincided with the effects of the 18th Century Industrial Revolution upon the atmospheric pollution surrounding Birmingham and, concurrently, the gradual darkening of the buildings and tree trunks neighboring upon the coal-burning factories. Thus moths inheriting dark-colored wings had a greater survival likelihood nearer the factories while those inheriting light-colored wings had a greater chance of surviving (and hence producing more moths with light-colored wings in the next generation) in forests remote from the coal-burning factories.

Kettlewell's observations and experimental verification provided yet another example of Darwin's theory that those biological variants best capable of adapting to a changing ecological environment would be better represented in the next generation - the survival of the fittest, the core premise of his theory of evolution. Of course, if by some ecological magic the Birmingham factories should all revert to energy-generation free of any air pollution, then within a generation or two the surfaces of Birmingham's trees and buildings would become lighter; and shortly thereafter the light-colored moths would again predominate.

Kettlewell died in 1957, to his final days an unduly modest man. He cleaved to his anonymity with the tenacity of a barnacle determined, to the end, to have a private rendezvous with obscurity.

– STANLEY M. ARONSON, MD

Disclosure of Financial Interests

Stanley M. Aronson, MD, has no financial interests to disclose.

CORRESPONDENCE

e-mail: SMAMD@cox.net



The Warren Alpert Medical School of Brown University: Class of 2009

Philip A. Gruppuso, MD, Eileen Palenchar, and Janice Viticonte

On May 24, 2009, 90 men and women received the Doctor of Medicine degree from The Warren Alpert Medical School of Brown University, representing the 35th class of physicians graduated from our institution since 1975. Of the 2,554 physician graduates of previous classes, approximately 328 (13%) are licensed to practice in Rhode Island. The purpose of this article is to introduce the graduates of the MD Class of 2009 to the physician community in our state.

A PORTRAIT OF THE CLASS OF 2009

Of the 90 graduates, fifty-four were women (59%) and 36 were men (40%). Regarding the class's racial/ethnic composition, 13% are members of minority groups underrepresented in medicine (5 African American and 7 Hispanic students) as defined by the Association of American Medical Colleges (AAMC). The proportion of students from underrepresented groups among all students at the Medical School at present (combined for the four years) is 17%, although this determination does not take into account the 40 students (10%) in the current medical student population who chose "prefer not to respond" when asked to indicate their ethnicity on their original medical school application.

Eleven of our most recent graduates are residents of Rhode Island. Those graduates came from six different communities: two students from East Greenwich, three from Cumberland, three from Cranston, and one student each from Central Falls, Lincoln, and Providence. Their high schools also reflect this diversity: Cranston High School West, Saint Raphael Academy, The Hotchkiss School in Litchfield, Connecticut, Moses Brown, Bishop Feehan, and Cumberland, East Greenwich, and North Providence high schools.

The largest proportion of students in the MD Class of 2009 comes from the Program in Liberal Medical Education (PLME): 40 graduates (44%).

This medical school has long had admissions agreements with postbaccalaureate premedical programs at Bryn Mawr College, Goucher College, and Columbia University.

Table 1. PGY-1 residency disciplines pursued by members of the MD Class of 2009.

I. Residency Position (includes ALL students with PGY-1 position in MD'09)

| Specialty | Number | Percentage |
|-----------------------|-----------|-------------|
| Anesthesiology | 1 | 1.1 |
| Dermatology | 2 | 2.3 |
| Emergency Medicine | 6 | 6.9 |
| Family Medicine | 4 | 4.6 |
| Internal Medicine | 18 | 21 |
| Medicine-Primary | 7 | 8 |
| Medicine-Prelim | 1 | 1.1 |
| Medicine-Pediatrics | 2 | 2.3 |
| Neurology | 3 | 3.4 |
| Neurosurgery | 1 | 1.1 |
| Obstetrics/Gynecology | 6 | 6.9 |
| Ophthalmology | 3 | 3.4 |
| Orthopaedic Surgery | 3 | 3.4 |
| Otolaryngology | 1 | 1.1 |
| Pediatrics | 9 | 10.3 |
| Psychiatry | 5 | 5.7 |
| Radiology | 5 | 5.7 |
| Radiation Oncology | 1 | 1.1 |
| Surgery | 4 | 4.6 |
| Surgery Prelim | 3 | 3.4 |
| Urology | 2 | 2.3 |
| Total | 87 | 100% |

Table 2. Specialty Choices for Brown Medical School Classes of 2004 - 2009

| Specialty Choice | 2009 | | 2008 | | 2007 | | 2006 | | 2005 | | 2004 | |
|--|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | No. | % |
| Primary Care, Total | 46 | 51% | 35 | 50% | 47 | 50% | 34 | 38% | 32 | 44% | 41 | 47% |
| Internal Medicine, Total | 25 | 33% | 13 | 19% | 19 | 20% | 17 | 19% | 16 | 22% | 20 | 20% |
| Categorical Med | 18 | 13% | 13 | 13% | 16 | 16% | | | 10 | 14% | 15 | 41% |
| Primary Care | 7 | 20% | 0 | 0 | 3 | 3% | | | 6 | 8% | 5 | 6% |
| Pediatrics | 9 | 10% | 9 | 13% | 13 | 14% | 9 | 10% | 4 | 5% | 6 | 6% |
| Family Medicine | 4 | 4% | 6 | 9% | 8 | 9% | 5 | 6% | 7 | 10% | 9 | 9% |
| Medicine/Pediatrics | 2 | 2% | 3 | 4% | 4 | 4% | 1 | 1% | 2 | 3% | 4 | 4% |
| Obstetrics & Gynecology | 6 | 7% | 4 | 6% | 3 | 3% | 2 | 2% | 3 | 4% | 2 | 2% |
| Surgery | 4 | 4% | 5 | 7% | 6 | 6% | 9 | 10% | 3 | 4% | 4 | 5% |
| Surgical Subspecialties, Total | 10 | 11% | 8 | 11% | 8 | 9% | 10 | 11% | 6 | 8% | 12 | 14% |
| Ophthalmology | 3 | 3% | 2 | 3% | 0 | 0% | 2 | 2% | 3 | 4% | 5 | 5% |
| Orthopedics | 3 | 3% | 2 | 3% | 3 | 3% | 4 | 5 | 2 | 3% | 3 | 3% |
| Neurosurgery | 1 | 1% | 1 | 1% | 0 | 0% | 1 | 1% | 0 | 0 | 0 | 0% |
| Urology | 2 | 2% | 2 | 3% | 2 | 2% | 1 | 1% | 1 | 1% | 1 | 1% |
| Plastic Surgery | 0 | 0% | 1 | 1% | 1 | 1% | 0 | 0% | 0 | 0% | 1 | 1% |
| Otorhinolaryngology | 1 | 1% | 0 | 0% | 2 | 2% | 2 | 2% | 0 | 0% | 23 | 23% |
| Dermatology | 2 | 2% | 1 | 1% | 4 | 4% | 5 | 6% | 5 | 7% | 1 | 1% |
| Emergency Medicine | 6 | 7% | 5 | 7% | 3 | 3% | 7 | 8% | 3 | 4% | 4 | 5% |
| Psychiatry | 5 | 6% | 3 | 4% | 8 | 9% | 5 | 6% | 4 | 5% | 4 | 5% |
| Neurology | 3 | 3% | 1 | 1% |
| Transitional & Preliminary Medicine * | 1 | 1% | 1 | 1% | 7 | 8% | 0 | 0% | 1 | 1% | 2 | 2% |
| Institutional Specialties, Total | 6 | 7% | 9 | 13% | 7 | 8% | 9 | 10% | 9 | 12% | 10 | 11% |
| Anesthesiology | 1 | 1% | 1 | 1% | 3 | 3% | 2 | 2% | 0 | 0% | 3 | 3% |
| Pathology | 0 | 0% | 3 | 4% | 0 | 0% | 1 | 1% | 0 | 0% | 0 | 0% |
| Rehabilitation Medicine | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 1 | 1% |
| Radiology & Rad. Oncology | 5 | 6% | 5 | 7% | 4 | 4% | 6 | 7% | 9 | 12% | 6 | 6% |
| Delaying Residency | 3 | 3% | 1 | 1% | 2 | 2% | 9 | 10% | 9 | 12% | 0 | 0% |
| Not Entering Medicine | 0 | 0% | 1 | 1% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Totals | 90 | 100% | 70 | 100% | 93 | 100% | 89 | 100% | 73 | 100% | 79 | 100% |

Table 3. The Warren Alpert Medical School of Brown University MD Class of 2009

| Name | Hospital | Affiliation | Specialty |
|------------------------|---|---|-----------------------|
| Albert Ahn | New York University Medical Center | NYU School of Medicine | Medicine-Primary |
| Thelma Alleyne | Morehouse School of Medicine | Morehouse School of Medicine | Medicine-Prelim |
| | Wake Forest Baptist Medical Center | Wake Forest University | Radiology |
| Sonia Aneja | Duke University Medical Center | Duke University School of Medicine | Obstetrics-Gynecology |
| Marie Audett | University Hospital | University of Cincinnati COM | Surgery |
| Jeremy Boyd | University Hospital | University of Cincinnati COM | Emergency Medicine |
| Mark Brady | Yale-New Haven Hospital | Yale University School of Medicine | Emergency Medicine |
| Matthew Brumbaugh | Rhode Island Hospital | Alpert Medical School | Medicine-Primary |
| Isis Burgos | Boston University Medical Center | Boston University | Psychiatry |
| Jocelyn Burke | University of Wisconsin Hospital and Clinics | University of Wisconsin | Surgery |
| Stephanie Carter | Strong Memorial Hospital | University of Rochester | Medicine |
| Flavio Casoy | University of California-San Francisco | University of California-San Francisco SOM | Psychiatry |
| Florence Chan | Yale-New Haven Hospital | Yale University School of Medicine | Medicine-Primary |
| Jessica Chan | University of California-San Francisco | University of California-San Francisco SOM | Obstetrics-Gynecology |
| Rajeev Chaudhry | Duke University Medical Center | Duke University School of Medicine | Surgery-Prelim |
| | Duke University Medical Center | Duke University School of Medicine | Urology |
| Sandy Chira | Brown University Internal Medicine Residency | Alpert Medical School | Medicine-Prelim |
| Makini Chisolm-Straker | Mt. Sinai Hospital | Mt. Sinai School of Medicine | Emergency Medicine |
| Joanne Chiu | New York Presbyterian | Weill Cornell Medical Center | Pediatrics |
| Melissa Choi | Methodist Hospital | University of Minnesota Medical School | Family Medicine |
| Lindsay Clark | Women & Infants' Hospital | Alpert Medical School | Obstetrics-Gynecology |
| Mark Coomes | William Beaumont Hospital | University of Michigan and Wayne State University | Surgery-Prelim |
| Mark D'Agostino | Walter Reed Army Medical Center | Walter Reed Army Medical Center | Transitional |
| | National Capitol Consortium. | National Capitol Consortium | Dermatology |
| Adam DeHavenon | University of Utah Affiliated Hospitals | University of Utah | Neurology |
| Anthony Del Signore | Mt. Sinai Hospital | Mt. Sinai School of Medicine | Otolaryngology |
| David Elson | Yale-New Haven Hospital | Yale University School of Medicine | Medicine-Primary |
| Lydia Engwenyu | Rush University Medical Center | Rush University | Medicine |
| R. Mitchell Ermentrout | St. Vincents Hospital | New York Medical College | Transitional |
| | UC Irvine Medical Center | University of California-Irvine | Radiology |
| Salma Faghri | Brown University Internal Medicine Residency | Alpert Medical School | Medicine-Prelim |
| | University of Alabama Medical Center | University of Alabama | Dermatology |
| Sarah Farley | University of Washington Affiliated Hospitals | University of Washington | Radiology |
| Jason Ferreira | Beth Israel Deaconess Medical Center | Harvard Medical School | Medicine |
| Sonia Garg | University of California-San Francisco | University of California-San Francisco SOM | Medicine |

Students from these programs decided upon a career in medicine only after completing college. Typically, they have been engaged in other careers for several years following college. The goals in establishing this admission route were to maintain a rich diversity in the student body by admitting students who had different academic and life experiences. Twelve members (13%) of the class were post baccalaureate students, seven from Bryn Mawr, two from Goucher and three from Columbia.

Sixteen students were admitted through the Brown–Dartmouth Medical Education Program in which students spend their first two years of medical school at Dartmouth, and transfer to Brown for the final two years.

Among the remainder of the class, seven students were part of the **Early Identification Program (EIP)**, one from Tougaloo College, four from Providence College, and two students from the University of Rhode Island. EIP students are offered provisional admission to the medical school during their sophomore year at their respective undergraduate colleges. Of the remaining graduates, one entered medical school through the MD/PhD program, two through advanced transfer and two through the Brown Avenue route by which Brown undergraduate students have been brought to the medical school.

The Class of 2009 included ten graduates who entered the medical program via the standard pre-med admissions route. This

Table 3. The Warren Alpert Medical School of Brown University MD Class of 2009

| | | | |
|------------------------|--|---|-----------------------|
| Dina Gewaily | Albert Einstein Medical Center | Jefferson Medical College | Transitional |
| | Scheie Eye Institute | University of Pennsylvania | Ophthalmology |
| Sam Glickman | Strong Memorial Hospital | University of Rochester | Medicine |
| Anna Groskin | Boston University Medical Center | Boston University School of Medicine | Family Medicine |
| Anna Halpern | University of Chicago Medical Center | University of Chicago | Medicine |
| Caitlin Hansen | Mt. Sinai Hospital | Mt. Sinai School of Medicine | Pediatrics-Primary |
| Nadine Harris | Vanderbilt University Medical Center | Vanderbilt University | Medicine |
| Curtis Henn | Hospital for Special Surgery | Cornell University | Orthopaedic Surgery |
| Leslie Hermann | duPont Children's Hospital | Jefferson Medical College | Pediatrics |
| Tammy Hshieh | Beth Israel Deaconess Medical Center | Harvard Medical School | Medicine |
| Elizabeth Hutton | Brigham & Women's Hospital | Harvard Medical School | Medicine-Pediatrics |
| Masataka Kawana | Stanford University Programs | Stanford University School of Medicine | Medicine |
| Anne Kemble | University of Hawaii | University of Hawaii | Medicine |
| Nathan Kohler | Shands Hospital | University of Florida College of Medicine | Neurological Surgery |
| Lindsay Kuroki | Barnes-Jewish Hospital | Washington University | Obstetrics-Gynecology |
| Hana Kwan | SAUSHEC | Lacklud AFB | Medicine |
| Joshua Lakin | University of California-San Francisco | University of California-San Francisco SOM | Medicine |
| Manuel Lam | Stanford University Programs | Stanford University School of Medicine | Medicine |
| Claire Langran | University of Utah Affiliated Hospitals | University of Utah | Medicine |
| Shankar LeVine | Alameda County Medical Center | University of San Francisco SOM | Emergency Medicine |
| Nathaniel Link | University of New Mexico School of Medicine | University of New Mexico School of Medicine | Pediatrics |
| Jeffrey Liu | Brown University Internal Medicine Residency | Alpert Medical School | Medicine-Prelim |
| | University of California-San Diego | University of California-San Diego | Ophthalmology |
| Erin McDermott | Lenox Hill Hospital | New York University | Orthopaedic Surgery |
| Amy McIntyre | Family Medicine Residency of Idaho | University of Washington | Family Medicine |
| Richard Myers | Oregon Health & Science University | Oregon Health & Science University SOM | Orthopaedic Surgery |
| Rachel Ngermanepothong | Boston University Medical Center | Boston University | Medicine-Primary |
| Brian Pham | Semel Institute for Neuroscience | University of California-Los Angeles | Psychiatry |
| Thao-Ly Phan | duPont Children's Hospital | Jefferson Medical College | Pediatrics |
| Rachel Rackow | Rhode Island Hospital | Alpert Medical School | Medicine-Primary |
| Alia Ramos | Temple University Hospital | Temple University | Psychiatry |
| Priscilla Reyes | Texas Tech University Affiliated-El Paso | Texas Tech University | Emergency Medicine |
| Christina Rincon | University of California-San Francisco | University of California-San Francisco SOM | Family Medicine |
| Carmelle Romain | Vanderbilt University Medical Center | Vanderbilt University | Surgery |
| John Rommel | University of North Carolina Hospital | University of North Carolina | Medicine |
| Steven Rougas | Rhode Island Hospital | Alpert Medical School | Emergency Medicine |
| Katharine Schulze | University of California-San Francisco | University of California-San Francisco SOM | Anesthesiology |
| Mark Scott | University of California-San Francisco | University of California-San Francisco SOM | Surgery-Prelim |
| Neel Shah | Brigham & Women's Hospital | Harvard Medical School | Obstetrics-Gynecology |

group is the first cohort of students representing the reactivated pre-med route.

The most common undergraduate major (44%) was biology (including subdisciplines such as biochemistry, neuroscience, and microbiology). Taken together, science majors (including math, engineering and psychology) accounted for 69% of all majors, while 20% of majors were in the humanities and 11% in the social sciences. Among the humanities majors, history concentrations were

the most common choice while psychology was the most frequent choice among those majoring in the social sciences.

WHERE THEY ARE GOING

Among the disciplines selected for PGY-1 positions by our graduates (Table 1), internal medicine remained the most frequently selected specialty with 26 students representing the combination of categorical, primary care and preliminary internal medicine. Pediatrics was the sec-

Table 3. The Warren Alpert Medical School of Brown University MD Class of 2009

| | | | |
|-------------------|---|--|-----------------------|
| Jesse Soodalter | Brown University Internal Medicine Residency | Alpert Medical School | Medicine |
| Kirsten Spalding | Brown University Psychiatry Residency | Alpert Medical School | Psychiatry |
| Jonathan Strutt | St. Louis Children's Hospital | Washington University | Pediatrics |
| Rosalyn Su | NYU School of Medicine | NYU School of Medicine | Pediatrics |
| Anil Taner | University of Hawaii | University of Hawaii | Transitional |
| | University of Maryland Medical Center | University of Maryland | Radiology |
| Stephanie Tecun | Rhode Island Hospital | Alpert Medical School | Medicine-Pediatrics |
| Mari Tokita | University of Hawaii | University of Hawaii | Transitional |
| | University of Washington Affiliated Hospitals | University of Washington | Radiation-Oncology |
| Beth Toste | McGaw Medical Center | Northwestern University | Obstetrics-Gynecology |
| James Town | University of Chicago Medical Center | University of Chicago | Medicine |
| Vicki Tsai | Baylor College of Medicine-Houston | Baylor College of Medicine | Surgery |
| George Turini | Rhode Island Hospital | Alpert Medical School | Surgery-Prelim |
| | Rhode Island Hospital | Alpert Medical School | Urology |
| Marcella Villa | Georgetown University Hospital | Georgetown University | Pediatrics |
| Clifford Voigt | Rhode Island Hospital | Alpert Medical School | Surgery-Prelim |
| Alissa Waite | Dartmouth-Hitchcock Medical Center | Dartmouth Medical School | Medicine-Prelim |
| | Dartmouth-Hitchcock Medical Center | Dartmouth Medical School | Neurology |
| Sarah Wakeman | Massachusetts General Hospital | Harvard Medical School | Medicine-Primary |
| Cynthia Wallentin | Roger Williams Medical Center | Tufts University | Medicine-Prelim |
| | Norwalk Hospital | Yale Medical School | Radiology |
| Leslie Wei | Colorado Health Foundation | Presbyterian-St. Luke's Medical Center | Transitional |
| | University of Colorado | University of Colorado | Ophthalmology |
| Sarah Whittle | Rhode Island Hospital | Alpert Medical School | Pediatrics |
| Teddy Youn | University of Washington Affiliated Hospitals | University of Washington SOM | Neurology |
| Jessica Zerillo | Beth Israel Deaconess Medical Center | Harvard Medical School | Medicine |

ond most frequent choice (9 graduates). Two graduates entered combined medicine/pediatric residency training. OB/GYN and Emergency Medicine were represented by 6 graduates each. Four of our graduates entered training in family medicine.

Residency choices showed several trends. (Table 2) The proportion of the class entering specialties in primary care (46 students, 51% of graduates) increased from the Class of 2008 (35 students, 50%). Most notable was a marked increase in the number of students entering internal medicine residencies. The number and percentage of graduates entering family medicine was a six-year low at 4 graduates. For the second year in a row, the percent of students entering primary care disciplines slightly exceeded the national level (46.5% for 2008).¹ The past two years represent a reversal of a trend that occurred during the previous

five years. During those years, the percentage of our students pursuing primary care careers declined and was below the national benchmark from 2004 through 2006. However, the actual number of graduates who will eventually practice primary care will be smaller than the 51% reported here. Based on data from the AAMC, we estimate that at most one third of our graduates will actually practice primary care with the remainder pursuing specialty training. As has been the case in previous years, our most recent graduates chose to pursue training in general surgery at a rate lower than the national average (4.0% versus 9.8%) while opting for surgical specialties at a rate higher than the national average (11.1% versus 6.7%).

Table 3 lists the Class of 2009 graduates and their residency training positions. Of the 90 graduates, 87 are entering residency training next year. Three are delaying their residen-

cies. Twelve graduates matched with Brown-affiliated residency programs and will be staying in Rhode Island. California is most popular destination state, soon to become the home for 13 graduates. New York was the third most popular locale with 10 graduates locating there. Of note, 6 graduates will be moving into Harvard-affiliated residency programs, 4 will be going to Yale affiliates, 8 will be training at programs affiliated with the University of California-San Francisco and 2 will be going to Stanford.

Consistent with recent trends, the geographic destinations of our graduates pursuing PGY-1 training (Table 4) shows that a high proportion will pursue training in New England, New York and California. Approximately half of the Class of 2009 will stay in the Northeast and 20% will go to the West Coast.



Table 4. Geographic destination for all MD Class of 2009 graduates moving on to PGY-1 positions.

| State | Number | Percentage |
|----------------------|-----------|-------------|
| California | 13 | 15 |
| Colorado | 1 | 1.1 |
| Connecticut | 4 | 4.6 |
| Delaware | 2 | 2.3 |
| District of Columbia | 2 | 2.3 |
| Florida | 1 | 1.1 |
| Hawaii | 1 | 1.1 |
| Idaho | 1 | 1.1 |
| Illinois | 4 | 4.6 |
| Maryland | 1 | 1.1 |
| Massachusetts | 9 | 10.3 |
| Michigan | 1 | 1.1 |
| Minnesota | 1 | 1.1 |
| Missouri | 2 | 2.3 |
| New Hampshire | 1 | 1.1 |
| New Mexico | 1 | 1.1 |
| New York | 10 | 11.5 |
| North Carolina | 4 | 4.6 |
| Ohio | 2 | 2.3 |
| Oregon | 1 | 1.1 |
| Pennsylvania | 2 | 2.3 |
| Rhode Island | 12 | 13.8 |
| Tennessee | 2 | 2.3 |
| Texas | 3 | 3.5 |
| Utah | 2 | 2.3 |
| Washington | 3 | 3.5 |
| Wisconsin | 1 | 1.1 |
| Total | 87 | 99.6 |

CONCLUSION

As has been true in previous years, the proportion of Warren Alpert Medical School graduates entering primary care residencies approximates the national data for all US medical school seniors. Residency choices of our graduates indicate a continued trend towards highly competitive specialties. Finally, our graduates continue to compete successfully for highly competitive graduate training programs.

REFERENCES

1. National Resident Matching Program Results and Data, 2008 Main Residency Match, Table 10: U.S. Seniors Matched to PGY-1 Positions by Specialty, April 2008.

Philip A. Gruppuso, MD, is Associate Dean for Medical Education and Professor of Pediatrics.

Janice Viticone is a Medical Residency Program Coordinator.

Eileen Palenchar is a Student Affairs Consultant.

All are with The Warren Alpert Medical School of Brown University.

Disclosure of Financial Interests

The authors have no financial interests to disclose.

CORRESPONDENCE

Philip A. Gruppuso, MD
 Warren Alpert Medical School
 Box G-A218
 Providence, RI 02912
 Phone: (401) 863-1618
 E-mail: Philip_Gruppuso@Brown.edu

Medical Student Education In Refugee Health and the Concept of a Medical Home

Carol Lewis, MD

When refugees resettle in the United States, their health burdens are many and often unusual, their stories are unique and compelling and their access to health care difficult. The evolution of the Hasbro Hospital Refugee Health Clinic has not only addressed refugee health, but has provided an opportunity for medical student education. In the Refugee Health Clinic, medical students can combine their medical knowledge and clinical skills, while putting advocacy at center stage.

WHO ARE REFUGEES?

Refugees are foreign-born people who cannot return to their home or last residence for fear of persecution. This persecution may be due to race, ethnicity, nationality, political beliefs, or membership in a particular social or religious group. Refugees usually come from nations where conflict, war, and genocide are extreme. They flee from violence, leaving family, belongings, and legal and medical documents behind. The United Nations High Commissioner for Refugees (UNHCR) awards refugee status after an identifiable group has been displaced from their home or country of origin. Generally refugees flee to neighboring countries.

UNHCR estimates that there are 31.7 million "people of concern" worldwide. This number includes 16 million refugees, of whom approximately half are children.¹ This number does not reflect those refugees who are internally displaced. When they are unable to return to their country of origin, refugees seek resettlement in a third country, usually the United States, Canada, Western Europe or Australia. Strikingly, less than 1% of refugees ever resettle in a third country. Those fortunate enough to navigate the resettlement application process, adjudicated in the US by the Citizenship and Immigration Service, are interviewed. They have an overseas medical exam and receive cultural orientation. Panel Physicians, designated by the US State De-

partment, perform medical examinations to identify Class A conditions, such as active TB, HIV, drug abuse and some mental health disorders, which are potential barriers to resettlement. These overseas examinations and cultural orientation are often cursory.

The United States, under the direction of the State Department, invites over 70,000 individuals annually for resettlement. The countries of origin depend on the geography of political strife.² The International Institute of Rhode Island reports that over 1400 refugees have resettled in Rhode Island since the year 2000; approximately half have been children. Between 2003 and 2006 a majority of the refugee children were from Liberia. More recently, Rhode Island has welcomed refugees from Burma, Burundi, Central African Republic, Eritrea, Ethiopia, Haiti, Iran, Laos, Liberia Rwanda, Somalia, and Togo. This last year, we have welcomed increasing numbers from Iraq and Nepal.

REFUGEE HEALTH BURDENS AND BARRIERS TO HEALTH CARE

Research from pediatric refugee populations in other states has found high rates of malnutrition, lead poisoning, anemia, mental health problems, oral health problems and infectious disease.³⁻⁷ Similar maladies have been identified in the Rhode Island refugee population.

Approximately 80 refugee children arrive in Rhode Island per year. They

may suffer from lead poisoning, Hepatitis B, HIV, latent tuberculosis infection, pathogenic parasites and malaria. (Table I)⁸. Malnutrition is common, as are iron and Vitamin D deficiency. We have cared for children with typhoid fever, congenital syphilis and miliary tuberculosis. Many children have never received dental care. Mental health issues are pervasive, including PTSD, depression and anxiety.

The linguistic barriers are obvious given the unfamiliarity of many refugees' languages. Recent refugees speak Kirundi, Krahn, Kunama, Arabic, Somali, Mai-Mai, Swahili, Kinyarwanda, Nepali, Kissi and Mandingo. Trained medical interpreters for these languages are scarce. Cultural barriers exist, particularly due to patients' unfamiliarity with our primary preventive care and mental health care systems. Our health care system is difficult to navigate, especially for those with special needs.

Refugees have left possessions, legal and medical documents, family, and basic social and cultural supports. They arrive with nothing. Often they do not have an anchor family or community in Rhode Island. Nevertheless, they exhibit resiliency, resourcefulness and determination.

DEVELOPMENT OF A MEDICAL HOME FOR REFUGEE CHILDREN AND THEIR FAMILIES

The Hasbro Children's Hospital Refugee Health Clinic was established in October 2007 to address the health care needs of our newest refugee families as

Table I. Health Status of Rhode Island Refugee Children at Arrival. Nov 2003-Nov 2006.⁸

| CONDITION | INCIDENCE AMONG R.I. REFUGEE CHILDREN |
|--------------------------------------|---------------------------------------|
| HIV Positive | 2% |
| Positive RPR | 3% |
| Malaria | 5% |
| Positive Hepatitis B Surface Antigen | 10% |
| Stool Ova and Parasites | 17% |
| Lead Intoxication | 25% |
| Positive PPD | 28% |

well as provide ongoing care that is comprehensive, family-centered and culturally appropriate, in coordination with other community providers.

The Medical Home concept has gained favor as an alternative to the more traditional model of seeking health care for acute care or exacerbation of chronic problems. Introduced in 1967 by the **American Academy of Pediatrics (AAP)** as a means of storing medical records,⁹ the concept was expanded in 2002 to include these characteristics: accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective care.¹⁰ It has proven a useful, cost-saving model for children with other special health care needs.¹¹ The American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association issued the “Joint Principle of the Patient-Centered Medical Home” in 2007.¹² It presents the principles and support for the Patient-Center Medical Home approach to health care. The American Academy of Medical Colleges has also given a preliminary endorsement to this approach.¹³

The Hasbro Hospital Refugee Health Medical Home model consists of three major components.

- Development of the Refugee Health Clinic, which provides timely intake exams and addresses specific medical needs of refugee children, including screening tests.
- Development of a coalition of providers who provide medical and community services.
- Ongoing needs assessment with information gleaned from the refugee community and their interpreters to improve access to health care.

The Refugee Health Clinic offers intake evaluations within 30 days of the child's arrival to the United States. The specific needs of the population are addressed at this visit. The subsequent visit, usually one month later, occurs in the pediatric clinic where the children are “mainstreamed” into the general pediatric population; the same provider who performed their intake exam continues to see the children. This provides continuity for the patients and allows for one pro-

vider to coordinate their care. This approach also allows us to more easily develop a tracking system to identify needs of the different refugee populations.

Approximately 80 refugee children arrive in Rhode Island per year.

The coalition of providers includes: The International Institute of Rhode Island, RI Department of Health, Samuels Sinclair Dental Center, psychologists from Brown University and Rhode Island College, The Providence Public School Department, Family Services of Rhode Island, Rhode Island Housing, RIH Med/Peds Clinic, Neighborhood Health Plan of RI, Interpreter Services, Alpert Medical School of Brown University students, and Brown University Pediatric Residents and Brown University Medical/ Pediatric Residents. This coalition has given voice to the needs of the population and provided access to care in this community.

A targeted needs assessment was completed through focus groups within the community, and with interpreters speaking Kirundi, Iraqi Arabic, Swahili, Krahn as well as a group of English-speaking refugee adolescents. Three themes emerged: first, we need interpreters who can also navigate through our complex health care system. Second, patients must trust their providers. Initially patients trust their interpreters; but over time this trust can be transposed to the health care providers. Third, patients felt an overwhelming gratitude to those who support their health and transition to their new community.

PARTICIPATION OF MEDICAL STUDENTS FROM ALPERT MEDICAL SCHOOL

The Warren Alpert Medical School has a reputation for enrolling students who are passionate, dedicated to their life-long endeavor as physicians. Many have a deep compassion for the community, both locally and globally. The Hasbro Children's Hospital Refugee Clinic has afforded some of them the opportunity to experience health delivery via the Medical Home

Model. AMS students have participated in the union of Refugee Health and the Medical Home Model in three venues.

- The Refugee Health Longitudinal Clerkship. This builds on the required fourth year Longitudinal Ambulatory Clerkship. Each month in the Refugee Health clinic, the student participates in refugee intake examinations. Subsequently, the student follows up with these same patients in their regularly scheduled pediatric longitudinal clinic. The students integrate these refugee families into their general pediatric patient panel. They also have the opportunity to work with the Refugee Health Coalition of providers. They experience coalition-building and work across all elements of the health care system and community agencies.
- Students have been invited to participate in the Refugee Health Promoter Series. This curriculum for refugee interpreters is designed to arm them with basic health information to function as health promoters in their communities. We have recruited first year medical students, paired with pediatric attendings, and Pediatric or Medicine/Pediatric residents to present a topic to the refugee interpreters (e.g., lead, nutrition, oral health, women's health, STI prevention, mental health, health literacy, infectious diseases, immunizations and injury prevention). Students are encouraged to “shadow” a provider in the refugee clinic.
- During their Community Health Clerkship, students have the opportunity to develop educational materials or presentations. Both are provided directly to the refugee community. This work is undertaken in collaboration with the International Institute, the refugee resettlement agency. The student is encouraged to observe how this information is pertinent to our direct patient care by participating in the Refugee Health Clinic.

We believe that this project not only ensures good medical care for a marginalized population but also affirms the Medical Home Model as an effective form of medical delivery. In the process, it helps to train a new generation of doctors for whom the ability to treat patients across all cultural barriers will increasingly be a vital skill.

REFERENCES

1. United Nations High Commissioner for Refugees Agency Statistical Yearbook 2007. *Trends in Displacement, Protection and Solutions*. 2008. <http://www.unhcr.org/statistics/STATISTICS/4981b19d2.html>
2. United Nations High Commissioner for Refugees 2007 Global Trends. *Refugees, Asylum-Seekers, Returnees, Internally Displace and Stateless Persons*. 2008. <http://www.unhcr.org/statistics/STATISTICS/4852366f2.pdf>
3. Lifson AR, Thai D, et al. Prevalence of tuberculosis, hepatitis B virus, and intestinal parasitic infections among refugees to Minnesota. *Public Health Rep* 2002; 117:69-77.
4. Walker PF, Jaranson J. Refugee and immigrant health care. *Med Clin North Am* 1999; 83:1103-20.
5. Stauffer WM, Rothenberger M. Hearing hoofbeats, thinking zebras. *Minn Med* 2007; 90:42-6.
6. Geltman P, Brown MJ, Cochran J. Lead poisoning among refugee children resettled in Massachusetts, 1995 to 1999. *Pediatrics* 2001; 108:1364-66.
7. Adams KM, Gardiner LD, Assefi N. Healthcare challenges from the developing world. *BMJ* 2004; 328:1548-52.
8. Watts DJ, Friedman JE, et al. Health status and subspecialty needs of refugee children after resettlement. Poster Presentation at Pediatric Academic Society Annual Meeting, 2008.
9. Sia C, Tonniges TF, et al. History of the medical home concept. *Pediatrics* 2004; 113:1473-8.
10. American Academy of Pediatrics. Medical home. *Pediatrics* 2002; 110:184-6.
11. Palfrey JS, Sofis LA, et al. The Pediatric Alliance for Coordinated Care. *Pediatrics* 2004; 113:1507-16.
12. American Academy of Family Physicians (AAFP) American Academy of Pediatrics (AAP) American College of Physicians (ACP) American Osteopathic Association (AOA). Joint Principles of the Patient-Centered Medical Home. 2007. <http://www.medicalhomeinfo.org/joint%20Statement.pdf>
13. Association of American Medical Colleges. The Medical Home Position Statement. 2008. <http://www.aamc.org/newsroom/pressrel/2008/medicalhome.pdf>

Carol Lewis, MD, is is Assistant Professor of Pediatrics (Clinical) at the Warren Alpert Medical School of Brown University, a member of the Division of Ambulatory Pediatrics at Hasbro Children's Hospital, and director of the Refugee Health Clinic.

Disclosure of Financial Interests

The author has no financial interests to disclose.

CORRESPONDENCE

Carol Lewis, MD
Rhode Island Hospital
593 Eddy St.
Providence, RI 02903
Phone: (401) 444-4471
e-mail: Carol_Lewis@brown.edu



A Risk Management CME Presentation

Presented by
NORCAL Mutual Insurance Company

A jointly-sponsored CME activity with the
Rhode Island Medical Society

Save the Date: October 3, 2009
Breakfast: 8:00 a.m.
CME: 9:00 a.m. – 12:00 p.m.

Location:
Radisson Airport Hotel in Warwick, RI

"Pain Management for Primary Care"

– Strategies and Resources for Improving
Pain Management and Reducing Risk

Featured Speakers:

Frederick W. Burgess, MD
Clinical Associate Professor of Surgery
(Anesthesiology)
Brown University School of Medicine

Frank Connor, Esq.
Taylor Duane Barton & Gillman, LLC

Diane Post, MA
Risk Management Specialist/
NORCAL Mutual Insurance Company

Agenda and learning objectives to follow.

Please RSVP by September 28 to Sarah Stevens at RIMS: (401) 331-3207 or sstevens@rimed.org.

Redesigning the Clinical Curriculum at the Warren Alpert Medical School of Brown University

Jeffrey Borkan, MD, PhD, Edward Feldmann, MD, Richard Dollase, EdD, and Philip A. Gruppuso, MD

The Warren Alpert Medical School is in the midst of a curriculum redesign. This process started in 2007 with the implementation of a redesigned pre-clerkship curriculum for Years 1 and 2.¹ The purpose of this report is to articulate the principles, process and overall design aspects of the next phase of the redesign: a new curriculum to replace the traditional content of Years 3 and 4.

Since the Flexner Report (1910),² the final two years of medical school have focused on clinical work in teaching hospitals. Students are expected to finely tune assessment skills such as history taking and physical examination, to integrate medical knowledge into patient care, and to master sound clinical decision-making. In addition, other tasks have been added through the decades: students must become competent in areas ranging from medical ethics to the application of technology. A professional, patient-centered approach to patient care, including attitudes that relate to potential conflicts of interest and cultural diversity, must be instilled.

US medical school curricula continually undergo redesign.^{3,4} Proposals to reform US medical education over most of the last 100 years have articulated a particularly social vision of medicine, in which medical schools are seen as serving society.⁵ The redesign process at the Warren Alpert Medical School is no different. It takes place during a period of turmoil in our healthcare system. Both the inpatient and outpatient settings are changing in ways that challenge their suitability as training sites. Examples range from the marked decrease in many routine pediatric and surgical inpatient admissions to the shift of diagnosis and initiation of treatment from the wards to the emergency department and the ambulatory settings. Such alterations pose threats to the longstanding status quo, challenge assumptions regarding the clinical training of medical students, and suggest the need for searches for alternative approaches and methods.

At the start of the process, the Medical Curriculum Committee (MDCC), under the direction of the Dean of Medicine and Biological Sciences and the leadership of the Associate Dean of Medicine for Medical Education, entered into an intense discussion of the goals, nature and implementation of a new clinical curriculum. The subsequent White Paper on curriculum redesign, a work in progress, is the chief source of the information in this report.

WHY UNDERTAKE A REDESIGN OF THE CLINICAL CURRICULUM AT AMS?

The decision to redesign the clinical curriculum is based on multiple factors, including:

Changes in the Effectiveness of the Clinical Learning Environment

The changing face of medical care has brought to the fore areas of emphasis that have not been stressed in traditional clinical curricula; i.e., chronic disease management, health promotion and preventative medicine, geriatrics, palliative care and health policy. The traditional clinical curriculum has been inpatient-centric, disease-oriented, and procedure-oriented. While focusing on evidence-based medicine, traditional clerkships often ignore the delivery of primary care and the substantial proportion of specialty medicine taking place in the outpatient setting.

The existing Brown clinical curriculum in Years 3 and 4 is built around a clerkship model that depends on the inpatient setting as a learning venue and the “apprenticeship model” in which learning requires direct student involvement with patients.

Threats to this educational model have emerged; e.g.,

- Lower inpatient censuses from shortened length of hospital stays
- Shifts from inpatient to outpatient settings for many conditions and procedures

- Extensive emergency department diagnostic evaluations that may limit the ability of clerkship students to participate in the diagnostic evaluation of and decision-making for acutely ill patients
- Restrictions on the inpatient and outpatient faculty due to the increased pressure for greater productivity and tighter financial bottom lines.
- Limited longitudinal experiences in both the inpatient and outpatient settings
- Electronic modalities (medical record, ordering systems) that can disenfranchise the student if not designed with educational needs in mind.

Creating a more Seamless Four Year Curriculum will Facilitate Greater Coordination, Longitudinal Programs and Planning, and Reduce both Gaps and Redundancies

Though the reform of Years 1 and 2 and the implementation of a redesigned pre-clerkship curriculum have already had desirable results, the existing curriculum in Years 3 and 4 is also built around a traditional division between preclinical and clinical experiences that inhibits coordination and longitudinal planning. The divide between preclinical and clinical training dates back to the Flexner Report.² This approach was adopted by Brown when the Medical School was established in the 1960s. Such divisions have impeded curricular integration and coordination.

This redesign will allow consideration of educational goals and programs with greater continuity between the “pre-clinical” and “clinical” curricula. Longitudinal planning and programs will allow teaching to match more closely the educational and developmental needs of students. The redesign process is also intended to address gaps and reduce redundancies in the curriculum. Areas of medical science that are

presently underrepresented in the existing clinical curriculum include nutrition science, genetics and contemporary clinical pharmacology.

Promoting a Patient-Centered Approach

A redesign can foster in medical students a number of “patient-centered” attributes; e.g., a holistic view of patients and patient care; a deliberate, thoughtful approach to the application of technology and therapies that takes cost into consideration; the ability to incorporate knowledge and the extraordinary access to this knowledge into the care of the individual patient; the ability to place the care of the patient into a population-based and societal context.

Meeting the needs of a Changing Medical School

The new curriculum will be launched prior to the opening of a new medical education facility (projected for August 2011).⁶ Its design will allow for an increase from the present 96 students per year to an eventual class size of 120 students. The new building and advising systems will incorporate a “learning communities” model, another change that will inform curriculum decisions.

Changes in the National Context of Medical Education and Oversight

As is the case for all curriculum decisions, the MDCC must consider the evolving standards of our accrediting body, the **Liaison Committee on Medical Education (LCME)**,⁷ as well as the anticipated modifications in the configuration of the Steps 1 and 2 **United States Medical Licensing Examination (USMLE)**.⁸ Although the timing and nature of these changes are uncertain, it is very likely that a new Gateway 1 examination, a comprehensive basic science/clinical science examination, will be introduced in the next decade. .

Finally, there has been a growing discontent around the US with the generally loosely structured fourth year of medical school training.⁹ with “pre-residency syndrome,” characterized by students’ excessive preoccupation with gaining their “first choice” graduate medical education position.¹⁰

GOALS OF THE REDESIGNED CURRICULUM

At the Warren Alpert Medical School, the overarching goal for the redesigned curriculum is to prepare students to meet the needs of their patients, families, and communities and stand out as physician leaders during the training and careers that follow. We also believe that the new curriculum should build on the Brown tradition of liberal education, self-directed learning, and excellence in medical education. The aim is to provide the experiences, knowledge and skills that are deemed so important that every Brown medical student should have them prior to graduation, irrespective of their individual trajectory. But the curriculum should also be sufficiently flexible to enable students to self-direct their post-residency learning and career goals.

The MDCC articulated qualities that we aspire to imbue in our graduates; specifically,

- The ability to function as self-directed life-long learners, contributing to advances in medical knowledge, therapeutics and technology, and able to adapt advances in healthcare to the interests of their patients and communities
- The capacity to be fully informed participants in assuring high quality health care in their practices, institutions and communities
- The commitment to be ethical, socially responsible physicians and leaders in all aspect of their work

PRINCIPLES TO BE INCORPORATED INTO THE NEW CURRICULUM

Although the redesign is in its early stages, the MDCC articulated several guiding principles.

- We should meet the needs of students with a variety of career goals.
- We should ensure coordination, integration, and continuity between educational experiences throughout the four years, providing *the right experience at the correct time in the best setting*. Clinical teaching and assessment should form a continuum from Year 1

through Year 4. This will require greater coordination of all elements of the curriculum and can be accomplished in several areas.

- The curriculum should be structured in evolutionary developmental ladders in which each step should prepare students for ones that follow. Just as knowledge of basic histology, biochemistry, and cell biology allows students to access the complexities of pathophysiology, Doctoring in the pre-clerkship years¹¹ prepares students for clerkships; clerkships prepare students for sub-internships and electives; subinternship responsibilities and a planned “capstone” experience” will prepare students for internship and residency.
- We should promote high-quality learning environments in the clinical setting. This will involve promoting the relevance and active participation of students on clinical services and attention to setting, preparation, and faculty development.
- Students should have the opportunity to explore and master emerging technologies for information management, including the electronic medical record, computer simulation and web-based resources.
- The redesign process should be sufficiently flexible and inclusive to take advantage of innovations that are not apparent at the start of the process.

PRELIMINARY DESIGN: ASPECTS OF THE NEW CURRICULUM

An Overarching Curricular Theme

Given the context of healthcare reform, a focus for the redesign has been proposed: Healthcare Delivery. This focus will incorporate several areas that are germane to the education of our students, such as:

- Application of fundamental clinical skills
- The judicious application of tech-

nology and therapeutic innovations

- The financing of healthcare and access to healthcare
- Medical informatics
- Quality improvement, patient safety and teamwork

Year 3, Core Competencies, the Clinical Knowledge Base and the Core Clerkships

At present, the required core clerkships represent 50 weeks of instruction that students complete during the entirety of Year 3 plus the first half of Year 4. The MDCC has committed to a reconfiguration of core requirements in which the core clerkships in the LCME-required disciplines (medicine, surgery, pediatrics, ob/gyn, psychiatry and family medicine) will be completed during Year 3. To accomplish this, the MDCC expects to reduce the number of required weeks. Changes in the clinical setting (such as the initial assessment of most inpatients in the emergency room) will also be taken into account in designing the core clerkship experiences. Such modifications will also need to take into account the planned growth of the student body.

Year 4, Focused Competencies and Formulation of a Fourth Year Educational Plan

The process of choosing a career path integrates a multiplicity of aptitudes, interests, and experiences. The new curriculum will facilitate this process, first by exposing students to the core rotations during their third year, then by providing individual counseling prior to the start of Year 4. Improvements in career mentoring in the fourth year have been shown to be effective and increase overall student satisfaction.⁹ At Brown, such counseling will occur in the context of the planned learning communities.

This proposal for students to formulate an educational plan presumes that we will strive for greater rigor in Year 4, something that has been sought by only a select few medical schools.^{9, 11-12} Such an approach also presumes that a student's career focus will help determine the Year 4 requirements and will vary from student to student. For example, students interested in primary care might

include more extended clinical experience in orthopedics and dermatology, while students considering surgery or orthopedics path might consider further anatomy or pathology. Career paths will be defined as areas of cross-disciplinary emphasis, with structured guidance and expectations, as well as room for clinical research.

Expansion of Doctoring into Years 3 and 4

The Doctoring course has been largely responsible for the ability of the preclinical curriculum to be comprehensive in its approach to preparing students for their clinical years. The MDCC considers that an adequately designed Doctoring program in the clinical years could allow for the in-depth presentation of cross-disciplinary and integrative topics. These may include such topics as the use of technology in clinical medicine; advanced communication and physical examination skills; death and dying/palliative care; nutrition; genetics; working with teams; and sexuality. In addition, the Doctoring program will include ample time for "intensives" to prepare students for clerkships, and later for internships. Although at this time, many specifics of the 4-year Doctoring curriculum are uncertain, the MDCC considers such a comprehensive and coordinated approach as the most effective way to assure inclusion of cross-disciplinary areas essential to any medical school graduate.

SUMMARY

The proposed clinical curriculum in Years 3 and 4 provides the opportunity to complete the process begun with the reform of the pre-clerkship curriculum in 2007. The redesign should produce an educational process which not only more adequately prepares students for the future, but helps produce leaders in multiple fields of medicine and re-establishes Brown as an innovator in medical education.

ACKNOWLEDGEMENT

The authors would like to thank the MD Curriculum Committee and Dean Edward Wing for their significant ongoing contributions and leadership.

REFERENCES

1. bms.brown.edu/students/handbook/Section2.pdf
2. Flexner A. Medical education in the United States and Canada. From the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Four, 1910.
3. Putnam CE. Reform and innovation. *Med Educ* 2006;40:227-34.
4. Hecker K, Violato C. Medical school curricula: do curricular approaches affect competence in medicine? *Fam Med* 2009;41:420-6.
5. Christakis NA. The similarity and frequency of proposals to reform US medical education. *JAMA* 1995;274:706
6. www.projo.com/news/.../brown29_01-29-07_LU45C8T.39f97dd.html
7. www.lcme.org
8. www.usmle.org
9. Coates, WC. Crooks K, et al. Medical school curricular reform. *Acad Med* 2008; 83:754-60.
10. Swanson AG. The "Pre residency Syndrome" disruption. *J Med Educ* 1985; 60:201-2.
11. Schindler BA, Mann BD, et al. MCP-Hahnemann School of Medicine. *Acad Med* 2000; 75: S310-S312.
12. Lyss-Lerman P, Teherani A, et al. What training is needed in the fourth year of medical school? *Acad Med* 2009; 84:823-9.

Jeffrey Borkan, MD, PhD, is Chair of the MD Curriculum Committee, Professor and Chair of the Department of Family Medicine, The Warren Alpert Medical School of Brown University, and Chief of Family Medicine at the Memorial Hospital of RI.

Edward Feldmann, MD, is Director of the Clinical Curriculum and Professor of Neurology at the Warren Alpert Medical School of Brown University and Rhode Island Hospital.

Richard Dollase, EdD, is the Director of Curriculum Affairs at the Warren Alpert Medical School of Brown University.

Philip A. Gruppuso, MD, is a Professor of Pediatrics, Research Professor of Molecular Biology, Cell Biology and Biochemistry, and Associate Dean for Medical Education at the Warren Alpert Medical School of Brown University.

Disclosure of Financial Interests

The authors have no financial interests to disclose.

CORRESPONDENCE

Jeffrey Borkan, MD, PhD
Department of Family Medicine
Memorial Hospital of RI
111 Brewster Street
Pawtucket, RI 02860
Phone: (401) 729-2238
e-mail: Jeffrey_Borkan@brown.edu



East Side Clinical Laboratory
Over 60 years of service to the Rhode Island medical community.

Established 1949

**When seasons change,
you don't have to.**



Phadia is the global leader in serologic antibody measurement. ImmunoCAP® Specific IgE blood test provides Results You Can Trust in allergic diseases. The world's most widely accepted specific immunoassay technology performed on a fully automated instrument platform make ImmunoCAP the preferred choice for allergy diagnostics. ImmunoCAP testing is now being performed on site at East Side Clinical Laboratory.



*See beyond the allergy symptoms
with results that make a difference.*

Visit our website www.esclab.com to view our locations throughout RI and South Eastern Massachusetts

Administrative Offices and Main Laboratory | 10 Risho Avenue, East Providence, RI 02914



ONE Call Does it All

With **Rhode Island ExpressCare**, one call is all you need to transfer your complex patients to Rhode Island Hospital, its Hasbro Children's Hospital and The Miriam Hospital. Our experienced team of registered nurse coordinators manages every transfer, and our adult and pediatric critical care transport teams provide the safest, most efficient transfer of your patient in our state-of-the-art ambulance. Because we recognize the importance of communication, we provide you with an update on your patient within 72 hours.

Rhode Island ExpressCare streamlines patient transfers with one call and communication at every step.

Rhode Island ExpressCare



A program of

**Rhode Island Hospital/
Hasbro Children's Hospital
The Miriam Hospital**

Lifespan Partners

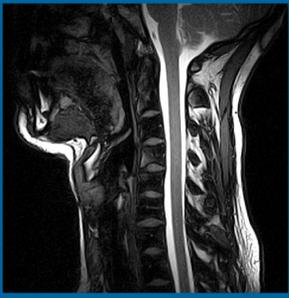
We are available 24 hours a day, 7 days a week.

To transfer your patient, call 401-444-3000.



THE IMAGING INSTITUTE

OPEN MRI • MEDICAL IMAGING



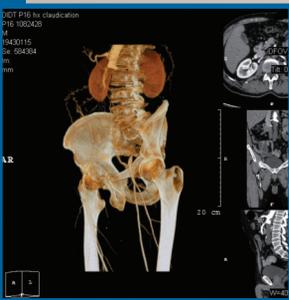
High Field MRI

- Offering both 1.5T High Field & Higher Field OPEN MRI Systems



MRA

- Advanced CT with multi-slice technology, 3D reconstruction



CT • 3D CT

- Digital Ultrasound with enhanced 3D/4D technology

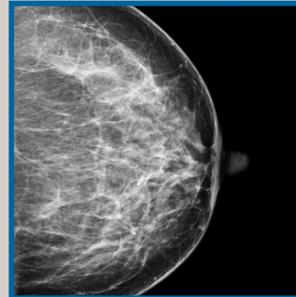


CTA

- Digital Mammography with CAD (computer assisted diagnosis)



3D Ultrasound



Digital Mammography



Digital X-Ray & DEXA

- Electronic Medical Record (EMR) Interfaces now available
- Preauthorization Department for obtaining all insurance preauthorizations
- Fellowship, sub-specialty trained radiologists
- Friendly, efficient staff and convenient, beautiful office settings
- Transportation Service for patients



Higher Field OPEN MRI

WARWICK
250 Toll Gate Rd.
TEL 401.921.2900

CRANSTON
1301 Reservoir Ave.
TEL 401.490.0040

CRANSTON
1500 Pontiac Ave.
TEL 401.228.7901

N. PROVIDENCE
1500 Mineral Spring
TEL 401.533.9300

E. PROVIDENCE
450 Vets. Mem. Pkwy. #8
TEL 401.431.0080

Better Banking for your Medical Practice

At Webster, we can provide a customized, exclusive package of banking solutions to meet the unique needs of your medical practice.

For more information, contact **Lisa Staley** at **(401) 421-1548** or at **lstaley@websterbank.com**.



Physician Intervention For Intimate Partner Violence

Sonia Aneja, MD, Amy S Gottlieb, MD, and Edward Feller, MD

In the United States, as many as one in four women will be physically assaulted or raped by a current or past partner or date during her lifetime.¹ Violence can be any pattern of psychological, economic, verbal, physical, or sexual abuse, including sexual coercion. The vast majority of victims are women.

The impact of Intimate Partner Violence (IPV) on women is far-reaching. The most devastating consequences are serious injury and death. Beyond this, women exposed to IPV face a myriad of co-morbidities such as depression, anxiety, and post traumatic stress disorder.² IPV has been associated with increased incidence of substance abuse and utilization of substance abuse resources.³ Victims are more likely to have somatic complaints, such as abdominal pain, headaches, musculoskeletal discomfort and chronic pain syndromes.³

IPV places a burden on the health care system. Women in abusive relationships are more likely to utilize medical services and to access out-patient care, mental health and emergency services. It has been estimated that in the United States, IPV results in the expenditure of \$5.8 billion annually with \$4.1 billion for direct medical and mental health care.⁴

Screening for IPV is a first step in addressing this epidemic. The American College of Obstetrics and Gynecology, the American Medical Association, and the American Academy of Family Physicians, endorse routine screening. Data indicate that patients also support regular IPV screening. Nevertheless, the rate of screening remains around 10%.⁵ Although physicians are encouraged and even mandated to screen for IPV, limited office-based resources exist to address the needs of women who screen positive. Lack of time, training, reimbursement or infrastructure are major barriers to physician screening.

INTERVENTION: IPV DESK REFERENCE

We propose a step-by-step protocol for physicians to implement when patients disclose a history of IPV. This protocol was created through a literature review of

qualitative studies and primary interviews conducted with non-physician health professionals in the Rhode Island community who work with victims of partner violence. This protocol, including screening questions for IPV, was formatted as a desk reference to be distributed to primary care physicians in RI. (Table 1) We hypothesize that this resource will increase screening and detection rates of IPV by addressing the sense of “powerlessness” that many physicians may feel when faced with possible victims of IPV.⁶ Ultimately, the goal is to empower both physicians and patients to optimize resources and improve health outcomes.

SCREENING

Patient barriers to universal screening include the social stigma surrounding IPV, cultural and language barriers, past failures with the medical and legal systems, shame, denial, fear of losing custody of children, economic hardship and desire to protect the perpetrator.⁷

Physician barriers may include lack of training in screening for IPV, time constraints, lack of compensation, and general discomfort with the issue. Some physicians may feel that they are not responsible for addressing “a social work issue.” Data suggest that many physicians feel ill-equipped to react to patients who screen positively, so they simply do not ask the questions.

Women of all racial, ethnic, socioeconomic, and educational backgrounds confront IPV, though this may not be readily apparent to victims or health care providers. Therefore, universal screening is the only effective way to screen for partner abuse. Screening must begin with a commitment to confidentiality. Provider discussions about possible IPV should begin after any accompanying partners, children, or friends are directed to leave the exam room. An initial leading question can be, “Are you in an intimate relationship? If so, do you feel safe in your relationship and at home?” The patient may or may not disclose abuse at this time. Most providers who screen for IPV stop at this point. But many victims will not disclose abuse unless they are questioned further. If the patient de-

nies abuse, the physician should follow up with simple questions. (Table 1, *Screening* section) In summary, every female patient should be briefly screened. This protocol involves a general inquiry about feeling safe at home, followed selectively with specific questions about physical and sexual abuse.

APPROACH TO THE PATIENT

When a patient discloses a history of past or present IPV, a provider must first demonstrate support and empathy. Statements such as “Nobody deserves to be abused,” and “This is not your fault, you did not cause this,” and “Partner violence is wrong and illegal” are extremely helpful to women who disclose a past or current history of IPV.⁸ IPV can have a deleterious impact on self-esteem and be extremely disempowering. Supportive statements attempt to empower the patient and re-build her sense of self-worth.

It is important to assess a patient's readiness to change her situation or leave an abusive partner. Research has shown that the Transtheoretical Model (stages of change model), which has been widely applied to smoking cessation, alcohol cessation and weight loss, can also be applied to survivors of IPV.⁹ The Transtheoretical Model addresses an individual's readiness to change his/her behavior in five stages; precontemplation, contemplation, preparation, action and maintenance. This model recognizes that each patient's situation is unique; to be effective, interventions need to be tailored to the individual. (Table 1, *Screening*, #5)

For most survivors of IPV, the process of leaving an abusive relationship is complex. Health care providers who feel frustrated when women stay in abusive relationships must understand that, in leaving, many women face social isolation, financial instability, cultural barriers, fear of retribution by the abuser and the prospect of being a single parent to their children.¹⁰ Health professionals should assess the victim's stage of change, and attempt to help her reach “preparation” or “action” while recognizing that this journey can be arduous.

Table 1. Intimate Partner Violence: Screening Card

| INTIMATE PARTNER VIOLENCE A GUIDE FOR SCREENING AND INTERVENTION | | | |
|--|---|--|--|
| <p>SCREENING</p> <ol style="list-style-type: none"> 1. Direct partner, friend, children to leave exam room. 2. Assure confidentiality* 3. Leading question: "Are you in an intimate relationship? If so, do you feel safe in your relationship and at home?" 4. If patient denies abuse, ask these follow up questions** <ul style="list-style-type: none"> Is anyone close to you threatening or hurting you? Is anyone hitting, kicking, choking or hurting you physically? Is anyone forcing you to do something sexually that you do not want to do? 5. If patient screens positively for any of the above, or you still suspect abuse, ask questions about specific types of abuse and assess her readiness to change the situation: <ul style="list-style-type: none"> Precontemplation: patient is not willing to acknowledge abuse Contemplation: patient acknowledges abuse, but she is not ready to leave Preparation: Patient is making plans to seek help and/or remove herself from abusive relationship Action: Patient is taking steps to end abusive relationship Maintenance: Patient is staying out of abusive relationship <p><small>* In accordance with RI state law, suspicion or knowledge of child abuse or neglect must be reported to DCYF at 800-742-4433; suspicion or knowledge of mistreatment of disabled people must be reported to the Office of Quality Assurance, Division of Developmental Disabilities, Department of Mental Health, Retardation and Hospitals at 401-462-2629; suspicion or knowledge of elder abuse must be reported to the Department of Elderly Affairs Protective Services Unit at 401-462-0555.</small></p> <p><small>** Women & Infants Domestic Violence Task Force</small></p> | <p>SAFETY ASSESSMENT</p> <ol style="list-style-type: none"> 1. Does the perpetrator have a weapon? 2. When was the first episode of abuse? The most severe? The most recent? 3. Has the perpetrator ever made threats to kill the patient? 4. Has the patient ever thought of hurting herself? <p>If you believe that the patient is in immediate danger of death or serious injury, make this very clear to her, and ask if she would like you to call the police or a domestic violence hotline while she is in the office. Do not do this without her permission. Do not tell her to "go stay at a shelter" or leave her partner; rather present options.</p> | | |
| <p>IF PATIENT SCREENS POSITIVELY FOR IPV, FOLLOW NEXT SEVERAL STEPS:</p> <p>VALIDATING STATEMENTS</p> <ul style="list-style-type: none"> "Nobody deserves to be abused." "This is not your fault, you did not cause this." "Partner violence is wrong under any circumstances and is against the law" <p><small>Supported by a grant from the Arngen Foundation. This card was created by Sonia Anuja in collaboration with Amy S. Cottlieb MD and Edward Feller MD as a part of the community health clerkship at the Warren Alpert Medical School of Brown University.</small></p> | <p>INTERVENTIONS Give the patient information and options:</p> <ol style="list-style-type: none"> 1. Referral to Rhode Island Victims of Crime Helpline: 1-800-494-8100. <ul style="list-style-type: none"> 24 hour hotline; patient will be counseled and referred to one of six member agencies in Rhode Island for consultation and shelter services. You can call hotline in the office to help patient make this first step, if she desires this. Calling the hotline does not mean immediate shelter placement; trained social workers and outreach workers will talk to patient about options and safety plan. 2. Provide resources, brochures about IPV and Rhode Island based resources: www.ricadv.org 3. Close follow up appointment | | |
| | <p>DOCUMENTATION</p> <ol style="list-style-type: none"> 1. Document injuries as specifically as possible; take pictures with patient's permission; draw pictures if necessary. 2. Document patient's exact words: "My husband hit me yesterday." | | |
| | <table border="0"> <tr> <td style="vertical-align: top;"> <p>Red Flags:</p> <ol style="list-style-type: none"> 1. Frequently missed appointments 2. Repeated visits with vague somatic complaints 3. Pregnancy </td> <td style="vertical-align: top;"> <p>Do Not:</p> <ol style="list-style-type: none"> 1. Call police without patient's permission 2. Insist that the patient leave her partner 3. Tell the patient to "go stay at a shelter" </td> </tr> </table> | <p>Red Flags:</p> <ol style="list-style-type: none"> 1. Frequently missed appointments 2. Repeated visits with vague somatic complaints 3. Pregnancy | <p>Do Not:</p> <ol style="list-style-type: none"> 1. Call police without patient's permission 2. Insist that the patient leave her partner 3. Tell the patient to "go stay at a shelter" |
| <p>Red Flags:</p> <ol style="list-style-type: none"> 1. Frequently missed appointments 2. Repeated visits with vague somatic complaints 3. Pregnancy | <p>Do Not:</p> <ol style="list-style-type: none"> 1. Call police without patient's permission 2. Insist that the patient leave her partner 3. Tell the patient to "go stay at a shelter" | | |
| | <p style="text-align: center;">RHODE ISLAND VICTIMS OF CRIME HELPLINE 1-800-494-8100</p> | | |

SAFETY ASSESSMENT

Partner abuse can be a medical emergency. Health care providers must act decisively when a patient discloses that she is a victim. From 1996 to 2005 the US Department of Justice estimates that homicides against women were committed by intimate partners in 30.1% of cases compared to 5.3% of homicides against men.¹¹

Consequently, safety or risk assessment is an important part of interventions. Risk factors for serious injury and lethality include the perpetrator's access to a firearm, previous threat with a weapon, previous threats to kill the patient, and use of illicit drugs. One study indicated that having a child living in the home who is not the perpetrator's biological child more than doubles the risk of femicide.¹²

A safety or risk assessment has two purposes: to help determine the risk of

lethal injury and to facilitate the patient's awareness of her situation and its potential for danger. The Danger Assessment, a validated tool, can be accessed at www.dangerassessment.org. While providers may not have enough time to implement this tool in its entirety, they can utilize portions of it in their clinical practice. (See Table 1) If a provider believes that a patient is at immediate risk of serious injury or death, he/she should make this very clear to the patient. While the police should never be called without a patient's permission, this option can be discussed with the patient.

REFERRAL AND FOLLOW-UP

Clinicians are often the bridge between the patient and domestic violence advocacy organizations. Offering information about local agencies is one of the

most powerful things that a provider can do. Raising awareness about IPV potentially helps a patient move from a place of denial and self-blame to a point where she may be ready to make a change.

In our state, the Rhode Island Coalition Against Domestic Violence oversees the six local domestic violence agencies. (Table 2) Also in Rhode Island is a 24-hour hotline called the Victims of Crime Helpline (1-800-494-8100) which patients or their providers can access. With the patient's permission, a physician may call this hotline to help her take this first step. Health care providers and patients should understand that referral to a local agency does not result in immediate shelter placement. These organizations advise clients in court advocacy and affordable housing. They will assist with shelter placement if requested by the victim. They may also provide support groups and psychological services.

Table 2. Rhode Island Coalition Against Domestic Violence Member Agencies in Rhode Island

- Blackstone Valley Advocacy Center 723-3057
- Domestic Violence Resource Center of South County 782-3990
- Elizabeth Buffum Chace Center 738-1700 (Kent County/Cranston, Johnston/North Providence/Situate/Foster)
- Sojourner House 658-4334 (Providence/North Providence)
- Victims of Crime Helpline (statewide resource): 1-800-494-8100
- Women's Center of Rhode Island 861-2760 (Providence/East Providence)
- Women's Resource Center of Newport and Bristol Counties 846-5263

RI Coalition Administrative office: 467-9940

After patients identified as abuse victims are informed about resources, physicians should schedule a close follow-up appointment. This gives the patient time to think about her options. In recommending follow-up, the provider is sending a clear message of support and concern. Lastly, the provider should document a disclosure of abuse or suspected abuse in the patient's chart. The provider should state, in the patient's own words, a description of abuse and the name of the perpetrator. If the patient has injuries as a result of IPV, these should be documented and photographed if possible. Such documentation can be extremely important if legal action is taken for protection, prosecution or child custody.

CONCLUSION

Intimate partner violence is a major public health problem that can have devastating consequences for women and their families. Every physician has a responsibility to screen female patients for IPV and take appropriate steps if a patient screens positively. Our project aims to guide physicians in a plan to assist their patients who are victims. Our hope is that this desk reference will empower physicians to screen for IPV and ultimately improve health outcomes for victims of partner violence.

REFERENCES

1. Tjaden P, Thoennes N. Full Report of the Prevalence, Incidence, and Consequences of Violence against Women: Findings from the National Violence against Women Survey. National Institute of Justice and Centers for Disease Control and Prevention, Washington DC, USA. 2000.
2. Houry D, Kembal R, et al. Intimate partner violence and mental health symptoms in African American female ED patients. *Am J Emerg Med* 2006; 24: 444-50.
3. McCauley J, Kern DE, et al. The "battering syndrome". *Ann Intern Med* 1995; 123: 737-46.
4. National Center for Injury Prevention and Control. Costs of intimate partner violence against women in the United States. Atlanta (GA): Centers for Disease Control and Prevention; 2003.
5. Elliott L, Nerney M, et al. Barriers to screening for domestic violence. *J Gen Intern Med* 2002; 17: 112-6.
6. Chambliss, Linda R. "Intimate Partner Violence and its Implication for Pregnancy," *Clinical Obstetrics and Gynecology*, June 2008; 51(2): 385-397.
7. Gunter J. Intimate partner violence. *Obstet Gynecol Clin N Amer* 2007; 34: 377.
8. Harberger LK, Ambuel B, et al. Physician interaction with battered women. *Arch Fam Med* 1998; 7: 575-82.
9. Burket JG, Denison JA, et al. Ending intimate partner violence. *Amer J Health Behav* 2004; 28: 122-33.
10. Burkitt K, Larking G. The Transtheoretical Model in intimate partner violence victimization. *Violence Victims* 2008; 23: 411-31.
11. US Department of Justice website, Bureau of Justice Statistics, www.Ojp.usdoj.gov/bjs/intimate/eth.gif
12. Campell JC, et al. Risk factors for femicide in abusive relationships. *Amer J Public Health* 2003; 93: 1089-97.

Sonia Aneja, MD ('09 Brown), is a resident in Obstetrics and Gynecology at Duke University Hospital.

Amy Gottlieb, MD is Assistant Professor of Medicine and Obstetrics and Gynecology (Clinical), The Warren Alpert Medical School of Brown University.

Edward Feller, MD is Clinical Professor of Medicine and Adjunct Clinical Professor of Community Health and Co-director of the Community Health clerkship at Brown.

Sonia Aneja completed this project as part of her Community Health clerkship at Brown.

Disclosure of Financial Interests

The authors have no financial interests to disclose.

CORRESPONDENCE

Edward Feller, MD
Box G- S121-2
Brown University
Providence, RI 02912
Phone: (401) 863-6149
e-mail: Edward_Feller@brown.edu



We Believe
in work and life balance.

We Believe
in a friendly environment where you will
be supported in your practice of good medicine.

We Believe
in a commitment to patient care and education.

We Believe
in electronic medical records.

We Believe
an expanding federally qualified
community health center recruiting for
BC/BE Family Practice Physicians.

Blackstone Valley Community Health Care has received support from the Rhode Island Foundation and the Federal Government that will allow expansion for patient access to clinical services weekday evenings until 8pm and all day Saturday and Sunday at the Pawtucket medical center.

Opportunities are available for Physicians, Physician Assistants, Nurses and support staff on a per diem or part time basis beginning in the fall of 2009.

To send your resume, visit our website at
www.blackstonechc.org
or fax to Director of Human Resources at
401-729-9901.

Barriers To Healthcare Access In the Southeast Asian Community of Rhode Island

Margret Chang, Edward Feller MD, Jayashree Nimmagadda, MSW, PhD, LICSW

Most Southeast Asian (SEA) refugees came to Rhode Island in the 1980s. Although researchers studied their health care status, their access to care, and the clash between their traditional views and Western medical views at that time, few studies have looked at the status of Rhode Island's refugees today.

Nationally, the poverty rate is as much as double the general population, and an estimated 60% of Hmong, 56% of Cambodian, and 52% of Laotians are linguistically isolated (all adults in the household have difficulty communicating in English).¹ The US SEA population has the lowest breast and ovarian cancer screening rates of any US ethnic group, low levels of blood pressure and diabetes screening, and increased prevalence of complications from chronic diseases such as diabetes or stroke.²

We sought to assess physician and patient barriers to health access and quality of care in Rhode Island's SEA community, 20,000 people, through focus groups. We asked: 1) How do Southeast Asians access health care in RI? 2) If they do, what are their experiences in accessing these services? 3) If they do not, what are the barriers?

METHODOLOGY

Semi-structured focus groups were held with Rhode Island's Cambodian, Laotian, and Hmong communities at neighborhood centers. Men and women formed 3 separate groups. Respondents were ages 41 to 83; the mean age was 62. Two native speakers of each language facilitated and recorded data. Participants were offered light refreshments and given a \$25 gift card. At each session, only facilitators and participants were present.

A convenience sample of participants was recruited by the RI Southeast Asian Coalition—an organization of leaders from each major sub-group (Cambodian, Laotian, and Hmong). Potential participants were recruited from community events at ethnic grocery stores, cultural

festivals, and religious temples. Once participants agreed to participate, informed consent documents were mailed or handed to them, along with a letter describing the focus group.

Language and ethnic-specific focus group sessions were recorded, transcribed and translated. A member of the research team performed an initial review. No names or identifying information were included in the transcription.

Analysis of data was conducted independently by one researcher who derived thematic categories from the transcripts.

RESULTS

The 54 participants (28 men and 26 women) comprised Hmong (N= 17); Cambodian (N= 17) and Laotian (N= 20). They identified diverse barriers to healthcare. Most revolved around interpretation difficulties.

The content was divided into five general themes.

1) Health Systems Barriers

Participants needed caseworkers and advocacy organizations to help navigate the healthcare system. Although many had health insurance or Medicare/Medicaid, most did not understand how to use benefits. Members of the Laotian focus groups were particularly eager to relate their experiences. Several participants described being mysteriously "kicked off of Medicare" for no reason. Consequently, many felt "scared" to go to the doctor without insurance.

In addition, participants mentioned the frustrations of having only one SEA community organization in RI. Although the organization provides some services to SEAs living in Providence, many communities in other parts of the state felt isolated and believed that "they live too far to receive any help." Members felt that a central SEA agency would help address barriers to healthcare access, especially for the elderly.

"I would be happy to hear that the state could help older people and those who cannot work, drive, or go to the doctor along."

Transportation also impedes participants' access to healthcare. All groups voiced concern that the elderly rely so heavily on their children, who typically work during normal clinic hours. Although SEAs know that they can ride the bus, they do not: they fear getting lost because they cannot read signs in English.

"I used to live in Washington [state] and California. Things were much better there, because there was a nurse or someone else to help me with transportation. Here, we don't know where to go, so we stay at home sick."

2) Clinic/Office Interactions

Participants unanimously felt that interaction with office staff was as important as interaction with doctors. Yet few clinics have interpreters on site.

"We need Lao *people* in the clinic, not just doctors. [We] need staff that can help show us resources, explain what payment plans are to me, teach me how to take my medicines, whether it's 1 pill aspirin a day, 2 pills a day...etc."

"Not knowing how to speak English...when you're ill and meet the doctor, if there isn't a Hmong-speaking person to help, you might go early at 10 am and you go a half hour early and wait and they never call your name. This is a problem."

Table 1: Barriers To Care

System-based

- Underrepresentation as leaders, decision-makers
- Care received in safety net settings
- Limited clinic hours, follow-up, phone contact
- Inadequate interpreter services, linguistic competency
- Insurance issues
- Lack of case workers or advocacy
- Poor continuity of care
- Obsolete medical record systems

Physician-based barriers

- Linguistic discordance
- Availability and proximity of providers
- Limited time, expertise, experience with interpreters
- Referral gridlock for specialists, behavioral care
- Telephone access
- Intake logjam
- Poor cultural understanding

Patient-based barriers

- “Safety net” care; lack of medical home
- Health literacy, linguistic issues
- Mistrust, perceived provider bias
- Cross-cultural disconnect
- Transportation, insurance issues
- No media messages in native language
- Communication barrier with MD
- Use of unproven alternative remedies

Participants understood the difficulty of hiring and retaining SEAs in clinics. The majority of the RI SEA healthcare workforce have low-paying positions requiring little formal education. Although employed in clerical or custodial positions, many find themselves serving as *ad hoc* interpreters or social workers due to the high demand for language assistance. As a result, the burnout rate is high.

“There was [a Laotian worker] at the [clinic],” explained a Laotian participant, “but she moved up...interpreters get tired of it...or worn out...so they move on to a higher position if they get a chance.”

Also, answering machine services and appointment reminders are usually given in English, which makes it difficult

to make appointments, remember them or get test results.

“...if you can't speak English, you can't even tell them you need a translator... when they call your house to inform you of an appointment, you can't understand what they are saying.”

3) Poor Doctor-Patient Communication

All respondents were troubled at the possible medical consequences of poor communication. Many feared that US medications or vaccines wouldn't work because doctors didn't understand their diseases.

“Maybe, the vaccines, because we are from a different country, when we fall ill, they might not be the right vaccines to treat our illnesses...or if they do understand our illnesses, they might not have the right medicines [available].”

The clinical impact of inadequate interpreter services extends directly to the doctor-patient relationship. With very few certified interpreters, many patients rely on friends and family members to interpret. Due to the lack of specific vocabulary words in SEA languages to describe symptoms and signs, many important clinical details frequently get lost in translation.

“For example, there is generally one word that means ill, injured, hurt, sick, or pain. It is generally used to describe any kind of illness from something minute to something serious, so translation requires in-depth explanations of symptoms and scenarios for others to comprehend meaning.”

Because of this inherent complexity, an untrained friend or family member serving as an *ad hoc* interpreter may make crucial mistakes.

Physicians often give incomplete or inadequate explanations of how to use medications. This led many to be-

lieve that US medications are ineffective, even harmful. In all groups, participants turned to traditional healing methods.

“Tnam borun (herbs and vodka) is important if you do it right and use it right, and don't drink a lot of cold water; better than doc medicine. If you use both, you get better faster.”

Communication difficulties also affected the physical examinations and procedures, particularly during gynecological exams. Participants in the Hmong women's group discussed a particular male interpreter whom they were not comfortable with, but who was the only person available.

“When it comes to the woman's part [of the physical exam], then they don't want him to know anything about it. So they say very little to the doctor because they are not comfortable with his presence.”

4) Lack of Education On Chronic Disease and Nutrition

Participants reported diabetes, hypertension, high cholesterol, cancer, and liver disease. Although they were aware that screening and regular doctor visits are important for prevention, most found it difficult to keep appointments for every checkup.

Participants were interested in learning about diet and nutrition. They understood the relationship between diet and good health. However, when asked about receiving dietary advice, many felt that their healthcare providers did not understand their culture.

“Sticky rice...the doctor told [my dad] he can't eat sticky rice, and my dad says 'that is like telling a fish not to swim! I am a Laotian man; I have to eat sticky rice...”

Asked what nutrition advice they needed, participants were forthright:

Table 2: Recommendations for Addressing Barriers

| Barrier | Interventions / solutions |
|--|---|
| Health services / Systems | <ul style="list-style-type: none"> • Increased access to care • National focus on recruiting and maintaining minority groups in health leadership positions • Home health agencies for SEAs |
| Clinic / Office Issues | <ul style="list-style-type: none"> • Native clinic workers • Telephone messages in native language • Technology promotion (electronic records, telemedicine, telephone interpreter services) |
| Doctor-Patient Miscommunication | <ul style="list-style-type: none"> • Adequate interpreter services • Telephone interpreters • Information in native language • Improving access to interpreter certification |
| Cultural / perceptual Barriers | <ul style="list-style-type: none"> • Cross-cultural education for health workers • Recruit SEA health professionals • Community outreach programs |
| Educational Barriers | <ul style="list-style-type: none"> • Dissemination of health education materials (e.g., community workshops, radio / TV public service announcements) • Collection of race and ethnicity data to monitor outreach efforts |

“We keep hearing that our nutrition and diet isn’t correct...But things like how much fats, protein, sugar to eat—we don’t understand those things. Someone needs to tell us what to do”

In addition, these limited-English patients do not get important health messages that appear in print, Internet, and television. Some have limited or inaccurate family health history from their parents or grandparents.

5) Cultural Barriers To Care

Participants identified diverse socio-cultural barriers, including lack of culturally appropriate care, perceived unfair treatment, provider bias on racial or ethnic grounds, and unawareness of the heterogeneity of SEA cultures.

Groups valued interpersonal relationships and interactions with their doctor. A persistent theme was the importance of family as the primary social unit and source of support and advice. Rather than consult the health care system, par-

ticipants often initially sought help from family, churches, or traditional healers. Because modesty and privacy are important, participants did not readily discuss some concerns with family members, especially of the opposite gender.

DISCUSSION

Focus groups identified the lack of interpreters and poor transportation as major barriers. A challenge specific to RI appears to be mobilizing the SEA community. Unlike states with multiple SEA advocacy organizations devoted to health and social service outreach, RI has none. Only the **Socio-Economic Development Center (SEDC)** has some of the cultural and linguistic resources needed to engage SEAs. Due to insufficient funding, SEDC cannot serve as a comprehensive vehicle for community outreach.

Challenges faced by SEAs in RI are amplified by the absence of a single SEA community geographic center. Instead, there are pockets of SEAs living in South Providence, Warwick, Smithfield, and Woonsocket. Because many SEAs do not have ready access to transportation, many

go to the nearest emergency department, “safety net” clinic or traditional healers for non-urgent treatment rather than to a fixed medical home. Indeed, informal meetings of the primary author with executives from local community hospitals revealed that their emergency departments have felt overwhelmed by the medical needs of SEA patients.

The lack of interpreter services contributes to adverse outcomes, including less screening and immunizations; more treatment errors; non-compliance with medication or treatment plans; missed appointments, and patient dissatisfaction.³ Ideally medical interpreters should be professionally trained. Family, friends, office employees or strangers recruited from waiting rooms misinterpret or omit up to half of all physicians’ questions, and are more likely to commit errors with clinical consequences. When children are present, ad hoc interpreters are likely to ignore embarrassing issues.⁴

Others suggest that incorporating cultural values into health education and outreach programs would make SEAs more accepting of services.⁵ One strength of the SEA community is its strong cultural identity and connection to local temples. This linkage has been helpful for health outreach, particularly health screenings held at local Buddhist temples. Such partnerships between cultural and medical resources are crucial for providing the information and the trust needed for the SEA community to participate more fully in health education and prevention efforts.

Among the recommendations for improving access to healthcare are: 1) Incentives for interpreter certification in SEA languages, 2) Initiation of home health agencies and outreach to care for SEA elders, 3) Educate providers on linguistic and culturally-specific issues, 4) Broad initiatives to increase SEA representation in the medical fields, with internship opportunities for SEA youth.

REFERENCES

1. California Endowment. Bridging Language Barriers in Health Care: Public Opinion Survey of California Immigrants from Latin America, Asia, and the Middle East, 2003. <http://www.ncmoline.com/mecia/pdf>
2. National Diabetes Education Program. *Silent Trauma: Diabetes, Health Status, and the Refugee—Southeast Asians in the United States*. Washington

DC, US Department of Health and Human Services, 2006.

3. Jacobs, et al. Legal and regulatory obligations to provide culturally and linguistically appropriate emergency department services. *Clin Ped Emerg Med* 2004;5: 85-92.
4. Brach, et al. Crossing the language chasm. *Health Affairs* 2005;24: 424-34.
5. Yee BW. Health and Healthcare of Southeast Asian American Elders: Vietnamese, Cambodian, Laotian, and Hmong Elders. 2001. <http://www.stanford.edu/group/ethnoger/southeastasian.html>.

Margret Chang is a 4th year medical student at the Warren Alpert Medical School of Brown University.

Edward Feller, MD, is a Clinical Professor of Medicine, Adjunct Professor of Community Health and Co-director of the Community Health clerkship at Brown.

Jayashree Nimmagadda, MSW, PhD, LICSW, is Interim Chair, MSW Program, Rhode Island College.

Margret Chang completed this project as part of required work in the Community Health clerkship at Brown. This is an edited version of her report.

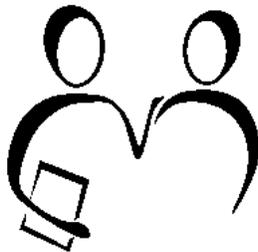
Disclosure of Financial Interests

The authors have no financial interests to disclose.

CORRESPONDENCE

Edward Feller, MD
Box G- S121-2
Brown University
Providence, RI 02912
Phone: (401) 863-6149
e-mail: Edward_Feller@brown.edu

Lead Psychiatrist/Medical Director Adult Services



The Kent Center a nationally recognized progressive CMHC is seeking a team oriented Board Certified/Board Eligible Adult Psychiatrist whose professional goal aspires to provide medical leadership and direction to a team of colleagues and associate staff while continuing to provide direct client care.

Our Psychiatric Consultation Service Team provides direct psychiatric services to a diverse population focusing on recovery of adult clients with mental health disorders, trauma, and substance abuse.

Team responsibilities include comprehensive evaluations, treatment planning, medication prescribing and monitoring of clients, and consultation services to members of clinical treatment teams.

Competitive salary, comprehensive benefit package including 4 weeks vacation, Blue Cross/Blue Shield medical, dental, life and long term disability insurance and 401K retirement plan. Send resume to Director of Human Resources, The Kent Center, 2756 Post Road, Suite 104, Warwick, RI 02886. Fax 401-691-3398.or e-mail hr@thekentcenter.org EOE.



Images In Medicine

Upper and (old) Lower Facial (VII) Nerve Palsies On Opposite Sides

Joseph H. Friedman, MD

An 86 year-old woman suffered a left internal capsule stroke one month before these photos. She had right facial weakness along with mild right arm and leg weakness as residua. Six years earlier she had had a left sided Bell's palsy with an excellent recovery. Photo A shows a mildly increased right palpebral fissure and mildly reduced right naso-labial fold. These findings indicate mild facial weakness on the right. In photo B, when smiling, one can see an increase in the naso-labial fold asymmetry, and contraction of the left orbicularis muscles. In photo C her left peri-orbital muscles contract as she puckers her lips, indicating synkinesis, a very common phenomenon in people who recover from a Bell's palsy.

Upper facial weakness can usually be distinguished from a lower motor weakness by having the patient contract the frontalis muscle (raising the eyebrows). In **upper motor neuron (UMN)** lesions the frontalis contracts. It does not with **lower motor neuron (LMN)** lesions. The vast majority of Bell's palsy cases recover very nicely but often develop synkinesis, a syndrome in which the VII nerve regenerates but one branch innervates more than one muscle, usually the mouth and eye so that smiling or lip puckering causes the eye to close and closing the eyes causes a unilateral smile. These photos show the difference between an UMN and old, or "healed" LMN VII nerve weakness.

The patient provided written informed consent to allow her photos to appear in this journal.

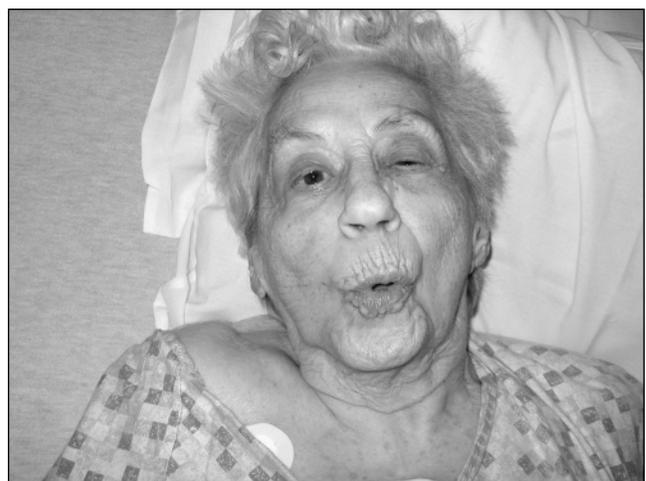
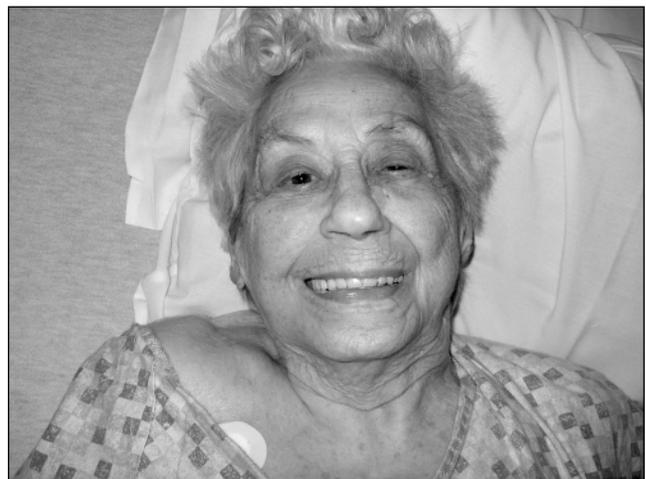
Joseph H. Friedman, MD, is Clinical Professor of Neurology, The Warren Alpert Medical School of Brown University, and Editor-in-Chief of Medicine & Health/Rhode Island.

Disclosure of Financial Interests

Consultant: Acadia Pharmacy, Ovation, Transoral; Grant Research Support: Cephalon, Teva, Novartis, Boehringer-Ingelheim, Sepracor, Glaxo; Speakers' Bureau: Astra Xeneca, Teva, Novartis, Boehringer-Ingelheim, GlaxoAcadia, Sepracor, Glaxo Smith Kline, Neurogen, EMD Serono.

CORRESPONDENCE

Joseph H. Friedman, MD
NeuroHealth
227 Centreville Rd.
Warwick, RI 02886
e-mail: Joseph H. Friedman, MD



Update On Myelodysplastic Syndrome

Christine M. Ho, MD, and James N. Butera, MD

Myelodysplastic Syndrome (MDS) is a bone marrow stem cell disorder, most commonly occurring in patients over 60 years old, characterized by cytopenias, bone marrow morphologic changes and cytogenetic abnormalities. Risks of MDS include infection, anemia, bleeding and transformation to **Acute Myelogenous Leukemia (AML)**. Older adults, at higher risk, present a treatment challenge due to atypical presentation, multiple co-morbidities, and increased risk of adverse effects from treatment.

RISK FACTORS

There is a predominance of MDS in males and Caucasians. Prior treatment with chemotherapy and radiation predisposes towards MDS. Other exposures that can increase risk include tobacco, pesticides, benzenes, and heavy metals, such as mercury and lead. There is less evidence of a genetic predisposition for MDS.

SIGNS AND SYMPTOMS

The presenting symptoms are typically related to resultant cytopenias. Symptoms can include fatigue, pallor, shortness of breath, easy bruising or bleeding, manifesting as petechiae, nose or gum bleeding. Sometimes, the cytopenias of MDS can exacerbate preexisting medical conditions, especially in older patients, in whom multiple co-morbidities are likely. For example, anemia can lead to congestive heart failure exacerbations. In addition, patients can present with frequent, unexplained infections or fevers. Not uncommonly, patients may present without symptoms and incidentally discovered cytopenias on routine lab work. As in many conditions, older

patients tend to present atypically, resulting often in late detection.

DIAGNOSIS

A bone marrow aspirate and biopsy are required for the diagnosis of MDS, which typically shows hypercellularity and uni-lineage or multi-lineage dysplasia. The combination of peripheral cytopenias despite a hypercellular bone marrow is the hallmark of MDS, and is a consequence of a dysfunctional bone marrow with an excessive rate of bone marrow cell apoptosis.

Bone marrow cytogenetic abnormalities are seen in 40-70% of patients with MDS and are helpful not only in characterizing and prognosticating MDS, but also in the determination of treatment options.¹

CLASSIFICATION

MDS can be primary or secondary. In primary MDS, there is no specific cause. In 50% of these patients, chromosomal abnormalities can be found, typically in the form of deletions. In secondary MDS, there is usually an inciting event, such as previous exposure to chemotherapy. Chromosomal abnormalities are seen in 80% of these patients. These abnormalities are most commonly numerical (ie: hypoploidy) or structural. Secondary MDS typically carries a worse prognosis.

The **World Health Organization (WHO)** Classification of MDS is summarized in Table 1. The classification system primarily uses percentages of bone marrow blasts, number of ringed sideroblasts, and number of dysplastic lineages to differentiate the subtypes of MDS.²

| | |
|--|---|
| Refractory anemia | Erythroid dysplasia only, <5% bone marrow blasts with no peripheral blasts, <15% ringed sideroblasts |
| Refractory anemia with ringed sideroblasts | Erythroid dysplasia only, <5% bone marrow blasts with no or rare peripheral blasts, >15% ringed sideroblasts |
| Refractory anemia with excess blasts | Uni-lineage or multi-lineage dysplasia, 5-19% of bone marrow cells are blasts |
| MDS-Unclassified | Cytopenias, unilineage dysplasia in granulocytes or megakaryocytes, <5% bone marrow blasts with no or rare peripheral blasts |
| Refractory cytopenia with multilineage dysplasia | Bi- or pancytopenia in blood, dysplasia in >10% of cells in two or more of myeloid cells lines, < 5% bone marrow blasts with no or rare peripheral blasts |
| MDS with del(5q) | Anemia, platelets usually normal to increased, normal to increased megakaryocytes with hypolobulated nuclei. Isolated 5q deletion seen in cytogenetics. |

Table 1.

PROGNOSIS

The most widely accepted prognostic tool is the International Prognostic Scoring System, which takes into account bone marrow blast percentage, specific cytogenetic categories (good risk, intermediate risk and poor risk), and number of cytopenias to develop four risk groups. Overall survival ranges from 5.7 years in patients in the most favorable risk group (less than 5% blasts, good risk cytogenetic, and ≤ 1 cytopenic lineage), 3.5 years and 1.2 years in the intermediate risk groups and 0.4 years in patients in the least favorable risk group (typically greater than 10 % blasts, poor or intermediate risk cytogenetics with cytopenias).⁴

TREATMENT

Historically, supportive care has been the mainstay of treatment, and almost all patients will need supportive care periodically during their disease course. Patients who develop infections can be treated with antibiotics. Thrombocytopenia may require intermittent platelet transfusions. Patients with anemia are treated with transfusion support or supplementation with Erythropoietin (Epo). Patients who are red blood cell transfusion dependent are at risk for iron overload and its complications, such as heart failure and liver dysfunction, and may require chelation therapy.⁵

Erythropoietin (Epo) has been used in patients with symptomatic anemia. It is most effective when given at high doses (40,000 Units weekly). Although the time for response could be up to 26 weeks, roughly 20 to 55% of patients will respond to Epo treatment, allowing for complete elimination or a decreased need for blood transfusions. Interestingly, when Epo is used in combination with growth factors, such as GM-CSF or G-CSF, effects on hemoglobin values are synergistic.

Two new classes of agents have been incorporated into the treatment for patients with MDS. First are the DNA methyltransferase inhibitors.⁶ It is thought that DNA methylation plays a role in the pathogenesis of MDS. DNA methylation typically serves to deactivate genes. Tumor suppressor genes are found to be more frequently methylated in MDS compared to normal hematopoiesis. This leads to a predominance of oncogenes which may result in the phenotype of MDS. Two drugs, azacitidine and decitabine, both of which are analogs of the pyrimidine nucleoside cytidine, are DNA-hypomethylating agents. Because they decrease the amount of DNA methylation, there is an increase in the expression of these tumor suppressor genes. Cytopenias in 24-39% of patients treated with these agents improved. These agents may be especially useful in preventing the transition of MDS to AML which is hallmarked by a further increase in DNA methylation.

The second class of drugs with demonstrated efficacy in MDS is immunomodulatory. Although various theories exist, the exact mechanism of action in MDS is unknown. Lenalidomide is the immunomodulatory agent which has had the most success in improving hemoglobin count in patients with MDS.⁷ This thalidomide analogue lacks the neurological toxicities of thalidomide, such as neuropathy and somnolence, and has been shown to be especially effective in patients with deletion of chromosome 5q, with about two-thirds of patients becoming transfusion independent. In patients with non-

5q deletion MDS, 49% of patients experience some hematologic improvement with lenalidomide.

Additionally, chemotherapy is used; however, the use is limited because patients with MDS are older and more susceptible to the side effects of chemotherapy. In patients who can tolerate it, the two situations in which chemotherapy may be used are in patients who have advanced MDS (refractory anemia with excess blasts) and in patients who have progressed to AML.

The treatment that offers the greatest chance of cure for patients with MDS is allogeneic stem cell transplantation.⁸ This aggressive strategy has a high rate of morbidity and mortality in older patients and therefore can be offered to only patients who can tolerate it. Elderly patients often have other comorbid medical conditions that preclude this option.

Reduced intensity transplantation (RIC) uses lower doses of chemotherapy during transplantation and carries with it lesser morbidity. Therefore, it can be offered to a larger number of older patients. However, there is still significant toxicity to RIC and it is reserved for patients with high-risk MDS who have adequate organ function, or those who have transformed to AML.⁹

However, for all the treatments mentioned, it is important to assess the older adult as a whole, and not entirely based upon medical co-morbidity. Functional status and level of cognitive, social and physical functioning are as important as age and medical condition when determining "prognosis" and ability to tolerate treatments. Older adults should not be automatically discounted from more aggressive treatments due to age alone.

CONCLUSION

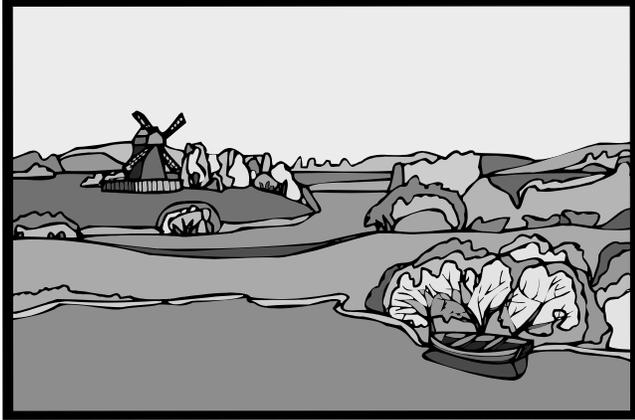
MDS is a heterogeneous stem cell disorder that leads to significant morbidity and mortality. It commonly occurs in the older adult population. Newer treatments aimed at improving cytopenias are available; however, a majority of patients do not respond to therapy and are at risk for death from cytopenias or transformation to AML.

Elderly patients are seldom able to tolerate more aggressive treatments such as allogeneic bone marrow transplantation and thus are a population that has the most to benefit from improved treatments options and further research. However, consider functional status when determining prognosis and ability to tolerate treatment.

REFERENCES

1. Haase D. Cytogenetic features in myelodysplastic syndrome. *Ann Hematol* 2008; 87: 515-26.
2. Giagounidis AAN, Germing U, Aul C. Biological and prognostic significance of chromosome 5q deletion in myeloid malignancies. *Clin Cancer Res* 200; 12(1).S
3. Cazzola M, Malcovati L. Myelodysplastic syndrome-coping with ineffective hematopoiesis. *NEJM* 2005; 352:536-8.
4. Muftt GJ, Bennett JM, et al. Diagnosis and classification of myelodysplastic syndrome. *Haematologica* 2008; 93:1712-7.
5. Jabbour E, Garcia-Manero G, et al. Managing iron overload in patient with myelodysplastic syndrome with oral deferasirox therapy. *The Oncologist* 2009; 14:489-96.
6. Griffiths EA, Gore SD. DNA methyltransferase and histone deacetylase inhibitors in the treatment of myelodysplastic syndromes. *Semin Hematol* 2008; 45:23-30.

7. Giagounidis A, Fenaux P, et al. Practical recommendations on the use of lenalidomide in the management of myelodysplastic syndromes. *Ann Hematol* 2008; 87:345-52.
8. Kasner MT, Luger SM. Update on the therapy for myelodysplastic syndrome. *Amer J Hematol* 2009; 84:177-86.
9. Laport GG, Sandmaier BM, et al. Reduced intensity conditioning followed by allogeneic hematopoietic cell transplantation for adult patients with myelodysplastic syndrome and myeloproliferative disorders. *Biol Blood Marrow Transplant* 2008;14:246-55.



Christine Ho, MD, is a Categorical Internal Medicine Resident, Rhode Island Hospital, The Warren Alpert Medical School of Brown University.

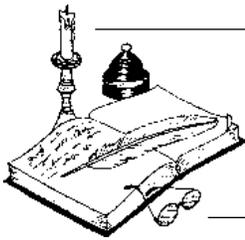
James N. Butera, MD, is Clinical Assistant Professor of Medicine, Division of Hematology/Oncology, The Warren Alpert Medical School of Brown University.

Disclosure of Financial Interests

The authors have no financial interests to disclose.

9SOW-RI-GERIATRICS-092009

THE ANALYSES UPON WHICH THIS PUBLICATION IS BASED were performed under Contract Number 500-02-RI02, funded by the Centers for Medicare & Medicaid Services, an agency of the U.S. Department of Health and Human Services. The content of this publication does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author assumes full responsibility for the accuracy and completeness of the ideas presented.



Physician's Lexicon

Epochs, Eras and Eons

Each of the formal scientific disciplines, including medicine, possesses its own vocabulary. Some terminologies are shared as when medicine and the law overlap in the forensic sciences. Perhaps the least likely of the physical sciences to share scientific nomenclature with medicine is geology; yet even here there is some common ground in paleopathology and the Darwinian timelines.

Geologists whose timelines are more profoundly rooted than physicians' think in terms of millions – if not billions – of years. Thus they divide the 4.35 billion years of this globe's existence into eons, eras, periods and epochs. And the names that they have chosen for the Periods generally reflect geographic place-names rather than personages of classical mythology. Thus, for example, the Cambrian Period is named after the Latin name for Wales [*Cambria*]; the Ordovician Period is named after a Celtic tribe of ancient Wales

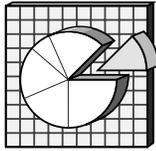
named the Ordovices; the Silurian Period is named after the Silures, the Brithonic people of ancient Wales; the Permian Period is named after the east Russian province of Perm; the Devonian Period is named after Devon, an English county; the Cretaceous Period is named after a Latin word, *creta*, meaning chalk; and the Jurassic Period is named after the Jura mountains in France and Switzerland.

There are a number of Greco-Roman prefixes appended to the geologic epochs that also crop up in medical nomenclature. These include the many prefixes attached to the Greek root *-cene*, meaning recent. These include: *paleo-* [Greek, meaning ancient], *proto-* [Greek, meaning first], *pleio-* [Greek, meaning more than or greater], *eo-* [Greek, meaning dawn], *oligo-* [Greek, meaning few or small], *pleisto-* [Greek, meaning the most of that which is new], and *holo-* [Greek, meaning entire or complete as in the Holocene Epoch and repre-

senting the geologic interval from 11,700 years ago to the present.] Medical terms employing these prefixes include paleoencephalon, pleiotropy, pleochromocytoma, pleocytosis, oligodendroglioma, holocrania and holozoic.

The eons are given the following names: Hadean [about 4 billion years ago] representing the early formation of the solar system, named after the Greek word, Hades, the lower, or invisible, world. The Archaean [about 3 billion years ago], named for the Greek word meaning ancient or primitive; Proterozoic [about 2.8 billion years ago] from the Greek, meaning former or anterior, while the *-zoic* root is Greek, meaning living; and the Phanerozoic Eon [about 542 million years ago to the present] is from the Greek, meaning visible or manifest.

– STANLEY M. ARONSON, MD



Resettlement of Refugees From Africa and Iraq In Rhode Island: The Impact of Violence and Burden of Disease

Maria-Luisa Vallejo, MA, MEd., MPH, Peter Simon, MD, MPH, and Jiachen Zhou

The Office of Minority Health at the Rhode Island Department of Health formally initiated the **Refugee Health Program (RHP)** in August 2004. The goal is to ensure that refugees and asylees enter into a comprehensive system of care that responds to their unique health care needs by addressing three main components: coordination of care, education and training, and surveillance and epidemiology.

Refugees are provided only eight months of insurance via Medicaid. No medical coverage is provided after they attain legal status, which takes approximately one year after their arrival in the United States. Timely medical care is an integral part of the refugee resettlement process. This discussion compares the burden of disease between recently resettled Africans and Iraqi refugees in Rhode Island.

REFUGEES IN RHODE ISLAND

The Federal Refugee Act of 1980 defines a refugee as a person who is outside of his/her country of origin and is unable or unwilling to return to that country because of the experience or legitimate fear of persecution on the grounds of race, religion, nationality, membership in a particular social group, or political affiliation.¹

Since 1990, Rhode Island has resettled 4,779 refugees including 133 in 2008. Figure 1 reflects the fluctuation of refugees from year to year. This varies with the stability of countries, international affairs and policies. For example, the African continent has been plagued by ongoing civil wars, political unrest and natural disasters, causing the most horrific refugee crisis in recent memory. Although peace agreements in such countries as Angola and Sierra Leone have enabled many African refugees to repatriate, displacement in the Democratic Republic of Congo, Burundi, and Liberia continues. During 2008, Rhode Island continued to resettle refugees (n = 89) from several African countries including Burundi (31), Somalia (19), Tanzania (13), Democratic Republic of Congo (8), Ethiopia (4), Liberia (4), Eritrea (3), Kenya (3), Rwanda (3) and Sierra Leone (1). The decrease in refugees from the 1990s is a reflection of national policies and cutbacks. There is now an expectation that the numbers will rise

with changes in administration.

BURDEN OF DISEASE

Information regarding the burden of disease in refugee populations is collected through the medical report (Medical Examination for Immigrant or Refugee Applicant) provided by the US Department of State. The US State Department Panel of Physicians examines refugees in their country of exit, approximately sixty days prior to their departure. This five-page report provides a good basic profile of the refugee's health before his/her departure and targets conditions that require follow-up when the refugee is resettled.

Physicians in Rhode Island hospitals complete the Rhode Island Refugee Health Screening Form within 30 days after the refugee's arrival in Rhode Island. The form, developed by the Rhode Island Department of Health in partnership with a network of providers, targets the most important health conditions for refugees in the United States, e.g., **tuberculosis (TB)**, hepatitis B, hepatitis C, elevated blood lead levels, sexually transmitted infections, anemia, malaria (if symptomatic), parasites, mental health illness, etc.

The Refugee Health Program produces an annual report based on the quarterly reports reflecting the number of refugees who entered the country during that period, countries of origin, sex, age distribution and Class A/B conditions according to the Medical Examination Classification. Class A conditions include the following: HIV/AIDS; active, infectious TB; untreated syphilis, cancer, gonorrhea, granuloma inguinale, lymphogranuloma venereum; Hansen's Disease (lepromatous or multibacillary); and addiction or abuse of specific substances

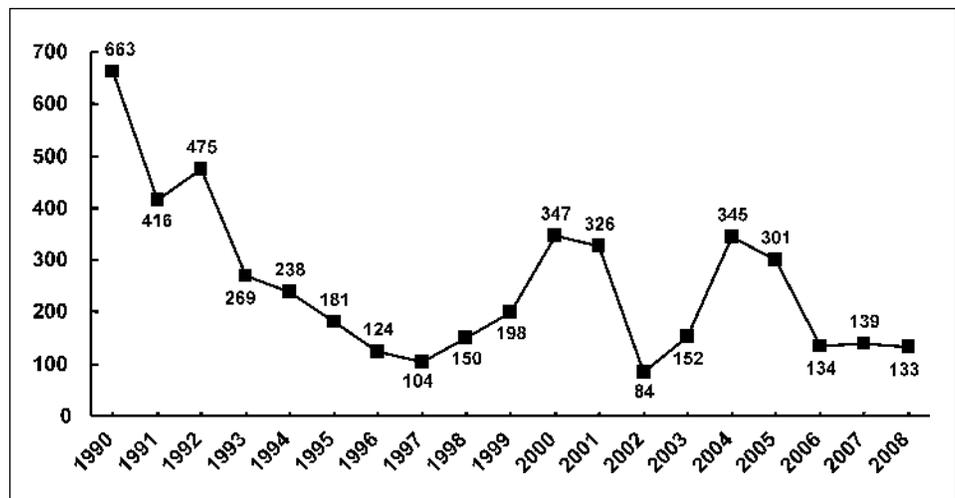


Figure 1: New Refugee Arrivals to Rhode Island, 1990-2008.

with harmful behavior. Class B conditions include the following: active, non-infectious TB; inactive TB; other sexually transmitted diseases; current pregnancy; Hansen's Disease with prior treatment; and any physical or mental health disorder without harmful behavior or history of such behavior unlikely to occur. During 2008, the majority of the 133 refugees to Rhode Island had conditions that fell into Class B (n = 108).

AFRICAN REFUGEES

African refugees have had little or no access to health services, and many have suffered from malnutrition, as well as typhoid, cholera, dysentery and malaria. In Rhode Island, during 2008, 33 (25%) of the 133 refugees had a history of malaria based on the medical reports and health screenings. Resettlement to the United States of malaria-infected refugees can pose problems for both the refugees and their resettlement communities. According to "Malaria in East African refugees resettling to the United States: development of strategies to reduce the risk of imported malaria," epidemiologic data were reviewed and malaria prevalence surveys conducted.³ Nonetheless, the risk of malaria continues to be of concern in resettlement communities and is the leading cause of death among refugees.

Refugees also constitute one of the most difficult populations to reach with HIV/AIDS prevention and care services in Africa. Little is known about HIV infection and risk behaviors of refugees living in refugee camps.⁴

Female genital mutilation, performed on girls ranging from infancy to puberty, may have medical complications; e.g. severe pain, shock, infection, bleeding, acute urinary infection, tetanus, and death. In Africa, an estimated 80 million girls and women have undergone female genital mutilation.⁵ Rhode Island health care providers should be aware of the practice, because its complications may require immediate treatment or have other medical implications.

IRAQI REFUGEES

Rhode Island started the resettlement of Iraqis at the beginning of 2008, when 39 (29%) of the 133 refugees to Rhode Island came from Iraq. The most frequent diseases or medical issues among Iraqis have changed from chronic diseases (e.g., cardiovascular disease, diabetes, etc.) to conditions resulting from violence (e.g., bombings, gunfire, etc.).

Malnutrition and catastrophic sanitary conditions contribute to other diseases and illnesses including diarrhea, pneumonia, malaria and typhoid. Additional health risks include the hazards from chemical, biological, and radioactive pollution during prior conflicts. Water and sewerage capacity have never been fully restored. Of particular concern is the cluster of cancers and genetic defects, which some suggest are associated with depleted uranium (DU) usage in anti-tank weapons.⁶ Although Iraq had one of the most advanced health systems in the region, it has been in decline for several decades.⁷ Poor standards of care and inefficient referral systems are all in part due to pre-existing corruption, neglect, shortages and sanctions.⁸ In addition to the physical effects of war on the Iraqi population, high numbers also suffer with mental health illnesses.⁹

CONCLUSIONS

The number of refugees coming to Rhode Island has fluctuated over the past ten years, and the countries of origin have also changed. Currently most (96%) refugees in Rhode Island come from Africa or Iraq. While malaria represents the greatest burden of disease, these refugees have also suffered severe psychological trauma. Health care providers should be aware of the severity of these problems and that these refugees are legally entitled to only eight months of medical coverage. The Refugee Health Program continues its work to: improve reporting of refugee health screening data; increase refugee access to culturally and linguistically appropriate services; and provide resources that assist health and social service providers to provide comprehensive care that is responsive to the needs of refugees.

REFERENCES

1. INA 101(a)(42)(a); 8 USC
2. Office of Refugee Resettlement (ORR). 2004. Report to the Congress.
3. Slutsker L, Tipple M, et al. Malaria in East African refugees resettling to the United States. *Infect Dis* 1995;17:489-93.
4. Tanka Y, Kunii O, et al. Knowledge, attitude, and practice (KAP) of HIV prevention and HIV infection in Congolese refugees in Tanzania. *Health Place*. 2007 Sep;[Epub ahead of print].
5. Ladjali M, Rattray TW, Walder RJ. Female genital mutilation. *BMJ* 1993;307:460.
6. Hirschfield R. An Arab-American priest, depleted uranium, and Iraq. *The Washington Report on Middle Eastern Affairs*. 2005;240:29-30.
7. Webster P. Reconstruction efforts in Iraq failing health care. *The Lancet* 2009;373:617-20.
8. *The Human Cost of the War in Iraq. A Mortality Study, 2002-2006*. Bloomberg School of Public Health, Johns Hopkins University Baltimore, Maryland.
9. Alhasnawi, et al. The prevalence & correlates of DSM-IV disorders in the Iraq Mental Health Survey (IMHS). *J World Psychiatry* 2009. <http://www.panet.org>

Maria-Luisa Vallejo, MA, MEd, MPH, is the Refugee Health Coordinator in the Division of Community Family Health and Equity, Rhode Island Department of Health.

Peter Simon, MD, MPH, is Acting Medical Director, Division of Community Family Health and Equity, Rhode Island Department of Health, and Clinical Associate Professor, Departments of Community Health and Pediatrics, The Warren Alpert Medical School of Brown University.

Jiachen Zhou, a graduate student in epidemiology, The Warren Alpert Medical School, Brown University, is an intern at the Rhode Island Department of Health.

Disclosure of Financial Interests

The authors have no financial interests to disclose.



THE RHODE ISLAND MEDICAL JOURNAL

The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publications Committee

VOLUME 1
NUMBER 1

PROVIDENCE, R.I., JANUARY, 1917

PER YEAR \$2.00
SINGLE COPY, 25 CENTS

FIFTY YEARS AGO, SEPTEMBER 1959

Meyer Saklad, MD, Chief, Department of Anesthesiology, Rhode Island Hospital, praised the first Chief of Anesthesiology at the hospital. In "Albert H. Miller – Physician," Dr. Saklad explained: "Modern-day anesthesia is indebted to him." In particular, Dr. Miller insisted on examining patients before their operations, noting: "Some surgeons considered it a personal affront that the patient should require a physical examination before ...an operation." He recorded patients' ages and postoperative complications, so that he could classify patients as to operative risk.

Leo Vincent Hand, MD, the President-elect of the American Society of Anesthesiology, and an intern under Dr. Miller, contributed "Arthur H. Miller: The Art of Anesthesia." He noted Dr. Miller's lesson: "the proper practice was for the anesthesiologist to establish rapport with the patient."

The Journal printed "The Life of Arthur H. Miller: A Factual Account of Dr. Miller's Life Based on Data Furnished by his Wife, Mrs. Ada Holding Miller, to Dr. Alex Mr. Bur-

gess, Sr." Born in Maine, Dr. Miller graduated from Bates (1894), from the School of Science at Bowdoin (1895), and received a medical degree from Columbia (1898). At one point he headed departments of anesthesiology at Rhode Island, St Joseph, Memorial, Providence Lying-In, Butler, South Country, Truesdale, "and other" hospitals. The article highlighted his first major decision: "to do away with the old, closed-cone method of giving ether." He substituted an open cone he had invented: the patient didn't choke, and the procedure used less ether. The author reported: "The method is still used."

Bencil L. Schiff, MD, in "Kaposi's Sarcoma," discussed the unusual occurrence in the lower left ankle and leg of a 24 year-old man.

Richard B. Knowles, MD, in "Acute Massive Digitalis Intoxication," discussed a 33 year-old housewife whose symptoms cleared within four days after "therapy with pronestyl, potassium chloride and a low-carbohydrate diet."

TWENTY-FIVE YEARS AGO, SEPTEMBER 1984

Bruce C. Kelley, PhD, David M. Gute, PhD, Peter P. Potthoff, MS, and William J. Waters, PhD, all from the Rhode Island Department of Health, discussed "Health Promotion Activities at the Worksite: A Rhode Island Business Perspective." The Department of Health had conducted a sample survey of all private-sector firms (with 20 or more employees). The results were similar to those from a study of workplaces in California. Of 952 employers, results showed a positive correlation between size of firm and medical program. Many respondents cited positive benefits of health programs. More than 40% "believe that health promotion programs increase worker productivity."

Elizabeth Conklin tracked key legislative issues for the Rhode Island Medical Society. In "Rhode Island General Assembly Adjourns in May," she reported on those issues; e.g., medical malpractice, optometric drug use, physician assistants, living wills, mental health, worker's compensation, legal drinking age (raised to 21), emergency telephone system (\$5 million bond referendum to finance the 911 system was put on the ballot), and physician participation in insurance programs (law requires physicians to make known their Medicare assignment policy).

For Lease
Will Build to
Suit or Subdivide
Medical Office or Clinical

Prime Location
Ample Parking

Route 6

East Providence, RI

500 Feet to On/Off Ramps to 195 and 95

401-438-6116

The Name of Choice in MRI



'OASIS' 1.2 Tesla open-sided scanner

Open MRI

of New England, Inc.

- High Field Open-Sided and Short-Bore Systems
- Fast appointments and reports
- Insurance authorization services, physician web portal and EMR system interfaces



ADVANCED

Radiology, Inc.

- 'Multislice' CT systems
- Digital xray, bone density and ultrasound
- Insurance authorization services, physician web portal and EMR system interfaces



Multislice CT system



ADVANCED Radiology, Inc.

525 Broad St • Cumberland
T 725-OPEN (6736) F 726-2536

1002 Waterman Ave • East Providence
T 431-5200 F 431-5205

148 West River St • Providence
T 621-5800 F 621-8300

501 Great Road • North Smithfield
T 766-3900 F 766-3906

335 Centerville Rd • Warwick
T 732-3205 • F 732-3276

101 Airport Rd • Westerly
T 315-0095 F 315-0092

MyCME

A Bright Idea from NORCAL Mutual



Introducing MyCME from NORCAL Mutual. Review our wide array of risk management resources and services. Register for and complete CME courses at your convenience. Submit your Attestation Form online. Print transcripts and certificates... everything from one easy-to-navigate website.

Call RIMS Insurance Brokerage Corporation at 401.272.1050 to purchase your NORCAL coverage.



*Our passion protects
your practice*

NORCAL Mutual is proud to be endorsed by the Rhode Island Medical Society as the preferred professional liability insurer for its members.