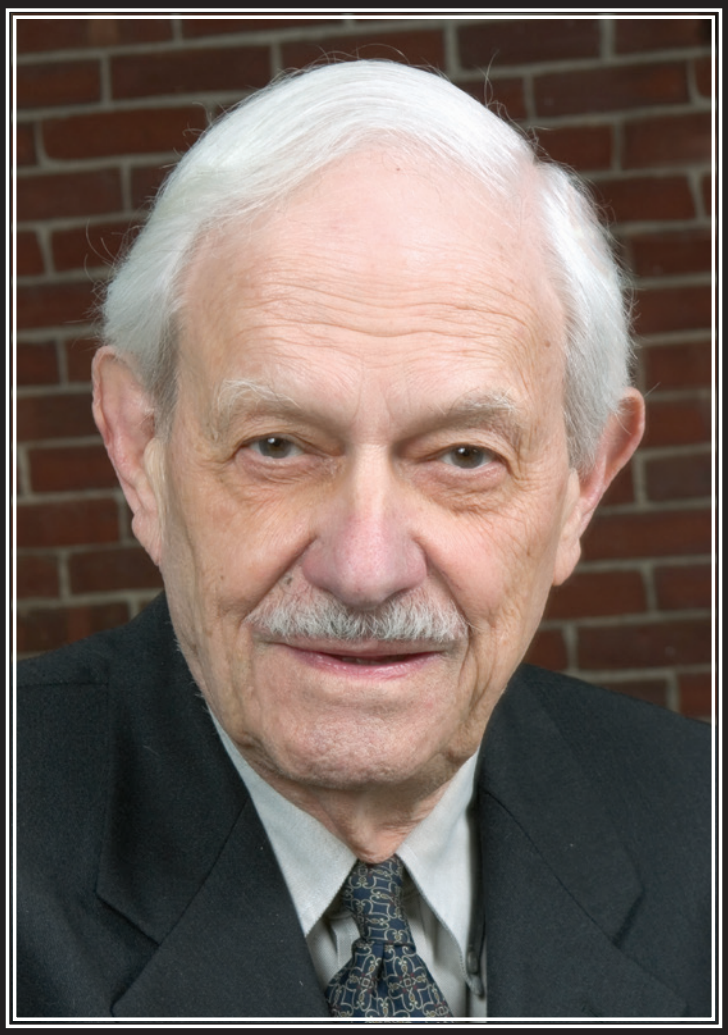
RHODE ISLAND
MEDICAL JOURNAL

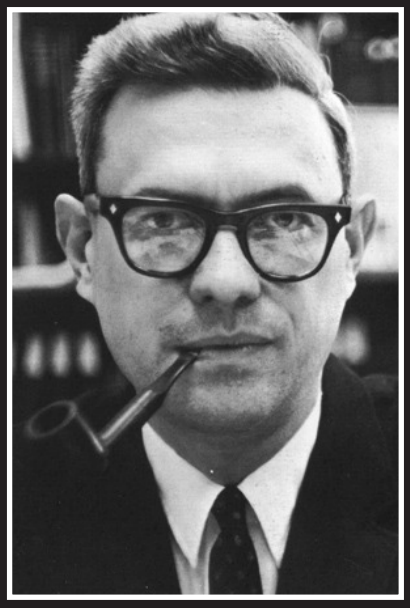
IN MEMORIAM



STANLEY M. ARONSON, MD

MAY 28, 1922–JANUARY 28, 2015

FEBRUARY 2015 VOLUME 98 • NUMBER 2 ISSN 2327-2228



Dr. Stanley M. Aronson, a distinguished neuropathologist, had been director of laboratories at Kings County Hospital Center in Brooklyn before relocating to Rhode Island in 1970.

Dr. Aronson, shown here at a Brown graduation, was founding Dean of Brown Medical School, 1972–1981.

Dr. Stanley and Gale Aronson attended RIMS Bicentennial Gala, April 2012

Dr. Aronson was Editor-in-Chief of the *Rhode Island Medical Journal*, 1989–1999, and continued to contribute commentaries, lexicons, and occasionally paintings, until this month.

BROWN

With Dean Jack Elias and Chancellor Thomas J. Tisch upon the founding of the Alpert Medical School Dean Stanley M. Aronson Fund for Research and Innovation, May 2014.

Brown medical school graduate Dr. Sarah Aronson spoke at the celebration honoring her father.

(*Left*) Dean Aronson presides over Match Day ceremonies for the first MD graduating class of 1975.

With Joseph H. Friedman, MD, first recipient of the Stanley Aronson Chair in Neurodegenerative Disorders, Butler Hospital, April 2014.

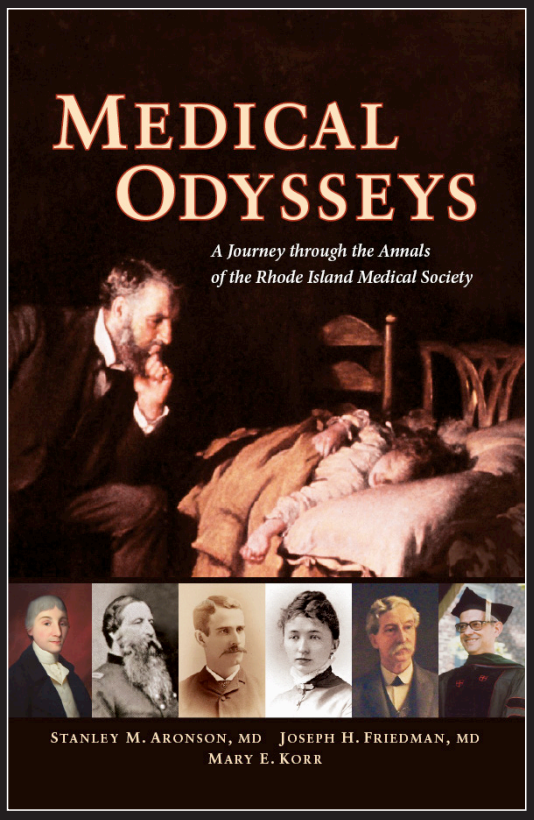
BROWN

Dr. Aronson received an honorary Doctor of Medical Science degree from Brown in 2007.

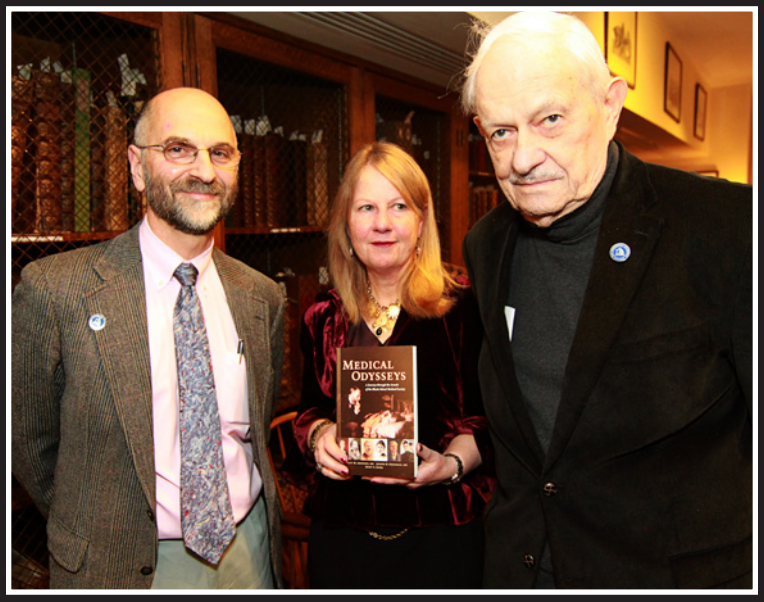
Dr. Aronson received RIMS' Dr. Herbert Rakantansky Award for exemplary professionalism and humanitarian service in the field of medicine, September 2013.

In 2012, in celebration of the Rhode Island Medical Society (RIMS) Bicentennial, the Society published *Medical Odysseys*, a compilation of essays by Dr. Aronson and the *Rhode Island Medical Journal's* (RIMJ) editors. An author's reception was held at the John Hay Library at Brown, which houses RIMS' historic manuscripts and vintage medical collections in its archives.

Dr. Aronson served as executive editor of RIMJ for a decade, from 1989 to 1999. Upon passing the pen to Dr. Joseph H. Friedman, he continued to contribute to the Journal's pages with his medical commentaries, lexicons, and illustrations, shown on these pages.



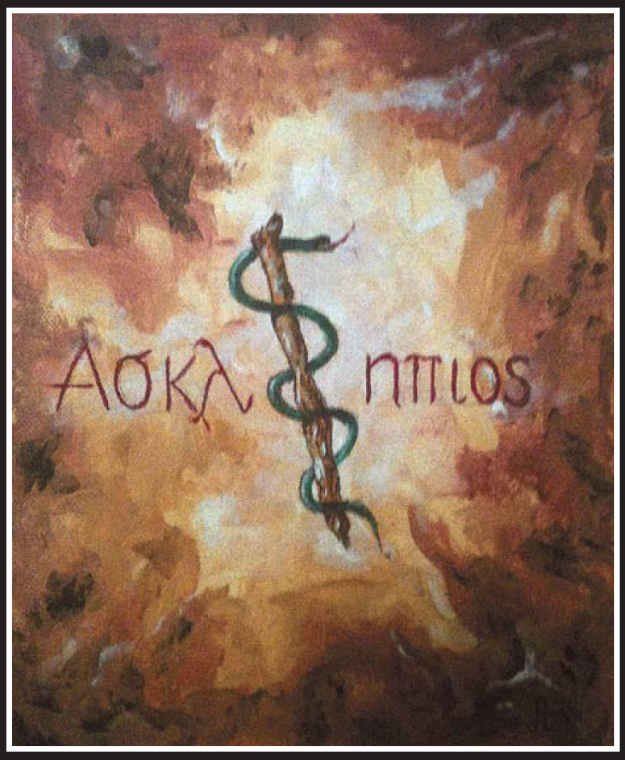
View a video of Dr. Aronson's remarks at the author's reception at http://www.rimed.org/video-2011-1215-Aronson.asp



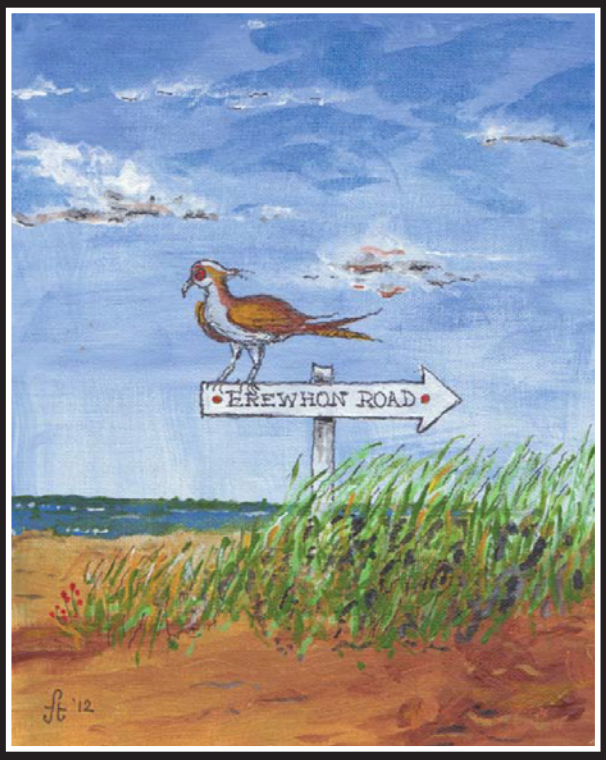
With Dr. Aronson are RIMJ editors Dr. Joseph H. Friedman and Mary Korr.

Dr. Aronson inscribing a copy of *Medical Odysseys* for Dr. Nitin S. Damle, RIMS president at that time.

FROM THE ARONSON PAINTBRUSH...



"Asklepios," acrylic on canvas, was featured on the January 2102 *Medicine & Health Rhode Island* and the March 2014 *Rhode Island Medical Journal.*



"Erewhon Road," acrylic on canvas, was featured on the December 2102 *Medicine & Health Rhode Island.*

"Aztec God", oil, was featured on the December 2008 *Medicine & Health Rhode Island* with the following credit: [A] painting by an octogenarian physician based upon a relic uncovered in Sotchimilco, Mexico.

"What Makes Lyme Disease Tick", oil, was featured on the July 2008 *Medicine & Health Rhode Island* with the following credit:
The artist is an itinerant New England physician.

A Tribute to Stan Aronson

'Sublime genius, renaissance mensch'

NEWELL E. WARDE, PhD
RIMS EXECUTIVE DIRECTOR, RIMJ PUBLISHER

One day in 1989, Stanley Aronson came to the Medical Society's headquarters to visit its new executive director, a young man who had been in the position for about a year. Stan was the most genuinely distinguished and revered éminence grise I had ever sat with one on one (for I was that young man), but I already knew him well enough that I was looking forward to the appointment with only slight trepidation.

We had recently persuaded Stan to take on the *Rhode Island Medical Journal* as its editor-in-chief, succeeding the talented and energetic Dr. Seebert Goldowsky, who had done the job very capably for 29 years before he finally begged to be relieved. Now Stan wanted to tell me his plans for the Journal and get assurance of my support, since the Journal's finances were chronically shaky and its future had been in question.

Suffice it to say we had an easy meeting of the minds that day, which freed our conversation to wander. He was intrigued by my background in German literature, a quirk of my youth that he never forgot. We spoke of Freud and Jung. He described the physician's calling as something nearly sacred, "akin almost to a priesthood," he said. I have often reflected upon the truth of another striking thing he said that day, in whatever context: "We're so stupid when we're in our twenties."

In the years that followed, Stan's stature in the world of medicine, combined with the power of his own pen, elevated the quality, visibility and solvency of the *Rhode Island Medical Journal*. In particular, Stan's own monthly commentaries were such gems of wit and erudition that they began to attract notice. They soon caught the eye of Bob Whitcomb, who was then the editor of the *Providence Journal*'s editorial pages. Bob began republishing Stan's columns on Mondays, a tradition that has now lasted 24 years and encompasses an astonishing 1200 columns. For the Medical Society, Stan's regular appearance on the op-ed page of Rhode Island's newspaper of record, where he was identified as the editor-in-chief (and after 1999 as editor emeritus) of the journal of the Rhode Island Medical Society, was a weekly windfall. Stan's growing audience of devoted readers generated many grateful letters to the newspaper over the years.

Stan's commentaries seemed to be at once a playground for his boundless curiosity, an outlet for his delight in language, and a showcase for his immense fund of varied knowledge. And they never failed to surprise. Even when he treated familiar topics like penicillin, Jonas Salk or the Hippocratic Oath, Stan always plumbed historical depths and brought poignant ironies to light.

But who knew until a few months ago that Stan was also a hockey fan who playfully pondered the messages of mayhem hidden within the franchise names of the NHL ("ruin" in Bruins, "anger" in Rangers, "lame" in Flames, "evil" in Devils, "liar" in Flyers)? His riff on collective terms for doctors and scientists will always be another favorite of mine (a rash of dermatologists, a clone of geneticists, a wince of dentists, an eruption of pediatricians, a pulse of cardiologists, a pile of proctologists, a graft of plastic surgeons, a run of gastroenterologists, a cluster of biostatisticians, etc.). One measure of the magnitude of Stan's fan base was his recognition last year in the *Providence Phoenix*, where the popular column "Philippe & Jorge's Cool, Cool World" celebrated him as "a sublime genius."

After ten years at the helm, Stan passed the editorship of the RIMS journal to Joe Friedman, but he remained an active supporter and contributor – and not only to the content between the covers. It has been a well-kept secret that certain anonymous artwork on the front cover, sometimes attributed to "an itinerant New England physician," was Stan's.

Several years ago, as the Medical Society's bicentennial year approached, I asked Stan if he would consider writing a new history of the Society. He and I knew that if there were to be such a history, everyone would want him to write it. After some months, he declined, citing his age and the magnitude of the project. But he agreed to serve on our bicentennial planning committee and to work with Joe Friedman and Mary Korr on a new anthology of essays to be published for the occasion. The result was *Medical Odysseys, A Journey through the Annals of the Rhode Island Medical Society*, published in 2011. When the bicentennial year 2012 arrived, Stan spoke memorably at the inaugural event of our year-long series of observances. (See and hear him at http://www.rimed.org/video-2011-1215-Aronson.asp. I also highly recommend listening again to Stan's contribution to "This I believe – Rhode Island" dated October 14, 2010, which is archived on the website of WRNI, Rhode Island Public Radio.)

The Medical Society has thanked and honored Stan in every way we know how, just as every other organization in the community has fittingly done. He was a recipient of both RIMS' Hill Award for service and the Rakatansky Award for professionalism. But I think Fred Schiffman's tribute to Stan as "a renaissance mensch" may be the best of all.

Stan and I last shook hands at each of two events to which he lent his good name last fall in support of the candidacy of Jorge Elorza for mayor of Providence. On the first of those occasions, he was invited to address the crowd. Though he was unprepared, I had to marvel at his thoughtful eloquence and at the hope, optimism and caring that he projected for his adopted home town. Civic engagement too belongs on the long list of Stan's exemplary virtues.

I count myself fortunate to have so often been close enough to grasp the hand and sense the heart of a great doer and healer. I shall always remember his ever-timely admonition that "The ultimate enemy is not death, but bigotry and willful ignorance."

Remembering Stan Aronson

JOSEPH H. FRIEDMAN, MD
RIMJ EDITOR-IN-CHIEF

I moved to Rhode Island in 1982. I had not heard of Stanley Aronson. He had recently retired as dean of the medical school at Brown, the "Program in Medicine," as it was then called, and I knew the name of the current dean, not the former one. I certainly didn't know that he was the first dean. I vividly recall the first time I spoke with him. I was doing a neurology consult on the wards of Roger Williams Hospital (before it became a Medical Center) and was paged to an outside number. Dr. Stanley Aronson, in his usual slow, distinguished, low frequency voice, told me that he was the neurology consultant for the Brown student health service, and that he had heard of me, the only full-time neurologist in the Brown medical school not working at the Veterans Hospital. He wondered if I'd be interested in taking over his responsibilities. I did, and, he shortly thereafter asked me to teach in his introduction to clinical neuroscience course at the medical school. This was after he retired. From time to time, we had occasional interactions.

Over the years I got to know Stan and we became friends. I learned that although he had been the neurology consultant at the student health service, he was not, in fact, an officially trained neurologist. He was a very distinguished neuropathologist. So, how did Stan come to be a neurology consultant? Because of his interest in the neurodegenerative disorders of children, he attended the pediatric neurology clinic at Columbia University, during his fellowship and early attending days. He practiced pediatric neurology to better understand the pathology he was studying. When he later became neuropathologist and chair of neuropathology at Downstate Medical Center, in New York, he actually ran a large in-patient ward for children with Tay Sachs and other degenerative disorders, as he followed these unfortunate children from end-stage disease to their autopsies. He was the doctor in charge. He was a pioneer in Tay Sachs disease, a disorder that is now almost extinguished in the western world. Stan was a "do-er." He didn't simply talk the talk, he practiced what he thought and taught.

Stan, who had served on the boards of numerous distinguished pathology journals, took over editorial leadership of the *Rhode Island Medical Journal*, then called *Medicine and Health, Rhode Island*, after his retirement from the deanship, to keep it from foundering. It was through this position that I got to know him, as I liked to write and get published, and the journal was a great venue for me to advertise myself and then the neurology department, as it developed. He asked me to take over from him, after ten years, after no one applied for the job. While reluctant to take on more work, how could anyone turn done a request from Dr. Aronson? I've been editor since January 1999, a long time. He has cautioned me several times to be sure to find someone to take over from me, although, at 66, he considered me a young man, just getting started.

When he retired from the deanship, he started the MPH program at Harvard. He continued writing, and never missed a week of his *Providence Journal* columns that have gone on for over 20 years. He was active on hospital and medical support group boards. He helped establish the Rhode Island branch of the American Parkinson's Disease Society, although Parkinson's was never one of his research interests.

When he turned 80, or thereabouts, he told me that he was looking for a "third career." Although this third career, running a hospital in a resource-poor country, never came to pass, it certainly could have. It was not an idle speculation. Stan's accomplishments, which are legion, and could be spread among several individuals and make each one of them proud, are covered in other tributes in this issue of the medical journal. His defining characteristics were his humility, sense of responsibility for his fellows, intelligence, extraordinary knowledge base, and unquenchable zeal for learning, teaching and helping.

Stan died before I could surprise him with the galleys for a book I've edited, but not yet published:

> This book is dedicated to Stanley M. Aronson, MD, MPH, distinguished neuropathologist, founding dean of the Program in Medicine at Brown University, dean emeritus of the Warren Alpert School of Medicine of Brown University, mentor and role model to several generations.

Farewell to the Boy from Brooklyn

MARY KORR
RIMJ MANAGING EDITOR

Stanley M. Aronson, MD, departed this world in the midst of a blizzard named Juno. The etymologist in him would have been inspired by the storm's name to write his next Lexicon for the *Rhode Island Medical Journal,* of which he was editor emeritus.

Like the storm, Dr. Aronson was a man of great strength; he had an immense intellect equaled by his humility, which was bred in the streets and a tenement in Brownsville, Brooklyn, where he grew up.

My friendship with him began a dozen years ago, when I started editing his commentaries, followed by two of his books, *Perilous Encounters* and *Medical Odysseys.*

We met to discuss editorial matters in his home library, stacked floor to ceiling with thousands of books. His easel stood in the corner. One particular portrait I admired of his was that of his immigrant grandmother from Eastern Europe.

Over time, I took to calling him the Boy from Brooklyn during these visits. He was working on a memoir of growing up there. Although Stan did not like to talk about himself, over the years he has surprised me with anecdotes. Two weeks ago, he related how he was expelled from the fifth grade. As he told it, the teachers in his public school selected students to be on the Student Council. He felt that was unfair and sent around a petition, which called for a student vote on candidates. In short order he was summoned to the principal's office and expelled for insubordination. He was sent to a tech school.

His wife Gale said that was the best thing that could have happened; she pointed to the majestic wood cabinet he had built as a result of his carpentry skills learned there. Indeed, in an early interview with Stan, he said the only future he envisioned as a boy growing up during the Great Depression was that of a skilled manual laborer.

Fate intervened and he found himself at City College of New York. Though just over the Brooklyn Bridge, it was a world away from the tenements and he remained forever grateful for the opportunity to attend, and develop his innate intellectual abilities and be in the company of brilliant classmates, as he described them.

Recently, he told me of his serendipitous entry into a medical career during World War ll. He was in Army training when he was injured and sent to rehab. During that time, the Army offered him the choice of working as an elevator operator – or applying to a new medical school program for enlisted military personnel. He opted for the latter, and was accepted to New York University College of Medicine. Before classes started each day, he had to lead reveille and teach students how to march and salute, up and down the medical school halls. "And I was paid for that," he said with a laugh.

Stan first came to Rhode Island in 1970 with his first wife, the late Betty Aronson, MD, and their daughters, to work at The Miriam Hospital. The hospital "didn't have its own police force with guns in the halls," he said, unlike the sprawling Kings County Hospital Center in Brooklyn, where he had been director of laboratories. "Coming to Rhode Island was such a joy. It was quiet and peaceful. We bought a farm in Rehoboth."

His arrival in 1970 coincided with Brown University's plans to extend its six-year master of medical science program to form a four-year program leading to the MD degree within its division of biology and medicine. It wasn't long after he arrived that Brown invited him to discuss leading the medical school effort. Stan frequently reminisced about the early intense years of the medical school, and particularly its students, whom he has remained in contact with over the years, frequently inviting them to his home.

Recently, my husband Ken, who knew Stan professionally, and I visited with him and Gale. He talked about his decision to use hospice care, and of the two workers who came to his house every day and how appreciative he was of them.

He spoke of how lucky and blessed he was to have his wife, Gale, at his side. They reminisced about their wedding more than a decade ago and how beautiful it was, held in their home and Zen garden. Brown-trained physicians held a special place in his heart – and with fatherly pride he noted his daughter, Dr. Sarah Aronson, was among these.

With his passing, this community has lost a physician leader, writer, counselor, scholar, humanitarian – and by his quiet dignity – a role model for future generations. Stan was a rare gift. Thank you for sharing those gifts with us all, Boy from Brooklyn.

RHODE ISLAND
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SPECIAL SECTION

HEADACHE DISORDERS

GUEST EDITOR

JULIE ROTH, MD

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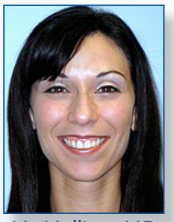
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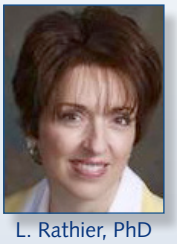
L. Rathier, PhD


N. Mehta, MD


Cover image of MRI brain in a patient with headache, courtesy of Julie Roth, MD, with permission of patient

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IN THE NEWS

PEOPLE/PLACES

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CONTRIBUTION

PUBLIC HEALTH

Erratum

Med Health R I. 2009 Sep;92(9):318-9.
Resettlement of refugees from Africa and Iraq in Rhode Island: the impact of violence and burden of disease.
Vallejo ML, Simon P, Zou J.
PMID: 19842533 [PubMed - indexed for MEDLINE]

Author name correction
Erratum in: R I Med J (2013). 2015 Feb. 2; 98(2):6.
Corrected to: Resettlement of refugees from Africa and Iraq in Rhode Island: the impact of violence and burden of disease.
Vallejo ML, Simon P, Zhou J.

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Publish (if you can)

JOSEPH H. FRIEDMAN, MD
joseph_friedman@brown.edu

Most physicians don't publish medical articles, and most of those who do publish small numbers of articles. Some physicians are relatively addicted to writing and generally try to get what they write printed. I fall into this latter category, as is evidenced by the monthly column I've been writing for this journal. Most of what I write is related to my narrow niche of neurological focus, movement disorders. This isn't important for this column. What is important is the increasing frustration I've experienced trying to get my manuscripts (ms) either submitted or revised. My technological incompetence has increased with age, but more problematic has been the increasingly bizarre nature of the submission requirements.

Back in the old days, one submitted three or four copies of a ms and a signed copyright transfer, which some journals required in advance, others only if the ms was accepted. These days, some journals require the copyright in advance; others require a box to be checked; and some require a signed statement in advance, even though the majority of articles are rejected. I am in the process of submitting a very brief case report, of interest primarily because of the educational value of the accompanying video of the movement disorder. Despite my problems with aging, I was stunned to learn that there are neurology journals that do not publish videos even though the journal can be accessed on the Internet. Even the RIMJ publishes videos. One distinguished journal that does accept videos only publishes them as an "image in neurology," which is fine, except that all images must also have a multiple choice question that includes five images. Since my patient's image was a video, and not an x-ray or skin abnormality, and obviously was unusual, finding static images would be meaningless, and finding 5 video examples of movements that might be confused with my case would be challenging. So, I withdrew.

The next journal had several categories that a submission might fall into. Each submission had a list of requirements that needed to be met before the article would be accepted. I was unable to identify which category my article might fall into. Another journal didn't mention whether they accepted videos but did supply an email for questions. Like other journals I've dealt with, those emails go into the netherworld of cyberspace. The journal I'm in the process of submitting to sent the ms back to me because, although I had, correctly checked the box indicating that the ms had a video as part of it, I had not indicated that on each page of the two page ms. In addition, I had not included a "running title" on each page, and my acknowledgement included the statement, "thanks to Adam____," rather than acknowledging Adam with a full sentence. The submission also required me to list three suggested reviewers. "Suggested reviewers" are reviewers the author knows and thinks can provide pertinent reviews. The notion of an author suggesting a reviewer never made sense to me. I always assumed that a friend would feel obliged to favor me if the outcome was in doubt, or even possibly favor me when I should not have been favored. I thought it made sense to have an author list some reviewers to exclude, since there may be bad blood between the two. Certainly one occasionally hears about scientists carrying grudges about competing theories. It turns out that two neurology journals checked their experience with the acceptance to rejection ratio when suggested reviewers assessed manuscripts and found that the suggested reviewers were actually more likely to reject a manuscript. I never suggest reviewers unless the journal requires it. And, this is a requirement that wastes time since one must supply the email address and telephone numbers of the suggested reviewers, which usually are not at one's fingertips.

Most difficult of all is the new stance some journals have taken of adopting templates that must be completed for submitting an article. It isn't enough

that one follows the template for writing the article, but one must also fill out a form that confirms and cites a page number for where a particular requirement is located. If an abstract is required, the form must check that the abstract is present, and which page it is on, although abstracts always come first. One must cite the page where the discussion begins, although every manuscript (and I have provided peer review for many journals) has a section labeled "discussion." If the paper reports a clinical trial, then the form must state that an IRB approved the protocol, despite the fact that every article with human subjects always states this at the beginning of the methods section. And on it goes. I reviewed a ms for one journal and found that the form that had to accompany the article was about 2/3 the length of the actual manuscript. It is certainly better to submit articles online than on paper, but the intrusions of political correctness and highly dubious screening procedures make submissions an increasingly onerous process. The list of conflicts of interest extend to family members, and to ties to industry, publishing houses, and anything else the journal thinks is relevant even when there is no relevance. And we see, quite easily, that since there is no oversight for this, other than comparing the conflicts listed in the ms and those listed on the accompanying template, anyone who wants to hide something can easily do so. If other older authors are like me, they will be taking on junior authors simply to handle the process of submission. It's worse than handling my TV remote or cell phone. ❖

Author

Joseph H. Friedman, MD, is Editor-in-chief of the *Rhode Island Medical Journal,* Professor and the Chief of the Division of Movement Disorders, Department of Neurology at the Alpert Medical School of Brown University, chief of Butler Hospital's Movement Disorders Program and first recipient of the Stanley Aronson Chair in Neurodegenerative Disorders.

Disclosures on website

Rhode Island Medical Journal Submissions

The Rhode Island Medical Journal is a peer-reviewed, electronic, monthly publication, owned and published by the Rhode Island Medical Society for more than a century and a half. It is indexed in PubMed within 48 hours of publication. The authors or articles must be Rhode Island-based. Editors welcome submissions in the following categories:

CONTRIBUTIONS

Contributions report on an issue of interest to clinicians in Rhode Island. Topics include original research, treatment options, literature reviews, collaborative studies and case reports. Maximum length: 2000 words and 20 references.

JPEGs (300 ppi) of photographs, charts and figures may accompany the case, and must be submitted in a separate document from the text. Color images preferred.

CREATIVE CLINICIAN

Clinicians are invited to describe cases that defy textbook analysis. Maximum length: 1200 words. Maximum number of references: 6.

JPEGs (300 ppi) of photographs, charts and figures may accompany the case, and must be submitted in a separate document from the text.

POINT OF VIEW

The writer shares a perspective on any issue facing clinicians (eg, ethics, health care policy, patient issues, or personal perspectives). Maximum length: 600 words.

ADVANCES IN PHARMACOLOGY

Authors discuss new treatments. Maximum length: 1000 words.

ADVANCES IN LABORATORY MEDICINE

Authors discuss a new laboratory technique. Maximum length: 1000 words.

IMAGES IN MEDICINE

Authors submit an interesting image or series of images (up to 4), with an explanation of no more than 500 words, not including legends for the images.

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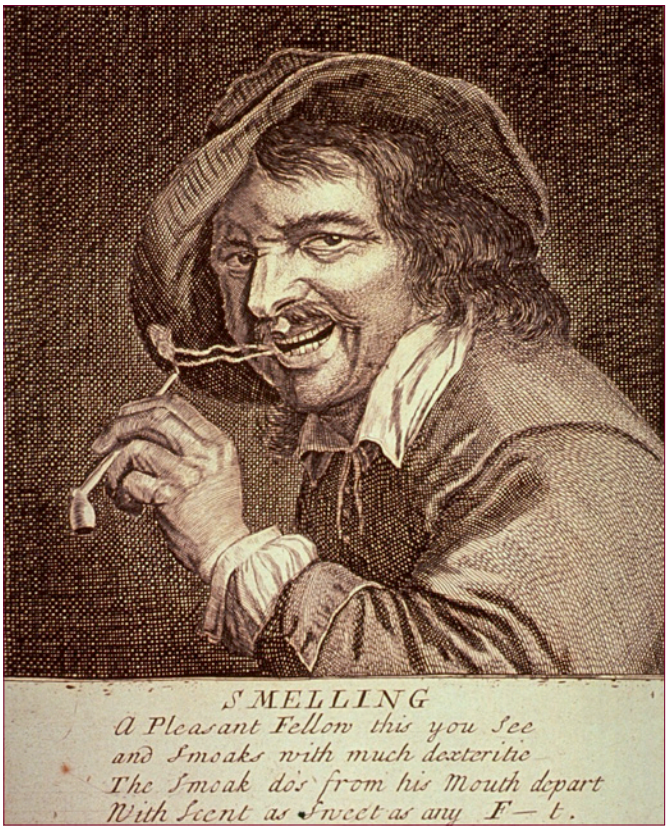
When Samuel Coleridge (1772–1834) toured the German city of Cologne, his personal journal took note of the many distinctive smells that confronted him while walking the streets of this ancient Rhenish metropolis. "I counted two and seventy stenches," he marveled. But of these many smells, he decided, only a few truly stank. Coleridge's reflections on urban smells make an astonishing claim: to have identified 72 distinguishable aromas!

An American tourist, currently visiting some urban center for the first time, might keep a diary of each day's observations and happenings. And in it he might describe, perhaps, the city's unique architecture, its historic structures, its idiosyncratic history, and certainly its restaurants, each with distinctive aromas; but rarely would he make specific note of the distinguishing street smells that he might have encountered. Maybe a passing comment on industry-generated smoke or, if the city were a seaport, the faint aroma of the neighboring seas, but, out of middle-class courtesy, little more. Chambers of Commerce are generally reluctant to advertise distinctive smells.

Humans are granted a defined number of senses including, amongst others, the senses of touch, sight, taste, hearing and smell. (There are still further senses said to exist, more perhaps in the realm of the intuitive, the revelatory world or even the spiritual, but their existences have not been verified by objective testing.)



HISTORY OF MEDICINE/NLM

The capacity to detect distinctive odors, identify them by name, knowing which bespeak of imminent danger and which hint at edible nourishment, has kept many species alive in an uncompromising Darwinian world. Indeed, with many invertebrate species and marine vertebrates, the sense of smell is substantially more developed than the sense of sight, and certainly more critical to survival. Humans, civilized men and women, have allowed their olfactory skills in distinguishing one odor from another to languish. Smelling an approaching predator may have been a life-saving virtue for our primitive ancestors, but is no longer an aid to survival in an urban world where every effort is now made to diminish or eliminate every lurking aroma.

A *New York Times* article, in 2014, took notice of the diminishing reliance humans – and particularly Americans – have placed upon the ability to identify encountered smells. In an article entitled, "Can't Place That Smell? You Must Be American," it seems, more and more, that anthropologists are now willing to assert that culture rather than genetic inheritance determines whether an encountered smell is a pleasing scent or an offensive

stink. And further, that increased acculturation diminishes the human acuity of smells while relying more on the sense of sight for survival.

More than any other nation, the United States has determined to eliminate smells from the quotidian lives of its citizens. If Coleridge's journal entry is a reasonable sampling of early 19th-Century perceptions of odors, then only two of 72 were deemed offensive. But if he were alive today, he would be astonished by the grimness with which Americans confront odors: Virtually all odors are considered offensive; and even the neutral word, odor, brings to mind the unvoiced adjective, "offensive."

Americans now inhabit a land where almost any odor is labeled as repugnant if not evil, and biologic smells are sure evidence of human disease and are given such names as halitosis or body odor (B.O.) And sweating, once sure evidence of honest labor, is viewed now as asocial if not uncouth behavior. Indeed, in current fiction, a witness who sweats is regarded with heightened suspicion. Our citizenry now live in mortal dread of yielding any odors, since by definition all smells are to be deemed irrefutably offensive unless they arise from cosmetic industry products.

And so we sweeten our exhalations, we wrap our foods in clear plastic and we air-condition our homes to lessen the effects of heat but also to remove the slightest trace of the many odors that bespeak of a thriving human existence. In truth, odors are neither odious nor pleasing except by the flawed judgments of humans. In the words of Thoreau (1817–1862), "There is no odor so bad as that which arises from goodness tainted." ❖

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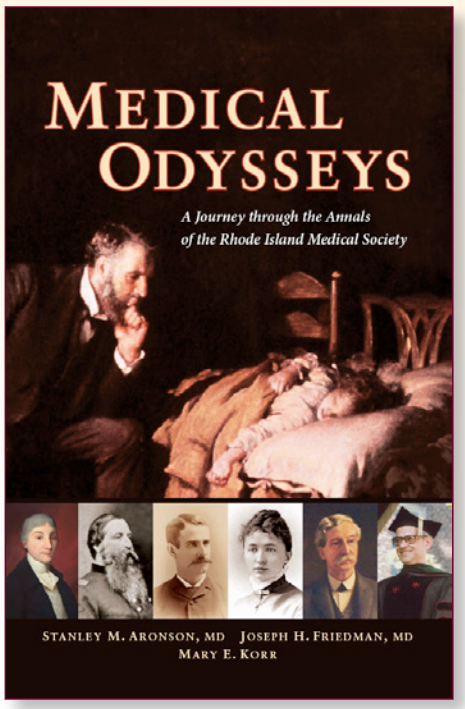
Disclosures

The author has no financial interests to disclose.



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A limited number of copies remain. Readers of Dr. Stanley Aronson's uniquely erudite and entertaining essays on medicine, medical history, language and forensic folklore will cherish this compilation, which also includes commentaries by Dr. Joseph Friedman, executive editor of the Rhode Island Medical Journal, as well as essays on aspects of RIMS' history by managing editor Mary Korr.

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The Other Epidemic

ELIZABETH HORN PRSIC, MD

[*Editor's note: The author changed several details of the patient encounter to adequately maintain patient confidentiality and protection.*]

KEYWORDS: Ebola, code status, veteran, advanced care planning, geriatrics

While working at the VA Hospital recently, I took care of an elderly male with end-stage chronic kidney disease and an advanced cancer. All things considered, he was doing well enough. He lived in an apartment below his daughter and while he had a lot of assistance with shopping, cooking and paying bills, he lived alone and was in good spirits, although his memory was fading. He couldn't remember the date, until I reminded him that it was his birthday.

As I always do at the time of admission to the hospital, I ask a series of questions to the patient regarding their code status. I have developed a way to bring up this difficult topic in the most reassuring, standardized way possible. I always ask the same questions in the same way. "Mr. Doe, I have to ask you a question I ask of every patient, no matter how old, young, sick or healthy they are when the come in to the hospital." Typically, I would proceed to ask specific questions regarding CPR, cardiac resuscitation and intubation. This time, however, the demented octogenarian looked at me, exasperated, and said, "No, doctor, I haven't traveled to Africa."

Now, I have been caught up in the fear and tantalizing 24-hour news coverage of Ebola as much as the next person, but this time, I felt caught off guard. Of course, I think about the possibility of Ebola when I am working in the hospital. Rhode Island has already had one of their own citizens infected with the virus and with a large Liberian population, we have been extremely cautious and proactive as a community regarding preparedness.

This, however, was different. I thought about the numbers. In a population of over 316 million[1], there have been 4 cases of Ebola diagnosed in the United States.[2] The odds of an American contracting Ebola is, roughly, .00000001%. This gentleman could not go to the grocery store unassisted let alone travel internationally to the developing world. With his end-stage kidney disease and lymphoma, I was thinking more along the lines of, well, a code discussion. Last time I checked, the odds of dying are 100%.

I smiled and thanked the veteran for letting me know his travel history. The last international travel he had had was to France during World War II. We spoke briefly about what he would want if his heart were to stop beating or if he were unable to breathe on his own. His son was in the room and listened as he answered clearly, no chest compressions, no breathing tube, and furthermore, no dialysis. He had donated a kidney to his brother years before and cared for him as he struggled through dialysis and worsening health. The patient was able to state where he was and why, and the date, his 88th birthday. When prompted, he stated clearly his wishes about the end of his life. The son nodded in agreement, remembering his father had a living will at home, something he and his sister would find and review the next day. I may have not made the headlines that evening, discussing end-of-life wishes with an aging and ill veteran, but the odds of giving that patient the care he wished for and the care he deserved were, I hope, 100%.

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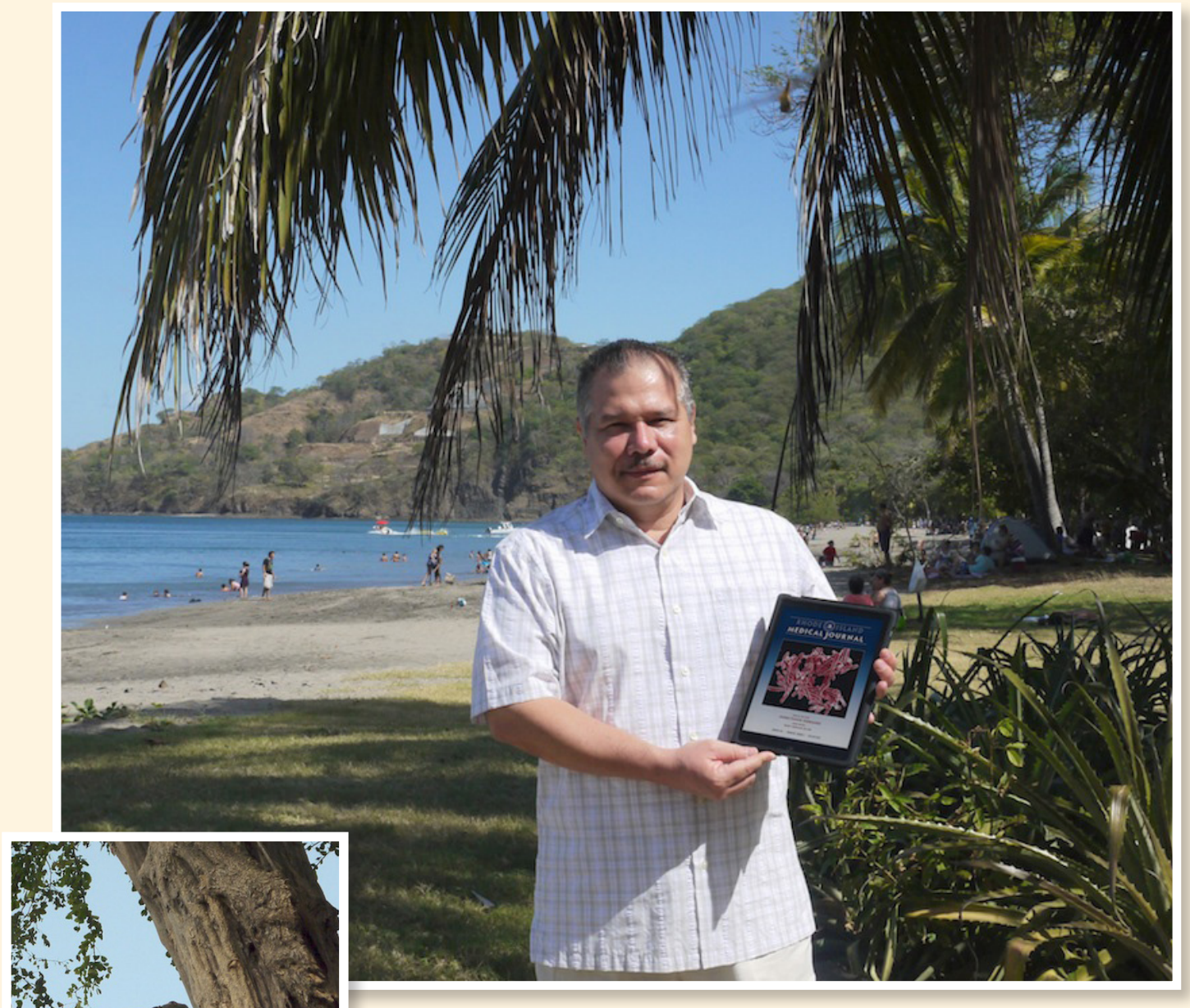

PHOTOS BY NEWELL E. WARDE, PHD

COSTA RICA

Wagner Moreno, M.Sc., Associate Professor of Psychology at the Guanacaste campus of the University of Costa Rica, accessed the January 2015 edition of the *Rhode Island Medical Journal* at the Playa Hermosa in Guanacaste, Costa Rica. [*Left*] An iguana sleeps in a nearby tree, displaying no interest whatsoever in the *RI Medical Journal*.

Wherever your travels take you, be sure to check the latest edition of RIMJ on your mobile device and send us a photo: **mkorr@rimed.org.**

University Orthopedics proudly announces the appointment of Derek Jenkins, M.D.


Derek Jenkins, MD

University Orthopedics is pleased to announce that Derek Jenkins, M.D., will join our Joint Replacement Center in February 2015. Dr. Jenkins is an expert in joint replacement and reconstructive surgery, with a focus on adult reconstruction of the hip and knee.

Dr. Jenkins was an adult reconstruction fellow at the Mayo Clinic in Rochester, MN, following his orthopedic surgery residency at Lenox Hill Hospital, NY, NY. He is a graduate of Dartmouth College as well as Dartmouth Medical School, where he also completed a student fellowship in Bone and Soft Tissue Pathology.

Dr. Jenkins, selected after a national search, will be an Assistant Professor at the Warren Alpert Medical School of Brown University. He will perform surgery at the Miriam Hospital, Rhode Island Hospital, Newport Hospital, and will see patients at University Orthopedics' Butler Campus and Middletown offices.

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Headache Disorders: Clinical Features, Approaches to Diagnosis, Specific Treatments

JULIE ROTH, MD
GUEST EDITOR

Migraine is a prevalent neurological disorder, but its prevalence is probably greater among practicing neurologists. I was about twelve years old when I had my "first and worst" headache – triggered, in retrospect, by eating an entire box of chocolates with my grandmother just hours earlier. There I was in the hotel room, a throbbing and ever-intensifying pain creeping over my left eyebrow toward the temple, curled in a ball, intensely nauseated, with a blanket over my head to block out light, and the sound of my parents' voices only intensifying the agony I felt. If the pain hadn't gone away with sleep, I am certain I would have also had my first head CT, and possibly my first lumbar puncture. Though we have all learned again and again the typical "red flags" for headache, any migraineur will have experienced at some point in life a "first," and invariably a "worst." Yet the needle in the haystack may be the aneurysm rupture, the obstructive hydrocephalus. Scarier still, severity of pain does not always match severity of disease – more often than not, the opposite is true. To a neurologist, a two-month history of personality changes and mild left-sided weakness with a dull, "two out of ten" headache is more frightening than a "ten out of ten" headache with nausea and vomiting in a young woman of childbearing age, especially if further history suggests a gradual onset, perimenstrual headaches, and a strong family history of migraine. Sorting through all those headaches invariably produces…headache. For many practitioners, the angst about headache is angst about missing a secondary cause. For others, it is the discomfort with treating chronic pain, or unpacking its psychosocial baggage.

This issue of the *Rhode Island Medical Journal* aims to alleviate the provider's headache, by shedding more light on headache – from accurate diagnosis to specific treatments.

DR. NORMAN GORDON has practiced general neurology in Rhode Island for more than 20 years; in **Clinical Features of Migraine and Other Headache Disorders**, he shares wisdom gleaned in his Miriam Hospital-affiliated private practice, illustrating the importance of making an accurate diagnosis as a crucial first step in the proper management of some common and uncommon primary headache disorders.

In **Chronic Daily Headache: Challenges in Treatment**, **DRS. JAY LEVIN AND MICHELLE MELLION** (of Rhode Island Hospital, The Neurology Foundation) provide a comprehensive review of one of the most tormenting conditions encountered by practitioners, touching on its diverse comorbidities, and treatment principles. By the end of the article, I assure you, the condition will be far less scary.

DR. LUCY RATHIER is a psychologist (of Lifespan Physicians Group) specializing in the behavioral treatment of medical conditions, particularly headache. Our article, **A Biobehavioral Approach to Headache Management**, provides the foundation for a collaborative, multifaceted approach to headache management, demonstrating a rationale for combining behavioral techniques with more typical medications – particularly for those headaches that have become chronic.

DR. NIHARIKA MEHTA, a specialist in obstetrical medicine at Women and Infants Hospital, has written an insightful case-based article, **Headaches in the Pregnant Patient**, which highlights challenges in diagnosing and treating headache in a pregnant patient – pregnant women being yet another anxiety-provoking population.

Pain is meant to signal the brain when something is wrong with the body. Yet in primary headache, that signal goes haywire, and the brain needs to be taught to stop listening to the false signal. Cut to two and a half years ago: pregnant with my daughter, I noticed an odd disturbance in my left peripheral vision – an alternating pattern of brightly lit, rainbow colors, shaped like a zigzag, with a glistening inner edge. It flashed on and off for fifteen minutes, then vanished completely. If it hadn't been for my interest and knowledge of migraine, I might have panicked, inevitably intensifying the pain that followed. Instead, I waited it out. The descending pathways of my periaqueductal gray area kicked in, and I was fine. By linking clinical features and mechanisms with management strategies, we hope you will not be afraid to unpack the baggage – both physiologic and psychosocial – and appreciate that that the diagnosis and treatment of headache can be among the most rewarding in medicine.

Author

Julie Roth, MD, is a Neurologist at The Neurology Foundation, Providence, RI; and is Assistant Professor, Department of Neurology, the Warren Alpert Medical School of Brown University.

Clinical Features of Migraine and Other Headache Disorders

NORMAN GORDON, MD

INTRODUCTION

While the best recognized manifestation of migraine is headache, not all headaches presenting to physicians are migraine, and migraine disorder is not just a headache. Migraine is a complex and not fully understood process of cerebral dysfunction associated with a variety of symptoms uniting cortical depolarization, brainstem dysfunction, meningeal vasodilatation and excitation of sensory pain structures as remote as the cervical nucleus caudalis. This gives rise to the often seen myriad of symptoms, seeming somewhat disparate in this common disorder. I will attempt to explain at least some of the known and less well-known aspects of this fascinating disorder, including pathogenesis, management and treatment. I will also briefly discuss some of the lesser-known and often misdiagnosed headache syndromes.

Migraine without aura

About 75% of migraine occurs without aura, a phenomenon thought clinically related to the experimental phenomenon of cortical spreading depression of neuronal activity. However, even in migraine without aura, PET studies suggest that depolarization can occur in unilateral or bilateral occipital cortex (or cortices).[1-3] The headache of migraine is often unilateral and throbbing, accompanied by nausea, vomiting, photophobia, sonophobia (phonophobia), scalp hypersensitivity or hyperalgesia, and aggravated by movement and sensitivity to strong scents. It is commonly triggered by hormonal changes, atmospheric changes, sleep deprivation, hunger, alcohol, various vasoactive drugs and food additives and emotional events either positive, or more often, negative. Excessive stimulation by light, noise, strong scents and movement are both triggers and exacerbating factors. The prodrome of migraine can be characterized by dysphoria, fatigue with yawning, and other nonspecific symptoms that can precede the headache by hours or days. The headache itself typically lasts some hours and is then succeeded by postdromal fatigue, dulled senses, dysphoria or, conveniently termed, the 'migraine hangover.'

Migraine aura

The aura is by far the most interesting aspect of migraine. The migraine aura usually precedes the headache and lasts 15 to 30 minutes. The most well recognized and common auras are visual and may be described by migraine sufferers as unilateral crescents, or expanding, jagged regions of shimmering light, leaving behind a scotoma. The terms fortification spectra, haloes, zigzags and scintillating scotomata are often used. Sensory auras of parasthesias, vertigo, as well as aphasias and motor hemiparesis are less frequently seen, but almost always have the same migratory nature of the visual aura. The mechanism of the aura is known to be spreading cortical neuronal depolarization demonstrated on PET scan, associated with subsequent hyperpolarization leading to the negative signs and symptoms such as the blind spot, hemi-anesthesia, and rarely hemiplegia.

The previously termed "Basilar Artery Migraine" is a migraine aura in which the deficits appear to be in a basilar artery distribution. This particular aura syndrome, the most striking of migraine auras, is associated with brainstem dysfunction, including bilateral visual loss, vertigo, dysarthria, ataxia, tinnitus, hearing loss, global parasthesias, altered consciousness, and finally, syncope. Autonomic changes such as flushing, anhydrosis, ptosis, midryasis, pulse and blood pressure changes and diarrhea can occur. Other auras deserving mention are other episodic conditions – abdominal migraine, cyclic vomiting and episodic ataxia. These conditions are more common in children and eventually evolve into more typical migraine with and without aura, as they mature into adulthood.

Acephalgic migraine is aura without headache and is more prevalent with aging as the incidence of migraine headache recedes. Often, these auras are identical to auras that the patient may have experienced with typical headache in the past, but they may occur a priori. They are often described with the typical features of migraine aura, such as visual obscurations in one hemifield, lasting 15 to 30 minutes, but always need further evaluation like an MRI, and EEG because they do raise a red flag as a NEW phenomenon.[2,3]

Migraine and stroke risk

There is evidence that the association between migraine with aura and stroke is real – however small – and likely related to contributing factors of smoking, oral contraceptive use, and age under 45.[4,5] The incidence of small, nonspecific, white matter lesions on MRI is higher in migraine sufferers but of unclear clinical significance. However, white matter lesions are also seen in patients known to have microvascular or ischemic cerebral disease, among other conditions.

Treatment of migraine

The treatment of migraine consists of preventative and abortive therapy. Patients experiencing infrequent, episodic migraine responding to effective abortive treatment do not require prophylaxis. The goal of preventative treatment is to reduce not only the frequency but also the severity of the attacks. Prophylactic medications often potentiate the effect of abortive medications.

Preventative treatment

First-line prophylaxis does not necessarily involve the choosing of one or more of the many agents available, but rather education and lifestyle changes. Regular sleep, food, fluids and exercise are the mantra of headache hygiene. Identification and avoidance of obvious triggers is free, convenient and devoid of side effects. Preventative agents[6-8] include beta blockers, calcium channel blockers, ACE inhibitors, Tricyclic antidepressants (TCAs), and NSAIDs. Anticonvulsants, considering a mechanism of action to inhibit spontaneous cortical depolarization, may make the most sense as first-line agents. Over the counter products such as feverfew, magnesium, riboflavin, CoQ10 and butterbur have all been somewhat supported by various, usually small clinical trials, but may be preferred by certain patients who are more favorably disposed to nontraditional methods. The American Academy of Neurology released guidelines in 2012 regarding the use of prophylactic and abortive migraine therapies, and included these supplements as having some data to support their use.

Migraine sufferers often respond to lower doses of preventive agents such as the anticonvulsants and TCAs than doses that are usually required to control epilepsy or depression. This tactic may minimize side effects and expense. Mention should be made of botulinum toxin, indicated for the treatment of chronic migraine (defined as greater than fifteen headache days per month) and administered every three months.

Abortive treatment

The most effective abortive treatment for migraine is the one that works. In other words, there is no clinical way to predict in advance a response to a particular migraine treatment. Any medication administered orally, as nasal spray, injection, patch, or rectally that not only aborts the headache, but also restores normal function within 1 to 2 hours, without unwanted side effects, can be an effective agent. Most of the abortive agents relieve the headache only. The prodrome, aura, and associated features dissipate either spontaneously or as a result of effective pain control. The triptan medications in all their forms are clearly the most effective agents, particularly when given as soon as possible in the migraine process, and in a dosage form appropriate for that individual. Oral agents in a patient who is vomiting may be useless, and in these patients, nasal sprays, injectables, or a patch is preferred. Triptans[6-8] are serotonin (5-HT 1B and D) agonists, and cause a degree of vasoconstriction in meningeal vessels, as well as other vascular beds, eliminating the pain caused by vasodilatation. However, they are not expected to directly terminate the various sensitivities of migraine, the nausea or vomiting, or affective components such as irritability.

NSAIDs and Tylenol[6-8] are often effective in early and milder migraine and can also be used safely in conjunction with triptans. Anti-emetics are effective adjuvant treatments and often used intravenously in appropriate settings such as the emergency room. Currently, the only ergot available is parenteral or nasal dihydroergotamine (DHE), a useful alternative to triptans, particularly in the emergency room, though this medication is subject to the same limitations in patients prone to vascular complications, and may cause nausea and vomiting itself. Dexamethasone and prednisone are particularly useful in the treatment of status migrainosus, defined as a migraine occurring without remission for more than 72 hours. Opioids and other potent analgesics such as tramadol can be used as rescue medications but are sedating and usually do not restore normal activity within two hours as desired.

Calcitonin G related peptide (CGRP) inhibitors and serotonin 1F receptor agonists are novel agents, which unfortunately in clinical trials have had either unacceptable adverse events, or other limitations despite showing efficacy, and none is at this time in a realistic pipeline.

Trigemino-Autonomic Cephalalgia (TAC)

Other interesting headache syndromes aside from migraine comprise a list that is far too extensive for the purposes of this article; however, some of these bear mentioning. The most familiar is cluster headache,[9,10] which is characterized by brief (15-180 minutes) bouts of severe pain in the periorbital region, often accompanied by conjunctival injection, tearing, nasal congestion or rhinorrhea, eyelid edema, forehead and facial sweating, miosis, ptosis and or a sense of restless or agitation. Treatment involves inhaled high-flow nasal oxygen or triptan medications. Lesser known to the general practitioner are some other Trigemino-Autonomic Cephalgias (TACs), a group of unilateral, severe, periorbital headaches associated with autonomic features. Of these, the two most interesting are Hemicrania Continua,[9,10] and the chronic and episodic forms of Paroxysmal Hemicrania. Hemicrania continua is a unilateral, continuous headache which does vary in intensity without complete resolution. It affects the sexes equally; location is often peri-orbital but also may the entire hemicranium. It is unusual to be associated with the usual migraine accompaniments and in contradistinction, is frequently associated with autonomic features such as tearing, miosis, and ptosis. While typical response to triptans is poor, a unique response to indomethacin is diagnostic. Chronic and episodic paroxysmal hemicranias also involve periorbital pain, but are associated with autonomic features – predominantly parasympathetic – such

as redness, swelling and tearing. The attacks last between 5 and 30 minutes and occur more than five times a day. They are distinguished from cluster headaches, which usually last longer, and have the characteristic of often occurring after dark and fewer times per day. The pain is also described as stabbing and boring. This condition is more common in women, while cluster headache is more common in men. Again, the other remarkable distinguishing feature is an exquisite response to indomethacin at a dose of 75 mg a day or more.

The chronic form may last a year without remission, whereas the episodic form may remit for months at a time. Rarer forms of TACs include SUNCT (short-lasting unilateral neuralgiform headache with conjunctival injection and tearing). Trigeminal neuralgia is an episodic facial pain syndrome and is not generally considered a headache disorder. Giant cell (temporal) arteritis should be excluded in elderly patients presenting with new onset of headache.

SUMMARY

Migraine disorder is not just a headache, but a relatively common and complex neurovascular syndrome, occurring in about 17% of women and 6% of men. The effects of migraine can be debilitating and disabling but can be effectively treated by a combination of non-pharmacological, lifestyle changes, pharmacological prophylaxis, and appropriate abortive treatment. Trigemino-Autonomic-Cephalgias are an interesting and less common group of primary head pain disorders which, if recognized clinically, may respond to a unique set of treatments – including inhaled nasal oxygen (cluster headache) or a trial of indomethacin, which can be diagnostic as well.

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Chronic Daily Headache: Challenges in Treatment

JAY H. LEVIN, MD; MICHELLE MELLION, MD

INTRODUCTION

An overwhelming majority of men and woman living in the Western world will experience headaches at some point in their life. Astoundingly, the lifetime prevalence of headache for men and women in this part of the world is over 94%.[1] Three to five percent of the global population has daily or near-daily headaches.[2] Chronic daily headache (CDH) is not a single diagnosis, but rather a descriptive term for the presence of headaches occurring at least 15 days per month for at least 3 months.

Duration of headache attacks is a key factor in the diagnosis of specific CDH entities. Specifically, it is helpful to differentiate long duration (>4 hours) from short-duration (<4 hours) CDH (**Table 1**). Across the spectrum of CDH disorders, chronic migraine (CM), chronic tension-type headache (CTTH), and medication overuse headache (MOH) account for the vast majority of cases of CDH.[3] Approximately half of people with headache on 15 or more days per month for more than 3 months have medication overuse headache (MOH).[4]

Table 1. Spectrum of Chronic Daily Headache Disorders[4]

Long Duration Subtypes (>4 hours)	Clinical Features
Chronic Migraine (CM)	Migraine-like attacks (defined as disabling moderate to severe attacks of throbbing pain, typically unilateral, lasting 4-72 hours with associated nausea, vomiting, photophobia, or phonophobia) are superimposed on a daily or near-daily headache pattern, greater than 15 headache-days per month for more than 3 months.
Chronic Tension-Type Headache (CTTH)	Frequent episodes characterized by bilateral or tightening-quality pain of mild to moderate intensity lasting hours to days; pain is not associated with physical activity but may be associated with mild nausea, photophobia, or phonophobia. These headaches occur over 15 days per month for more than 3 months (or >180 days per year).
Medication Overuse Headache (MOH; aka "Rebound Headache")	Headache occurring 10 or more days per month for more than 3 months as a consequence of regular overuse of an acute or symptomatic headache medication. Common precipitants include triptans, acetaminophen, NSAIDs, narcotics, and combination-analgesics (ie. Hydrocodone-acetaminophen or Vicodin).
Hemicrania Continua	Persistent unilateral headache with associated ipsilateral conjunctival injection, lacrimaton, rhinorrhea, or ptosis lasting for over 3 months. It is marked by moderate to severe flairs. It is exquisitely sensitive to indomethacin.
New Daily Persistent Headache (NDPH)	Persistent headache, daily from its onset, which is clearly remembered. Pain may be migraine-like or tension-like and must be present for at least 3 months without remission. In the setting of abortive drug use, NDPH may only be diagnosed if the headaches clearly preceeds the medication overuse. The diagnoses are not mutually exclusive.
Short Duration Subtypes (<4 hours)	**Clinical Features**
Chronic Cluster Headaches	Attacks marked by severe stabbing unilateral peri-orbital pain lasting 15-180minutes, occurring up to 8 times daily. Episodic cluster headache becomes chronic when the cluster period occurs for over a year without at least 1 months remission.
Chronic Paroxsysmal Hemicrania	Attacks of severe unilateral peri-orbital pain lasting 2-30 minutes occurring several times a day. Attacks are similar to cluster headaches, but are shorter and more frequent. Attacks are associated with conjunctival injection, lacrimaton, rhinorrhea,or ptosis. They respond absolutely to indomethacin. Paroxysmal hemicrania becomes chronic when attacks occur for a year with remissions lasting less than a month.
Short-lasting, Unilateral, Neuralgiform headache attacks with Conjunctival injection and Tearing (SUNCT)	Headaches resembling cluster and paroxysmal hemicrania, diagnosed when a patient has 20 or more attacks of moderate to severe unilateral peri-orbital or temporal/trigeminal distribution stabbing pain lasting 1-600 seconds, often associated with conjunctival injection, lacrimation, rhinorrhea, and/or ptsosis. SUNCT becomes chronic when the attacks occur near-daily without at least 1 months remission over the course of a year.
Hypnic Headache (aka "alarm clock headache")	Headache attacks that develop only during sleep, cause awakening, and last for up to 4 hours per episode, at least 10 mornings per month for at least 3 months.

PATHOPHYSIOLOGY OF CHRONIC DAILY HEADACHE

The underlying mechanism of headache chronification, regardless of etiology, is not clear. The predominant theory in chronic migraine is that medication overuse induces a state of "latent sensitization" resulting in dysregulation of the central trigeminovascular pathways and neural adaptations, which subsequently decrease thresholds to triggers.[5] The exact etiology of other chronic daily headaches, such as chronic tension-type headache, is also poorly understood. It has been proposed that peripheral pain pathways most likely play a role in episodic tension-type headache, whereas central pain pathways play a more important role in chronic tension-type headache.[4] Increased pericranial tenderness induced by manual palpation is the most significant abnormal finding in patients with tension-type headache. The tenderness is typically present interictally and usually escalates during actual headache episodes.[4]

DIAGNOSIS

A thorough history and neurological exam are sufficient to make the diagnosis of chronic daily headache. Examiners must keep in mind that the headache disorders often overlap. Understanding the various headache types and teasing out the dominant form(s) will help to guide appropriate treatment. Frequently, patients will present with more than one headache type, potentially necessitating diverse treatments. MOH is a common co-morbid condition that occurs in over 80% of patients with chronic migraine.[2]

Adjunctive studies, such as neuroimaging or electroencephalography, should only be considered when there are changes in the headache history or new focality on neurological examination. In the recent "Choosing Wisely" campaign, the American Headache Society (AHS) established that neuroimaging is not needed in patients with stable headache patterns.[8] Patients presenting with headache and a normal neurological exam have a 0.4-0.9% chance of having a significant abnormality on neuroimaging, which is similar to that of the general population without headaches.[1] In a large meta-analysis, an abnormal finding on neurological exam was the most robust predictor of intracranial pathology on neuroimaging.[7] Patients with new focal findings on neurological exam are about 30% more likely to demonstrate pathological findings on neuroimaging.[1] Red flags that should prompt immediate neuroimaging are summarized in **Table 2**. Since many of these potential etiologies for secondary headache may not be visible on head CT, the preferred imaging technique is MRI for non-emergency situations; the diagnostic yield of head CT was 2% compared to 5% for MRI.[8] Because MRI was better at detecting abnormalities, the cost per abnormal finding of CT scans was $2409 compared to $957 for MRI.[8]

EEG serves no role in the diagnosis of chronic daily headache. The American Academy of Neurology (AAN) recommends against the use of EEG for headaches in their recent "Choosing Wisely" campaign.[14] The sensitivity of an EEG in detecting structural brain lesions is considerably lower than that of neuroimaging with CT or MRI. A normal EEG in a patient with evidence of structural abnormality may provide a false sense of security and delay more definitive neuroimaging. Conversely, an abnormal EEG (ie. mild focal slowing or questionable epileptiform activity) in a patient with a primary headache disorder may prompt additional unnecessary work-up and treatment.[14] EEG therefore increases cost without adding benefit.

Table 2. Red flags in patients with Chronic Daily Headache

New focal signs on neurological exam
New onset HA pattern in a patient > 50 years of age
Change in established headache pattern
Drowsiness, confusion, cognitive impairment
Weight loss
Known HIV+
Fever, stiff neck

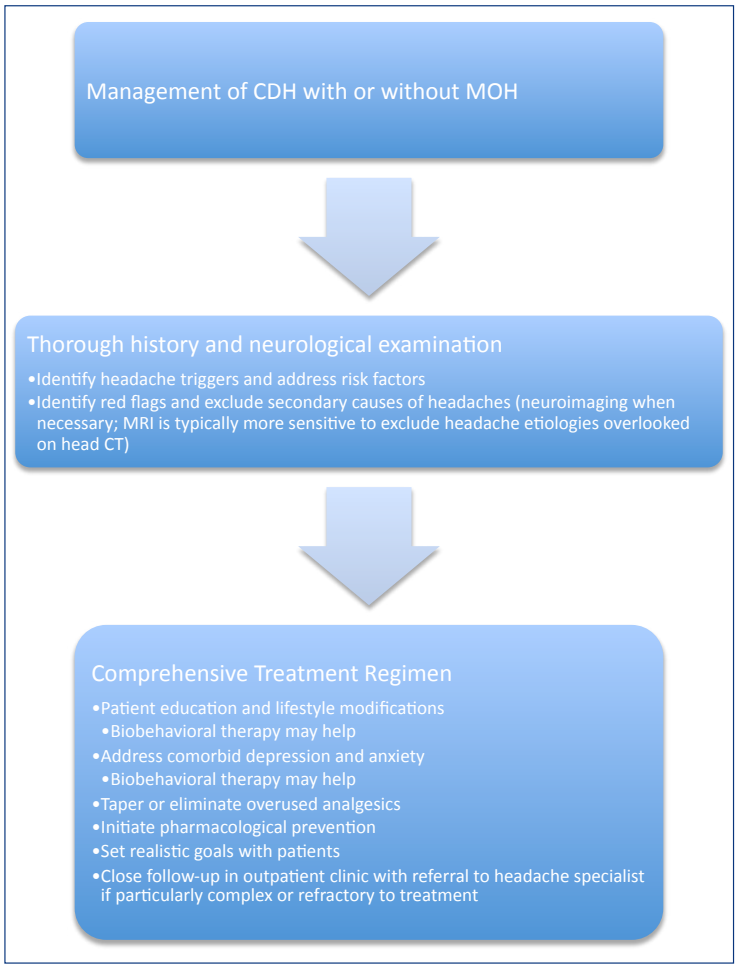
TREATMENT

Individuals presenting with chronic daily headache are among the most difficult and labor-intensive patients encountered in a neurologist's practice.[6] Treatment of CDH disorders is based on accurate diagnosis, exclusion of secondary causes, elimination of medication overuse, and modification of risk factors in a multidisciplinary fashion.[6] We have outlined a general medical approach to CDH (**Figure 1**).

Education is a key element in treating CDH. Taking the time to communicate with patients about reasonable expectations from available treatments for CDH is necessary in order to begin to manage this complicated and frustrating medical problem. Patients need to understand that treatment will take time and that their headaches will likely not disappear immediately, if ever. As physicians, we need to partner with our patients in their treatment, not only managing medications that can help with treatment, but also advising them about behavioral and lifestyle changes that are necessary for successful management.

Lifestyle changes to modify risk factors play an important role in headache prevention. Clinicians must help patients identify headache triggers and address risk factors such as excessive caffeine use, poor sleep habits, maladaptive coping mechanisms to stress, unhealthy diet, and lack of exercise. Moderation of caffeine intake, improved sleep hygiene, stress management, healthy diet, and aerobic exercise all are important in successful management of chronic headaches. A trained psychologist may help promote strategies to modify these risk factors. Patients with comorbid conditions such as depression and anxiety would be ideal candidates for biobehavioral therapy. Referral to a sleep specialist may reveal undiagnosed sleep apnea. Physical therapy may

Figure 1.



prove to be beneficial, especially in conjunction with other multidisciplinary treatment modalitites.[10] Techniques such as relaxation training, biofeedback, stress management, and cognitive-behavioral therapy have proven efficacy in treating patients with CDH.[2,6] Behavioral management is discussed in depth by Rathier and Roth in the current issue of the Journal.[13]

It is essential to taper or eliminate overused analgesics. Both the AAN and AHS recommend against the routine use of opioid or butalbital-containing medications.[8,14] Reducing the 1.4% prevalence of MOH by 50% could save the US healthcare system approximately $15 billion annually in health care costs and lost productivity.[14] Opiates may contribute to MOH with frequency of use as few as 8 days per month, thereby leading to chronification of the very headaches they were originally intended to treat.[9] These medications should be tapered over the course of a few weeks. Simple analgesics and triptans may be abruptly discontinued.[2,6] Patients must be counseled about the role of medication-overuse in perpetuating their daily headache cycle. They also need to be counseled that their headaches may worsen initially as they reduce their medication usage, but they may be reassured that after this withdrawal period they will likely be restored to a more episodic, less chronic headache pattern. As with any lifestyle modification, analgesic overuse will require patience on the part of the practitioner and perseverance on the part of the patient. Cognitive-behavioral therapy (CBT) may help challenge maladaptive thoughts and promote wellness strategies.[13]

Pharmacological approaches to chronic daily headache management are often required in conjunction with nonpharmacologic options. Nearly 40% of patients with migraines need preventative therapy, but only 3-13% currently take these medications.[11] There are a myriad of medications for patients with CDH. The American Academy of Neurology (AAN) and American Headache Society (AHS) have developed guidelines regarding pharmacological prevention of chronic migraine and other chronic daily headache disorders with both conventional medications and herbal remedies (**Table 3**).

Even after eliminating medication-overuse and instituting appropriate prophylactic pharmacological measures, up to 40% of patients may suffer a relapse after initial successful treatment.[2] CDH is a difficult spectrum of disorders to treat. It is essential to educate patients, manage their expectations, and set goals for treatment. Rather than expecting to be completely pain-free, more realistic goals may include decreasing headache intensity, restoring daily functioning, and improving quality of life.[6] Behavioral therapy may augment medical therapy to maximize success.[13]

Table 3. Pharmacological Prevention of Chronic Migraine and other Chronic Daily Headaches (Adapted from AAN/AHS Guidelines[11,12])

Level A: Medications with well-established efficacy	Level B: Probable efficacy	Level C: Possible efficacy
Valproate	Amitriptyline	Lisinopril
Topiramate	Venlafaxine	Candesartan
Propranolol	Atenolol	Clonidine
Timolol	Nadolol	Carbamazepine
Metoprolol	NSAIDs[a]	Co-Q10
Butterbur (petasites)	Magnesium	Estrogen
OnabotulinumtoxinA	Feverfew (MIG-99)	Cyproheptadine
	Riboflavin (Vit B2)	
	Histamine SC	

a. NSAIDs such as ibuprofen, naproxen, and fenoprofen may help prevent migraines but also pose a risk for MOH

CONCLUSIONS

Treating patients with CDH is extremely challenging. Taking the time to perform a detailed history, neurological examination, and review medication utilization is critical in order to determine appropriate management. Treatment starts with educating patients about their condition, tapering overused analgesics, and setting realistic goals during an ongoing dialogue between clinician and patient. A comprehensive approach to preventative therapy, both pharmacologically and non-pharmacologically, will enable

patients to reach their goals. Although CDH is difficult to manage, the partnership formed with patients to cope with this condition can be exceptionally rewarding for the clinician and life-changing for the patient.

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A Biobehavioral Approach to Headache Management

LUCY RATHIER, PhD; JULIE ROTH, MD

Effective long-term management of patients with headaches can be challenging because these disorders are complex with heterogeneous triggers, expression, and impact.[1,2] While the biomedical model has led to important discoveries in the pathophysiological mechanisms of headache, the model has limitations, including the marked varied individual responses to identical treatments.[1] Headache has both sensory (e.g., pain location, intensity, and quality) and affective (e.g., depression, anxiety, distress) components.[3] The pain experience involves the interconnectivity of physical vulnerabilities (e.g., genetics), psychological predispositions (e.g., prior learning history), biological changes, psychological issues, and biopsychosocial contexts that influence an individual's evaluation of and response to headache.[1] As a result, effective treatment of headache cannot rely solely on regulating the chemical and electrical signals within the pain pathways associated with headache, but must also address their cognitive, affective, and behavioral components.

Typically, nonpharmacologic treatment for headache has been considered an option when the patient's presentation fell outside the normative patient experience. As headache has begun to be conceptualized as a chronic disease,[4] treatment also needs to reflect this conceptualization. Hence, a comprehensive, multidisciplinary treatment program to prevent headache is appropriate. The biobehavioral approaches with the strongest efficacy include cognitive behavioral therapy [CBT], relaxation training, biofeedback, and stress management.

BIOLOGICAL BASIS FOR MIGRAINE AND PRIMARY HEADACHE DISORDERS

The pathophysiology of migraine is complex, melding a genetic predisposition[5] with a cascade of events that have been described over nearly one century. For many years, migraines were thought to be a purely vascular headache, and the aura of migraine was felt to be due to cerebral vasoconstriction resulting in ischemia. In the 1940s, when Leao first described his theory of cortical spreading depression (CSD), an electrical signaling phenomenon involving the cortex of the brains of rabbits, a new postulated mechanism for migraine was born. Since then, fMRI studies in humans have demonstrated that neuronal signaling in CSD is the physiology of migraine aura, though it is unknown whether it is this event or another – originating in deep, subcortical structures such as the brainstem – is the first in the migraine cascade.[6-9] The throbbing pain of migraine is triggered by subsequent activation of the trigeminal vascular system, mediated by a neurogenic inflammatory response, release of nociceptive neuropeptides such as calcitonin gene related peptide (CGRP), neurokinin A, substance P, among others. Nausea and irritability occur through stimulation of the chemoreceptor trigger zone, and autonomic activation results in fluctuating levels of catecholemines.[5] Central pain processing pathways are subsequently activated in the thalamus, periaqueductal gray (PAG) matter of the midbrain, and the posterior hypothalamus, and a process known as central sensitization contributes to the aversion to stimuli – including sound, light, motion. For some, even light touch can be painful.

The clinical picture of migraine is the result of neurovascular dysregulation, and the many prescription and over-the-counter treatments target nociceptive and inflammatory pathways (such as NSAIDs) or stabilize and constrict cerebral blood vessels (triptans, ergots, and others). Prophylactic agents also operate on central and peripheral pathways, stabilizing blood vessels and autonomic activation (beta blockers and calcium channel blockers), acting on ion channels and neuronal receptors (anticonvulsant medications), or regulating levels of neurotransmitters (SSRIs, TCAs). Each medicine works by interrupting a single link in the cascade; however, no pharmacological treatments operate specifically on central sensitization, or treat the affective component of the pain, both of which may be larger complaints for patients than the pain itself. Non-pharmacologic strategies for headache treatment and prevention are a way to reduce brain-derived autonomic and nociceptive dysregulation, through behavioral "revamping" of these dysfunctional systems. Behavioral treatments in particular are evidence-based, and complementary to medical treatments, providing comprehensive care for a complex condition.

BIOBEHAVIORAL TREATMENTS FOR HEADACHE AND MIGRAINE

Biobehavioral techniques focus on managing the physiological, cognitive, and affective components of stress. These techniques facilitate skill development aimed towards increasing the patient's ability to cope with pain and reduce headache-related distress.[10] A review of biobehavioral treatments consistently show that biofeedback, relaxation, and CBT (including stress management) produce a 30-60% reduction in migraine activity. The US Headache Consortium[11] assigned the following treatments "Grade A" evidence (multiple

well-designed randomized clinical trials that yielded a consistent pattern of findings): relaxation training, thermal biofeedback combined with relaxation training, electromyographic biofeedback, and CBT (for prevention of migraine).

Individuals with clinical depression or anxiety, those with moderate-severe headache-related disability, difficulty managing triggers (including stress), having other significant psychological issues (e.g., history of abuse/maltreatment), or preference for biobehavioral approaches are all ideal candidates for biobehavioral intervention.[11]

Stress and Headache

Stress results from an interaction between the perception of an event as threatening to one's well-being and an individual's physiologic, cognitive, and affective response to the situation. When individuals experience a situation they view as "stressful," the individual's response elicits various physiologic changes including cerebral vasoconstriction and neurogenic inflammation. Stress increases sympathetic arousal and may increase neuronal hyperexcitability.

There are five ways that stress can potentially contribute to the expression and maintenance of headache episodes: 1. Predisposer – Stress contributes to headache onset or expression in a person with a preexisting vulnerability; 2. Precipitant – Stress precipitates individual headache episodes; 3. Exacerbator – Stress exacerbates the progression of headache, including transformation from an episodic to chronic condition; 4. Perpetuator – Stress worsens headache-related disability and quality of life; and 5. Consequence – Headache can serve as a stressor.[12] After a stressful period, there may be a letdown phase that can as a result trigger a headache.

Co-morbid Psychiatric Disorders and Headache

Depression and anxiety are more common among patients with headache relative to the general population. Depression and anxiety are especially prevalent among those with chronic migraine, with more than half experiencing depression and nearly one-third experiencing anxiety. Experiencing depression or anxiety is associated with more severe migraines, increased disability, reduced adherence, increased medication use, and lower efficacy for actively managing migraine. In fact, psychological distress may play a greater role in the progression of headache from episodic to chronic than medication overuse.

The prevalence and impact of abuse and maltreatment is beginning to receive greater attention within the headache community. PTSD occurs more commonly in those with migraine (whether episodic or chronic) than in those without migraine. The trauma impairs their ability to cope with various aspects of life, including how to manage headaches. Given a history of trauma, the individual would be well-served by including a psychological evaluation in treatment plan.

Cognitive-Behavioral Therapy (CBT)

CBT, a Grade A treatment for headache prevention,[13] utilizes both cognitive and behavioral headache management strategies. Cognitive strategies focus on identifying and challenging maladaptive thoughts, beliefs, and responses to stress.[14] Cognitive strategies for headache management focus on enhancing self-efficacy (i.e., patients' beliefs in their ability to succeed or accomplish a certain task),[14] encouraging patients to adopt an internal locus of control (i.e., a belief that the mechanism for change lies within oneself as opposed to an external locus of control or the belief that only the health-care provider, medication, or medical procedures have the power for change),[15] and eliminating catastrophizing (a hopeless and overwhelming way of thinking), all of which predict poor treatment outcomes.[16]

Behavioral strategies include replacing behaviors that may maintain or exacerbate headaches with wellness strategies. Modifiable risk factors for migraine progression include medication overuse, obesity, caffeine overuse, snoring, depression, and stressful life events. Behavioral treatment includes education in wellness activities as a means of enhancing self-management of headaches. For example, patients can benefit from making lifestyle behavior changes designed to help them maintain a healthy weight and achieve a state of physical well-being (i.e., proper nutrition and eating habits, reduced consumption of caffeine, regular physical activity). Interventions that encourage patients to improve sleep hygiene, quit smoking, reduce alcohol intake, and reduce use of sedative medications may also be provided by a psychologist. CBT may also provide the patient with strategies to avoid triggering a headache, improve overall coping, and help the headache sufferer manage co-morbid symptoms of depression and anxiety.

Relaxation Training and Biofeedback

Relaxation techniques possess Grade A evidence for their use.[16] The focus is on helping patients minimize physiological responses to stress and decrease sympathetic arousal. The classic procedure, progressive muscle relaxation training, first published in 1938, involves tensing and relaxing various muscle groups while attending to the resulting contrasting sensations.[17] Other relaxation techniques include visual or guided imagery, cue-controlled relaxation, diaphragmatic breathing, hypnosis, and self-hypnosis.[16,18]

Biofeedback has also received Grade A evidence for its use.[19-21] It involves monitoring physiological processes that the patients may not be consciously aware and/or do not believe they voluntarily controls. Digital processes take the patients' physiological information and convert it into a signal that patients receive in either visual or auditory form. Through biofeedback training, patients develop increased awareness of physiological functions associated with headache and stress and learn to control their physiologic states.[22-24] Various relaxation skills, such as diaphragmatic breathing or visualization to elicit the "relaxation response"[25] are often incorporated into biofeedback training.[19] To achieve the benefits from relaxation and biofeedback, patients may

use any techniques or tools that help them quiet the mind and calm the body (e.g., meditation, prayer, yoga, pleasant music, guided relaxation).[26] To achieve maximum benefit of these techniques, patients must be motivated to consistent practice in order to lower their baseline of stress and tension.

Cost-Effectiveness of Behavioral Treatment

Recent research found that the most expensive behavioral treatment method – individual sessions with a psychologist in clinic – cost more than pharmacologic treatment with $6-a-day drugs in the first months.[27] However, at about five months, individual sessions become competitive in cost. After a year, they are less expensive than all methods except treatment with drugs costing 50 cents or less a day. Overall, group therapy and minimal-contact behavioral treatment were cost-competitive with even the least expensive medication treatment in the initial months. At one year, they become the least-expensive headache treatment choice.

SUMMARY

Headaches are more than just a series of changes in neurophysiology and neurochemistry. They also involve individuals experiencing pain and attempting to manage the impact of that pain on their lives. As a result, headache is best conceptualized in a biopsychosocial framework, as involving physiologic, cognitive, affective, and behavioral phenomena. Although pharmacologic treatment alone is considered a basis of involved in migraine management and prevention, many individuals with headache will benefit from multidisciplinary treatment.

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Headaches in the Pregnant Patient

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Headache disorders are highly prevalent throughout the world, and have a female predominance. More than 80% of women in the reproductive age group experience headache at some point, making it a common occurrence in pregnancy.[1] The International Headache Society broadly categorizes headaches as primary or secondary. As is the case in the non-pregnant population, primary headaches (such as migraine headaches, tension headaches and cluster headaches, chronic daily headaches or medication overuse headaches) account for majority of the cases of headache seen in pregnancy. Secondary headaches are headaches attributable to another underlying cause. Certain causes of secondary headaches deserve special consideration in pregnancy as they might be either unique to pregnancy or be exacerbated by physiologic changes of the gravid state.

Case: A 22 y.o. gravida 1, at 28 wks. gestation presents for daily headaches which began after 16 weeks gestation. Headaches are present when she wakes up in the morning and tend to decrease but not resolve with acetaminophen. She has no prior h/o headaches and is otherwise healthy. Pertinent features in exam include a BMI of 37, BP 128/88 and a normal neurologic exam (including fundoscopy).

What is the differential diagnosis of new onset headache in the second half of pregnancy?

Pregnancy is associated with a physiologic increase in blood volume and vasodilatation, that peaks around 26–28 weeks gestation. Previously asymptomatic arteriovenous malformations (AVMs) or aneurysms can therefore present at this time with headaches or cerebrovascular accidents. Sinus headaches are also more frequently seen in pregnancy due to this increased vascularity and mucus production, resulting in sinus congestion. In patients presenting with prolonged debilitating headaches, worse with supine position, idiopathic intracranial hypertension (pseudotumor cerebri) is an important consideration. This condition is often encountered in pregnancy, since it is known to particularly affect obese women of childbearing age.[2] In patients with pituitary adenomas, particularly macroadenomas, tumor growth can occur with pregnancy progression,[3] and may present as headache. Pregnancy is a hypercoagulable state and although ischemic stroke is rare, cerebral vein thrombosis can be seen in pregnancy, particularly in the third trimester and postpartum period.[4] Finally, preeclampsia, which can complicate 5–10% of pregnancies, characterized by hypertension and proteinuria, can also present with headache. Preeclampsia headaches tend to be vascular in nature and often accompanied by visual disturbances.

What investigations, if any, should be performed in this patient? What radiologic testing can be performed safely in pregnancy?

Common things being common, most patients who present with headaches in pregnancy have benign headaches and do not need investigations. However, some investigations might be necessary when ruling out secondary causes. Preeclampsia is a multisystem pregnancy-specific disorder characterized by hypertension and proteinuria. Clinical symptoms of preeclampsia include headache which can be present irrespective of high blood pressure. Other associated abnormalities include thrombocytopenia, liver and renal dysfunction and occasionally pulmonary edema. When considering preeclampsia in the differential, the following investigations are recommended; a complete blood count (looking for hemo-concentration and thrombocytopenia), liver enzymes (AST and ALT), creatinine and a urine protein to creatinine ratio looking for proteinuria.[5]

A CT scan can safely be performed with minimal radiation risk to the fetus, regardless of gestational age. Magnetic resonance imaging (MRI) carries no radiation risk and has been used in pregnancy without any documented adverse pregnancy outcomes.[6] An MRA and MRV should be considered when suspecting AVM's or cerebral vein thrombosis. Similarly, a lumbar puncture can be safely performed in pregnancy at any gestational age. Opening pressure is not affected by the gravid state.

Case (continued): The patient did not have preeclampsia and was treated with acetaminophen and caffeine for symptomatic relief. She was also placed on metoprolol 12.5 mg po twice daily for prophylaxis and at a follow-up visit 4 weeks later reported improvement.

How are headaches best managed in pregnancy?

Although both patients and providers are wary of using medications during pregnancy, sometimes with severe or frequent disabling headaches, treatment becomes necessary. **Table 1** lists some medication that can be safely used for treatment of tension/migraine headaches in pregnancy.

Table 1. Headache Medications, and Their Use In Pregnancy

Class of meds	Use in pregnancy justifiable in most circumstances	Use in pregnancy justified in some circumstances	Comments
Medications for acute relief of headache	Acetaminophen Metoclopramide Promethazine Prochlorperazine Caffeine	Ibuprofen Butalbital Sumatriptan Opioids	Occasional use of NSAIDs, including ibuprofen, prior to 20 wks gestation is acceptable. Use during late pregnancy is avoided due to concerns about premature ductal closure.[1] Safety data for Sumatriptan in pregnancy is still evolving but available data is reassuring.
Medications for preventive therapy	Amitriptyline Nortriptyline Metoprolol Magnesium Verapamil		Propranolol and atenolol use in pregnancy may be associated with fetal growth restriction.[1] For most patients, the risk of antiepileptic medications for headache prevention in pregnancy outweighs the benefit.

1 From Micromedex, accessed Mar 21, 2014

Case (Conclusion): She returned at 37 wks. gestation with severe intractable headache, borderline hypertension and labs suggestive of preeclampsia. She was started on a magnesium sulfate drip and a decision was made to induce labor. On postpartum day 7, after an uneventful delivery, she returned with a severe persistent headache and generalized malaise. Slight weakness in the right leg was noted. An MRV showed right sagittal vein thrombosis. She was started on low molecular weight heparin and subsequently transitioned to oral anticoagulation, with planned treatment duration of 6 months.

In summary, headaches are a common complaint in pregnancy, especially in the first half. Although common etiologies prevail, it is important to consider the "zebras" in diagnosis and perform an evaluation as indicated. Some causes of headache can cause substantial morbidity to mother and fetus if undiagnosed, therefore necessary radiologic testing should not be withheld. There are several treatment options available for a pregnant woman, and pregnancy should not preclude the institution of an appropriate regimen to help her remain relatively symptom free.

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Update on Concussion Management for the Rhode Island Clinician

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ABSTRACT

Concussions are common injuries with increasing diagnostic incidence. The 4th International Conference on Concussion in Sport, held in November 2012 in Zurich, revised consensus statements regarding the definition of a concussion, diagnostic criteria, and management. Return-to-play guidelines require a graded return to activity in which concussed athletes remain symptom-free. In order to improve awareness pertaining to concussion diagnosis and management, legislation has now been enacted in all fifty states. Rhode Island enacted into law the School and Youth Programs Concussion Act in 2010, which increases awareness of concussions for athletes, coaches, teachers, school nurses and parents/guardians through written information and mandatory training for coaches. Athletes must be removed from practice/competition and cannot return until a physician has evaluated and cleared them.

KEYWORDS: concussion, traumatic brain injury, trauma, sports medicine

INTRODUCTION

Since 1999, there has been increased research on concussion[1], and more coaches and health care professionals are aware of management.[2] Prior concussion management protocols allowed some athletes to return to play within 15 minutes of injury.[1] The 4th International Conference on Concussion in Sport was held in November 2012 in Zurich.[3] Its purpose included updating information involving the complex pathophysiology, diagnosis, and treatment of concussions.

EPIDEMIOLOGY

There are approximately 3.8 million sports and recreation-related concussions in the United States annually.[4] Roughly 50% of concussions go unreported.[4] From 2001 to 2005 in the United States, there were nearly 502,000 emergency room visits in children ages 8 to 19 for concussion diagnosis and management.[5]

The number of high school athletes diagnosed with sports-related concussion is rising.[6] American football has the highest number of concussions for males in high school (HS), while soccer has the highest number for HS females.[2] However, high-risk sports such as ice hockey and rugby have lower participation rates among HS athletes nationally, and thus are omitted from epidemiologic reports.

DEFINING CONCUSSION

Concussion is a brain injury in which biomechanical forces lead to a complex pathophysiological process resulting in immediate and transient alteration in brain function.[3,7] Kinetic energy to the cranium leads to both acceleration-deceleration and rotational mechanisms.[8]

Animal models have suggested that the pathophysiology of a concussion involves disruption of the neuronal membrane resulting in a potassium efflux into the extracellular space, which prompts release of the excitatory amino acid glutamate and metabolic dysfunction.[1,8] The concussed brain is less responsive to neural activation, and if the patient does any premature physical or cognitive activity before the brain has completely recovered, there is an increased risk of prolonged and worsened brain dysfunction.[4]

Second Impact Syndrome (SIS), a rare complication of concussion not universally accepted among experts, is believed to be a catastrophic consequence of repeated head injury in sport that can lead to death.[9] It is generally thought to have 100% morbidity and 50% mortality. A lack of evidence for this condition exists in the literature. There are only anecdotal case reports currently, with all subjects being under age 25.[9] With SIS, an athlete sustains an initial head injury, and then sustains a second injury prior to full resolution of symptoms from the initial head injury that can lead to catastrophic brain swelling and usually death.[9]

CLINICAL EXAMINATION

Common symptoms of concussion reported by patients are in **Table 1**.[3,10,11] Clinicians should look for signs of concussion as patients may not recognize that they suffered a concussion. Signs of concussion include poor balance or motor coordination, slow/slurred speech, poor concentration, delayed responses to questions, "blank stare," poor sport performance, unusual emotions, personality change and inappropriate behaviors.[3,10,11] Younger athletes take longer to recover from concussions[1], and athletes who have previously had a concussion should be expected to have symptoms longer.[12]

Factors including poorer performance on neurocognitive

Table 1. Signs/Symptoms of Concussion

Headache	Dazed Feeling	Light sensitivity (photophobia)	Ringing in the ears (tinnitus)
Dizziness/vertigo	Fatigue	Irritability	Confusion
Disorientation	Seizure/convulsion	Nausea/Vomiting	Sound sensitivity (phonophobia)
Poor balance or coordination	Delayed responses to questions	Slow or slurred speech	Poor concentration or ability to focus
Vacant stare	Unusual emotions	Personality change	Inappropriate behavior
"Don't feel right"	Amnesia	Loss of consciousness	Neck pain
Insomnia	Visual problems	Excessive sleepiness	

Patients with concussion can have a variety of symptoms; some of the common symptoms are listed in the table above.[3,11,13]

Table 2. Commonly Used Concussion Tests and Scales [2–4,11,15]

	Examples	Description	Key Features	Use	Availability
Sideline Assessments	1. Sports Concussion Assessment Tool (SCAT3™) 2. Standardized Assessment of Concussion (SAC)	Standardized tests to evaluate for concussion	Symptom inventory, physical examination, gross cognitive assessments, balance assessments	Sideline or office	Most are free, available on internet
Computerized Neurocognitive Assessments	1. ANAM® 2. CogState Sport® 3. Headminder® 4. ImPACT®	Computerized tests for cognitive function	20-40 min computerized evaluation of reaction time, concentration processing speed, symptoms, and memory	Office based	Practitioner must purchase
Balance Assessments	1. Balance Error Scoring System (BESS)	Timed balance assessment in different stances	Athletes performs double, single and tandem leg stances and errors are recorded	Office based	SCAT3™ contains a modified version
Symptom Inventories	1. Postconcussion Symptom Scale (PCSS) 2. Graded Symptom Checklist (GCS)	Common concussion symptoms are rated	Form of a questionnaire	Sidelines or office based	Free and available on the internet

reaction time and visual memory composites are associated with a protracted recovery. Subacute symptoms – including migraines, other headaches, and dizziness that linger 2 to 3 days after injury – have also been potential predictors of protracted recovery.[13] A balance assessment can include a Romberg test, tandem walking, heel to toe, and Balance Error Scoring System (BESS).

A variety of testing can be done either in the office or on the sidelines for concussion diagnosis and management (**Table 2**). The Sport Concussion Assessment Tool (SCAT3) assists with completing a clinical profile of the concussed patient incorporating the Glasgow Coma Scale (GCS).[3,14] The GCS should be followed after a concussion. Children under 12 years old should be assessed with the Child SCAT3.[14]

Neurocognitive testing is often performed during the preseason so that in the event of a concussion, a comparison can be made to help with concussion management.[4] Assessment of a concussion should always remain the combination of clinical examination, completion of a self-reported symptom checklist, postural assessment, and neurocognitive testing.[15]

DIAGNOSTIC IMAGING

Imaging including CT scan or MRI offer little to the evaluation of a concussion unless there is concern for a cervical spine injury, skull fracture, epidural hematoma, subdural hematoma, diffuse axonal injury, intracerebral hemorrhage, or subarachnoid hemorrhage.[1,3]

NEUROPSYCHOLOGICAL ASSESSMENT

Clinicians and scientists have been designing and studying different objective tools to help determine when a patient has recovered from a concussion. Common neuropsychological testing assessment tools are the Automated Neuropsychological Assessment Metrics (ANAM)®, CogState Sport®, HeadMinder®, ImPACT®, and pen and paper testing by a neuropsychologist.[1,11]

Often neurocognitive testing is not done properly.[15] It is recommended that neurocognitive testing be interpreted by healthcare professionals who are trained and familiar with the type of test being performed.[4] There are individual test limitations including false positive and false negative rates, baseline variability, practice effect, poor test-retest reliability, and improper assessment of the reliable change index by practictioners.[4] For this reason, it should be used as an adjunct only to help with return to play. It cannot be emphasized enough that a patient being asymptomatic prior to return to contact or collision sports is the most important aspect of concussion management.[11]

LABORATORY ASSESSMENT

Currently, there is no utility to laboratory evaluation of patients with concussions. The significance of Apolipoprotein (Apo) E4, ApoE promoter gene, Tau polymerase, and other genetic markers are unclear in how they can be used to diagnose or treat concussions.[3] Biochemical serum and cerebral spinal fluid biomarkers of brain injury including S-100, neuron specific enolase (NSE), myelin basic protein (MBP), GFAP, tau, etc. are not clinically indicated at this time. Swedish hockey players had increased levels of the axonal injury marker total tau compared to preseason values and that the levels of S-100 calcium binding protein B were also increased in post-concussive patients compared to preseason values.[16] The total tau and S-100 calcium binding protein B were highest immediately after the concussion and decreased during rehabilitation.[16]

MODULATION OF SYMPTOMS

There is no evidence that non-steroidal anti-inflammatories or acetaminophen shorten the duration of symptoms of a concussion.[1] Due to risk of bleeding, aspirin and NSAIDs should be avoided in the acute concussive setting.[4] Athletes who take analgesics for 1-2 weeks in the acute concussion setting are also at risk for rebound headaches. Environmental modifications can include utilizing a quiet and dim setting to help with symptoms of light and noise sensitivity.[4]

There are circumstances where pharmacology therapy is indicated for concussion modulation. Specific or prolonged symptoms including sleep disturbances, anxiety, depression, post-concussive headache, and cognitive impairment may warrant prescription medication.[3] Pharmacologic therapy should be prescribed only by clinicians experienced with concussion management.[3] In order to be safely back to sport, patients should not be taking any specific medications that could potentially modify the symptoms/signs of a concussion.[3]

RETURN-TO-PLAY CRITERIA (Table 3)

A graduated return-to-play criteria consists of taking a patient through a stepwise progression with each step lasting at least 24 hours, with no advancement if the patient remains symptomatic.[1,3,11] If at any time an athlete develops symptoms, they must reduce activity to a lower stage and remain asymptomatic for at least 24 hours prior to progressing.[11] **Table 3** outlines the return to play criteria for an athlete and **Table 4** outlines a modified return to play criteria for the recreational athlete.[11] The optimal rest period before re-initiation of aerobic activity and physical exertion has yet to be determined.[3]

RETURN-TO-SCHOOL CRITERIA

The 2004 and 2008 international conferences on concussion initiated the concept of cognitive rest after concussion in addition to physical rest.[1] Some patients have increased symptoms after a concussion with cognitive activities including attending school, focusing on schoolwork, taking exams, reading and attempting to stay up to date on assignments.[1] Halstead also suggests that because most children appear physically normal post-concussion, some

Table 3. Return to Play

Stage	Activity Allowed	Examples
1	No activity	Physical and cognitive rest
2	Light aerobic	Walking, swimming, stationary cycling (70% Maximum Heart Rate)
3	Sport-Specific	Sport drills but no head impact or physical contact
4	Noncontact training drills	Complex drills, light resistance training
5	Full-contact practice	Normal training (after cleared by physician)
6	Return to play	Normal activities

General accepted guidelines/criteria for a step-wise progression to return to play.[1,3,4,11]

Table 4. Modified Return to Play for the Recreational Athlete[11]

Stage	Activity Allowed	Examples
0	No activity	Physical and Cognitive rest
1	Light Aerobic (70% Maximal Heart Rate) with minimal cognitive effort	Swimming, walking, elliptical, cycling
2	Moderate Aerobic (75 to 80% Maximal Heart Rate) with increased amount of cognitive effort, sport-specific drills	Swimming, walking, elliptical, cycling, sport-specific drills
3	Light resistance training, more complex drills	Resistance machine circuit, a few minutes of yoga (avoid certain poses) or spinning class
4	Return to general fitness classes, but less duration of time. Encourage breaks. Personal trainer sessions could resume at a lighter intensity with breaks.	Zumba®, aerobics, boot camps, and other intense classes
5	More intense resistance training, start with only part of a class and work towards a full class	CrossFit®, kettlebell training, and other classes that include Olympic lifts and plyometrics
6	Full participation in pre-concussion activities, participation in a full class	CrossFit®, kettlebell training, and other classes that include Olympic lifts and plyometrics

school officials and educators may not recognize the need for both environmental and academic adjustments.[17] It is recommended that cognitive rest include temporary leave from school, shortening the patient's school day, reducing workload and increasing the amount of time to complete assignments.[1,4]

EDUCATION OF PARENTS AND COACHES

Appropriate concussion recognition in youth sports relies on education of youth coaches, athletes, officials, school administrators, healthcare providers, and parents.[4] Physicians need to discuss potential long-term consequences of a concussion and recurrent concussions with athletes and parents including the potential risk for chronic traumatic encephalopathy.[4] A cross-sectional survey of pediatrician members of the Illinois pediatricians revealed only 27% of participants were familiar with the Illinois state concussion legislation and only 15% knew the latest Zurich guidelines.[18]

The Center for Disease Control (CDC)'s "Heads Up: Concussion in Youth Sports" initiative was launched in 2007.[19] Seventy-seven percent of coaches reported that they felt more comfortable identifying patients who may have a concussion and 63% viewed concussions as being a more serious medical issue.[19]

A 2007 study in by Guilmette et al[20] evaluated 109 New England HS football coaches' knowledge of concussion showing that most coaches could recognize symptoms and would consult a healthcare professional prior to allowing for return to play. The CDC's Heads Up initiative was seen by only 31% of coaches and was a less frequently used source of information.[20] The National Federation of State High School Associations (NFHS) also has concussion modules on their website that coaches can use to gain further knowledge.[21]

Educating coaches, parents, and athletes will not necessarily improve concussion management as 40% of surveyed athletes reported that they did not tell their coach about their concussion despite being aware of needing to report symptoms.[22]

PREVENTION

The 2012 Zurich Conference consensus stated there was no good evidence that currently available protective equipment on the market is capable of preventing a concussion.[3] Mouthguards, helmets, and headgear currently do not prevent concussion.[3] Newer innovations in helmet design are currently being investigated, but study limitations such as lack of randomization of helmets among study participants continue to limit the application of such studies to player safety.[23]

Collins et al advocated for the use of overall neck strength as a screening tool to determine which high school athletes have an increased concussion risk and which athletes should undergo neck-strengthening prevention programs.[24] For every one pound increase in neck strength, the odds of sustaining a concussion were decreased by 5%.[24]

Some have advocated for rule changes in higher impact sports such as no tackling in football under age 16.[25] Video studies of men's and women's lacrosse concussions have been performed in HS athletes to evaluate the conditions in the game in which athletes suffer concussions. Men's lacrosse players typically were vulnerable when hit and there was head-to-head contact,[26] while women's lacrosse players wear little mandatory equipment and are at risk for accidental stick or body to the head contact.[27] Overall, the competitive and aggressive nature of sport should be balanced with fair play and respect for others.

RHODE ISLAND LAW

Between 2009–2014, all fifty states and the District of Columbia have passed legislation about sports concussion.[18,28] The majority of the laws mandate that all concussed athletes be removed from activity immediately. Many states require that an athlete receive a physician clearance prior to returning to athletic activities. Rhode Island state law requires all school coaches, whether paid or volunteer, to take concussion awareness training.[29] The training is free and accessible online. The average amount of time to complete the training is approximately 30 minutes.[30]

The Rhode Island School And Youth Programs Concussion Act was introduced by Senators Felag, Levesque, Bates, and Sosnowski on January 13, 2010. A concussion and head injury information sheet must be signed by the youth athlete and athlete's parent and/or guardian prior to participation. School districts are required to use training materials made available by the CDC entitled "Heads Up: Concussion in High School Sports/Concussion in Youth Sports." All coaches, trainers, and volunteers must complete the training course.[30]

School districts have been encouraged to have all student athletes undergo baseline neurocognitive testing prior to the start of every sport season. Parents and guardians are provided with information as to the risk of concussion and traumatic brain injury prior to the start of every sport season and need to sign an acknowledgement that they received the information.[29]

Youth athletes suspected of having sustained a concussion or head injury must be removed from practice or competition. A physician must evaluate the athlete and provide written clearance to allow any return to play. All school districts are encouraged to have an athletic trainer at all recreational and athletic events.[29] Recent communication with the Rhode Island Interscholastic League stated that as of September 2014, 15 of 57 Rhode Island high schools had athletic trainers on staff.

The latest amendment from 2014 (2014 R.I. Pub. Laws, Chap. 237 (2014 HB 7367)) directs the Department of Education to make guidelines for teachers and teachers' aides

to complete training for traumatic brain injuries and concussions. Under the latest amendment, school nurses are also required to complete a training course and perform an annual refresher course.[28]

In summary, clinicians should familiarize themselves with the Zurich guidelines and the Rhode Island legislation if seeing concussed individuals in practice to ensure safe patient care.

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Rhode Island Child Death Review: Motor Vehicle Accident Deaths, 2008–2013

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Motor vehicle accidents are the leading cause of death for young people ages 15 to 20 in the United States.[1] Fortunately, over the last ten years, there has been a significant decline in teen driver fatalities. Between 2003 and 2012, fatalities dropped 49% – from 7,937 to 4,283.[2] In Rhode Island, unintentional injury from motor vehicle accidents is also a leading cause of death for young people ages 15 to 24. The rate of motor vehicle fatalities within this age group is substantially higher than any other.[3]

Research has shown that teen drivers are especially at risk for fatal motor vehicle accidents because they lack experience and judgment.[4] Presence of passengers, night driving, drinking, and non-use of seatbelts are all factors that further jeopardize a young driver's safety.[5] This report aims to summarize the relevant circumstances around fatal motor vehicle accidents in Rhode Island involving youth from 2008 to 2013. The review will include data both before and after the 2011 passage of Rhode Island's primary enforcement seat belt law, which enabled police to issue citations based solely on the observation of an unbelted driver or passenger.

METHODS

The **Rhode Island Child Death Review Team** (RICDRT) reviewed motor vehicle related deaths of drivers, passengers, and pedestrians ages 0 to 24 that occurred in Rhode Island and were reported to the Office of the State Medical Examiner (OSME) from 2008 to 2013. Demographic, clinical and death scene information was abstracted from OSME record source documents which included autopsy, toxicology, and police reports, medical records, and other sources as available. Toxicology reports noted the presence of alcohol, prescription drugs, or illicit drugs upon autopsy but were unable to determine if drugs were prescribed, were used as prescribed, or had impaired the individual. Due to small sample sizes in individual years, OSME data are presented in 3-year aggregates from 2008 to 2010 and from 2011 to 2013 – both before and after the passage of Rhode Island's primary seatbelt law.

Youth Risk Behavior Survey (YRBS) data were obtained from the Rhode Island Department of Health. The YRBS is a program administered by the CDC which monitors health risk behavior in high school and

Table 1. Motor Vehicle Deaths among Youth in Rhode Island, 2008–2013

		2008–2010		2011–2013		2008–2013	
		#	%	#	%	#	%
Total		70	-	43	-	113	-
Deaths by Gender	Female	22	31%	17	40%	39	35%
	Male	48	69%	26	60%	74	65%
	n	70	-	43	-	113	-
Deaths by Race	White	66	94%	37	86%	103	91%
	Black	3	4%	2	5%	5	4%
	Asian	1	1%	0	0%	1	1%
	American Indian	0	0%	2	5%	2	2%
	Unknown	0	0%	2	5%	2	2%
	n	70	-	43	-	113	-
Deaths by Ethnicity	Non-Hispanic	60	86%	29	67%	89	79%
	Hispanic	9	13%	11	26%	20	18%
	Unknown	1	1%	3	7%	4	4%
	n	70	-	43	-	113	-
Deaths by Age	0-15	5	7%	5	12%	10	9%
	16-19	21	30%	15	35%	36	32%
	20-24	44	63%	23	53%	67	59%
	n	70	-	43	-	113	-
Deaths by Rider Type	Driver	36	51%	23	53%	59	52%
	Passenger	20	29%	14	33%	34	30%
	Pedestrian	13	19%	6	14%	19	17%
	Unknown	1	1%	0	0%	1	1%
	n	70	-	43	-	113	-
Seat Belt Use*	Belted	7	14%	7	23%	14	17%
	Not Belted	40	78%	18	58%	58	71%
	Unknown	4	8%	6	19%	10	12%
	n	51	-	31	-	82	-
Substance Use**	Any Alcohol or Drugs	43	61%	26	60%	69	61%
	No Alcohol or Drugs	27	39%	17	40%	44	39%
	n	70	-	43	-	113	-

Notes: Unless otherwise noted, data includes drivers, passengers, and pedestrians who died in automobile or motorcycle accidents.
**Seat Belt Use:* Pedestrian fatalities and motorcycle accidents were excluded.
***Substance Use:* "Any Alcohol or Drugs" includes all fatalities with alcohol or drugs noted in the toxicology report upon autopsy.

middle school students by surveying students at a sample of schools in participating states every two years. The Rhode Island survey results selected for this report concern motor vehicle risk behavior including the use of seat belts, drinking and driving, and texting while driving. YRBS data are presented by gender and by year – 2009, 2011, and 2013.

RESULTS

From 2008 to 2013, there were 113 youth deaths (ages 0–24) related to motor vehicle accidents. Fifty-nine fatalities were drivers (52%), 34 were passengers (30%), and 19 were pedestrians (17%). The majority of fatalities were male (65%), white (91%), or Non-Hispanic (79%). Sixty-seven fatalities were between the ages of 20 and 24 (59%), 36 between the ages of 16 and 19 (32%), and 10 between the ages of 0 and 15 (9%). See **Table 1**.

Between the two 3-year aggregates, the number of fatalities declined. Seventy deaths occurred between 2008 and 2010 and 43 deaths occurred between 2011 and 2013. The percentage of fatalities was highest among drivers and passengers not wearing seat belts in both aggregates. The absolute number of all fatalities with alcohol or drugs noted in the toxicology report upon autopsy declined from 43 to 26. See **Table 1**. The absolute number of driver fatalities with alcohol noted in the toxicology report upon autopsy also declined from 18 to 11. See **Figure 1**.

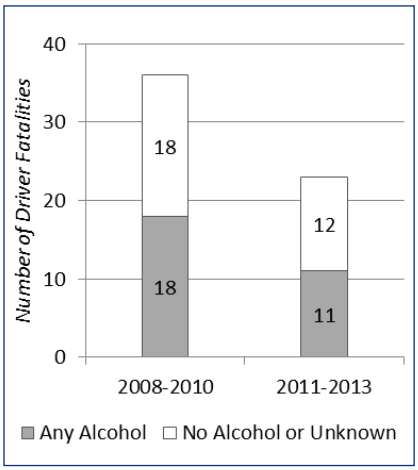
Supplemental data obtained from the YRBS for 2009, 2011, and 2013 show a marked decline in percentage of individuals surveyed who reported never or rarely wearing a seat belt. In each survey year, females appeared less likely to report never or rarely wearing seat belts than males. Respondents were also more likely to report recently riding with a driver who had been drinking than never or rarely wearing a seat belt. In 2013, males (11.4%) were more likely to report driving when drinking alcohol than females (4.8%). Notably, a higher percentage of both male and female respondents reported texting or e-mailing while driving in 2013 than riding with a driver who had been drinking, driving when drinking alcohol, or never or rarely wearing a seat belt. See **Figure 2**.

DISCUSSION

The OSME data show a decline in youth driver and passenger fatalities from motor vehicle accidents in Rhode Island, which is in line with the national trend. The YRBS data show an increase in reported seat belt use among high school students, consistent with the Rhode Island Department of Transportation Office of Highway Safety's findings for all ages.[6] It is unclear whether the decline in youth driver and passenger fatalities can be directly attributed to the increase in seat belt use or the primary seat belt law. However, the literature does show that states with a primary law have higher rates of seat belt use and lower rates of motor vehicle fatalities for all drivers when compared to states with a secondary law or no law.[7,8]

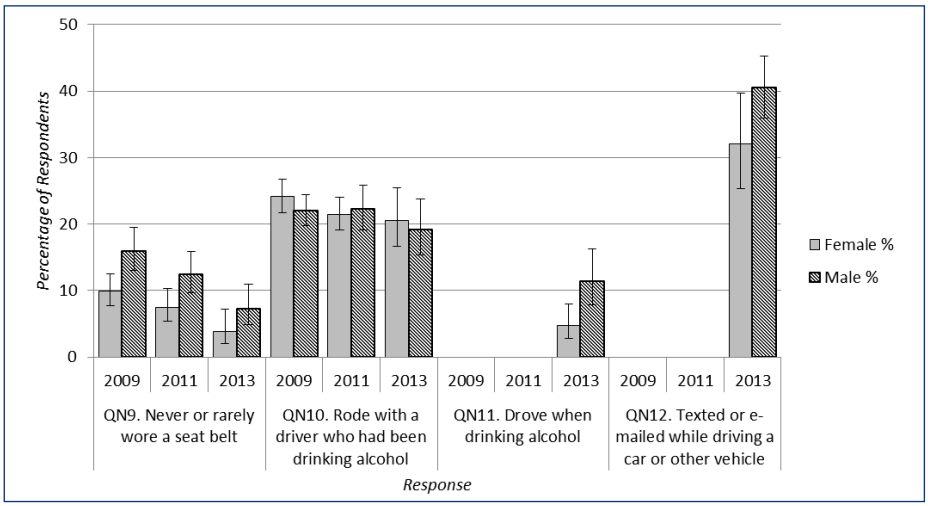
The OSME data also show a decline in the absolute number of driver fatalities that had alcohol noted in the toxicology report upon autopsy. This finding may speak to the success of enforcement, public campaigns, and other efforts to change social norms around drinking and driving. However, the alarmingly high percentage of YRBS respondents who reported recently riding with a driver who had been drinking alcohol strongly supports the continuation of efforts to improve statewide prevention strategies.

Figure 1. Driver Fatalities and Alcohol Use, 2008–2013



Notes: Figure 1 includes all driver fatalities in both automobile and motorcycle accidents. Any alcohol refers to alcohol noted in the toxicology report upon autopsy.

Figure 2. Rhode Island High School Youth Risk Behavior Survey, Motor Vehicle Risk Behavior, 2009–2013 (YRBS)



Note: QN11 and QN12 were not available for 2009 and 2011. QN10, QN11, and QN12 refer to activity thirty days prior. QN11 and QN12 only included respondents who had driven a car in the past thirty days. Confidence intervals are 95%.

The YRBS data indicate that texting while driving is a pervasive problem amongst young drivers in Rhode Island. Going forward, it will be important to monitor this risky behavior closely. Furthermore, while most states, including Rhode Island, have primary all-driver texting bans, it is unclear whether these laws change behavior.[9] Therefore, coordinated strategies that go beyond policy and enforcement are needed. Parents may be a valuable resource in this effort. While parental engagement has been shown to reduce unsafe driving behaviors, parental support for graduated driver licensing restrictions is often mixed.[10,11] Improving parental involvement through enhanced parent-teen driver programs would be beneficial. Healthcare providers also have an important role to play. Questions about risky behavior, including the use of cigarettes, alcohol, and drugs, have long created opportunities for education within the primary care setting.[12] It would be appropriate for these conversations about risk to also address distracted driving.

In conclusion, while youth fatalities from motor vehicle accidents appear to be decreasing both nationally and in Rhode Island, there is still considerable room for improvement within this tragic public health problem.

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VITAL STATISTICS
MICHAEL FINE, MD
DIRECTOR, RHODE ISLAND DEPARTMENT OF HEALTH
COMPILED BY COLLEEN A. FONTANA, STATE REGISTRAR

Rhode Island Monthly Vital Statistics Report
Provisional Occurrence Data from the Division of Vital Records

VITAL EVENTS	REPORTING PERIOD		
	AUGUST 2014	12 MONTHS ENDING WITH AUGUST 2014	
	Number	Number	Rates
Live Births	1,018	11,314	10.8*
Deaths	783	9,904	9.4*
Infant Deaths	4	63	5.6#
Neonatal Deaths	4	50	4.42#
Marriages	1,002	7,077	6.7*
Divorces	236	3,211	3.1*
Induced Terminations	256	3,124	276.1#
Spontaneous Fetal Deaths	45	594	52.5#
Under 20 weeks gestation	42	489	49.4#
20+ weeks gestation	2	71	6.3#

* Rates per 1,000 estimated population
\# Rates per 1,000 live births

Underlying Cause of Death Category	REPORTING PERIOD			
	FEBRUARY 2014	12 MONTHS ENDING WITH FEBRUARY 2014		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	178	2,326	220.8	3,239.5
Malignant Neoplasms	200	2,432	230.9	5,900.0
Cerebrovascular Disease	35	396	37.6	535.5
Injuries (Accident/Suicide/Homicide)	64	759	72.1	11,437.5
COPD	40	447	42.4	405.0

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.
(b) Rates per 100,000 estimated population of 1,051,511 (www.census.gov)
(c) Years of Potential Life Lost (YPLL).

NOTE: Totals represent vital events, which occurred in Rhode Island for the reporting periods listed above.
Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

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New Legislators Reception

RIMS held its bi-annual New Legislators Reception on Wednesday, January 14, 2015. Eighteen new legislators were elected to the General Assembly for the new 2015-2016 session. New legislators attending the event included Senators Coyne, Morgan, and Gee; and Representatives McKiernan, Lancia, Solomon, Fogarty, Filippi, Price, Tobon, and Regunberg.

RIMS members in attendance were Peter Karczmar, MD; Gary Bubly, MD; Bradley Collins, MD; Sarah Fessler, MD; Christine Brousseau, MD, James Griffin, DO; Arnold Herman, MD; Mike Migliori, MD; and Senator Christopher Ottiano, MD, and James Carney, PA-C.

Lively conversation between the legislators and RIMS members made for an enjoyable evening in this informal, relaxed setting.

Working for You: RIMS advocacy activities

January 5, Monday

Meeting with Hospital Association of RI (HARI); RIMS staff

Governor's Commission on Disabilities meeting

HealthSource RI Advisory Board meeting

RIMS Executive Committee meeting

January 6, Tuesday

RIMS Physician Health Committee (Herbert Rakatansky, MD, Chair)

Bryant University Physician Assistant Program's White Coat Ceremony

January 7, Wednesday

RIMS Membership Committee meeting, Drs. Fingerut, Fera, Frazzano, Jones, Karczmar, Settipane and RIMS staff

January 7–10, Wednesday–Saturday

AMA State Legislative Strategy Conference; Michael Migliori, MD, Chair, RIMS Public Laws, and Staff

January 12, Monday

OHIC Administrative Simplification Workgroup

January 13, Tuesday

HealthSource RI Expert Advisories board meeting

Advanced Practice Registered Nurse/ Certified Registered Nurse Anesthetists' reception for legislators

January 14, Wednesday

Board of Medical Licensure and Discipline (BMLD) meeting

Secretary of State meeting regarding lobby regulations

Special Commission to Study Health Plan Patient Liability Provisions on Access to Health Care and Provider Financial Condition

RIMS' Reception for New Legislators, RIMS leadership and staff

January 15, Thursday

Health Services Council meeting

Meeting with Rhode Island Quality Institute

January 16, Friday

Coalition of Mental Health Professionals of RI

Meeting with Purdue-Pharma regarding opioid-related legislation

Meeting with Amy Nunn, ScD, Brown University School of Public Health, regarding RI Public Health Institute

January 20, Tuesday

Meeting with HSRI Staff

Meeting with HealthSource RI Expert Advisory Board

OHIC Health Insurance Advisory Committee meeting

Legislative hearings

January 21, Wednesday

Primary Care Physician Advisory Committee, Department of Health

OHIC Administrative Simplification meeting

Recovery Works Coalition meeting

Meeting with Chairman Miller, Chair Senate Committee of Health and Human Services, regarding 2015 legislation

Legislative hearings

Speaker Mattiello Fundraiser; Drs. Migliori and Rich; and RI Society of Anesthesiology members Rafael Padilla, MD and Brett Arron, MD; attending

January 22–23, Thursday and Friday

American Society of Association Executives' *The Business of Meetings* Certificate Program, Washington, DC

January 22, Thursday

Mental Health and Substance Abuse Coalition meeting

Joint Senate Finance/Health and Human Services hearing regarding State Innovation Model Grant

January 23, Friday

Meeting with DOH staff regarding legislation

January 27, Tuesday

DOH Health Services Council meeting

Meeting with Chairman Keable, House Committee on Judiciary, regarding legislation

Legislative hearings

January 28, Wednesday

Legislative hearings

January 29, Thursday

Meeting with Aetna

Legislative hearings

Senate President T. Paiva-Weed fundraiser; Michael Migliori, MD, and RIMS staff attending

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The Rhode Island Medical Society delivers valuable member benefits that help physicians, residents, medical students, physican-assistants, and retired practitioners every single day. As a member, you can take an active role in shaping a better health care future.

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Connection Between Childhood Adversity and Psychiatric Disorders Seen at Cellular Level

PROVIDENCE – In a new study published online in *Biological Psychiatry* on January 23, 2015, researchers from Butler Hospital identify an association between biological changes on the cellular level and both childhood adversity and psychiatric disorders. These changes in the form of telomere shortening and alterations of mitochondrial DNA (mtDNA), are important in the aging process, and this new research provides evidence that psychosocial factors – specifically childhood adversity and psychiatric disorders – may also influence these cellular changes and could lead to accelerated aging.

Recent studies have examined the possible connection between mitochondria and psychiatric disorders, but the research is very limited, and no prior work has examined the relationship of mitochondrial DNA to psychosocial stress.

"We are interested in these relationships because there is now clear evidence that stress exposure and psychiatric conditions are associated with inflammation and health conditions like diabetes and heart disease. Identifying the changes that occur at a cellular level due to these psychosocial factors allows us to understand the causes of these poor health conditions and possibly the overall aging process." said **AUDREY TYRKA, MD, PHD**, Director of the Laboratory for Clinical and Translational Neuroscience at Butler Hospital and Associate Professor of Psychiatry and Human Behavior at Brown University.

Dr. Tyrka and fellow researchers recruited 299 healthy adults from the community for the study. Participants completed diagnostic interviews to assess psychiatric disorder diagnosis, and assess childhood adversities, including parental loss, and childhood abuse and neglect. Participants were categorized into four groups based upon the presence or absence of childhood adversity and the presence or absence of lifetime depressive, anxiety, or substance use disorders. Using standard techniques, researchers extracted DNA from whole blood samples for each participant and quantified telomere length and mtDNA copy number, a measure of mitochondrial DNA content.

Results of the study show childhood adversity and lifetime psychopathology were each associated with shorter telomeres and higher mtDNA content. These effects were seen in individuals with major depression, depressive disorders, and anxiety disorders, as well as those with parental loss and childhood maltreatment. A history of substance disorders was also associated with significantly higher mtDNA copy numbers.

These findings indicate that childhood stress and some psychiatric disorders are linked to important cellular changes that may represent advanced cellular aging. "Understanding this biology is necessary to move toward better treatment and prevention options for stress-related psychiatric and medical conditions, and may shed light on the aging process itself," said Dr. Tyrka, also the director of Research for Butler Hospital. ❖

Memorial Opens Follow-Up Clinic

PAWTUCKET – Memorial Hospital has created a Hospital Follow-Up Clinic to ensure that patients discharged from any area hospital can be seen quickly by a primary care physician.

"We have a checklist of items we make sure are addressed – including medication reconciliation, follow-up testing and the patient's understanding of the care plan – and we then turn the patient over to their primary care physician," explains **DINO MESSINA, MD, PHD, FACP**, associate program director in the Department of Medicine at Memorial and medical director of the Internal Medicine Clinic. "We are tracking certain parameters going forward but we're certain that this clinic can make a difference and improve the quality of the transition of care from the hospital to the home for our patients." ❖

Women & Infants Receives Women's Choice Award

Hospital is among America's Best Hospitals for Obstetrics

PROVIDENCE – Women & Infants Hospital has received the 2015 Women's Choice Award® as one of America's Best Hospitals for Obstetrics. This evidence-based designation identifies the country's best health care institutions based on robust criteria that consider female patient satisfaction, clinical excellence and what women say they want from a hospital.

The America's Best Hospitals for Obstetrics scoring process is unique in that it is the only national list that focuses on female patient satisfaction. The hospitals that qualify for this highly selective designation provide the highest level of obstetric services based on their exceptional scores for patient recommendation as provided by data reported by the U.S. Department of Health and Human Services in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys, as well as an analysis that weighs criteria identified as the most important to women for patient satisfaction, including early elective deliveries. ❖

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RIH Awarded Advanced Certification for Comprehensive Stroke Center

PROVIDENCE – Rhode Island Hospital has been recognized by The Joint Commission as meeting its standards for Disease-Specific Care Comprehensive Stroke Center Certification, one of 82 health care organizations nationwide to earn this designation.

Rhode Island Hospital submitted to a rigorous onsite review by the Joint Commission, which measured the hospital's performance against its Comprehensive Stroke Center standards and requirements including advanced imaging capabilities, uninterrupted availability of specialized treatments, and staff with the unique education and competencies to care for complex stroke patients.

Organizations seeking CSC certification must meet all of the general eligibility requirements for disease-specific care and primary stroke center certification. In addition, CSCs are required to:

- Have dedicated neuro-intensive care unit beds for complex stroke patients that provide neuro-critical care 24/7.
- Use advanced imaging capabilities.
- Meet strict requirements for providing care to patients with a diagnosis of subarachnoid hemorrhage; perform endovascular coiling or surgical clipping procedures for aneurysms; perform emergency retrieval of clots lodged in brain arteries; and administer IV tissue plasminogen activator (tPA).
- Coordinate post-hospital care for patients.
- Use a peer-review process to evaluate and monitor the care provided to patients with ischemic or hemorrhagic stroke.
- Participate in stroke research.

"By achieving this advanced certification, Rhode Island Hospital has thoroughly demonstrated the greatest level of commitment to the care of its patients with a complex stroke condition," said **MARK R. CHASSIN, MD**, Joint Commission president. ❖

URI scientists discover estrogen interaction prevents some pregnant women from expelling bile acids

Problem can lead to serious health issues for fetus, infant

KINGSTON – A University of Rhode Island pharmacy professor has discovered an interaction involving the hormone estrogen that occurs in some pregnant women preventing them from expelling bile acid, leading to disease in their fetuses.

RUITANG DENG, an associate professor of biomedical sciences in the College of Pharmacy, and his research team, recently completed a study funded by a $1.4 million National Institutes of Health grant. They examined the effects of molecular interactions involving estrogen in the late stages of pregnancy that shut down the bile salt export pump, preventing the woman from expelling bile acids and leading to a condition called intrahepatic cholestasis of pregnancy. The bile salt export pump is an active transport protein in humans located on a plasma membrane.

The findings were published in the December 2014 issue of *Hepatology*, the official journal of the American Association for the Study of Liver Diseases. The journal also ran an editorial article featuring the work of Deng and his research team.

"Typically, the condition is not dangerous for pregnant women, but it can have severe consequences for the fetus, including stillbirth," Deng said. "If it is diagnosed before birth, the only solution is pre-term birth by induced labor or Cesarean section. And even then, the baby can develop diseases later on in childhood because of the condition."

The incidence of disease varies widely among ethnic groups, ranging from 1 to 5 percent in the United States and European countries, and 15 to 27 percent in some South American countries such as Chile and Argentina. The condition and symptoms usually develop in the third trimester.

The most common symptom of the disease in pregnant women is skin itching (pruritis), particularly in the palms of the hands and soles of the feet, Deng said.

Deng and his research team members, all of whom are URI faculty, graduate students and post-doctoral fellows, examined the interactions among estrogen, estrogen alpha, a nuclear receptor to which the estrogen binds, and the bile acid receptor called farnesoid X receptor (FXR). Those interactions led to suppression of the bile salt export pump.

"We examined the estrogen and bile acid signaling pathways and uncovered a crosstalk between the two pathways controlling the bile export pump," Deng said. "Something in that crosstalk causes the bile salt export pump to shut down.

"The next step would be to examine that crosstalk to see how to keep the pump activated," Deng said. "Maybe we can provide a strategy for developing therapeutic treatments for the disease by targeting the crosstalk." ❖

Lifespan Opens Urgent Care Center for Mental Health Issues in East Greenwich

EAST GREENWICH – The Lifespan Outpatient Psychiatry and Urgent Care recently opened in East Greenwich. The new center integrates Lifespan's behavioral services with those of Gateway Healthcare, for the area's first walk-in urgent care for mental health issues.

"Rhode Island is ranked among the nation's highest for people with serious mental health issues," said **DANIELA BOERESCU, MD**, director of Lifespan Outpatient Psychiatry and Urgent Care. "Our goal in opening this location is to provide urgent care and outpatient services to make mental health services more accessible, especially to those people who need attention right away. We want to be able to help patients and their family members quickly in those times."

Urgent care, which is available for those 18 years or older, offers onsite mental health assessment, access to crisis psychiatry as necessary, crisis stabilization services, and family education and support. And both urgent care and outpatient services support a broad range of medical and psychotherapy treatments, including medication management, individual psychotherapy, group therapy, couples and marital therapy, and family therapy. The on-site team is multidisciplinary and is made up of psychiatrists, psychologists, social workers and community treatment specialists.

"We are able to treat patients with a variety of behavioral health conditions," explained Dr. Boerescu. "Those include mood disorders, anxiety disorders, somatoform disorders and other behavioral health issues such as eating disorders, attention deficit disorder, job pressures and stress management." ❖

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Recognition

Cara Mathews, MD, wins Young Investigator Award

WOMEN & INFANTS

PROVIDENCE – The Gynecologic Oncology Group (GOG) Foundation recently announced that **CARA MATHEWS, MD**, of the Program in Women's Oncology at Women & Infants Hospital of Rhode Island, earned its national Young Investigator Award for 2015.

The award was given for Dr. Mathews' research presentation, "Survival in advanced endometrial cancer: Does time to chemotherapy initiation matter?" The research is sponsored by Genentech BioOncology.

"Cara represents the latest generation of oncologist researchers, balancing time with her patients in and the operating room with a desire to get to the root of the enigma of gynecologic cancers," says Cornelius "Skip" Granai III, MD, director of the Program in Women's Oncology. "She is gifted and compassionate, and this is a great tribute to her tenacity as a researcher."

The goal of the Young Investigator program at GOG is to encourage physicians with not more than five years out of fellowship to participate in leading-edge research and become familiar with the inner workings of the organization. GOG is a national non-profit organization dedicated to promoting excellence in the quality and integrity of clinical and basic scientific research in the field of gynecologic oncology. It consists of gynecologic oncologists, medical oncologists, pathologists, radiation oncologists, nurses, statisticians, basic scientists, quality of life experts, data managers, and administrative personnel.

The award provides all data for the project from prior trials done through GOG, financial support for statistical analysis, travel, and any other costs of the project. ❖

Appointments

NEWPORT HOSPITAL

Gail Carreau, MD, joins Newport Women's Health

NEWPORT – Newport Hospital announced that **GAIL CARREAU, MD**, has joined Newport Women's Health as an obstetrician/gynecologist. She began seeing patients on January 19.

A graduate of George Washington University School of Medicine and board certified in obstetrics and gynecology, Dr. Carreau has extensive experience caring for women with high-risk pregnancies.

She comes to Newport Hospital from Franciscan Women's Health Associates in Tacoma, Washington. She completed her residency at the Yale University-affiliated Bridgeport Hospital in Connecticut. A fellow of the American College of Obstetricians and Gynecologists, Dr. Carreau is also a member of the American Institute of Ultrasound in Medicine. ❖

Liza Famador, MD; Camille Montes, MD, join Newport Hospital

NEWPORT – Family Medicine physicians **LIZA FAMADOR, MD**, and **CAMILLE MONTES, MD**, have joined Portsmouth Family Medicine at Newport Hospital.

Before coming to Newport Hospital, Dr. Famador, who is board certified in Family Medicine, worked for Comprehensive Community Action Program in Coventry. She is a graduate of the University of the East Ramon Magsaysay Memorial Medical Center, Quezon City, Philippines, and completed a residency in Family Medicine at the University of Pittsburgh Medical Center Shadyside.

Board certified in Family Medicine, Dr. Montes comes to Newport Hospital from Comprehensive Community Action Program in Cranston. Dr. Montes is a graduate of the University of Santo Tomas, Manila, Philippines, and completed a residency in Family Medicine at the University of Pittsburgh Medical Center Shadyside. ❖

LIFESPAN

Liza Famador, MD

LIFESPAN

Camille Montes, MD

Appointments

Bharat Ramratnam, MD, named Medical Director of Lifespan's Clinical Research Center


LIFESPAN

PROVIDENCE – Lifespan's Clinical Research Center has named **BHARAT RAMRATNAM, MD**, medical director. Dr, Ramratnam, who assumes the new role immediately, will also continue to lead the Laboratory of Retrovirology for the Lifespan/Tufts/Brown Center for AIDS Research and Rhode Island Hospital's NIH-funded COBRE Center for Cancer Research Development.

"Since its launch last summer, the Lifespan Clinical Research Center has played a critical role in helping researchers manage important clinical trials in the departments of medicine, neurology, pediatrics and emergency medicine. I'm pleased to have Dr. Ramratnam join our team and lead this important research resource," said Peter Snyder, PhD, Lifespan senior vice president and chief research officer. "Dr. Ramratnam's extensive research experience, which includes being the principal investigator for numerous NIH-funded projects over the past 15 years, makes him well suited for this new role."

Dr. Ramratnam replaces the center's first medical director, Catherine Gordon, MD, MSc, who is stepping down to devote all of her time to her ongoing role as the director of the division of adolescent medicine at Hasbro Children's Hospital.

He is an associate professor of medicine at the Alpert Medical School with appointments in the divisions of Infectious Diseases and Hematology/Oncology. ❖

Carrie Bridges Feliz, MPH, to Lead Community Health Services at Lifespan


LIFESPAN

PROVIDENCE – Lifespan has named **CARRIE BRIDGES FELIZ, MPH**, to lead its Community Health Services team.

Bridges Feliz joins Lifespan with an extensive background in public health having served as the team lead for Health Disparities and Access to Care in the R.I. Department of Health. In that role, she supervised the offices of Minority Health, Women's Health, and Primary and Rural Health. She also served as a public health prevention specialist for the Centers for Disease Control and Prevention (CDC), where she concentrated on Rhode Island refugee health; HIV, sexually transmitted diseases, and tuberculosis prevention efforts; and infectious diseases.

Bridges Feliz has earned numerous awards, including the Woman of Achievement Award from the YWCA of Rhode Island, the Women of Excellence Community Award from the Women's Center of Rhode Island, the President's Award of Excellence from the Urban League of Rhode Island and the Centers for Disease Control and Prevention Service Award.

She has also served on several boards – Blue Cross and Blue Shield of Rhode Island board of directors, the Young Voices board of directors, the CES, Inc. advisory board, and the board of directors for the Central Rhode Island Area Health Education Center.

Bridges Feliz earned her bachelor's degree from Duke University and her master's degree in public health from the Boston University School of Public Health. ❖

Dr. Herbert Brennan Named to International Medical Panel

WARWICK–**HERBERT J. "HUB" BRENNAN, DO**, and Kent Hospital Medical Staff president, was appointed to the International Medical Panel of the Federation Internationale de Motcyclisme (FIM) at its Annual Congress on November 24, 2014 in Jerez de la Frontera, Spain.

The FIM, founded in 1904 is based in Geneva, Switzerland and is the world governing body for motorcycle sport and represents the interests of motorcyclists from 107 national motorcycle federations. Dr. Brennan is one of four U.S. representatives to the organization and the sole U.S. physician on the medical panel.

The Rhode Island native is a lifelong and avid off-road motorcyclist and advocate for the sport. He is a member of the Rhode Island Trials Club, New England Trials Association and the American Motorcyclist Association. He holds an international medical license as a chief medical officer of the FIM.


KENT HOSPITAL

"I am at once humbled and extremely honored to have been selected to the panel," said Dr. Brennan. "While motorcycling here in the United States and in much of Europe is largely an endeavor of leisure and sport, many developing countries employ the motorcycle as a mainstay of basic family transportation and local economic infrastructure. I look forward to working with our chairman, Dr. David McManus and my colleagues on the panel to help make motorcycling worldwide, as safe as it is enjoyable for all of us who ride on two wheels."

Dr. Brennan is a partner in Brennan, Cronin and Peters Internal Medicine in East Greenwich, Rhode Island and serves on a number of boards and committees focusing on health care governance and transformation. ❖

Research

Dr. Olszewski Publishes Hodgkin's Study in Journal of Clinical Oncology

PAWTUCKET – **ADAM OLSZEWSKI, MD**, of The Cancer Center at Memorial Hospital is the lead author of a study showing that half of Americans with early-state Hodgkin lymphoma do not receive therapy recommended by guidelines which may affect their survival rate. The study, conducted through Brown University, was recently published in the Journal of Clinical Oncology.

Until now, there was no data about how patients with early-stage Hodgkin lymphoma are treated in the U.S. and how treatment choices affect survival. Dr. Olszewski, an assistant professor of medicine at Alpert Medical School of Brown University, led a team that studied these issues using information from the National Cancer Data Base, which contains data on approximately 70 percent of newly diagnosed cancer cases in the U.S. and is a joint project of the Commission on Cancer of the American College of Surgeons and the American Cancer Society.

The team – which included Dr. Rajesh Shrestha and Dr. Jorge Castillo - looked at 20,600 cases of early-stage Hodgkin lymphoma reported between 2003 and 2011, treated with either CMT or chemotherapy alone. They discovered that although national guidelines uniformly recommended CMT throughout the past decade, only about half of patients received the full treatment, while the other half received chemotherapy without radiation. Moreover, the proportion of cases treated with CMT decreased steadily over the years, especially among younger adults. Certain groups had a particularly low chance of receiving CMT. These included younger women, older and sicker patients, African Americans, and patients without health insurance. Although 90 percent of all patients survived more than five years after their diagnosis, those who received CMT appeared to have a significantly better survival rate compared with those who omitted radiation. This advantage was present regardless of patients' age, gender, race, or specific subtype of Hodgkin lymphoma.

Dr. Olszewski noted, that choosing the best cancer treatment is a complex process which is difficult to capture in large databases. The fact that the choice between CMT and chemotherapy alone is partly affected by patients' race, health insurance or local treatment patterns underscores deficiencies of cancer care delivery in the US. According to the US Census, about 30% of Americans younger than 30 years were uninsured in 2011, and thus at risk of receiving suboptimal treatment for early-stage Hodgkin lymphoma.

Omitting radiation therapy in half of the patients, he added, may indicate that doctors are concerned about its long-term toxicity for their patients, even though radiation techniques in the 21st century are more advanced. The team of scientists said future clinical trials in Hodgkin lymphoma are needed and should focus on minimizing toxicities without compromising survival in order to meet the concerns of patients and physicians. ❖

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Or visit **www.rwmc.org/core-research-facilities/**

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Obituaries

ABRAHAM HORVITZ, MD, 103, of Providence, passed away peacefully on January 27, 2015 at his home at Laurelmead. The first child of Jacob and Fanny Horvitz of Providence, he was a graduate of Classical High School and Brown University. He decided to become a doctor as a teenager and earned his MD at Columbia Medical School in 1936. When he went to Washington University in St. Louis to do his residency he was joined by his new wife, the former Eleanor Feldman.

He was working at Harlem Hospital in New York when Pearl Harbor was attacked and although exempted from the draft because he was a doctor, he felt that it was obligation to enlist. By the end of 1942, now a lieutenant in the Third Army Surgical Corps, he was on board a transport ship headed for England. (He was subsequently promoted to captain.) On D+1 June 7, 1944 on Utah Beach in Normandy, he was in a surgical tent, operating on wounded American and German soldiers. Months later, he would come under fire in the Battle of the Bulge but nothing could have prepared him for the horror that awaited him when he witnessed the liberation of a concentration camp, a searing experience that almost certainly strengthened his identity as a Jew and made him an ardent supporter of Israel. What he remembered most especially was an ambush of U.S. battleships by U-boats in the English Channel during a practice run for the D-Day invasion. A ship ahead of his and another just behind it were blown out of the water with appalling loss of life. His ship, however, went untouched. God, he believed, had saved him for some purpose, a belief that thousands of his patients and their families would come to share in decades to come.

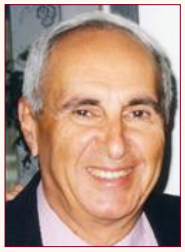
After three years working at Brooklyn Jewish Hospital, where his son Leslie was born, he and Eleanor returned to Providence where he opened his surgical practice in 1948. He was affiliated with the Miriam Hospital for 41 years. In 1966, he was named Medical Staff President of the Hospital. By the time he retired at the age of 79 (on his own volition), he'd performed countless operations, one of which lasted a marathon 13 hours. But retirement from the hospital didn't mean leaving medicine. He went on to become a Clinical Associate Professor Emeritus of Surgery at Brown University Medical School and for many years regularly attended medical conferences at the Miriam. He was also a longtime member of Temple Beth-El. In his last years he would often say that he'd lived a good life. There are many people, some who would not otherwise be alive because of him, who would agree. He is survived by his only child Leslie.

In lieu of flowers, donations in his memory can be made to the Rhode Island Jewish Historical Association (where his late wife Eleanor worked for over two decades) or to a charity of the donor's choice.

REYNALDO S. LINSAO, MD, 74, of Johnston, passed away January 6, 2015. He was the beloved husband of Dr. Milagros (Magbojos) Linsao. Born in Manila, Philippines, he was a son of the late Macario and Maria (Santos) Linsao.

Besides his wife he is survived by his loving children Roderick Linsao and his wife Cecilia of North Hills, CA, Reginald Linsao and his wife Coreen of Smithfield and Marion Linsao and her husband Robert Holzmacher of La Crescenta, CA. He was a cherished grandfather of Owen Linsao and Mia Holzmacher.

In lieu of flowers, donations can be made to the HOPE Foundation at 2105 Cranston Street, Cranston, RI 02920.



VARTAN PAPAZIAN, MD, 87, of Tequesta, FL and Smithfield, RI, passed away on Tuesday, January 20, 2015 at home surrounded by his loving family. He was the beloved husband for 55 years of Joan (Yaghjian) Papazian.

Dr. Papazian graduated from Classical High School in 1945 and served with the U.S. Army from 1946–1947. He graduated from Brown University in 1950 where he was a member of the Sigma Xi Honor Society. Dr. Papazian was a graduate of Tufts University School of Medicine and graduated cum laude in 1954. At Tufts, he was a member of the Alpha Omega Medical Honor Society.

He served an internship at Rhode Island Hospital from 1954–1956, a residency at Rhode Island Hospital from 1956–1958 and was a graduate of the University of Pennsylvania's Graduate School of Medicine in 1957.

Dr. Papazian began practice in Providence, RI in 1958. In 1960 he became a member of the American Board of Otolaryngology and in 1961 a Fellow of the American Academy of Otolaryngology. He was a member of the Pawtucket Medical Society, the Providence Medical Society, the Rhode Island Medical Society, the American Medical Association, the Rhode Island Otolaryngological Society and the New England Otolaryngological Society. He was on the staff of the Rhode Island Hospital from 1958–1980 and on the consulting staff from 1980–1998. He was Chief of Otolaryngology at Memorial Hospital of Rhode Island from 1963–1992 and remained on the active staff until his retirement. He joined the active staff of Miriam Hospital in 1995 and was a consulting member at Bradley Hospital. Dr. Papazian retired in May, 1998. Besides his wife, he was the devoted father of Melanie Papazian and her wife Lori Ruizzo of Smithfield, Dr. Martin Papazian and his wife Kara of Lincoln and Jessica Papazian-Ross and her husband Stefan of Smithfield; and loving grandfather of Emily, Michael and Elise Papazian. Dr. Papazian is also survived by his sister Ruth Harpootian of East Providence and his uncle Stephen Berberian of Rockville, MD.

In lieu of flowers, memorial contributions may be made to: Saints Sahag & Mesrob Church, 70 Jefferson Street, Providence RI 02908.

Obituaries

JOSEPH LEOPOLDO PETTERUTI, DO, a retired RI family practitioner, passed away January 3, 2015 in Fort Myers, FL. He graduated from LaSalle Academy, Providence, RI in 1947 and entered the US Army in 1948 serving in Germany during the Korean War and retired in 1993 as Medical Corp, Colonel.

'Dr. Joe,' as he was known, graduated from Providence College of Osteopathy in 1959; was on the staff of Kent Hospital where he served on the Senior Policy Committee, Chairman of the Credentials Committee, Chief of Family Medicine, Executive Committee, Board of Incorporators, President of Kent County Medical Society and Vice President of Southwest Florida Osteopathic Society.

Dr. Joe retired from private practice in Warwick, RI in December, 2000 and moved to Cape Coral, FL, where he was employed as an Associate Medical Director at Hope Hospice of Cape Coral, FL. He was a past member of the Potowomut Golf Club, Warwick, RI. He was a member of the Military Order of Foreign Wars, American Military Society of Surgeons, American Osteopathic Association, RI Society of Osteopathic Physicians. He was awarded two Meritorious Service Medals, the Army Commendation Medal, Distinguished Service Award, RI Star, Humanitarian Medal and the National Defense Medal.

He was a devoted and loving husband of June M. Petteruti; adored father of daughters Christine Crean, Lynn Donatelli, RN; Cheryl Hardiman, Vicky Fanelli all in Massachusetts and son Stephen Petteruti, DO, in RI and step-daughter, DeAnne Gentile, RN, in RI, 10 grandchildren and two step-grandsons.

Dr. Joe was a caring, compassionate and dedicated physician who touched the lives of many. He will be remembered by all for his wonderful sense of humor, kindness and love of golf and travel.

A military funeral with full honors will be held at the Veterans Cemetery in Exeter, RI, Friday June 5, 2015.

The Words of Hospice

STANLEY M. ARONSON, MD

From its preliterate beginnings, medicine has consistently been a passive enterprise: It responds rather than initiates. It declares, "Only when you feel ill, might you then use my limited talents;" and even when preventive medicine, with its quarantines and vaccines was invented, it was in response to a widespread call for the creation of a specific branch of the profession to create barriers to the spread of disease. And so, as new health-related needs emerge, medicine responds by exploiting or reordering its limited magic – and its associated vocabulary.

Consider, for example, the capacity of modern medicine to extend life; but this prolongation, however, may come at an egregious cost: unremitting pain, hopelessness, a loss of dignity and self-control; and a life confined to an intensive care unit. Medicine – at first reluctantly – has responded by creating a new branch of medicine: Palliative and Hospice Care, with its special vocabulary, Board requirements and eligibilities.

And its special vocabulary?

Palliation: A key Latin word, *pallium*, meaning a cloak, gave rise to a family of similar words, some with divergent meanings. As a verb, palliate has come to mean to excuse, to forgive, to extenuate. The Latin, *pallidus*, emphasized paleness and the movement toward pallor (and numerous related terms such as pale, pall, appall.) Medicine has adopted the word to define an agent, agents or procedures which mitigate or relieve without curing the underlying disease.

Comfort: From late Latin there is the word, *comfortare*, meaning to make strong (prefix, *com-*, as an intensive meaning 'with,' and the root *fortis,* meaning 'strong.' Thus, earlier, the word had implied encouragement or strengthening (as in "aid and comfort to the enemy.") Currently, comfort is taken to mean 'to soothe, to console, to relieve the symptoms of an affliction.'

Hospice: There are a number of words derived from the stem, *hospes*, originally meaning a guest or even a host. Hospital, as the name of a defined institution for the infirm or aged, did not emerge until the 15th Century in Western Europe, and virtually all at that time had been managed by religious institutions. The names of such institutions clustered around some variant noun such as hospice, hotel, hospital, hostel, or ostler. The word, hospital, in current parlance (as a place to treat sickness) became the dominant mission of current hospitals by the 18th Century.

Terminal: The word, terminal, as in Latin, *terminus*, originally denoted a visible boundary or a finishing point. The word was applied initially to school schedules declaring that it embraced 'a period of time;' or, when applied to railroad facilities, terminus became a synonym for train station, with scheduled stops. Terminal (palliative) care, however, defines those special interventions designed to enhance the patient's sense of comfort, dignity, and the feeling of being in limited control of one's life. A family of related words has evolved from the Latin, term *terminus.* These cognate terms include terminology, exterminate and determine.

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Grave-robber flees from a corpse that has come to life in this illustration from the National Library of Medicine. The artist was Jacques Winslow (1669–1760). During his lifetime and the period of the Fenner-Dorrance trial, securing corpses for dissection in anatomy labs by medical students and doctors was not an uncommon practice.

The Plot Thickens

Medical students strike again

During the trial, Dr. Pardon Bowen testified to the necessity of acquiring anatomical knowledge by dissection, "if we are meant to qualify ourselves to preserve the lives and limbs of our fellow creatures." He justified the propriety of this particular corpse dissection, stating, "he was a stranger, entirely unknown and had no friends or relatives whose feelings could be hurt."

When Dr. Daniel Knight, of Pomfret, Conn., took the stand, he testified that two hours after the re-burial of the corpse in a pauper's cemetery under the direction of Judge Dorrance, he and four other medical students returned and "took up said body to a house of Mr. George Sugden (or Suggins) on Westminster Street."

He stated, seemingly in contradiction to Dr. Bowen's testimony, that they felt they had the right, having purchased the body at an exorbitant price from the "mob" from Scituate.

Drs. Horatio Bowen and George W. Hoppin swore neither Dr. Pardon Bowen nor Judge Dorrance knew anything about the unearthing of the body after it was re-buried.

According to a "Report of the Case" printed in 1802 by Bennett Wheeler, editor of the *United States Chronicle,* the questions asked Dr. Knight by one of Gov. Fenner's attorney proceeded as follows:

Q. What operations were performed on the dead body the same night after you had removed it from the grave to Mr. Suggins?
A. *The body was opened and the entrails taken out.*

Q. What was done with the entrails?
A. *They were buried in said Suggins' shop which had no floor.*

Q. What knowledge have you of any operation, which was performed on the dead body afterwards?
A. *The operation of dissection was begun the following night, which was continued for several nights until completion.*

Q. Who was the principal operator in dissecting the body?
A. *Dr. Pardon Bowen.*

Q. What other persons attended and assisted in dissecting said body?
A. *To the benefit of my recollection, Dr. Benjamin Dyer, Dr. Comfort A. Carpenter, Dr. James Mason, George W. Hoppin, John Eddy and Horatio G. Bowen.*

The Purloined Corpse: A Winter's Tale

MARY KORR
RIMJ MANAGING EDITOR

Governor Arthur Fenner

On the snowy and wintry night of February 12, 1799, a distraught stranger hung himself by a Scituate roadside. Upon discovery of the dangling corpse the next morning, the town's coroner examined the body, ruled it a suicide, and ordered a quick burial.

Perhaps not surprising during the days of grave-robbing, a notorious legal case ensued from this unfortunate occurrence and played out over several years. It was the central characters, for the case became a newspaper sensation, who garnered the attention. They included a prominent physician, Dr. Pardon Bowen; a shadowy band of medical students, RI Gov. Arthur Fenner and the Hon. John Dorrance.

The libel and slander trial of Judge Dorrance vs. Gov. Fenner was tried in the Court of Common Pleas, Providence, in December 1801. The case was a sensation and the courtroom was packed.

Did Dr. Bowen secure a corpse from Judge Dorrance for the price of one beaver hat?

"Its mythology was enlarged by men on street-corners and grossly and merrily embroidered by the scurrilous press of that place and period," wrote Ben C. Clough, a Brown University professor who published "The Corpse and the Beaver Hat" in an anthology in 1947.

Central to the legal proceedings were the following questions:

- Did Dr. Bowen secure the aforesaid corpse from Judge Dorrance for the price of one beaver hat? Furthermore, did Dr. Bowen pay a delegation from Scituate $40 in hush money?
- Did Gov. Fenner falsely and maliciously spread the above-stated charges in order to defame Judge Dorrance (a prominent Federalist) to undermine his (unsuccessful) campaign for re-election as a justice in the Court of Common Pleas?

Gov. Fenner pleaded not guilty to the charges, but did not deny that he claimed on numerous occasions Judge Dorrance, "having had the body confided to him for a decent burial, sold it for dissection to Doctor Pardon Bowen for a beaver hat, and furthermore, had the impudence to wear the hat in town meeting, when he

presided as moderator." Gov. Fenner also acknowledged carrying a newspaper report in his pocket and showing it to constituents.

The Procurement

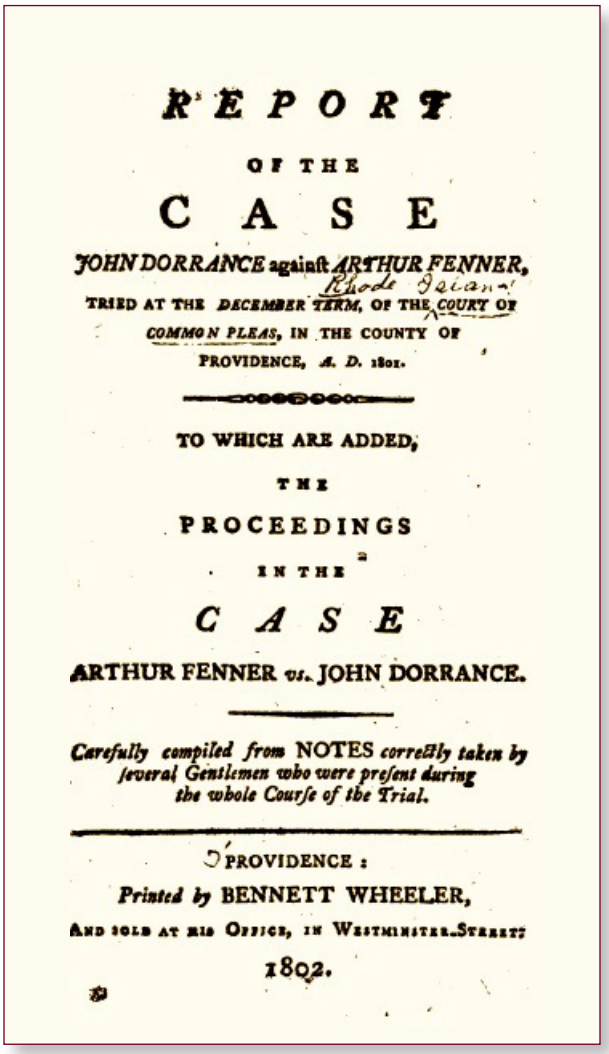
Dr. Horatio G. Bowen, a medical student at the time of the events, testified that "immediately on the report being circulated that a man had hung himself in Scituate, it was proposed to procure it for a dissection; which was unanimously agreed by the whole, and a night appointed for bringing the body away."

One student sought the professional advice of a Dr. Joseph Mason on how to best procure the body. "I advised him to send someone to observe where they buried the body and afterward to go out in the night and take it up and bring it into town," Dr. Mason testified.

The students followed his advice.

However, stalwart Scituate citizens took notice of the empty grave and followed the sleigh tracks to the yard of Dr. Benjamin Dyer. (He and Dr. Bowen taught anatomy in a large room near Dr. Bowen's residence known as the "Theatre.")

At the trial, Dr. Pardon Bowen testified: "That I ever bought this body or any other from Mr. Dorrance for a beaver hat for the purpose of dissection or any other purpose I solemnly declare to be false. At the same time it is true that I presented to Mr. Dorrance a beaver hat, but this hat was for essential services rendered me in the arrangement of my own affairs."



REPORT
OF THE
CASE
JOHN DORRANCE against ARTHUR FENNER,
Rhode Island
TRIED AT THE DECEMBER TERM, OF THE COURT OF
COMMON PLEAS, IN THE COUNTY OF
PROVIDENCE, A. D. 1801.

TO WHICH ARE ADDED,
THE
PROCEEDINGS
IN THE
CASE
ARTHUR FENNER vs. JOHN DORRANCE.

Carefully compiled from NOTES correctly taken by several Gentlemen who were present during the whole Course of the Trial.

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1802.

However, he acknowledged meeting and paying the Scituate delegation $40 to settle the matter and had them sign an agreement, which stated: "Said Pardon's agreeing to have above said body decently buried under direction of John Dorrance, Esq."

The Verdict

"The verdict was for the defendant, although the defense of truth broke down," Rhode Island historian Thomas Williams Bicknell, in Vol. 6 of *The History of the State of Rhode Island and Providence Plantations*, wrote in 1920. "Governor Fenner was the political idol of the day and his personality was large, powerful, impressive, magnetic, and withal so courteous and popular as the State executive, that court and jury were both turned from a just judgment according to the law and testimony."

Judge Dorrance appealed and the second trial began in January 1802. He asked for a change of venue to Massachusetts or Connecticut; it was denied but resulted in a new jury which Judge Dorrance considered so biased he dropped the suit. The court awarded Gov. Fenner $10,000 plus costs.

And what of the twice-purloined corpse? Dr. Hoppin testified a Dr. Cleveland framed the bones into a skeleton, which he took with him when he left Providence. ❖