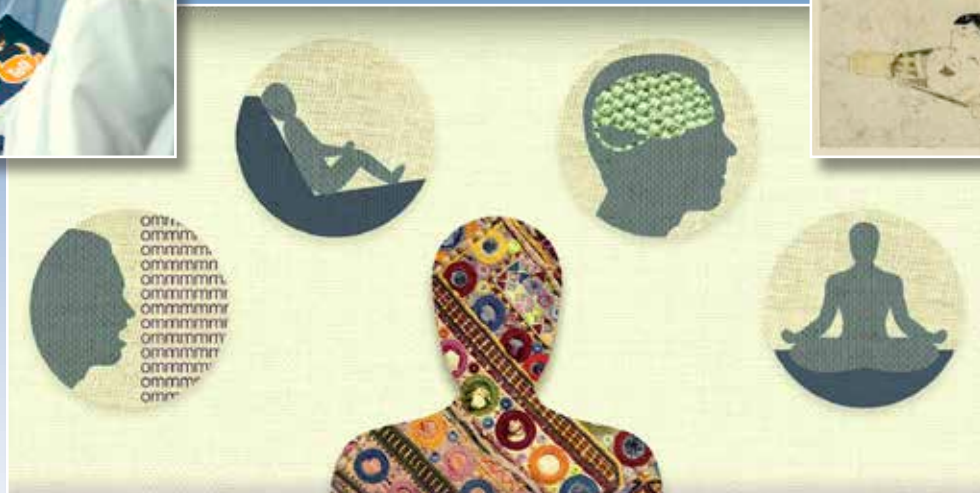
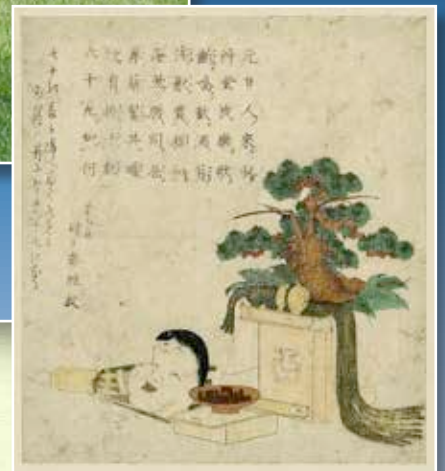


RHODE ISLAND MEDICAL JOURNAL



SPECIAL SECTION

INTEGRATIVE MEDICINE

GUEST EDITORS: ELIZABETH KO, MD; FRED J. SCHIFFMAN, MD

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A woman practices Tai Chi outside. Credit: Mariann Seriff, Graves Fowler Creative; Courtesy: National Center for Complementary and Integrative Health.

Circa 1820 print by Japanese artist Eisen Ikeda shows the mask of a mythological figure, a dish of incense, a bonsai tree, and other articles. Credit: Library of Congress

Meditation origins and traditions video. Courtesy: National Center for Complementary and Integrative Health. <https://nccih.nih.gov/news/multimedia/video/meditation-origins-traditions>

A doctor and a patient sit to review and discuss a folder of Time to Talk campaign materials. Credit: Matthew Lester, Courtesy: National Center for Complementary and Integrative Health.

Yoga instructor demonstrates a lunge pose. Credit: Bob Stockfield, Courtesy: National Center for Complementary and Integrative Health.

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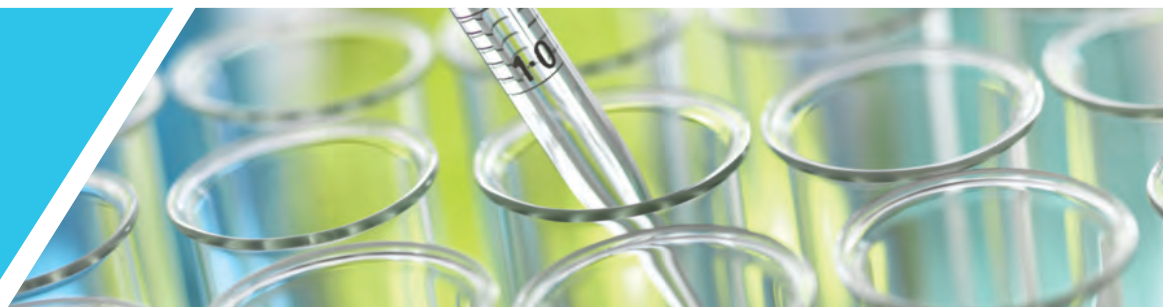
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Checklists: You documented it, but did you do it?

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CHECKLISTS ARE HERE to stay. There are convincing data which show that mandatory checklists prevent incorrect surgeries, incorrect medication administrations, testing the wrong patient, and thereby decrease the likelihood of bad medical outcomes. As Dr. Atul Gawande has persuasively written, checklists developed in industry but have been extremely helpful in medicine as well.



To be honest, I abhor checklists in medical practice and count myself fortunate to have not been required to use them, so far. I was never much on SOAP (Subjective, Objective, Assessment and Plan) either. I have seen the effects of checklists in many medical electronic medical records. There is a checklist developed by the American Academy of Neurology to guarantee better care of people with Parkinson's disease. It is a good list. I believe it will improve care, if carried out as intended, but cannot foresee myself, a specialist in Parkinson's disease (PD), actually using it. Have I recommended physical therapy within the past year? Have I asked about hallucinations if the patient is on medications? Have I inquired about sleep? I think there are 10 questions, and each is intended to be asked at least once yearly. I think I cover all of them more frequently than that, but it would be

challenging to keep track of which ones I asked and which ones I skipped at each visit. But there is a problem with checklists. They encourage laziness. A quick click and a paragraph of printed material suddenly appears. I recall a neurosurgeon who generated three-page single-spaced notes on each

office follow-up visit. This allowed him to bill at the highest possible level since every visit included a detailed note on the number of bowel movements per day, sleep habits, appetite and a zillion other aspects of life that had nothing to do with neurosurgery. In fact, I often could not discern what had taken place at the office visit. Why did he go? What happened? Was the patient better or not?

I recently was an expert witness in a malpractice case and immediately noted that each exam was exactly the same as the previous one. Like the common, "WNL" abbreviation in medical charts for "within normal limits," but frequently indicative of "we never looked," electronic medical records often contain the identical, carried-forward description of the medical examination and, oftentimes, the medical history. This often-used technique carries with it the high probability of undermining the intent of the EMR. Instead of documenting the exam, I find that it "undocuments" it. If every exam

is the same (normal), was the exam actually performed? On the one hand, when the doctor actually mentioned the patient's mental status, the only time in twenty or so notes, I thought that the description of memory and cognition must be true, as this was the only time it was mentioned. But then I got to worry that perhaps this was the only time he clicked the box for "normal mental status," possibly meaning that it was normal, or possibly meaning that the patient was not too obviously impaired.

I recently reviewed a different neurosurgeon's note on a patient I saw in my office. He had been operated on for normal pressure hydrocephalus. This is a gait disorder often associated with cognitive and bladder problems. It always involves a gait disorder, however, and it cannot be diagnosed in its absence, yet the neurosurgeon's note from the last visit prior to surgery reported, "gait normal." In fact, all the notes of this surgeon on this patient noted that the gait was normal, and all the neurological exams were identical. How could the patient improve? Was the patient actually examined?

When I was a neurology resident we were required to record all our initial evaluations on a printed form several pages long; the first page was for the history, the inner pages for the physical and neurological exam and the last for assessment and plan. The neurological exam had boxes either for written information, describing orientation, language

function, memory, clock drawing, praxis and other mental status details, or tremors and other movements, as well as small boxes for entering the deep tendon reflex scores, whether various eponymal reflexes were present or not, images for dermatomal sensory loss, and boxes for entering the description of the gait. It was excellent training for me, and there were many nights when, while filling out a form, I realized I had to go back and assess something I had forgotten. After all, anyone reading my note would see an empty box and know that I had been incomplete, although, in truth, items could be left out if irrelevant. I suspect, although without any evidence to support it, that most of us think differently when clicking a box on a computer screen than when writing a number on a piece of paper, and certainly differently than when putting

an observation into writing. I suspect, especially when there are a lot of boxes to click, that one tends to think, “I really don’t have to ask about that. He would have told me if it was a problem. And I’m running late.” Or something similar. I think a few boxes in an EMR probably work well. Did you document the presence or absence of falls? Did the patient see their PCP in the last six months? Has weight been stable? The problems develop when the number of boxes gets too large. One way of dealing with that is having the patient fill out an extensive checklist. I’ve seen those, too. I wonder if anyone actually reviews it. Excellence is often the enemy of the good.

We all have been drilled with the legal advice, “If you didn’t chart it, it didn’t happen.” Unfortunately we now have the opposite problem. I wonder, “if it was charted, did it really happen?” ❖

Author

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[Editor's Note: The Rhode Island Medical Society received a response from the American College of Emergency Physicians regarding a report issued by the Rhode Island Executive Office of Health and Human Services (EOHHS) recently.]

Background

On February 10, the HealthFacts RI database, a new all-payer healthcare claims database, was launched. EOHHS released a report from the database which found that nearly 60 percent of all visits to Rhode Island emergency rooms in 2014 were potentially preventable.

The top reasons for emergency room visits varied by payer type, according to the report. Alcohol abuse, teeth disorders and upper respiratory infections were especially prevalent among the Medicaid population. Chest pain, dizziness and urinary tract infections were particular to the Medicare population. Neck sprains, headache and chest pain were among the top reasons for privately insured patients.

The database is a partnership led by EOHHS, with support from HealthSource RI, the Office of the Health Insurance Commissioner and the Rhode Island Department of Health. It includes claims information from all major insurers in the state.

Link to report

<http://www.health.ri.gov/data/potentiallypreventableemergencyroomvisits/>

American College of Emergency Physicians takes issue with report from new HealthFacts RI database

WASHINGTON — The American College of Emergency Physicians (ACEP) and its Rhode Island Chapter today jointly took issue with a new report by the state's Executive Office of Health and Human Services (EOHHS) HealthFacts RI database, about "potentially preventable" emergency visits, calling it irresponsible and saying it could put patients at risk.

The report assesses whether emergency visits could have been avoided, based on the patients' final diagnoses, not their presenting symptoms. This analysis does not take into consideration the national "prudent layperson" standard, which says emergency visits must be covered by insurance companies based on the patients' symptoms, not their final diagnoses. This standard was included in the Affordable Care Act (ACA).

"It is very alarming that a report like this is being issued that directly undermines language in the ACA and patients' responsible use of the emergency department," said **JAY KAPLAN, MD, FACEP**, president of ACEP. "Patients never should be forced into the position of self-diagnosing their medical conditions out of fear of insurance not covering the visit. This applies 20/20 hindsight to possibly life-threatening conditions – such as chest pain – and it violates the national prudent layperson standard designed to protect patients' health plan coverage of emergency care."

Dr. Kaplan adds that a report like this could lay down precedent barring emergency patients from receiving care.

The data in the EOHHS study does not correlate with the latest national data on emergency visits from the Centers for Disease Control and Prevention, which found 96 percent of emergency patients needed medical care within 2 hours in 2011.

"A report like this only serves to potentially scare patients away from the emergency department when they may need it most," said **CHRISTOPHER P. ZABBO, DO, FACEP**, president of ACEP's Rhode Island Chapter. "Both harmless and deadly conditions often have the same presentations. Asking patients to make that determination while at home, anxious, and with inadequate information, is a recipe for disaster."

A key finding of the RI report cites "chest pain" as representing the "greatest opportunity for savings."

Dr. Zabbo adds that this is a very dangerous message for the state of Rhode Island to send to its citizens. Patients with chest pain should get immediate medical attention to determine whether or not they are having a heart attack. If the doctor discovers it was muscle pain, upset stomach or anxiety/panic attack, it was still right for that patient to seek emergency medical care, and his or her insurance should absolutely cover the visit.

According to a study published in the Journal of the American Medical Association in 2013, researchers found that discharge diagnoses do not identify "non-emergency" ER visits. The small number of emergency patients who are ultimately discharged with "primary care treatable" diagnoses come to the ER with the same symptoms as other patients who need immediate or emergency care, hospital admission or surgery. ❖



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We are read everywhere



AGRA, INDIA

Andreas Nicholas, filmmaker/partner at AnderImage, LLC, pauses to view the February issue after visiting the iconic Taj Mahal, the 17th century white marble mausoleum built by Mughal Emperor Shah Jahan's for his favorite wife. Andreas and his team are in India filming a video for an anti human-trafficking organization called Nomi Network.

We are read everywhere

WASHINGTON, DC

Sarah Fessler, MD, RIMS

President-Elect, accessed the February issue on her tablet at Reagan National Airport. What better way to pass the time while waiting for a delayed flight?

Dr. Fessler was in Washington, DC, with Steve DeToy, RIMS Director of Government and Public Affairs, to attend the AMA National Advocacy Conference and meet with the members of Rhode Island's Congressional delegation.

For details about this and the other ways RIMS staff and leadership were working for you in February, see page 47.



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.

Introduction to the Principles of Integrative Medicine (IM)

GUEST EDITORS

ELIZABETH KO, MD

FRED J. SCHIFFMAN, MD

While there are many definitions of health, the definition by the World Health Organization in 1948 is widely endorsed:

“...a state of complete physical, mental and social well-being, and not merely the absence of disease.”

Although medical advances have saved and improved the lives of millions, medicine has primarily focused on addressing the immediate events of disease, with less emphasis on the underlying factors that contribute to illness. The widespread use of this definition supports how the perception of health is gradually shifting from health as “absence-of-disease” to a much more all-encompassing idea of prevention and wellness.

The interest in lower cost, effective, holistic, evidence-based approaches to prevention and treatment of disease is growing. In 2007, nearly two of five Americans reported use of therapies such as massage, yoga, meditation and supplements.¹ Such therapies accounted for \$34 billion in out-of-pocket expenditures.² This interest is growing along with, and fueled by, the growth in knowledge about the relationship between health and the more intangible elements of the healing process. Some of these practices are based on experiences of cultures over time, some based on evolving scientific theories, some based on little more than speculation. Regardless, each compels an inquiry of what is lacking in the conventional healthcare system that prompts so many to turn elsewhere for healing. The challenge remains to determine which models and approaches to healthcare, conventional or alternative, might best integrate the science and achieve the outcomes that patients and providers desire.

The Arizona Center for Integrative Medicine, established by Andrew Weil, MD, in 1994, defines integrative medicine as healing-oriented medicine that takes account of the whole person, including all aspects of lifestyle.³ Patients and practitioner are partners in the healing process, which uses both conventional and alternative methods to facilitate the body's innate healing response. All factors that influence health, wellness and disease are taken into consideration, including mind, spirit and community. Good medicine is based on good science, which is inquiry-driven and open to new paradigms. The most effective, least invasive interventions should be used whenever possible.

The Institute of Medicine (IOM), in their report on Integrative Medicine and the Health of the Public Summit, identified care coordination as a major and growing need for those with and without chronic disease. Five chronic conditions – diabetes, heart disease, asthma, hypertension and depression – account for more than half of all U.S. health expenditures.⁴ Most of these conditions can be adequately managed although only 55 percent of the most recommended clinical

preventive services are actually delivered.⁵ For this reason, care coordination that emphasizes wellness and prevention remains the hallmark of integrative medicine.

Harvey Fineberg, MD, president of IOM, states that there are five critical dimensions to integrative medicine:⁶

- **Broad definition of health:** Health is more than the absence of disease; it is a state of physical, emotional and social well-being.
- **Wide range of interventions:** Integrative medicine explores the spectrum of healing, from prevention to treatment to recovery.
- **Coordination of care:** Emphasizes coordination across all providers, caregivers and institutions.
- **Patient-centered care:** Services are provided for and around the individual patient.
- **Variety of modalities:** Integrative medicine is open to not just usual care, but to unconventional modalities that help patients manage, maintain and restore health.

In this special section of the *Rhode Island Medical Journal*, we explore several ideas and opinions that contributors believe will contribute to the achievement of the WHO's definition of health. The challenge remains to create a seamless engagement by patients and providers of the full range of physical, emotional, social and psychological factors known to be effective and necessary for the achievement of optimal health.

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Making Whole: Applying the Principles of Integrative Medicine to Medical Education

GRACE CHOW, MD; KEVIN T. LIOU, MD; ROBERT C. HEFFRON, MD

ABSTRACT

In the past few decades, the public's use of complementary and alternative medicine (CAM) has steadily increased. The term "integrative medicine" is often used to refer to the combination of CAM with conventional medicine. Many medical schools have incorporated didactic content on CAM and/or integrative medicine into their curricula. A frequently cited rationale for these course offerings is that medical students ought to be taught the basics of CAM in order to counsel patients on safe, effective therapeutic options. Schools have also offered these courses to meet the needs of students who are interested in incorporating CAM into future practices. In this article, the authors suggest that the core principles of integrative medicine – holistic worldview, centrality of the doctor-patient relationship, emphasis on wellness, and inclusiveness – are aligned with the goals of contemporary medical education and serve a critical function in the development of effective, humanistic physicians.

KEYWORDS: complementary alternative medicine, integrative medicine, medical education

INTRODUCTION

In the past decade, the public's use of complementary and alternative medicine (CAM) has steadily increased.¹ The National Center for Complementary and Integrative Health (NCCIH) was established to conduct scientific research on CAM, to train researchers, and to distribute authoritative information about CAM to health professionals and the public.² As part of this mission, NCCIH created an educational initiative entitled "Complementary and Alternative Medicine (CAM) Education Project Grant" whose central aim was to support the incorporation of CAM-related content into medical school curricula.³ The initiative's longer-term goal was to promote the integration of CAM and conventional medicine within an interdisciplinary healthcare system.³

The term "integrative medicine" is often used to refer to the combination of best practices from CAM and conventional medicine, but there continues to be a lively debate surrounding the definition of integrative medicine and its role in medical training.³ A recent study found that 66 out of 130 medical schools include CAM and/or integrative

medicine in their curricula.⁴ A frequently cited rationale for these course offerings is that medical students ought to be taught the basics of CAM in order to counsel patients on safe, effective therapeutic options.⁵ In addition, schools have offered these courses to meet the needs of students who are interested in incorporating CAM into their future practices. Given the public's and health professionals' growing interest in CAM, it makes sense to equip medical students with CAM-related knowledge and skills. However, the rationale for incorporating integrative medicine into medical curricula extends beyond these goals.

Bell et al. argue that integrative medicine is more than simply the combination of CAM with conventional medicine:

Integrative medicine is a comprehensive, primary care system that emphasizes wellness and healing of the whole person (bio–psycho–socio–spiritual dimensions) as major goals, above and beyond suppression of a specific somatic disease... [T]he patient and integrative practitioner are partners in the effort to develop and implement a comprehensive treatment plan for issues that extend far beyond the immediate chief complaint... Truly integrative medicine draws from conventional and alternative techniques to facilitate healing and to empower the patient because healing is believed to originate within the patient rather than from the physician.⁶

These core principles of integrative medicine – holistic worldview, centrality of the doctor-patient relationship, emphasis on wellness and healing, and inclusiveness – are aligned with the goals of contemporary medical education^{7,8} and are relevant to the training of all medical students, regardless of their interest in practicing CAM. This article describes how the principles of integrative medicine may serve a critical educational function in the development of effective, humanistic physicians.

Holistic Worldview

Although integrative medicine is a relatively modern field, its philosophical foundations are derived from traditional medical systems (e.g. traditional Chinese medicine, homeopathy, and Ayurvedic medicine), which treat the whole patient as an "intact, complex, dynamic system."⁶ Many CAM systems share an emphasis on "looking for patterns of dysfunction that manifest throughout the individual rather than isolated problems in separate bodily subsystems."⁶ A practitioner of traditional Chinese medicine (TCM), for example,

may search for symptoms (e.g. anxiety, sleeplessness), signs, (e.g. tongue appearance, cold limbs), and medical history (relationships, spiritual life) that a conventional physician might not consider when diagnosing patients with a chief complaint of stomach pain. Thus, the TCM practitioner may distinguish several patterns of disharmony – each treated differently – while the conventional physician may diagnose only one pathological mechanism (e.g. peptic ulcer disease).⁹

Because of their tendency to view human beings as complex systems that are more than the sum of their parts, TCM and other CAM systems are said to embrace a “holistic” worldview; that is, each medical problem (e.g. stomach pain) can only be understood in relation to the whole person.^{6,8} This worldview resonates with George Engel’s biopsychosocial model for medicine, in which he called for physicians to take into account not only the biology of disease, but also its psychological and societal consequences.¹⁰

Developed decades ago, the biopsychosocial model continues to shape medical practice and education today. The arts and humanities are increasingly being used in medical schools as a means for students to explore the human dimensions of illness.¹¹ For example, the field of narrative medicine aims to help physicians refocus on the patient’s story and appreciate the “singular, irreplicable, and incommensurable” aspects of the illness experience. “What... is *different* about this disease as it manifests itself in this particular patient? What...is unique about this patient as a host of this disease?”¹² These are common questions for integrative practitioners to ask as they formulate an individualized treatment plan. Introducing students to this holistic approach can help them become more cognizant of the biopsychosocial dimensions of medical practice.

Integrative medicine also provides students with a practical framework to fit together the various dimensions of patients’ lives. More importantly, this framework leaves room for patients’ individuality to be factored into diagnosis, assessment and treatment plans. Such patient-centered approaches have the potential to not only improve clinical outcomes, but also to build more effective, supportive doctor-patient relationships.

Centrality of Doctor-Patient Relationship

A central tenet of integrative medicine is that a healthy doctor-patient relationship is vital to the healing process. Integrative medicine envisions patients and doctors as equal partners in the medical decision-making and treatment process.^{6,8} This patient-centered approach is consistent with conventional medicine’s shift away from a paternalistic model of medicine towards one that is more collaborative.¹³

While it respects the power of conventional biomedicine, integrative medicine also attempts to facilitate the body’s own healing response. In this model, patients are expected to be active participants in their health because the source of healing is believed to come from within themselves. Thus, physicians should act not only as care providers, but also

as motivators and teachers who guide patients on healthy lifestyle practices.

Because physicians are expected to serve as effective role models, the concept of physician self-care is central to integrative medicine. This issue is especially relevant in light of recent physician suicides and mounting evidence of physicians’ poor health habits.¹⁴ Educators have long recognized that stress in medical school has detrimental effects on students’ health, and in recent years, there has been a growing movement to create student wellness programs.¹⁵ The CAM practices encompassed within integrative medicine offer a wide range of self-care tools (e.g. mind-body techniques, yoga, tai chi, and nutrition) that students can incorporate into personal wellness programs and later teach to future patients.

Recent changes to the health-care system have placed larger emphasis on behavior modification (e.g. smoking cessation, diet) as a form of intervention.⁸ Such changes will require meaningful patient-physician relationships, an area where integrative medicine has much to offer.

Emphasis on Wellness and Healing

In the 19th century, two French scientists – Pasteur and Béchamp – put forth competing theories about the nature of illness. Pasteur posited that external pathogens (“germs”) were the cause of all disease. Béchamp proposed that the internal terrain (“host”) was the most important factor in the pathogenic process and that pathogens only caused disease if the health of the host was compromised.

For decades, the worldview of conventional medicine was based on Pasteur’s germ theory of disease, driven in part by the success of antibiotics in fighting disease. However, in light of recent health reforms that emphasize prevention and wellness,¹⁶ the tide has shifted towards Béchamp’s approach, which focuses on the cultivation of a healthy terrain through lifestyle practices rather than on the elimination of pathogens. These changes have been most relevant in the management of chronic disease, such as heart disease and diabetes, but can also be extended to the field of oncology. Rather than focusing exclusively on the destruction of “germs” (i.e. tumor cells) through chemo-radiation and surgery, oncologists are now exploring immunotherapies, which optimize the internal terrain and stimulate the host’s own immune system to fight cancer.

This shift towards a more host-oriented approach aligns closely with the orientation of integrative medicine, whose view of health is consistent with the World Health Organization’s definition: “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”¹⁷ Conventional medicine has traditionally focused on the latter half of the above definition. In contrast, many of the CAM systems have emphasized the cultivation of inner balance and harmony.⁹ Rather than treating a disease after it has already developed, a TCM practitioner will use acupuncture and herbs to correct imbalances and also prescribe individualized diets and lifestyle practices

to supplement a patient's constitutional vulnerabilities, preventing disease from occurring.⁹ With its vast arsenal of self-care resources, integrative medicine can prepare students for these recent healthcare changes that have placed a larger premium on prevention and wellness.

Inclusiveness

At its core, integrative medicine is an inclusive paradigm that rejects the notion of an "alternative" medicine by proposing that all safe and efficacious healing modalities have a place in the physician's toolkit. It asks practitioners to recognize the benefits and limitations of conventional medicine while being open to other evidence-based approaches that may be more effective for certain conditions. The inclusiveness and openness of the integrative model provides a useful context for developing two other important skills in medical education: cultural sensitivity and inter-professional teamwork.

Due to the ever-changing demographic patterns in the United States and the growing recognition of culture as a key factor in determining health outcomes, cultural competency is now widely considered a core competency in medical training.¹⁸ Beliefs about the causes and treatment of disease are strongly influenced by one's cultural and religious backgrounds. Differences in doctors' and patients' belief systems may result in conflict.¹² Because many CAM systems grew out of ancient traditions, exposure to integrative medicine practices can help students view health and illness through the lens of other cultures. It also promotes cultural humility by helping students realize that conventional medicine may not have all the solutions.⁷ Most importantly, the very existence of the integrative model serves as an important reminder that there is room within the medical paradigm for a diverse range of voices and perspectives.⁶⁻⁸

Cultural sensitivity and humility is also a crucial component of teamwork.¹⁹ Integrative medicine is inherently a collaborative field. The existence of various licensed professions within CAM presents unique opportunities for inter-professional education.¹⁹ By learning from different CAM practitioners, students can develop collaborative skills that are necessary to work effectively with other healthcare professionals.⁷

These types of inter-professional skills are becoming increasingly important as the healthcare system becomes more team-based and multi-disciplinary.¹⁶ The patient-centered medical home (PCMH), for example, is a coordinated, team-based model that has shown promise in improving clinical decision-making and health outcomes.²⁰ Integrative medicine, which shares many of the features of PCMH, can prepare students for these emerging healthcare trends.

SUMMARY

Over the years, conventional biomedicine has been responsible for various breakthroughs in medical care, from

antibiotics to organ transplants. Conventional medicine excels at taking apart complex systems and studying the individual components. Its strength, however, is also a potential weakness. The reductionistic approach of conventional medicine has produced a fragmented healthcare system, in which patients are shuffled from one specialist to another. Often times, medical care is directed at small pieces of the patient's problem, rather than the whole person.

Integrative medicine fights against this reductionistic tendency and provides a framework for putting the pieces back together. This paradigm challenges physicians to view patients as whole individuals and to weave the various dimensions of their lives into a holistic picture. This comprehensive approach engenders meaningful doctor-patient relationships and promotes wellness and healing. By recognizing that the whole is more than the sum of the parts, integrative medicine also embraces diversity and welcomes new perspectives, which is especially important in today's team-based healthcare system and culturally diverse landscape.

In short, integrative medicine embodies humanistic values that all physicians should possess. It should have a place in contemporary medical education. One of the central aims of medicine is to heal, which literally means "to make whole." This is the very essence of integrative medicine – to synthesize the disconnected fragments of a person, and a healthcare system, into a new, meaningful whole.

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Yoga for Depression and Anxiety: A Review of Published Research and Implications for Healthcare Providers

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ABSTRACT

There is increasing interest in the use of yoga as way to manage or treat depression and anxiety. Yoga is affordable, appealing, and accessible for many people, and there are plausible cognitive/affective and biologic mechanisms by which yoga could have a positive impact on depression and anxiety. There is indeed preliminary evidence that yoga may be helpful for these problems, and there are several ongoing larger-scale randomized clinical trials. The current evidence base is strongest for yoga as efficacious in reducing symptoms of unipolar depression. However, there may be risks to engaging in yoga as well. Healthcare providers can help patients evaluate whether a particular community-based yoga class is helpful and safe for them.

KEYWORDS: yoga, depression, anxiety

INTRODUCTION

Over the past few years, patients, clinicians, researchers, and yoga practitioners have shown increasing interest in the use of yoga as a way to manage or treat depression and anxiety. Yoga is a discipline and practice with origins in India. In the United States, most people practice *hatha* yoga, which includes physical postures (*asanas*) and can include breath control and practices (*pranayama*) and meditation (*dhyana*). There are many different styles of hatha yoga – for example, *Vinyasa* or *Iyengar*. Hatha yoga classes can vary in numerous ways: some classes may involve flowing from one posture to another; others may be more focused on alignment and holding postures. Classes can range from very vigorous and aerobic in nature to very gentle. In some classes, teachers may focus on teaching mindfulness. That is, teachers may instruct yoga students to focus on breathing and bodily sensations in a non-judgmental way as the students move or hold postures.

Yoga might be appealing to people who struggle with depression and anxiety for many reasons. It is affordable and readily accessible in many areas. In addition to the fact there are many yoga classes in the community, yoga students can also use instructional DVDs and books to practice at home. There are modified classes for people with special concerns,

such as pregnant women. Yoga may also alleviate physical pain,¹ a common comorbidity among people with depression or anxiety. Yoga can easily be used in combination with traditional mental health treatments. Finally, some people may like the fact that yoga focuses on promoting good mental and physical health, and is not focused on correcting a deficit or treating poor health.

MECHANISMS BY WHICH YOGA MAY IMPROVE DEPRESSION AND ANXIETY

There are many possible mechanisms by which yoga might have an impact on depression or anxiety. We highlight two types of mechanisms here: cognitive/affective and biologic.

First, in a yoga class, a student may be directed to direct his/her attention to present-moment thoughts, feelings, and body sensations in a non-judgmental way. This practice of mindfulness, when extended into everyday life, may help one to focus on current experience, rather than ruminating on the past or worrying about the future. Further, the emphasis on a non-judgmental approach may help to decrease self-criticism. Learning to attend to current experience, including current thoughts and feelings, can also teach one that thoughts and feelings are transient mental events, and that negative (and positive) feelings will fluctuate and change. Mindfulness-based therapies have a demonstrated impact on depression and anxiety symptoms.²

Yoga-based practices may serve to regulate the autonomic nervous system. Autonomic nervous system dysfunction is associated with depression³ and anxiety.⁴ Yoga practices may modify underactivity of the parasympathetic nervous system (PNS) and GABA systems in part through stimulation of the vagus nerves, which are the primary peripheral pathway of the PNS. There is some research to suggest that yoga does indeed increase PNS activity and increase GABA levels in the thalamus, and that these increases are correlated with improved mood.⁵ Researchers have also hypothesized yoga may have a positive impact on related biologic pathways. Yoga may reduce hypothalamic-pituitary-adrenal axis activation, although evidence to date is inconsistent.⁶ Finally, there is some evidence yoga may serve to decrease inflammation (e.g.,⁷). Change in these biologic pathways may affect the underlying pathophysiology of depression and anxiety.

REVIEW OF CLINICAL TRIALS OF YOGA FOR DEPRESSION AND ANXIETY

Unipolar depression. A recent meta-analysis of 12 randomized controlled trials (RCTs) of yoga for clinical depression reported yoga was significantly better than usual care, relaxation exercises, or aerobic exercise in decreasing depressive symptoms.⁸ Studies have also shown that hatha yoga can improve mood symptoms occurring in the context of medical problems. Meta-analyses of RCTs have reported that yoga is associated with large reductions in depression and anxiety in cancer patients,⁹ and has a significant impact on depression (and pain) associated with fibromyalgia.¹⁰ Yoga may also be useful for prenatal depression.¹¹

Bipolar disorder. We were unable to find any randomized clinical trials of yoga for bipolar disorder. We have published anecdotal evidence that yoga can be helpful for some symptoms of bipolar disorder.¹²

Anxiety and anxiety disorders. There are very few studies of yoga for specific anxiety disorders. Two separate single-arm trials of yoga interventions as adjunctive treatments for people with generalized anxiety disorder showed improvements in anxiety symptoms over time.^{13,14} Among a small group of people with “anxiety complaints,” yoga, relative to a wait-list control, was associated with lower anxiety after 1 month of practice.¹⁵ There is a larger-scale randomized clinical trial of yoga vs. cognitive behavioral therapy vs. an educational control group currently underway (see clinicaltrials.gov).

Promising data on the effects of yoga on anxiety also comes from studies of yoga versus a control group in healthy individuals (without psychiatric disorders) or in individuals with a particular medical problem. These data are encouraging. For example, as mentioned above, a meta-analysis showed that yoga was superior to control groups in reducing anxiety for people with cancer.⁹ Yoga was also shown to be superior to a health education control group in reducing anxiety (and increasing quit rates) for women trying to quit smoking.¹⁶

Post-Traumatic Stress Disorder. There is significant interest in yoga for PTSD, although relatively few RCTs have been published. In a recently published RCT, 64 women with PTSD were randomly assigned to yoga or a health education class. At study endpoint, significantly fewer women assigned to the yoga group met criteria for PTSD.¹⁷ A small RCT with 21 male military veterans showed that a breathing-based yoga intervention was associated with larger decreases in PTSD symptoms than a wait-list control group.¹⁸ In contrast, another RCT included 38 women with PTSD who were randomized to Kripalu yoga vs. an assessment control, and both groups showed decreases in PTSD symptoms. However, the study was likely underpowered to detect statistically significant differences.¹⁹ Finally, in a non-randomized study, Descilo and colleagues²⁰ compared tsunami survivors with elevated PTSD symptoms who received a yoga breathing intervention vs. a wait-list control, and found significant decreases in PTSD symptoms for the yoga group relative to the control group. There are

also several trials of yoga for PTSD in veterans currently underway (see clinicaltrials.gov). Thus, the existing literature on yoga for PTSD is encouraging, but not definitive.

LIMITATIONS OF EXISTING RESEARCH

As can be seen by this literature review, with the possible exception of unipolar depression, there are relatively few scientific studies evaluating the impact that yoga may have on symptoms of mood, anxiety disorders, and PTSD. Further adding to the difficulty of making conclusions from this literature, there are important differences between studies, and many studies suffer from methodologic limitations. We highlight a few key issues here. First, the style of yoga varies significantly between study interventions – with different emphasis placed on how gentle vs. vigorous the practice is and the degree to which pranayama, meditation, and mindfulness are emphasized. Some of the yoga interventions described above were not hatha yoga – i.e., they were primarily focused on pranayama and not at all focused on asana practice. Second, yoga interventions also differ in “dosage”: i.e., the length of classes, the number of classes per week, and the degree to which home practice is encouraged. Third, trials employ a variety of control groups, ranging from a relatively weak control groups (i.e., no treatment) to stronger control groups (i.e., physical activity or another type of class that controls for time and attention). Fourth, many studies do not include an assessment of the key outcome measure (e.g., depression or anxiety symptoms) performed by an evaluator who is blind to treatment assignment.

IMPLICATIONS FOR HEALTHCARE PROVIDERS

We provide recommendations for healthcare providers in light of the current level of evidence of yoga for depression and anxiety. It is possible that an individual with a mood or anxiety disorder will be interested in trying yoga. A healthcare provider might advise his/her patient that there are many different styles of yoga in the community, and that the patient may want to try a class for a few weeks, evaluate whether the class seems to be comfortable and helpful, and, if not, consider trying a different class. If the patient is not physically fit, it is wise to start with a “gentle” or “beginner’s” yoga class. Classes that emphasize mindfulness practices may be particularly helpful for people with depression or anxiety. Although there is no formal licensure for yoga teachers, yoga teachers who are Registered Yoga Teachers (RYTs) with the Yoga Alliance have gone through a formal training program approved by the Yoga Alliance. Thus, the patient may want to choose a class taught by a RYT.

Although yoga may be beneficial, the patient and healthcare provider should be aware of possible risks of engaging in yoga. In studies described above, investigators often did not report on a systematic assessment of adverse events, and thus there is very little data available on possible risks

of yoga participation. However, in a survey study of people with bipolar disorder who practiced yoga, potential risks cited included: practices such as rapid breathing or extended meditation possibly leading to symptom exacerbation (mania or depression), physical injury, and negative comparison to other students.¹² Other possible risks include dehydration resulting from the combination of a heated room and psychotropic medications, or strong negative psychological reactions (such as panic attacks, flashbacks, or hallucinations) to extended meditation sessions. When choosing a class, a patient will want to be mindful of his/ her own vulnerabilities and risks, including risks associated with psychotropic medications.

CONCLUSION

In sum, there is preliminary evidence that yoga may be helpful for depression, anxiety, or PTSD. The evidence is strongest for unipolar depression. Healthcare providers can help patients evaluate whether a given community-based yoga class is helpful and safe for them.

For further reading and suggestions for practice, see *Yoga for Depression: A Compassionate Guide to Relieve Suffering Through Yoga* by Amy Weintraub (Harmony Books, 2003).

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Teaching Doctors-in-Training About Nutrition: Where Are We Going in 2016?

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ABSTRACT

Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of preventable death in the U.S., and its public health and economic burdens are rising. There is substantial evidence that dietary factors significantly reduce ASCVD-related morbidity and mortality, and that Americans, including those with established ASCVD, adhere poorly to cardio-protective diet patterns. Despite this, there continues to be a large gap in nutrition education during medical school and post-graduate training, leaving physicians poorly prepared to counsel patients on diet, nutrition, and related behavior change. The result is a massive missed opportunity to improve cardiovascular disease prevention at the health system level. However, recent calls for change by stakeholder groups, and a surprising new experiential learning model, suggest this may be changing.

KEYWORDS: nutrition education, graduate medical education, culinary medicine, cardiovascular disease prevention

ABUNDANT DATA SUPPORT DIET CHANGES TO REDUCE ASCVD RISK

Data from numerous lines of evidence over the past half century have shown that dietary factors impact cardiovascular morbidity and mortality, and various mechanisms are involved, including effects on blood lipids, blood pressure, body weight, inflammation, insulin sensitivity, endothelial function, platelet function, and other mechanisms.¹ In the last 15 years, randomized trials have shown that a combination of diet changes may produce large effects on cardiovascular outcomes. In the 2001 Lyon Diet Heart Study, post-myocardial patients randomized to a Mediterranean diet supplemented with plant and marine omega-3-fatty acids demonstrated marked reductions in the rate of cardiac death and recurrent non-fatal infarction at 46 months compared to those assigned to usual diet advice (1.24 per hundred patients per year vs. 4.07 per hundred patients per year).² In the 2006 PREDIMED trial, subjects free of cardiovascular disease at entry and randomized to a Mediterranean diet supplemented with extra virgin olive oil or with nuts showed 15.5 % and 44.8 % relative risk reductions in

stroke, respectively, compared to those randomized to a control diet.³ Based on these and other data, the 2013 American Heart Association/American College of Cardiology (AHA/ACC) Guideline on Lifestyle Management to Reduce Cardiovascular Risk made class I and II recommendations for diet change that included increased intake of fruits, vegetables, whole grains, low-fat dairy products, poultry, oily fish, legumes, nuts and non-tropical oils, and reduced consumption of sweets, sugar-sweetened beverages and red meats.⁴ Although there are some differences, the guideline-recommended diet changes are food-based (vs. nutrient-based) and aligned with a Mediterranean diet pattern.

ADHERENCE TO CARDIO-PROTECTIVE DIETS IS POOR IN THE U.S.

Despite the large evidence base supporting diet interventions for the primary and secondary prevention of ASCVD, the typical American diet has remained poor. In fact, of the seven cardiovascular health metrics established by the American Heart Association in 2010, goal achievement has been lowest in the area of diet adherence.⁵ In addition, more than one-third of adults are obese and increased intake of sugar-sweetened beverages and foods has been identified as a contributor.⁶ Even among those with established coronary disease (CHD), data show low adherence to recommended diet changes. A 2008 survey study by Ma et al showed that subjects diagnosed with CHD a year prior met only 12.4% and 7.8% of the recommended intake of vegetables and fruits, respectively, and had higher than recommended intakes of trans-fats.⁷ Similarly, in the cross-cultural Prospective Urban Rural Epidemiology (PURE) study, only 39% of more than 7,500 subjects with a history of CHD or stroke reported adherence to healthy diets as assessed via the Alternative Healthy Eating Index.⁸

THE NUTRITION TRAINING GAP IS LARGE

Despite recommendations by the National Academy of Sciences in 1985 that at least 25 hours of nutrition education be provided during the 4 years of medical school training, a 2010 survey showed that little more than one-quarter of medical schools offered a nutrition course, and the average number of nutrition education hours in 2008 was under twenty.⁹⁻¹⁰ Moreover, survey data show that most nutrition

training during medical school remains didactic-based, with little to no experiential or problem-based learning. This is unfortunate because recent reforms in medical school curricula would appear to provide ample opportunity to vertically integrate the principles of diet, nutrition and behavior change over the 4 years of training.

Nutrition education during post-graduate training is similarly inadequate: few requirements exist, and there is little to no reinforcement of principles learned during medical school, nor opportunities for competency-building across the domains established by the Accreditation Council for Graduate Medical Education (ACGME), i.e., medical knowledge, patient care, practice-based learning, systems-based practice, communication skills and professionalism.

The reasons for the low prioritization of nutrition in medical training likely include a lesser focus on disease prevention and management compared to technologically advanced acute and chronic treatments, both in outpatient or inpatient settings; earlier perceptions of nutrition as less evidence-based than other sciences; and lack of core nutrition faculty, and funded research, within medical institutions.

Against this background, it is not surprising that data show physicians perceive significant barriers to effective diet counseling of patients, including lack of time, knowledge and resources, and have low confidence in their ability to effect diet change.¹¹ These gaps, in knowledge, competencies, confidence and practice, translate to a massive missed opportunity to optimize cardiovascular health at the health system level.

NEW CALLS TO ACTION, AND NEW NUTRITION EDUCATION MODELS

Fortunately, the nutrition training gap may be closing. The nutrition-science evidence base has grown rapidly over the last several decades. Cardiovascular disease prevention and health promotion have now been prioritized by policy makers and payers. Also, the fact that clinicians lack competencies for translating diet and lifestyle knowledge to patients has been well publicized, leading to calls to action from various stakeholders.

The most vocal of these have been nutrition leaders who, in 2014, published an extensive summary of current training in nutrition education in the *American Journal of Clinical Nutrition*. In it, they outlined the history of governmental and non-governmental activities aimed at improving nutrition education during medical training, and called for reforms of medical school curricula to increase exposure to nutrition.¹² Similarly, In 2015, the *Journal of Parenteral and Enteral Nutrition* also questioned the current status of nutrition training in Graduate Medical Education after a survey of 72 ACGME program directors in a variety of medical specialties showed that only 26% of programs had formal nutrition education curricula, and these varied substantially in length and form.¹³ The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) has since created a Task

Force on Postgraduate Medical Education in Nutrition to identify ways to close the gaps.¹³ Similarly, the ACC has recommended that cardiovascular training programs provide nutrition education pertinent to treating obesity and its associated risks in its 2015 Core Cardiology Training Statement (COCATS 4) on cardiovascular disease prevention.¹⁴

In response to these and other calls for change, some residency training programs have begun to incorporate formal nutrition training into graduate medical education. The University of North Carolina at Chapel Hill has developed an open-access, web-based Nutrition in Medicine program targeting medical students and residents, reportedly in use by a number of residency programs.¹⁵ Innovative partnerships between medical and culinary schools, most notably Johnson and Wales, also have led to the development of experiential nutrition learning activities. Dubbed 'culinary medicine,' these new electives and courses are now in place in at least 10 medical schools (including Brown University's Alpert Medical School) and one residency program in the U.S. They aim to teach medical students and trainees the relationship between food components and health, how to distinguish between healthier vs. unhealthier diet components, and practical aspects of healthy food sourcing and preparation. Students and trainees take part in workshops and live cooking demonstrations that teach the differences between whole vs. refined grains and saturated vs. unsaturated fats, and how to prepare tasteful meals with healthier macronutrient and sodium contents. The goal: impart food knowledge and skills that will translate to teachable moments at the bedside and in the clinic. This translational aspect of not only teaching the science of nutrition and the effects of dietary components on health outcomes, but providing experiential learning, is being utilized in the area of public health nutrition as well. A similar culinary medicine partnership between the Harvard School of Public Health and the Culinary Institute of America, that teaches food and cooking skills to practicing clinicians, has shown promising early outcomes.¹⁶

CONCLUSION

In conclusion, the economic and health burdens from cardiovascular disease are large and growing, and payers and other stakeholders have called for an increased focus on disease prevention and health promotion, including by health systems. Although robust evidence supports diet change to improve cardiovascular outcomes, physicians have been inadequately trained to impart this knowledge to patients and families. However, calls for better nutrition education during medical school and training are being heard. New web-based curricula are being developed and used. Also, unlikely partnerships between medical and culinary schools are moving nutrition education out of the classroom and into the kitchen, possibly the perfect place to blend together the related fields of nutrition science, behavioral medicine and the culinary arts.

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On Patients, Bonsai, and Orangutans: The Value of Mindfulness in the Practice of Medicine

ELIZABETH TOLL, MD; JOSHUA ORABONE, MD, MPH

In 2008, I (JO) met an elderly gentleman selling tiny trees at a roadside stand, a chance encounter that sparked a change in how I see the world and live within it. I began to learn about bonsai, the Japanese art form that literally means “tree in a dish.” Initially I thought it would be fun to grow a miniature tree, but as I acquired the knowledge and tools to care for my plant, I wondered, “How can one little tree be so complicated?” This was years before I became a resident with patients of my own. Now I care for fifty bonsai and many patients. Both have taught me about nature, patience, and mindfulness. As it turns out, trees and patients are not so very different.

My patients and trees come in all ages and sizes. Young patients and trees have one set of needs, while adolescents, adults, and ancients have others. My patients and trees come from all over the world. In addition to their physical differences, they know different climates and diets and communicate distinctively. Both embody lifetimes of stories – of love and neglect, peace and strife, sunny weather and lightning strikes. How they prosper, or sicken, has everything to do with these experiences. Good care must consider all these factors, not to mention the practitioner’s own agenda.

I have had many hobbies. I’ve collected coins and raised tropical fish. I’ve followed sports teams. Legions of action figures gather dust in my childhood bedroom. Bonsai is different. It is a practice.

How does a hobby differ from a practice? Hobbies are leisure pursuits providing enjoyment and escape. A practice involves studying an activity from multiple perspectives, including one’s mind, body, and emotions with unconscious integration of all these areas. Mastery requires energy and discipline, yet paradoxically yields flexibility and calm.

Mindfulness is quite the rage these days: meditation, yoga, stress reduction. Proponents cite a wide variety of beneficiaries, ranging from quarreling preschoolers¹ to sufferers of irritable bowel syndrome,^{2,3,4} chronic pain,⁵ mental illness,⁶ and physician burnout,⁷ to note a few. Research demonstrates mindfulness to improve acceptance,⁸ calm, and empathy.⁹

Perhaps mindfulness is having its moment because so many folks, including physicians, are living lives that are anything but. Drivers chug coffee and text. Teens do algebra while watching feature films and instagramming their friends. Physicians and staff deliver patient care amidst minefields of high-maintenance electronic medical records,

administrative hurdles, and smart phone intrusions. Technology designed to simplify life and connect people falls short, adding complexity and increasing isolation.

In medicine and beyond many suffer overwhelm and scatter from the attention deficit disorder of technology. This may be the appeal of mindfulness. It teaches people to slow down and focus on this moment, right here, right now, and nothing else. At its very best, medicine is a mindful practice, in spite of countless current trends. Cultivating mindfulness in any setting sows these skills throughout work and life.

Mindfulness draws on ancient meditative practices of the East, including Buddhism. Practitioners learn to focus on this moment through awareness of breathing, a stepping stone to noticing the many sensory signals we constantly receive. There are physical sensations, like a tense muscle or itchy elbow, as well as visual, auditory, tactile, olfactory, gustatory, and intuitive ones. Pings arrive continuously from all these fronts. So do waves of thought and emotion, not just from this instant, but also the future (“Will I meet that deadline?”) and past (“They were so irritating!”). Stop for a moment. Observe your breathing. What else do you see, hear, feel, taste, smell, and intuit? Note thoughts and feelings rolling through. An astonishing amount of data continuously streams into our experience radars.

High-octane living mandates we ignore most of this input in the name of productivity. Who can notice every breath, sensation, idea, and emotion when we need to understand yesterday, plan next week, and figure out dinner? Ironically, while ruminating on the past and future, we miss the cornucopia of this moment, the only time and place we can truly be.

Mindfulness teaches “bare attention,” noticing each morsel of input as it floats through, not in order to respond to it, but rather to cultivate focus, openness, curiosity, observation, acceptance, and non-judgment.¹⁰ Create a simple moment of mindfulness. Close your eyes and strive to breathe with an attitude of focus, openness, curiosity, observation, acceptance, and non-judgment (hereafter “attitude”). You may ask, “Am I supposed to breathe through my nose or mouth?” or, “Should my belly fill as I inhale or exhale?” Note “supposed to” and “should.” You are bringing in judgment, as though there is a right or wrong way to breathe. Let that judgment go, and return to your breathing and attitude. You may feel, “This is frustrating!” An emotion has snuck in. That’s fine. Notice it. Return to your breathing and attitude.

Next come thoughts like, “Shoot! I forgot to answer that email!” and “Will there be traffic on the way home?” Note them, and return to your breathing and attitude. Your nose is itching. That’s ok. Notice it. Return to your breathing and attitude. An inner voice chides, “Pay attention! How can breathing be this confusing?” Judgment is back. (Physicians are expert at scolding themselves.¹¹) Observe all this. Let it go. Return to your breathing and attitude.

Mindfulness starts with breathing. When thoughts, feelings, or sensations intrude, simply note them and let them float through like puffy clouds, returning to this moment and this breath. Acknowledge honking horns, cooking smells, distracting thoughts, or uncomfortable emotions and allow them to pass through. You have climbed aboard the asymptote of experiencing the totality of a single moment while doing nothing with that experience.

Interestingly, from the earliest days of medical training, physicians learn the same mindful approach – focus, openness, curiosity, observation, acceptance, and non-judgment – as the foundation of the patient-doctor relationship. We practice giving full attention to a patient, listening actively, being curious, suspending judgment, asking open-ended questions, receiving answers, and refining information with supple inquiry. We absorb and reflect on the emotions and thoughts of patients and ourselves. Later we layer scientific knowledge and clinical experience onto these bedrock healing skills.

Mastery in medicine comes when we connect with a patient, interview with emotional intelligence, complete a thorough exam, and tap into evidence-based medicine, memory of this patient, and experiences with comparable patients. We develop a differential, devise a care plan, consider contingencies, and communicate our impressions to the patient at the right educational level with empathy, realism, and hope. Vigilant practice yields the breadth, flexibility, and calm emerging from years of mindful doctoring. This is not a job, nor a hobby, but a conscious practice. Mastery means setting aside all other responsibilities and connections and being fully present with this patient and this concern. Each encounter is endlessly complicated, requiring bare attention.

And so it is with little trees. I (JO) need to think about the container, soil, water, sun, and nutrients. I must consider seasons, sending some bonsai into the dark and cold for dormancy and exposing others to heat and humidity to approximate their habitats. I must weigh how interventions like pruning, trimming, repotting, or wiring will impact growth. When done too aggressively, or impatiently, I have defeated my plans and distorted, injured, and even killed the very trees I’ve tried to nurture. As in medicine, the outcomes of today’s decisions may not be obvious for months or years, and important lessons emerge from the school of painful mistakes. I imagine a tree in the future, yet it’s impossible to know how it will grow. In balancing the trees’ needs and my goals, I often choose to do nothing but watch and wait. Some days I feel I have delivered the best care when I’ve done the least and spent the visit observing and “listening.” Leaving

a tree alone allows my unconscious mind to develop a care plan. One day, later on, I return, and the next step is clear.

The trees have taught me to take this wait and watch approach with my patients. Doing nothing, or rather doing *No Thing*, can be a sound policy in medicine,^{12,13} too, especially when one has no idea what is going on with a patient, often when health and life collide. These maladies improve only when patients and caregivers consider both realms. When doctors treat their own anxious imperatives to do *Some Thing* they can cause harm, while a tincture of time and open ears and eyes may reveal a solution for the patient.

I (JO) used to feel I’d shortchanged my patients when visits ended without prescriptions or definite plans, until they started thanking me for helpful care. Being genuine, present, curious, and willing to do *No Thing* allows patients to vent and share perplexing symptoms, thereby decreasing pain and loneliness. Like trees, patients can take months and years to reveal important clues about symptoms like trauma, substance use, and hidden fears. Watching and waiting, and hanging in there, allows patients to communicate slowly and quietly, like trees. One day the right intervention appears. Better yet, patients declare readiness for one path or another, uncovering their own capacities for problem solving and healing.

Medical trainees assume knowledge will package neatly. The patient will have a problem. There will be a solution. It’s disconcerting to learn how many grey areas like human interaction, decision-making, and risk juggling permeate practice. Tolerating uncertainty and moving ahead is a huge part of medicine, seldom addressed throughout training.

Mindfulness helps manage such uncertainty and confusion. Buddhists speak of the “monkey mind,” those thoughts (and emotions and physical sensations) that divert us from this moment. They resemble monkeys swinging freely without focus or connection. We all host these creatures and their antics. The more readily we acknowledge monkey thoughts, feelings, and sensations without attending to them, the more easily they can pass through without disturbance.

Mindful moments in medicine are similarly interrupted. The medical monkey can feel like a massive orangutan crashing through, grabbing attention from patients to overstuffed schedules, EMR foibles, insurance annoyances, meaningful use, corporate compliance, and the bottom line, to name but a few of this beast’s favorite branches and leaves. While mindful medical considerations converge to help patients, orangutan thoughts yank us into a dense forest of demands and hassles that fracture their care. It’s challenging to let the orangutan pass through. Sometimes we even invite it into the room by sharing our stresses and frustrations with patients.

The bonsai monkey is a chattering little trickster, appearing in many guises, especially impatience. It urges me to clip here, tie there, and make a cut before studying a tree. “Hurry!” it whispers, preventing me from sitting still and making decisions in concert with a tree’s natural cycle.

Understanding these simians is important. They slow us

down and deplete us. They draw us away from our mission – be that breathing, connecting with a patient, or sizing up a bonsai. They complicate our lives. Today's walk is diminished by self-rebuke about missing the gym yesterday. Fear of failing the Boards increases anxiety, not knowledge or preparation. No patient encounter is enhanced when a physician complains about an EMR. Mindful practice reveals how much energy goes toward thinking, feeling, and being elsewhere, especially the lands of tomorrow's worry and yesterday's regret. Being here and now allows full engagement in life.

Releasing the monkeys frees us to enter a calmer place, sometimes called "the zone." The zone comes in many versions, all affording a level of absorption deep enough to relinquish daily concerns and get lost in an activity.¹⁴ Stillness emerges while engaging all faculties. Some find this through quiet activities like fishing, rocking a baby, watching a fire, praying, or creating. Others achieve stillness through motion, like running, drumming, skateboarding, or working on a car. The common threads are focus, engagement, and internal calm.

People describe feeling lost, and found, and removed from time in the zone. They feel peaceful, but energized. They don't care what others think. In fact, they love themselves. They speak of having access to the totality of their experience and a merging of its parts. To paraphrase one surgeon, "There's work, and then there's operating. That's not work, it's what I love, and I get lost in it. I emerge from each case refreshed."¹⁴ The same thing happens when one really connects with a patient, exchanging woes and pain for hopes and care while tapping into our finest selves.

With bonsai, I (JO) move from one tree to the next, getting lost in stepping back, observing, and imagining. Hours pass. Because many interventions take months or years to play out I must harbor optimism and employ all my senses, including intuition.

The trees have helped me bring a similar approach to my patients. I talk with a toddler's parents about setting limits, yet none of us will see the fruits of our labor for several years. My smoking intervention must be engaging, not preachy or nonchalant. In discussing end of life care I must meld medical reality with this patient's unique coordinates. Most of all, I must listen to my patients, because, like the little trees, no matter how hard I work to imagine the world from their perspectives, ultimately, it will be the patient who experiences the impact of the practitioner. And the practice.

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Child Passenger Safety Training for Pediatric Interns: Does it Work?

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ABBREVIATIONS: CPS = child passenger safety, AAP = American Academy of Pediatrics, RF = rear-facing, FF = forward-facing, WCC = well-child check

ABSTRACT

OBJECTIVE: Evaluate the efficacy of a child passenger safety (CPS) educational intervention on the CPS-related knowledge, attitude and anticipatory guidance behaviors of pediatric interns.

METHODS: All subjects were surveyed at baseline and 6 months. Intervention interns attended a CPS training module which included viewing an educational video, observing a car seat inspection appointment, hands-on practice and completion of a post-intervention survey.

RESULTS: All 16 intervention interns completed the initial survey, the intervention and the immediate-post questionnaire. Thirteen (81%) completed the 6-month follow-up. The baseline survey was completed by 27/40 (67%) of control interns, 28/40 (70%) submitted a follow-up. The proportion of intervention interns who self-reported giving CPS guidance at all well-child visits increased by 31.3% (95% CI 6.1,56.5%); the control group had no change. Similar results were seen with self-reported knowledge and attitude.

CONCLUSIONS: A CPS training module increases pediatric interns' knowledge, improves attitudes, and self-reported behaviors regarding CPS-related anticipatory guidance.

BACKGROUND

In the United States motor vehicle occupant injury is a significant source of morbidity and mortality for children. In 2013 an estimated 172,000 children under the age of 14 were injured, and 1,149 were killed in motor vehicle crashes.¹ Motor vehicle crashes are the leading cause of death in this age group.¹

Pediatricians play an important role in promoting child passenger safety (CPS). CPS is the only health supervision topic that is recommended at every well-child visit by Bright Futures, a preventative screening guide developed by the American Academy of Pediatrics (AAP).² Pediatricians' CPS recommendations have been shown to change parental behaviors.^{3,4} A national study found that this crucial guidance does not occur universally, with less than 30% of

parents reporting CPS counseling.^{5,6} Parental recall of anticipatory guidance during well-child visits has been shown to be high.⁷ Education provided during pediatric residency is associated with a greater likelihood that pediatricians will counsel caregivers regarding CPS.⁸ Among pediatric residents who do not counsel, 57% cited lack of information as the major barrier.⁸

The purpose of this study was to investigate the effect of a brief CPS educational intervention delivered to pediatric interns. We hypothesized that a two-hour CPS training module would increase pediatric interns' knowledge, improve attitudes, and self-reported behaviors while delivering CPS-related anticipatory guidance during well-child visits compared to pediatric trainees in comparable academic residency programs who do not receive such training.

METHODS

Study Setting and Design

A quasi-experimental study design was utilized with three academic children's hospitals serving as study sites. One site supplied the intervention group and the others the controls. All pediatric interns at these sites were invited to complete a baseline survey between month 2 and 4 of their first year of residency, and a follow-up survey approximately 6 months post-baseline. Participants were given a \$5 gift card upon completion of each survey. Intervention interns completed a survey immediately following the educational session. All surveys assessed CPS-related knowledge (correct vs. incorrect response), attitude (4 point scale, 1 = not important to 4 = very important), and behavior (5 point scale, 1 = never, 5 = always). All surveys were developed for this study by the research team which consisted of pediatricians, child passenger safety professionals as well as a survey design expert. The study was approved by the institutional review board at all institutions.

The CPS Educational Intervention

After completing the baseline survey, intervention interns attended a 2-hour CPS educational module. They watched the 1-hour AAP CPS Continuing Medical Education video⁷, followed by discussion with a certified CPS technician instructor. Intervention interns then practiced harnessing dolls in car seats and installing car seats in a vehicle or training-seat with expert feedback from one of the study authors (DM). If

possible, based on timing of appointments, interns observed a car seat inspection appointment at the hospital's car seat fitting station conducted by a certified CPS technician.

Data Collection and Analysis

All surveys were administered electronically using DatStat™ (Seattle, Washington). Participant surveys were coded with participant ID number and emailed to participants. No identifying information was collected. Data were extracted from DatStat™ into Excel, cleaned and analyzed in aggregate. The data are presented as the percent change in subjects answering correctly on the immediate post and 6 month follow-up surveys compared with baseline, with 95% confidence intervals (CI) calculated for each percent change.

RESULTS

All sixteen interns at the intervention site and all 40 interns at the control sites were invited to participate. Participation was completely voluntary and participants could drop out of the study at any time. All 16 intervention interns completed the initial survey, the educational intervention and the immediate post survey. Thirteen intervention interns (81%) completed the 6-month follow-up. The baseline survey was completed by 27/40 (67%) of interns at the control sites, 28/40 (70%) submitted a follow-up. The intervention and control groups were similar in age, experience with installing car seats, whether or not they had children and history of formal CPS training (Table 1).

Table 1. Characteristics of intervention and control groups.

	Intervention interns	Control interns	p - value
Age			
20–25	4 (25%)	3 (11%)	p = 0.23
26–30	11 (69%)	22 (79%)	p = 0.34
31–35	1 (6%)	1 (3%)	p = 0.70
36–40	0	1 (3%)	p = 0.44
> 40	0	1 (3%)	p = 0.44
Have children	1 (6%)	3 (11%)	p = 0.59
Never installed car seat	13 (81%)	20 (71%)	p = 0.59
Formal CPSa training	0	0	

^aCPS = child passenger safety

We conducted statistical tests of comparison of proportional changes pre- and 6 months post-intervention for each condition. Using a binomial test for proportions expressed as a z statistic we found that knowledge increased with the CPS intervention and was maintained over the 6-month follow-up period. Compared to baseline, 31% [95% CI 5.6, 56.1%][p<0.001] more intervention interns correctly identified the recommended criteria for transition from a rear- to forward-facing car seat both in the immediate post survey and the 6-month follow-up, while the control group demonstrated a 3.6% [95% CI 3.4, 10.6%][p>0.05] increase at 6

months. We observed changes in attitudes in the intervention group. For example, the proportion of intervention interns who agreed that booster seat use is 'very important' increased from baseline by 37.5% [95% CI 13.8, 61.2%] when measured immediately post the intervention and 29.5% [95% CI 4.7, 54.3%][p<0.05] at 6-month follow-up, compared to an increase of 1.6% [95% CI -3.1, 6.3%][p>0.05] from baseline to 6-month follow-up in the control group. I think that p values rather than confidence intervals, or both would be helpful.

The intervention also influenced behavioral intention and self-reported behaviors: the proportion of study interns who planned to give CPS guidance at all well child visits increased by 43.8% [95% CI 19.4, 68.1%] immediately post intervention and increased by 31.2% [95% CI 6.1, 56.5%] [p=0.05] from baseline to 6 months, while the control group had no change. Other practice behaviors had similar changes (Table 2). Of note, the proportion of interns in the intervention group who cited lack of confidence in their knowledge as a reason that they don't ask caregivers about CPS at each well child visit dropped from 78% at baseline to 0% immediately post-intervention and at the 6-month follow-up. In the control group this percentage increased from 31% at baseline to 64% at the 6-month follow-up.

All three components of the educational module were rated favorably by the intervention interns: hands-on practice with car seats was rated as helpful or very helpful by 100%, the AAP video was rated as helpful or very helpful by 14 of the 16 participants, and 85% thought that observing a car seat fitting station appointment was helpful or very helpful. All participants stated they were either likely, or very likely to change their clinical practice as a result of the educational module, with all stating that increased confidence in their CPS knowledge was the main reason for the change.

DISCUSSION

In this study we were able to demonstrate that a 2-hour CPS educational intervention increases pediatric interns' knowledge, improves attitudes, and changes self-reported behaviors regarding CPS-related anticipatory guidance during well child visits. The intervention produced a sustained improvement in CPS knowledge, attitude and behavior, which exceeded those changes attributable to standard training experiences at 2 control residency programs.

There were several limitations to this study. First, intervention and control subjects were not randomly selected, but by the measures used, the groups appear to be similar. While both groups denied formal CPS training, we did not account for any differences in informal messaging or training at the respective continuity clinics that may have influenced the participants' attitudes/practices at baseline or follow-up. Our data also relies on self-report, which may be biased; however, this would likely be present in both groups. Research subjects were only followed for 6 months so it is not known if the intervention effect would be seen

Table 2. Percent change from baseline in subjects answering correctly

Target Area	Intervention Group			Control Group	
	% correct at baseline	%Δ immediate post (95% CI)	%Δ at 6 months (95% CI)	% correct at baseline	%Δ at 6 months (95% CI)
Knowledge					
Transition from a RF to FF car seat	69.0%	+31.0% (8.3,53.7)	+31% (5.6,56.1)	64.3%	+3.6% (-3.4,10.6)
Use of booster seat until 4'9"	62.5%	+37.5% (13.8,61.2)	+37.5% (11.2,63.8)	57.1%	+7.2% (-2.6,17.0)
Back seat until age 13	31.3%	+62.5% (38.8,86.2)	+31.7% (6.4,57.0)	50.0%	0%
Less than one inch movement at belt path	25.0%	+68.8% (46.0,91.5)	+59.6% (32.9,86.3)	46.4%	+14.3% (1.1,27.5)
Attitude^a					
CPS anticipatory guidance at all WCCs	75.0%	+12.5% (-3.7,28.7)	+3.6% (-2.9,38.7)	64.3%	-9.2% (-20.1,1.7)
Child stays RF until 2 years	75.0%	+6.3% (-5.6,18.1)	+17.9% (-2.9,38.7)	67.9%	-1.6% (-6.3,3.1)
Booster until 4'9"	56.3%	+37.5% (13.8,61.2)	+29.5% (4.7,54.3)	53.6%	+1.6% (-3.1,6.3)
Back seat until 13 years	75.0%	+6.3% (-5.6,18.1)	+10.7% (-6.1,27.5)	64.3%	+8.1% (-2.2,18.4)
Behavior					
Give anticipatory guidance at all WCCs	18.8%	+43.8% (19.4,68.1) ^b	+31.3% (6.1,56.5)	51.7%	0%
Ask if confident car seat is installed correctly (at least some visits)	25.0%	+68.8% (46.0,91.5) ^b	+32.1% (6.7,57.5)	37.9%	+3.5% (-3.4,10.4)
Discuss when to turn from RF to FF (at least some visits)	37.5%	+62.5% (38.8,86.2) ^b	+41.1% (14.3,67.7)	79.3%	0%
Discuss booster seat use (at least some visits)	25.0%	+75.0% (53.8,96.3) ^b	+39.3% (12.7,65.9)	69.0%	-10.4% (-21.9,1.1)

CPS = child passenger safety, RF = rear-facing, FF = forward-facing, WCC=well child check; Δ = change

^aReporting attitudes noted to be "very important"

^bPlanned behavior change

beyond this time period. Finally, small sample size led to large, sometimes overlapping confidence intervals, however the percent changes observed in the study versus the control group are suggestive of an intervention effect.

CONCLUSION

A brief CPS educational intervention for pediatric interns may increase the likelihood, as well as nature, of CPS anticipatory guidance given to their clinic patients. Further investigation is needed to fully evaluate the efficacy of a CPS educational intervention with residency training programs. Further investigation of the effect of increased CPS knowledge and greater incorporation of this knowledge into clinical practice should also evaluate the effect this has on the retention of parental knowledge and change in parental behaviors around CPS.

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Concordance between Activated Partial Thromboplastin Time and Antifactor Xa Assay for Monitoring Unfractionated Heparin in Hospitalized Hyperbilirubinemic Patients

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ABSTRACT

BACKGROUND: Activated partial thromboplastin time (aPTT) and antifactor Xa (anti-Xa) monitoring methods for unfractionated heparin (UFH) often disagree. The extent of discordance for those with elevated bilirubin remains unclear. Our objective was to evaluate concordance between activated aPTT and anti-Xa methods for hyperbilirubinemic patients on UFH.

METHODS: This was a retrospective cohort study of 26 patients hospitalized at Rhode Island Hospital between August 2014 and September 2014. Patients had at least one bilirubin measurement >5 mg/dL. After categorizing lab values, percent agreement and kappa were used to examine concordance between aPTT and anti-Xa.

RESULTS: Overall percent agreement between aPTT and anti-Xa was 50%. A nontherapeutic aPTT and therapeutic anti-Xa accounted for 98% of all disagreement. Specifically, 76.7% of disagreement was due to a subtherapeutic aPTT and a therapeutic anti-Xa. Unweighted kappa was 0.141 (95%CI: 0.048–0.235).

CONCLUSION: Concordance between aPTT and anti-Xa values was poor in hyperbilirubinemic patients.

KEYWORDS: Activated partial thromboplastin time, antifactor Xa heparin assay, unfractionated heparin, hyperbilirubinemia, Rhode Island

INTRODUCTION

Intravenous unfractionated heparin (UFH) is an anticoagulant frequently used to treat thromboembolic diseases.¹ Despite its beneficial anticoagulant effect, UFH is recognized as a high-risk medication by the Institute of Safe Medication Practices due to associated medication errors and adverse drug events (ADEs), including serious or fatal bleeding episodes.^{2,3} Laboratory monitoring of UFH guides dosing to achieve therapeutic levels and avoid ADEs due to over- or under-dosing. Monitoring of UFH was traditionally done using activated partial thromboplastin time (aPTT) since it was widely available and inexpensive.⁴ More recently, institutions have transitioned to using antifactor Xa levels (anti-Xa).⁴

Data suggest that the aPTT and anti-Xa tests are not

equivalent measures due to distinct limitations of each.⁵⁻⁸ There is no single absolute numerical reference range for aPTT because it can vary between institutions,¹ which is a significant limitation that interferes with accurate assessment of a patient's intrinsic heparin activity across care settings.¹ Variation in aPTT occurs due to differences in collection, sample preparation, reagents, and instruments used between institutions.⁹ Studies have shown that aPTT is also a more variable assay when compared to anti-Xa due to biologic variables.⁹ For example, several conditions can affect the aPTT assay, such as factor deficiency, renal disease, and liver disease.⁴ Even though anti-Xa is less affected by these laboratory and biological factors, it still can be affected by others like hyperbilirubinemia and hypertriglyceridemia.^{4, 9, 10}

At Rhode Island Hospital, physicians identified hyperbilirubinemia as a particular concern due to its potential to interfere with valid assessment of intrinsic heparin activity. The threshold for hyperbilirubinemia to interfere is dependent on the lab reagent used, but many institutions use an upper total bilirubin level of 20 mg/dL.¹⁰ Nonetheless, clinicians at our institution reported discordant values of anti-Xa and aPTT for patients with elevated bilirubin levels of just 5 mg/dL. In some cases, clinicians believed that the interference with assessment of heparin activity via anti-Xa had been obscured by hyperbilirubinemia, which may motivate improper dosing, increasing the risk for significant bleeding and thromboembolic events. Due to a deficit in published literature examining the concordance between anti-Xa and aPTT values in patients with hyperbilirubinemia, we aimed to examine the agreement between anti-Xa and aPTT in these patients.

METHODS

Setting and Participants

This was an exploratory single-center retrospective observational cohort study conducted at Rhode Island Hospital in Providence, RI. Data was collected for all patients on UFH intravenous infusion protocol from August 8, 2014 to September 8, 2014, a time period during which both anti-Xa and aPTT methods were available to clinicians for monitoring as the hospital transitioned to exclusively using anti-Xa for UFH protocol. We collected baseline data from the medical record admission history, including age, sex, height, actual body weight, and other relevant characteristics. Patients

included had ≥ 1 order for continuous intravenous UFH that was administered during their inpatient stay, a total bilirubin level > 5 mg/dL, and both an aPTT and anti-Xa measurement at least once during their stay. At our institution, the normal range for bilirubin is 0.2-1.3 mg/dL. We therefore chose bilirubin > 5 mg/dL as the threshold for hyperbilirubinemia as it is approximately three times the upper limit of normal. Patients were excluded from the analysis if they did not have both aPTT and anti-Xa measured at least once on the same day. Patients were also excluded if their treating physician did not follow the hospital-approved UFH dosing nomogram. The study was approved by the Lifespan-Rhode Island Hospital Institutional Review Board.

Measures

Since we did not expect the aPTT and anti-Xa tests to be assessed using the same plasma sample (at exactly the same measurement time), we calculated the mean daily value of each test by patient. The mean daily lab values for aPTT and anti-Xa were then recoded from continuous variables to two dichotomous variables indicating whether the lab value for each test was in the therapeutic range or out of the therapeutic range for a given day. The first dichotomous variable was equal to 1 if the aPTT value was ≥ 70 and ≤ 100 seconds, 0 if otherwise.¹¹ The second dichotomous variable was equal to 1 if anti-Xa was ≥ 0.3 and ≤ 0.7 units/mL, 0 otherwise.¹¹ For a secondary analysis, values of the dichotomous variables were recoded to multilevel categorical variables where 0 indicated subtherapeutic lab values (< 70 seconds for aPTT and < 0.3 units/mL for anti-Xa), 1 indicated therapeutic values (as above), and 2 indicated supratherapeutic values (> 100 seconds for aPTT and > 0.7 units/mL for anti-Xa).

Statistical Analysis

To describe the relationship between mean daily anti-Xa and aPTT levels, we plotted the anti-Xa values versus the aPTT values with a means-centered 95% confidence ellipse. Assuming a bivariate normal distribution, the ellipse shows where 95% of the data in a scatter plot should lie on average. Confidence ellipses also serve as visual indicators of correlations, where more circular ellipses indicate that two variables are uncorrelated and more diagonal ellipses indicates stronger correlations.^{12,13} To complement the plot and describe the linear association between anti-Xa and aPTT, we additionally calculated the coefficient of determination (R^2), thus allowing for interpretation of the correlation between measures independent of the scale of the plot.¹²

After creating categorical variables, we calculated the observed agreement between the aPTT and anti-Xa tests. Cohen's unweighted kappa (κ) was also used to assess agreement between the dichotomous variables and both unweighted and weighted κ were used to assess agreement between the ordinal variables.^{5,6,8,14,15} Kappa is a more robust measure than percent agreement because it accounts for agreement due to chance. Kappa was interpreted using

previously established benchmarks.¹⁶ We calculated 95% confidence intervals for κ using an analytic method for the dichotomous variables¹⁷ and 1,000 bootstrap replications for ordinal variables.^{18,19} Statistical significance was based on a two-sided type 1 error of 0.05.

RESULTS

We identified 86 individuals with 1,236 lab measurements as our initial study population. Their mean (SD), median, and range of daily total bilirubin level during the inpatient stay was 5.4 (8.3) mg/dL, 1.2, and 0.2 to 34.2, respectively. Of 483 total days of patient stay for all patients in the cohort, a mean daily aPTT and anti-Xa levels were both available on 108 days (22.4%). There were 42 patients (49%) with complete information for anti-Xa, 53 patients (62%) with complete information for aPTT, and 26 patients (30%) with complete information for both. At baseline, patients were older, predominantly male, and typically admitted for acute coronary syndrome (Table 1). During the inpatient stay, the mean (SD), median, and range of daily total bilirubin level for these 26 patients was 5.2 (9.0) mg/dL, 0.8, and 0.2 to 34.2, respectively; these values stand in contrast to those at admission (baseline), which were 1.1 (1.3) mg/dL, 0.5, and 0.2 to 5.3.

Figure 1 depicts the distribution of mean daily anti-Xa versus aPTT levels. The R^2 was 0.32, indicating modest correlation. Table 2 shows that when the aPTT and anti-Xa levels disagree, the mismatch almost always occurs (98% of disagreement) because the anti-Xa level is therapeutic and the aPTT level is not. We observe the same result in Table 3, which shows that disagreement usually occurs (77% of

Figure 1. Mean Daily anti-Xa Versus Mean Daily aPTT Levels with 95% Confidence Ellipse

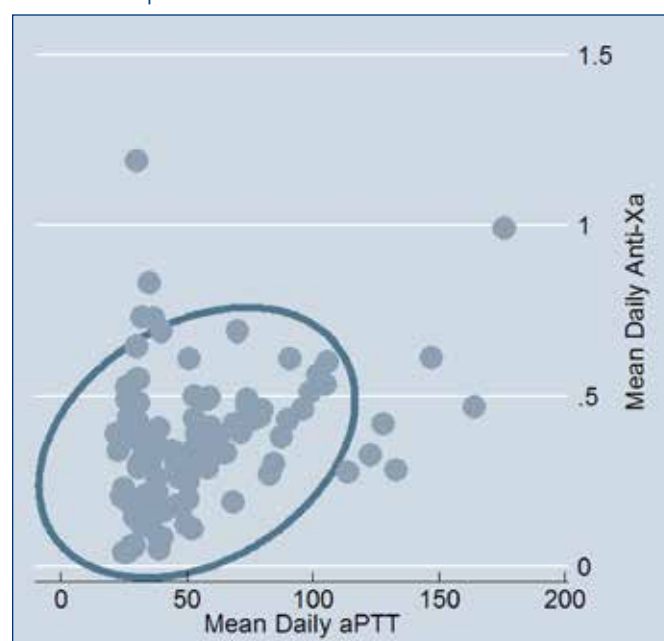


Table 1. Demographic and Clinical Characteristics of Patients at Admission

CHARACTERISTIC	(N=26)
Age at Admission – yr [mean (SD)]	66.5 (15.5)
Median	64.5
Range	23 to 88
Sex – no. (%)	
Male	17 (65.4)
Female	9 (34.6)
Weight – kg [mean (SD)]	84 (23.4)
Median	82.1
Range	43.6 to 137
International Normalized Ratio – mean (SD)	1.2 (0.2)
Median	1.1
Range	1 to 1.6
Total Bilirubin – mg/dL [mean (SD)]	1.1 (1.3)
Median	0.5
Range	0.2 to 5.3
Unfractionated Heparin Indication – no. (%)	
Acute Coronary Syndrome	12 (46.2)
Pulmonary Embolism and/or Deep Vein Thrombosis	5 (19.2)
Atrial Fibrillation or Flutter	2 (7.7)
Atrial Thrombus	1 (3.9)
Congestive Heart Failure	1 (3.9)
Extracorporeal Membrane Oxygenation	1 (3.9)
Ischemic Colitis	1 (3.9)
Ischemic Stroke	1 (3.9)
Portal Vein Thrombosis	1 (3.9)
Necrotic Bowel status post Short Bowel Resection	1 (3.9)
Hepatic Impairment – no. (%)	
Yes	1 (3.9)
No	25 (96.1)
Factor Deficiency – no. (%)	
Yes	0 (0)
No	26 (100)
Vitamin K Deficiency – no. (%)	
Yes	0 (0)
No	26 (100)
Factor Xa Use – no. (%)	
Yes	2 (7.7)
No	24 (92.3)
Vitamin K Antagonist Use – no. (%)	
Yes	2 (7.7)
No	24 (92.3)
Direct Thrombin Inhibitor Use – no. (%)	
Yes	0 (0)
No	26 (100)
Antiphospholipid Syndrome – no. (%)	
Yes	1 (3.9)
No	25 (96.1)
Triglyceride Value >360 mg/dL – no. (%)	
Yes	1 (3.9)
No	25 (96.1)

Table 2. Percent Agreement of Mean Daily aPTT and anti-Xa Therapeutic Classifications, Dichotomous Indicator

		aPTT		Total
		Non-therapeutic	Therapeutic	
Anti-Xa	Non-therapeutic	41 (37.9%)	1 (0.9%)	42
	Therapeutic	53 (49.1%)	13 (12%)	66
	Total	94	14	108

Table 3. Percent Agreement of Mean Daily aPTT and anti-Xa Therapeutic Classifications, Multilevel Indicator

		aPTT			Total
		Sub-therapeutic	Therapeutic	Supra-therapeutic	
Anti-Xa	Sub-therapeutic	34 (31.5%)	1 (0.9%)	2 (1.9%)	37
	Therapeutic	46 (42.6%)	13 (12%)	7 (6.5%)	66
	Supra-therapeutic	4 (3.7%)	0 (0%)	1 (0.9%)	5
	Total	84	14	10	108

disagreement) when the aPTT level is subtherapeutic and the anti-Xa level is in the therapeutic range.

As shown in **Table 4**, the observed agreement between aPTT and anti-Xa levels was 50.00%. If each lab test had produced a value randomly, we would expect the aPTT and anti-Xa levels to agree 41.77% of the time. The unweighted kappa value was 0.141 [95%CI: 0.048–0.235], indicating poor agreement. Using the ordinal categorical indicator variables, the observed agreement between sub-, supra-, and therapeutic levels was 44.4%. We would expect the aPTT and anti-Xa levels to agree 35% of the time by chance. The unweighted kappa value associated with this was 0.145 (bias-corrected 95%CI: 0.070-0.173), indicating poor agreement.

The linear weighted kappa for the ordinal categorical indicator variables was 0.15 (bias-corrected 95%CI: 0.079–0.161), indicating poor agreement (**Table 5**). Similarly, the quadratic weighted kappa for the ordinal categorical indicator variables was 0.15 (bias-corrected 95%CI: 0.096-0.253).

DISCUSSION

We report the results of an exploratory retrospective cohort study of aPTT and anti-Xa UFH laboratory monitoring methods for anticoagulation in hyperbilirubinemic patients at a large academic medical center. The monitoring methods agreed approximately half of the time with a nontherapeutic aPTT and therapeutic anti-Xa accounting for nearly all of the disagreement

Table 4. Unweighted Kappa for Agreement Between aPTT and anti-Xa Measurements

A. Dichotomous Indicator Variable				
Observed Agreement	Expected Agreement	Kappa	95%CI	P-value
50.00%	41.77%	0.141	0.048-0.235	<0.01
B. Multilevel Categorical Indicator Variable				
Observed Agreement	Expected Agreement	Kappa	95%CI	P-value
44.44%	35.00%	0.145	0.070-0.173	<0.01

Table 5. Weighted Kappa for Agreement Between aPTT and anti-Xa Measurements

A. Linear Weights				
Observed Agreement	Expected Agreement	Kappa	95%CI*	P-value
69.44%	64.11%	0.149	0.049-0.269	<0.01
B. Quadratic Weights				
Observed Agreement	Expected Agreement	Kappa	95%CI*	P-value
81.94%	78.67%	0.153	0.009-0.313	<0.01

*Confidence intervals bias-corrected and calculated using 1000 bootstrap replications.

and 76.7% of disagreement due to a subtherapeutic aPTT and therapeutic anti-Xa. To our knowledge, this is one of the first studies examining the discordance between aPTT and anti-Xa among hyperbilirubinemic patients.

Even though guidelines recommend calibrating aPTT levels to anti-Xa levels, this practice has been questioned.^{5, 11, 20-22} Previous studies have shown that anti-Xa and aPTT assays poorly correlate and that about 50% of measurements are discordant, but did not examine the effect of hyperbilirubinemia on coagulation assays.⁵⁻⁸ Those findings and our own results support the hypothesis that anti-Xa and aPTT often disagree, with disagreement among those with hyperbilirubinemia similar to those without. Our findings align with the laboratory study of Lippi et al., who concluded that bilirubin up to 20mg/dl does not significantly affect coagulation testing.²³ Kostousov et al. conducted an in vitro study of extracorporeal membrane oxygenation (ECMO) patients with hyperbilirubinemia and found that elevated bilirubin increased the aPTT level and decreased the anti-Xa level.²⁴

A limitation of our study was that aPTT and anti-Xa levels were not measured at the same exact time, but measuring the two levels at the exact same time could produce different results. Our study was also limited by its single-center setting, small sample size, and the unclear cause of hyperbilirubinemia for many patients. A major strength of our study was its use of recent data and the application of statistical methodologies that have not been previously used to examine the discordance between aPTT and anti-Xa.

In conclusion, our study supports the evidence that aPTT and anti-Xa monitoring methods often disagree, but offers important new information to suggest that disagreement in patients with elevated total bilirubin is not dramatically different from that documented in the overall hospitalized

population. Clinicians should continue to use anti-Xa to assess coagulation status since it is less affected by laboratory and biological factors than aPTT. Alternatively, some studies have suggested the use of endogenous thrombin potential (ETP) as a more direct measure of heparin activity,^{7, 25} but this assay is not widely available and requires further investigation to assess its clinical utility.

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An Atypical Presentation of a Small Bowel Obstruction in a Young Woman with a Congenital Omental Defect

XIAO C. ZHANG, MD, MS; THOMAS HARONIAN, MD

INTRODUCTION

Acute small bowel obstruction (SBO) is a common surgical emergency in which the normal flow of intraluminal intestinal contents is interrupted.¹ The two most common etiologies for SBO are postoperative adhesions and hernias; additional risk factors include tumors, foreign body ingestion, and inflammatory bowel diseases. Prolonged obstruction can lead to bowel dilatation proximal to the obstruction, coupled with edematous bowel wall and loss of normal absorptive functions.² If untreated, SBO can progress to compromised intestinal perfusion, causing perforation, infection, and death; up to 42% of SBO are complicated by ischemia with significantly increased mortality.³⁻⁴ Initial symptoms include periumbilical cramping, nausea, vomiting, obstipation and abdominal distention, while sudden onset of sharp, focalized abdominal pain is suggestive of peritoneal irritation secondary to acute perforation.⁵⁻⁶

CASE REPORT

A 35-year-old woman with no past medical or surgical histories presented to the ED with sudden onset of epigastric pain that radiated to her left flank and left lower quadrant. She had never experienced this discomfort in the past and had a normal bowel movement shortly prior to presentation. Review of systems was negative for urinary or vaginal symptoms, constipation, diarrhea, hematochezia, and melena. She denied any history of pelvic inflammatory diseases or inflammatory bowel diseases or abdominal trauma; she had an unremarkable colonoscopy with excision of a non-malignant polyp 5 years ago for rectal bleeding after vaginal birth.

On arrival to the ED, she was afebrile with blood pressure 141/97 mm Hg and pulse rate 77 beats/min. Her initial exam was remarkable for mild left epigastric tenderness with minimal left flank tenderness without any rebound tenderness or guarding. Complete blood count (CBC), comprehensive metabolic panel (CMP), lipase, urinalysis, and

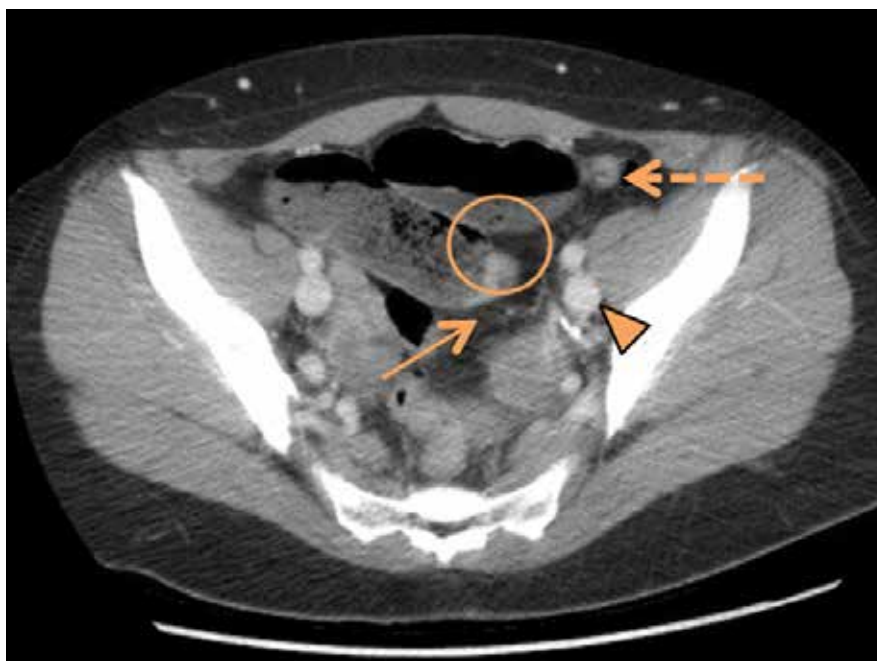


Figure 1. CT abdomen pelvis w/contrast of a small bowel obstruction of in a young woman with a left congenital omental defect. Specific findings include the transition point in the left pelvis (arrowhead), prominent loops of dilated distal ileum with air-fluid levels (dashed arrow), a small bowel feces sign (circled) and adjacent free fluid within the right pelvis (solid arrow).

serum pregnancy tests were normal. Throughout the ED stay, her symptoms gradually worsened with more frequent, intermittent episodes of abdominal pain, requiring repeated dosages of morphine, ondansetron and GI-cocktail (aluminum-magnesium, hydroxide-simethicone suspension with viscous lidocaine 2%) with interval improvement. An abdomen CT with IV-contrast showed a small bowel obstruction located in the left pelvis (**Figure 1**).

The patient was kept NPO and taken to the operating room for diagnostic laparoscopy that revealed a loop of small bowel herniating through an omental defect. The small bowel was reduced without signs of ischemic injuries; the omental defect was lysed and the appendix was also removed. The patient was transferred to the surgical floor where she was able to be discharged home on hospital day 3 taking pantoprazole and oral analgesia.

DISCUSSION

This is an unusual presentation of an acute SBO secondary to an internal hernia through a congenital omental defect. This case is presented due to the rarity of the disease process and to review unique CT findings for SBO, as well as emphasizing the importance of frequent patient reassessment.

Internal hernia is a protrusion of an intraperitoneal viscus within the peritoneal cavity and it is a very rare etiology for bowel obstruction, especially in the absence of abdominal surgeries, trauma or inflammation. While only 0.2 to 5.8% of intestinal hernias are due to internal hernia, the mortality may exceed 50% if there is strangulation.⁷⁻⁹ Traditionally, internal hernias through the omentum occur in a bimodal distribution in both pediatric and adult patients. Pediatric omental hernias are associated with congenital defects and occur in 35% of pediatric internal hernia; adult mesenteric hernias, in contrast, often occur after abdominal surgeries, especially gastric bypass with Roux-En-Y anastomosis.¹⁰ Adult patients with mesenteric hernia after a recent gastric bypass present more acutely with periumbilical crampy pain, nausea, and distention; vomiting is less prominent due to decreased gastric secretions from a surgically reduced stomach.¹¹ Due to the vague symptoms, compounded by disease rarity, a high level of suspicion should be kept for SBO on the differential diagnosis for acute abdominal pain, especially since early intervention can prevent unnecessary resection anastomosis.

Abdominal computed tomography (CT) is the imaging modality of choice in the ED for SBO due to its ability to identify the etiology, the location, as well as the severity and complications of the obstruction.¹² The ability to detect SBO via CT depends on the various imaging slice widths; the sensitivity and specificity can be as high as 96% and 100% for a 0.75mm slice thickness study, or as low as 79% and 87% for a 50mm slice thickness study.¹³⁻¹⁴ The presence of intraluminal fluid within the dilated bowel loops can also provide imaging enhancement to help delineate bowel wall pathologies.¹⁵ Common SBO findings on CT include dilated proximal bowel with multiple air fluid levels, a distal collapsed bowel and a localizable transition point. Additional CT findings include submucosal edema, mesenteric edema, "target sign" (intussusception), "whirl sign" (volvulus), and "venous cut-off sign" (thrombosis).¹⁶⁻¹⁸ Another rare CT finding for SBO is the small bowel feces sign (SBFS), defined by the presence of feculent material mingled with gas bubbles in the small intestinal lumen, as seen in our patient's CT (**Figure 1**). The etiology of SBFS is thought to be secondary to bacterial overgrowth and increased water absorption in the distal small bowel from delayed intestinal transit and obstruction. While rare (prevalence as low as 7-8%), SBFS has a high specificity for subacute or low-grade SBO because the presence of increased water absorption indicates slowed, but not halted intestinal transit.¹⁹⁻²⁰

Once diagnosed, management of SBO depends on the severity of the obstruction. Patients with partial or uncomplicated

obstruction (without ischemia or perforation) may be observed with appropriate volume resuscitation, electrolyte repletion and gastric decompression, while patients with complicated SBO require prompt surgical exploration.²¹⁻²²

CONCLUSION

Small bowel obstruction is a surgical emergency commonly associated with post-operative adhesions or hernias and can result in intestinal perforation from intraluminal dilatation. Omental or mesenteric hernias in adults are often seen after abdominal surgeries such as gastric bypass, and may present with vague abdominal symptoms. CT abdomen is the imaging modality of choice due to its high sensitivity and specificity; common SBO CT findings include air-fluid levels, dilated loops of bowel and collapsed distal bowel both proximal and distal to the transition point, respectively. The small bowel feces sign (SBFS) is a rare but specific CT finding for low grade SBO and should prompt immediate surgical consult in the absence of other radiographic findings for SBO. Patients diagnosed with partial or uncomplicated SBO can be managed conservatively, while signs of bowel ischemia and perforation warrant immediate surgical intervention.

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The Rhode Island Special Needs Emergency Registry – An Opportunity for Expanding the Healthcare Provider’s Role in Health Equity

JAMES C. RAJOTTE, MS; AKSHAR PATEL, MPH; JAMES COYNE, MS; BRITTAN BATES-MANNI, MS

“Every American should have the opportunity to be as healthy as he or she can be. Every community should be safe from threats to its health. And all individuals and families should have a high level of services that protect, promote, and preserve their health, regardless of who they are or where they live.”

— Trust for America’s Health (TFAH)¹

These insightful words provided by TFAH reflect Rhode Island’s aspiration to achieve health equity, but require expansion to address health security. All citizens should have the opportunity to be healthy by accessing services regardless of who they are, where they live, and whether or not an emergency is happening. The American Medical Association’s *Declaration of Professional Responsibility* references that the healthcare community, as a whole, takes ownership for safeguarding the health of patients who are under medical care to earn society’s trust in the healing profession.² Thus, do providers inherently challenge themselves to consider what they can do for patients to also prevent health disparities from occurring during and after a disaster?

Rhode Islanders who report having a disability or diabetes are more likely to be prepared (25.1% and 26.2%, respectively) than those without a disability or diabetes (18.3% and 19.2%, respectively).³ The Federal Emergency Management Agency (FEMA) and Ad Council report 81% of Americans are not very prepared for an emergency,⁴ increasing the likelihood for relying upon outside assistance. Being prepared should include having an emergency plan and an emergency three-day supply of water, food, and medications. Higher personal and community preparedness can minimize reliance upon first responders for the first three days after an emergency.

The Rhode Island Special Needs Emergency Registry (RISNER) was established in 2007 by the Rhode Island Department of Health (RIDOH) and the Rhode Island Emergency Management Agency. RISNER strives to identify individuals with disabilities, chronic conditions, or other special healthcare needs. Residents who use life support systems, have mobility or assistive devices, utilize a service animal, or require assistance due to cognitive/developmental needs are the primary focus. Residents of assisted living/nursing facilities are not eligible for enrollment since those facilities have trained medical staff and are already prioritized by first responders (e.g., police, fire, and emergency medical services).

Outreach has predominantly focused on community-based organizations, first responders, and individuals. The information within RISNER is kept strictly confidential at the state/municipal level. Data are only shared with first responders to assist in responding to 911 calls and with local/state emergency management staff to protect individuals’ safety and well-being during emergencies. While enrollment in RISNER does not guarantee assistance, the system allows first responders to effectively plan for, prepare for, and respond to community needs. This article briefly describes the demographics of enrollees and recommends ways RISNER can be utilized as a tool for healthcare providers seeking to protect and prepare their patient population.

METHODS

RISNER data are updated through an annual mailing to all enrollees in addition to reconciliation with the Center for Vital Records. Incomplete data due to self-registration utilized for enrollment can occur. A dataset containing 14,836 individuals enrolled in RISNER as of December 31, 2015 was updated to remove individuals with either an invalid year of birth (<1903) or a missing date of birth to standardize association of disability data to age groups. The data presented herein were gathered from a one-page enrollment form containing 69 data entry fields. While RISNER prioritizes collection of predefined disabilities important to consider during emergencies, individuals can enter “other disabilities” using text boxes on the enrollment form. Individuals enrolled with only “other disabilities” reported were excluded. A total of 13,175 enrollees were reviewed, grouped, and analyzed using SAS® 9.3.

Demographics were grouped, where applicable, for ease of comparison. Grouping included core cities (i.e., those with highest childhood poverty levels) versus non-core to compare geographic enrollment. **Table 1** illustrates the fields combined for this report using the available data entry fields. These fields were used to generate 13 traits that were then consolidated to create six major characteristic variables. These were utilized to create three main categories (i.e., mobility, life support, and sensory/cognitive) for the disabilities/conditions. The number of categorical disability types selected by an enrollee was also calculated as having a single category, two categories, or all categories.

Table 1. Disability Variables

Category	Characteristic	Trait	Field(s) combined
Mobility	Uses Assistive Aid	Mobility Device	Uses Wheelchair/Mobility Vehicle Uses Walker/Cane Uses Crutches
		Prosthetic Device	Uses Prosthesis
		Assistive Animal	Uses Assistive Animal
	Confined to Bed	Confined to Bed	Is Confined to Bed
Life Support	Dependent on Mechanical Device	Oxygen / Respirator / Ventilator	Uses Oxygen Uses Tanks Uses Concentrator Uses Respirator/Ventilator Has Battery Backup for Unit
		Pacemaker / Defibrillator	Uses Electrical Uses Pacemaker Uses Defibrillator
	Dependent on Treatment	Insulin	Is Insulin-Dependent
		Dialysis	Uses Dialysis On Dialysis at Home On Dialysis at Clinic
Sensory/ Cognitive	Has Sensory Impairment	Auditory	Is Hard of Hearing Is Deaf Uses Hearing Aids
		Visual	Is Visually Impaired Is Legally Blind
	Has Cognitive/ Muscular Condition	Neurological Disorder	Has Seizure Disorder Has Autism Spectrum Disorder Has Alzheimer's/Dementia Has Cognitive/Developmental Delay
		Speech Impairment	Is Speech Impaired Has Non-Verbal Impairment
		Psychiatric Disorder	Has Psychiatric Condition

RESULTS

Table 2 describes the overall composition of RISNER enrollees' demographics collected on the registration form. The majority of enrollees (77.6%) reported their race as white, 10.9% as non-white, 4.9% as multi-racial, and 6.6% did not report race. Similarly, a total of 91.0% of enrollees indicated a language preference for communications or assistance in English, with 9.0% indicating a language other than English. Enrollees spanned across the age spectrum from birth to over 100 years of age (data not shown). Only 28.1% of enrollees reported living in core cities that include nearly two-thirds of the state's poor children.

Table 3 depicts the categories, characteristics, and traits of disabilities identified. A total of 42.3% of enrollees identified only one disability-type, with sensory/cognitive being the most common (21.0%). A similar percentage (40.3%) of enrollees identified themselves as having two disability-types, with mobility and sensory/cognitive being the most frequent combination (21.9%). Only 17.9% of enrollees identified as having all three types. Over one-third of individuals reported at least one of the following characteristics: uses assistive aids (53.8%), has sensory impairments (40.0%), or

has a diagnosis with cognitive/neurological conditions (35.9%). In terms of characteristic-specific traits, the use of a mobility device (53.2%), dependency on pulmonary devices, such as oxygen or a respirator (13.3%), or diagnosis with neurological conditions (28.9%) were most common.

Relationship status of the registrant to the enrollee is outlined in **Table 4**. Self-enrollment was most common (69.0%) followed by enrollment by a personal contact (21.7%). The lowest registrants were service providers (9.2%), where only 1.0% of enrollments were represented by healthcare workers. The remaining 8.1% of service providers were social workers/case managers.

Table 2. Demographics by Age, Race, Language, and Location, 2007–2015

Total Sample	N	%
	13,175	100
Age		
Children	871	6.6
0–6 Years	168	1.3
7–17 Years	703	5.3
Adults	12,304	93.3
18–24 Years	427	3.2
25–44 Years	1,257	9.5
45–64 Years	3,239	24.6
65 Years and Older	7,381	56.0
Race		
Single Race	11,666	88.5
White	10,225	77.6
Non-White	1,441	10.9
Multi-Race	644	4.9
Unreported Race	865	6.6
Preferred Language		
English	11,992	91.0
Non-English	1,145	8.6
Spanish	741	5.6
Portuguese	150	1.1
Other	254	1.9
American Sign Language	38	0.3
Living Location		
Core Cities	3,701	28.1
Providence	2,141	16.3
Pawtucket	802	6.1
Woonsocket	518	3.9
Central Falls	240	1.8
Non-Core Cities	9,474	71.9

Note: Additive values of groups are not exact due to rounding percentages.

Table 3. Enrollment by Disability Variables, 2007–2015

Total Sample	N	%
	13,175	100
Disability Category		
Single Disability-Type	5,508	42.3
Mobility	1,395	10.6
Life Support	1,410	10.7
Sensory/Cognitive	2,703	21.0
Two Disability-Types	5,304	40.3
Mobility & Life Support	1,355	10.3
Mobility & Sensory/Cognitive	2,884	21.9
Life Support & Sensory/Cognitive	1,065	8.1
All Disability-Types	2,363	17.9
Mobility Characteristics		
Uses Assistive Aid *	7,091	53.8
Mobility Device	7,012	53.2
Prosthetic Device	209	1.6
Assistive Animal	69	0.5
Confined to Bed	399	3.0
Life Support Characteristics		
Dependent on Mechanical Device *	2,343	17.8
Oxygen/Respirator/Ventilator	1,749	13.3
Pacemaker/Defibrillator	796	6.0
Dependent on Treatment *	2,271	17.2
Insulin	1,360	10.3
Dialysis	1,143	8.7
Sensory/Cognitive Characteristics		
Has Sensory Impairment *	5,270	40.0
Auditory	3,281	24.9
Visual	3,086	23.4
Has Cognitive/Muscular Condition *	4,733	35.9
Neurological Disorder	3,810	28.9
Speech Impairment	1,658	12.6
Psychiatric Disorder	1,121	8.5

Notes: All trait percentages represent presence among entire sample size.

* Includes individuals who reported one, two, or all three traits within the denoted characteristic.

DISCUSSION

Using the total number of enrollees (N=13,175), RISNER enrollment can be estimated at 1.0% of the state's population. Enrollment appears low compared to the U.S. Census estimate⁵ (12.8%) and Disability and Health Program estimate (19.0%)⁶ for the number of non-institutionalized Rhode Islanders with disabilities. Aside from lack of awareness, enrollment might be limited by a belief that preparing won't help.⁴ A person's decision to not enroll may be based

Table 4. Enrollment by Registration Method, 2007–2015

Total Sample	N	%
	13,175	100
Relationship To Enrollee		
Self	9,093	69.0
Personal Contact	2,866	21.7
Family/Friend	2,810	21.3
Caregiver	56	0.4
Service Provider	1,216	9.2
Social Worker/Case Manager	1,060	8.1
Healthcare Worker	128	1.0
Other Professional	28	0.1

on one's perception of not having a disability or not needing assistance from others.

Increased outreach activity to raise awareness about RISNER and improve inclusion in the registry is needed. Outreach efforts that leverage the lowest registering groups (i.e., healthcare workers) may help diversify and increase enrollment. Primary care practices, select specialties (e.g., geriatricians, ophthalmologists, podiatrists), and health center providers may help to reach individuals who should be enrolled, regardless of age, language, race, or geography. As efforts are underway to reduce health disparities among Rhode Islanders already at-risk, healthcare providers can help us reach new audiences. The results from this article create an opportunity for healthcare workers to play a pivotal role for improving the resiliency of Rhode Island patients.

There are a few study limitations. Gender was unavailable for analysis because the default value for the field was previously set to female and therefore, cannot be validated. Trend data and a review of all enrollment/disenrollment data since inception could not be included given changes to the dataset resulting from technology improvements to RISNER. Form design limited the data set and how fields were merged into categorical variables. While RISNER data are updated through ongoing self-reports and annual matches to vital records, there remains a chance that a small data percentage may be attributed to deceased individuals.

MOVING FORWARD

In 2016, RISNER began improving data collection with a revised form that obtains information on enrollees' living situations, transportation access, and conditions such as morbid obesity. The intent of this first improvement is to allow for further analyses that can provide more detailed community profiles to local responders and emergency planners. Secondly, a shift in the outreach strategy for RISNER will be aimed at balancing enrollment across population groups. Targeted outreach in this manner aims to ensure

equal access to RISNER. By working together, public health and healthcare can safeguard the health of the population.

Eliminating current health disparities and preventing new disparities from occurring before, during, or after an emergency remains a strategic priority for RIDOH. Healthcare provider collaboration on the use of RISNER as a tool for helping Rhode Island assure health equity and security is feasible. Dialogues with healthcare providers on how to promote RISNER is a start. Providers can then enroll patients and provide informational resources to help improve personal preparedness among those with special healthcare needs. In addition, healthcare providers can partner with RIDOH as part of the local emergency management system that utilizes RISNER to conduct activities such as wellness calls before, during, and after an emergency. To enroll someone or learn more, visit: <http://www.health.ri.gov/emregistry/>.

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**VITAL STATISTICS**

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PUBLIC HEALTH

Rhode Island Monthly Vital Statistics Report

Provisional Occurrence Data from the Division of Vital Records

VITAL EVENTS	REPORTING PERIOD		
	SEPTEMBER 2015	12 MONTHS ENDING WITH SEPTEMBER 2015	
	Number	Number	Rates
Live Births	949	11,523	10.9*
Deaths	787	10,407	9.9*
Infant Deaths	7	70	6.1#
Neonatal Deaths	5	58	5.0#
Marriages	948	6,630	6.3*
Divorces	274	2,997	2.8*
Induced Terminations	197	2,625	227.8#
Spontaneous Fetal Deaths	49	621	53.9#
Under 20 weeks gestation	44	567	54.5#
20+ weeks gestation	5	54	4.7#

* Rates per 1,000 estimated population

Rates per 1,000 live births

Underlying Cause of Death Category	REPORTING PERIOD			
	MARCH 2015	12 MONTHS ENDING WITH MARCH 2015		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	198	2,415	229.3	3,699.5
Malignant Neoplasms	187	2,244	213.1	5,522.0
Cerebrovascular Disease	46	422	40.1	490.0
Injuries (Accident/Suicide/Homicide)	74	789	74.9	11,931.0
COPD	62	552	52.4	655.0

(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 1,055,173 (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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Working for You: RIMS advocacy activities

February 1, Monday

Interview with Providence Business News regarding Zika virus; Christine Brousseau, MD
RIMS Council Meeting

February 2, 2016

RIMS Physician Health Committee: Herbert Rakatansky, MD, Chair
Interview on *Dan Yorke State of Mind* television show; Sarah Fessler, MD, President-elect, and Steve DeToy, Director of Government and Public Affairs
Legislative hearings

February 3, Wednesday

Workers Compensation Advisory Council
Legislative hearings
House Majority Leader DeSimone fundraiser

February 4, Thursday

Conference call regarding amicus briefs defending confidentiality of Patient Safety Organization data in a liability case involving a Rhode Island physician and a hospital
Legislative hearings
Senate Majority Leader Ruggerio fundraiser

February 9, Tuesday

Conference call regarding Emergency Department Information Exchange/possible legislation, Gary Bubly, MD, Past President, and RIMS legal Counsel

February 10, Wednesday

Board of Medical Licensure and Discipline presentation on RIMS' legislative agenda
Governor's Overdose Prevention and Intervention Task Force, Josiah Rich, MD; Gary Bubly, MD; Peter Karczmar, MD
Legislative hearings
House Majority Whip Edwards fundraiser

February 11, Thursday

Legislative hearings
State Innovation Model Steering Committee; Peter A. Hollmann, MD

February 12, Friday

Meeting with health insurers regarding telemedicine legislation

February 16, Tuesday

Meeting with RIMS Sponsor Shred-it

February 17, Wednesday

Primary Care Physician Advisory Committee
Conference call regarding RIMS' outreach

February 18, Thursday

SIM Population Health and Behavioral Health Subcommittee
Secretary of State seminar on lobbying legislation, reporting, and compliance regulations

February 19, Friday

Meeting with Providence Health Centers regarding potential nutrition grant; Stanley Block, MD

February 22, Monday

Meeting with Neighborhood Health Plan

February 23, Tuesday

Sarah Fessler, MD, President-elect, and Steve DeToy, Director of Government and Public Affairs, attend AMA National Advocacy Conference and meet with Congressional delegation
Secretary Roberts Provider Advisory Council at RIMS



On February 23, **Sarah Fessler, MD**, President-elect, and **Steve DeToy**, Director of Government and Public Affairs, attended AMA National Advocacy Conference in Washington, DC to meet with **US Senator Jack Reed** (above left) and other members of the Rhode Island Congressional delegation.

February 24, Wednesday

Legislative Hearings

February 25, Thursday

Mental Health and Substance Abuse Coalition Meeting; Steve DeToy, RIMS Director of Government and Public Affairs, Co-chair

Meeting with insurers regarding telemedicine legislation

Legislative Hearings



AFFINITY PROGRAM

The Rhode Island Medical Society continues to drive forward into the future with the implementation of various new programs. As such, RIMS is expanded its affinity program to allow for more of our colleagues in health-care and related business to work with our membership.

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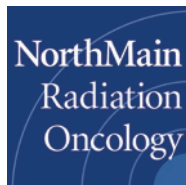
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Care New England creates first outpatient palliative care site at the Program In Women's Oncology at Women & Infants

PROVIDENCE – Almost four years after creating a multidisciplinary Palliative Care Program and joining 10 other pioneering organizations nationally to support the Conversation Project with a goal of promoting discussions about palliative care and end-of-life decisions, Care New England Health System is bringing palliative care into the outpatient setting.

In addition to an inpatient consult service at all CNE hospitals, Care New England has offered home-based palliative care through the VNA of CNE. Care New England is seeking to reach patients who would benefit from palliative care in all possible settings, and hoping to help more patients engage their physicians in conversations about what matters as they face advanced illness. This clinic is a natural extension of the inpatient and home-based palliative care programs.

"Palliative care is a specialized medical care for people with serious illness and focuses on providing patients with relief from the symptoms, pain, and stress of a serious illness, whatever the diagnosis," says **KATE M. LALLY, MD, FACP**, director of the Palliative Care Program.

"The goal is to improve quality of life for both the patient and the family."

Starting this month, she and a specialized palliative care team will begin working with women who seek care for gynecologic or breast cancers through the Program in Women's Oncology. This, Dr. Lally says, can include women with:

- Stage IV cancers.
- Recurrent or progressive disease.
- Unmanaged pain.
- Malignant bowel obstruction.
- Many symptoms.
- Frequent hospital admissions for symptom management.
- Uncertainty regarding the goals of care, which includes discussion of advanced directives.

"People do not need to be dying to need help living with their symptoms," says **CORNELIUS "SKIP" GRANAI III, MD**, director of the Program in Women's Oncology. "This is a tremendous step in helping us provide what our patients and their families need, which is physical and psychological relief from cancer."

The palliative care team – which includes physicians, a nurse practitioner, a medical assistant, social workers, case managers and others as needed – will meet with patients referred by the physicians in the Program in Women's Oncology and its Breast Health Center in sessions scheduled twice a month to start.

"Based on the patient's clinical criteria and needs, we may see her once or more than that," Dr. Lally says. "This is an extra layer of support for them." ❖

Paul DiSilvestro, MD, helps uncover more inherited genetic mutations linked to ovarian cancer

PROVIDENCE – Previous research has established a link between genetic mutations in the BRCA1 and BRCA2 genes to an increased risk of developing ovarian, fallopian tube or peritoneal cancer in women. A recent publication documents the efforts of a team of researchers affiliated with the Gynecologic Oncology Group (GOG) to determine if inherited genetic mutations other than BRCA1 and BRCA2 can also put a woman at risk of developing these diseases.



The team – which includes **PAUL DISILVESTRO, MD**, head of research with the Program in Women's Oncology at Women & Infants Hospital and professor of obstetrics and gynecology at The Warren Alpert Medical School of Brown University – published their findings in the article "Inherited Mutations in Women with Ovarian Carcinoma" in the recent issue of the *Journal of the American Medical Society*.

"Descriptions of the identity of these genes and their frequency was lacking in the medical literature," Dr. DiSilvestro explains. "The goal of this research was to better define these issues."

More than 1,900 women with ovarian cancer who were identified through the University of Washington gynecologic tissue bank and from various GOG clinical trials made up the study population. Information about mutation frequencies were compared with the National Heart, Lung and Blood Institute GO Exome Sequencing Project and the Exome Aggregation Consortium. Clinical characteristics and survival rates were assessed by mutation status.

What the evaluations revealed was that 18 percent of the women with ovarian cancer carried mutations in genes associated with ovarian cancer risk beyond the BRCA1 and BRCA2 genes.

"The results of this trial expanded our knowledge of the genes that we suspect cause hereditary ovarian cancer, bringing the total to 11," Dr. DiSilvestro says, adding that, "Genetic testing should now begin screening for these nine additional genetic mutations so women carrying the genes can make educated decisions about their health care future." ❖



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Providence VA one of 7 centers to offer new Hospital-in-Home program

PROVIDENCE – The Providence VA Medical Center is one of seven Veterans Health Administration facilities participating in a new Hospital-in-Home program.

It was launched in August for veterans who are medically stable, but traditionally would have been admitted as inpatients. The Hospital-in-Home program provides hospital-level care in the veteran's own home.

Since it started at the Providence VAMC, 104 veterans have been referred for evaluation, 75 were accepted, and 73 have been successfully treated and discharged. Of the veterans treated to date, 30 percent were evaluated for admission to the program after coming to the emergency room.

"We've received rave reviews from veterans and their family members about the program," said **THOMAS MOCK**, chief of the Social Work and Geriatric Extended Care services at the Providence VAMC. He added that the Hospital-in-Home program can also improve access to care for other veterans, by freeing-up hospital beds that may have otherwise been filled without the program.

"Home care helps reduce the risk of infections and falls, and allows



PROVIDENCE VA MEDICAL CENTER PHOTO BY WINFIELD DANIELSON

Anthony Witherstone, a registered nurse with the Providence VA Medical Center's Hospital-in-Home program, uses a stethoscope to listen to the lungs of Ray Edington, a Navy Seabee Veteran of Vietnam, at his home in Woonsocket, R.I., Thursday, Jan. 14, 2016. Ray had an infection that would normally have required a hospital stay for treatment, but he and his wife, Karen Edington, were offered an alternative through the Hospital-in-Home program.

veterans to spend more time with the people they care about," said **DR. SUSAN MACKENZIE**, director of the Providence VAMC. "We're honored to

be a part of this new program, helping VA provide the exceptional health care Veterans have earned through their service and sacrifice." ❖

CharterCARE opens new outpatient Integrated Behavioral Health Center

PROVIDENCE – CharterCARE Health Partners has announced the opening of its new Integrated Behavioral Health Center, an outpatient program designed specifically for people who need a structured support system to achieve early recovery from addiction. The Center is located on the campus of Roger Williams Medical Center in a building adjacent to the hospital at 877 Chalkstone Avenue in Providence.

The Department of Outpatient Addiction Medicine, currently located on the first floor of the main building at Roger Williams Medical Center, has also moved into this space.

The new Center is staffed by a multi-disciplinary treatment team including physicians, nurses, and therapists, and will be led by **ALEX ETIENNE, MD**, and **VINCENT MARCACCIO, MD**, both of whom are certified Suboxone providers. The program is directed by Liz Cantor, PhD, and will offer same day appointments for outpatient evaluation/intake for co-occurring disorders and/or co-morbid behavioral health

and medical conditions, short- and long-term counseling, individual counseling, Suboxone treatment from induction phase to maintenance, a Partial Hospital Program (PHP) and an Intensive Outpatient Program (IOP).

"Opiate addiction is a national and local epidemic and, since CharterCARE is a leading provider of behavioral health services, it is a natural extension of our program to create an outpatient center that offers services to this complex population," said Dr. Cantor. "Additional supports and treatment toward sustaining their recovery are important at this critical stage." She added that CharterCARE is working closely with the state of Rhode Island to become a center of excellence in Suboxone outpatient treatment.

To make a referral or appointment, call 401-456-2362. For more information about the program, contact Dr. Liz Cantor, Director of Behavioral Health Outpatient Services, at 401-318-2452 or at Elizabeth.cantor@chartercare.org ❖

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Women & Infants' researchers publish on connection between anal cancer, HPV

PROVIDENCE – Researchers at Women & Infants Hospital recently published the results of a study demonstrating a connection between anal cancer and human papillomavirus (HPV) infection.

The study – entitled “Anal Cytology and Human Papillomavirus Genotyping in Women with a History of Lower Genital Tract Neoplasia Compared with Low-Risk Women” – was published in a recent issue of *Obstetrics & Gynecology*.

The publication extends the research of **KATINA ROBISON, MD**, of the Program in Women's Oncology at Women & Infants. The initial research, presented at the 2014 HPV Conference, indicated an increased likelihood that the two diseases would coexist in some women.

“HPV is associated with anal cancer, which is more common among women. In 2014 alone, there were 7,200 cases of anal cancer noted and 4,500 of them are women. We believe that certain women with a history of an HPV-related genital infection would benefit greatly from anal cancer screening,” says Dr. Robison, who is also an assistant professor and co-director of colposcopy at The Warren Alpert Medical School of Brown University.

Anal cancer screening is routinely performed using anal cytology in HIV positive men and women, as well as in men having sex with men. Knowing that anal cancer is five times more likely in women with a history of cervical, vaginal or vulvar cancer, which are all linked to HPV, Dr. Robison wanted to evaluate the feasibility of screening HIV negative women with anal cytology and HPV testing.

The research – conducted from December 2012 to February 2014 – examined 273 women recruited through Women & Infants' outpatient clinics. Anal cytology and HPV genotyping were performed. All women with abnormal anal cytology were referred for high-resolution anoscopy. Biopsies were also conducted at the discretion of the colorectal surgeon.

The 273 women were divided into two groups – the “high-risk group” who had a history of cervical, vaginal or vulvar cancer, and the “low-risk group” who had no history of cancer, dysplasia or abnormal Pap smears. Of those, 40 percent of the high-risk group and 21.7 percent of the low-risk group were found to have abnormal anal cytology. In the high-risk group, 20.8 percent were found to have high-risk HPV, but only 1.2 percent of the low-risk group.

The study also included the work of other scientists affiliated with Women & Infants. Listed as co-authors were: **BETH CRONIN, MD; MELISSA CLARK, MD; CHRISTINE LUIS, MS; PAUL DISILVESTRO, MD; STEVEN SCHECTER, MD; LATHA PISHARODI, MD; CHRISTINA RAKER, ScD; AMY BREGAR, MD; and JOEL PALEFSKY, MD.** ❖

Justin M. Nash, PhD, awarded funding for integrated behavioral health program at Memorial

PAWTUCKET – **JUSTIN M. NASH, PhD**, professor in the departments of Family Medicine and Psychiatry and Human Behavior at The Warren Alpert Medical School of Brown University and director of behavioral health in family medicine at Memorial Hospital was awarded \$15,000 in funding from the Care Transformation Collaborative (CTC) of Rhode Island's Integrated Behavioral Health Pilot Program to develop a population health approach to improving the behavioral and overall health of Memorial's patients.

The CTC was started in 2008 by the Office of the Health Insurance Commissioner with the goal of bringing health care stakeholders together to promote care for patients with chronic illnesses by utilizing the Patient Centered Medical Home model.

“The funding allows us to enhance our efforts to improve the behavioral health of the patients in the Family Care Center. We are using a population health approach of standardizing screening for depression, anxiety, and substance abuse. We are also using a registry to understand how our patients access and use the behavioral health services in the Family Care Center and in the community,” says Dr. Nash. ❖




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Appointment

Victor A. Pinkes, MD appointed Chief of Emergency Medicine at Memorial



PAWTUCKET – Memorial Hospital recently appointed **VICTOR A. PINKES, MD, FACEP**, its new chief of emergency medicine. Dr. Pinkes is a member of Affinity Physicians working at Memorial.

Dr. Pinkes earned his medical degree from University of Health Sciences/The Chicago Medical School. He completed his emergency medicine residency at Cook County Hospital and Loyola University,

Resurrection Medical Center, both in Chicago.

Dr. Pinkes is a member of the American Academy of Emergency Medicine, the American College of Emergency Physicians and American Medical Association. He is certified in advanced cardiac life support, pediatric life support and advanced trauma life support. His clinical interests include addiction medicine and emergency department informatics. ❖

Obituary

DR. WILLIAM MICHAEL CONNELL, 54, of Newport, RI, died unexpectedly from an apparent heart attack at his home, Monday February 1, 2016.

Born in Newport on June 15, 1961, he was the son of Phillip Michael Connell and Rosalie Ann Connell of Newport.

He received a Bachelor of Science Degree from the University of Rhode Island with Phi Beta Kappa honors. Additionally, he received his medical degree from Georgetown University. Doctor Connell first opened his internal medicine practice on Bellevue Avenue in 1992 and subsequently moved his practice to Middletown. He was well known as a modern doctor with an old country doctor's style, personally visiting patients at their homes and allocating an abundance of time to each patient's office visit. He cared for his patients with kindness, dignity, and respect going out of his way to provide each patient with true individual care.

He was a member of the Ancient Order Hibernians, Division #1. He is survived by his parents; his sister Jacqueline and her husband Thomas Patton of Portsmouth.

Donations in his memory may be made to St. Augustin Church, 2 Eastnor Road, Newport, RI 02840.



Recognition

RISA honors Afreen Siddiqui, MD, at annual meeting

PROVIDENCE – **AFREEN SIDDIQUI, MD**, of East Greenwich, was honored for her two years of dedicated service as president of the Rhode Island Society of Anesthesiologists (RISA) at the annual RISA membership meeting on Thursday, January 28, 2016. The society is a nonprofit organization that promotes professional education and support of its members to provide the best possible care of their patients.

The 2016–2018 slate of officers was approved by the membership and announced at this meeting. **RAFAEL E. PADILLA, MD**, of Tiverton, was named president. **STEPHEN PANARO, MD**, of Barrington, was nominated as vice president. **HERBERT CHEN, MD**, of East Greenwich, accepted the treasurer position. **EVAN BURKE, MD**, of Providence, was named secretary.

For more information about RISA, contact Megan Turcotte at mturcotte@rimed.org or 401-331-3207. ❖



Afreen Siddiqui, MD, shown with Rafael Padilla, MD, was honored for her two years of service as president of the Rhode Island Society of Anesthesiologists at its annual meeting.



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Recognition

Roger Williams Cancer Center receives Outstanding Achievement Award from American College of Surgeons' Commission on Cancer

PROVIDENCE – Roger Williams Cancer Center is one of just 24 accredited cancer programs in the country to receive the June-December 2015 Outstanding Achievement Award from the Commission on Cancer (CoC) of the American College of Surgeons.

The award acknowledges programs that achieve excellence in providing quality care to cancer patients. Roger Williams is the only cancer center in Rhode Island, Massachusetts, Vermont, New Hampshire and Maine to receive this recognition during this period of time.

"This national recognition recognizes our team's efforts to deliver cancer care that not only meets national standards, but exceeds them," said **KIMBERLY O'CONNELL**, president of Roger Williams Medical Center. "Our center provides Rhode Island's most comprehensive continuum of cancer care and it is care that is recognized nationally for excellence."

The Commission on Cancer Outstanding Achievement Award recognizes cancer programs that strive for excellence in demonstrating compliance with the CoC standards and are committed to ensuring high quality cancer care. The purpose of the award is to raise the bar on quality cancer care, with the ultimate goal of increasing awareness about quality care choices among cancer patients and their loved ones.

"All our clinical, academic, and research efforts are focused on advancing treatment and care for those with cancer," said **DR. N. JOSEPH ESPAT**, director of the Cancer Center at Roger Williams. "We believe patients are best cared for in a collaborative environment that includes surgical, medical and radiation oncologists, along with oncology nurses, laboratory professionals, and support staff. This award is a reflection of our dedication to this philosophy of collaborative cancer care."

To achieve the Outstanding Achievement Award, programs are evaluated on 34 cancer program standards categorized within one of four cancer program activity areas: cancer committee leadership, cancer data management, clinical services, and quality improvement. Seven of the 34 standards are evaluated as to whether they will receive commendation. Award recipients must have received commendation ratings in all seven commendation standards, in addition to receiving a compliance rating for each of the 34 cancer program standards.

In addition, the award is intended to:

- Recognize cancer programs that achieve excellence in providing quality care to cancer patients.
- Motivate other cancer programs to work toward improving their level of care.
- Facilitate dialogue between award recipients and health care professionals at other cancer facilities for the purpose of sharing best practices.
- Encourage honorees to serve as quality-care resources to other cancer programs.

In 2015, the Cancer Center at Roger Williams was classified by the Commission on Cancer as an Academic Comprehensive Cancer Center Program, placing it among a select group of cancer centers in New England to hold such a designation. Nationally, only 13% of Commission on Cancer programs hold the Academic Comprehensive Center Program designation.

The Cancer Center also holds numerous other national accreditations and certifications including:

- accreditation of its Hematology/Oncology Division by the Quality Oncology Practice initiative Certification Program, an affiliate of the American Society of Clinical Oncology;
- accreditation of the state's only Bone Marrow Transplant unit, located at Roger Williams, from the Foundation for the Accreditation of Cellular Therapy;
- accreditation in mammography from the American College of Radiology;
- accreditation in Breast Health from the National Accreditation Program for Breast Centers;
- accreditation for a Complex General Surgical Oncology Fellowship through the Accreditation Council for Graduate Medical Education;
- certification from the STAR Program® of Oncology Rehab Partners for offering premium cancer rehabilitation and survivorship services for cancer survivors.

The Commission on Cancer is a consortium of professional organizations dedicated to improving survival and quality of life for cancer patients through standard-setting, prevention, research, education and the monitoring of comprehensive quality care. Its membership includes fellows of the American College of Surgeons and representatives of 47 national organizations that reflect the full spectrum of cancer care. ❖



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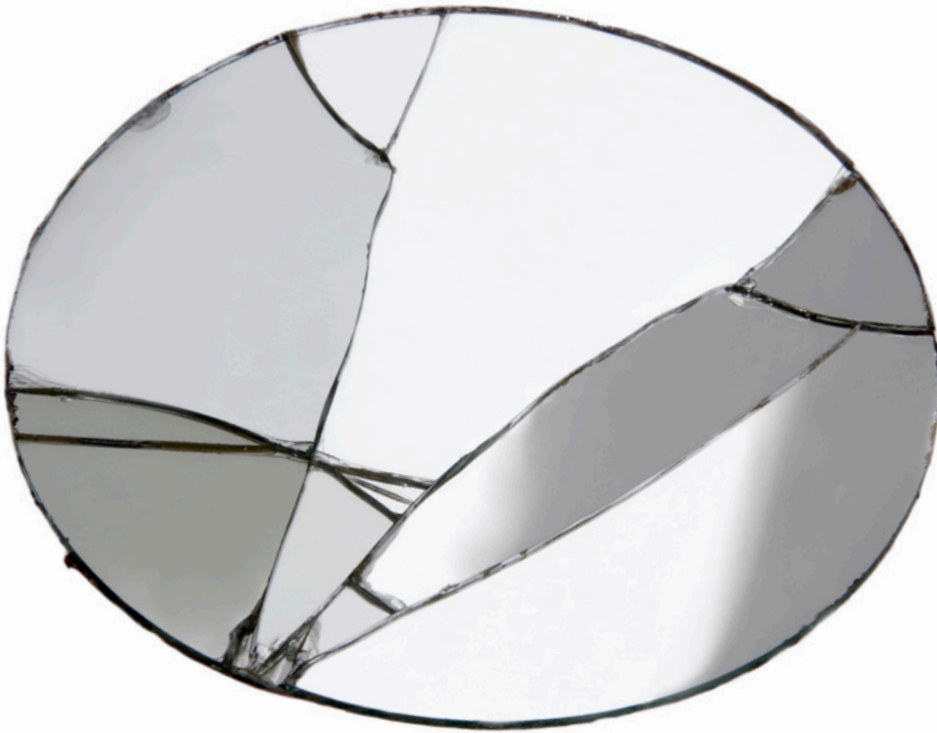
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1916: RI doctors mobilized on Mexican border in hunt for Pancho Villa

MARY KORR
RIMJ MANAGING EDITOR

When President Woodrow Wilson called out the cavalry to capture the notorious Mexican bandit and former Revolutionary War general, Francisco “Pancho” Villa, Providence physicians **DRS. AUGUSTUS W. CALDER, MARCIUS H. MERCHANT** and **BUXTON H. BERTRAM** packed their duffels.

Along with about 700 other medical and military personnel in the Rhode Island National Guard, they mustered out at Quonset Point on a train bound for El Paso, Texas, where they would be encamped at Fort Bliss near the Rio Grande. A Horse Guards Battalion rounded out the contingent, which no doubt attracted the interest of Dr. Calder, a rider and one of the founders of a Rhode Island polo club.

The federal call to action stemmed from a decade of border skirmishes during the Mexican Revolutionary War and escalated three months earlier, in March 1916, when Villa and his guerrilla band of “Villistas” killed 18 American soldiers at a fort in Columbus, New Mexico, three miles north of the Mexican border. This followed the execution of 16 American employees of the American Smelting and Refining Co. on a



Dr. Augustus W. Calder of Providence



Dr. Marcius H. Merchant of Warren

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train outside of Chihuahua, Villa’s home turf, on the previous January 11.

General John “Black Jack” Pershing led President Wilson’s Mexican Punitive Expedition, as it was branded. He and more than four thousand Army regulars crossed the border and pursued the villains for 400 miles into uncharted terrain, from March 16, 1916 to February 7, 1917.



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Ambulance Corps leaving Columbus, NM, for Mexico in search for Villa.



[Left] General Francisco “Pancho” Villa (1877–1923) on horseback, during the Mexican Revolution circa 1914. Possibly related to the Mutual Film Co., which contracted with Pancho Villa to produce a silent film, “The Life of General Villa” during the Revolution in 1914.

[Below] The camp of the U.S. Army 13th Cavalry in Columbus, NM, which was raided by Pancho Villa in March 1916 during the Mexican Revolution. The incident served as the catalyst for the Mexican Punitive Expedition ordered by President Woodrow Wilson.

[Bottom] The Rhode Island National Guard was encamped here in El Paso, TX, on the Rio Grande border.

General Pershing and his men pursued Villa for almost a year, until America’s entry into World War I intervened and Black Jack was called back to lead the American Expeditionary Forces in Europe. Ultimately, in 1923, Villa was assassinated by political foes.

The Rhode Island National Guard mustered out from November 1916 to the following February. Dr. Calder returned to his practice at the Providence Surgical Hospital; Dr. Merchant to his practice in Warren, and Dr. Buxton to the Lying-In Hospital. The latter would become an active editorial board member and business manager of the *Rhode Island Medical Journal*.

The Rhode Island National Guard, upon the 97th anniversary of the long-forgotten Mexican Punitive Expedition, published an account, which included the following written excerpt by Dr. Buxton assigned to Ambulance Company No. 1 which he titled: *Experiences on the Mexican Border*.

“We left Quonset Point on June 19th of a Sunday and had a very rapid trip to the border, four days on the road; received very enthusiastic greetings all the way along. I was surprised to find how general the call was throughout the country, brought home very forcibly to me by the fact that almost everyone whom I happened to know from various cities we passed through I found, on trying to reach them by telephone, were either at some mobilization camp or on their way to the border.

...I’ll never forget the night that we reached El Paso, – we landed in the freight yards near the Rio Grande river and had to wait an hour before being shunted out to Fort Bliss about 6 miles out of the city where we were to camp. I got off the train and wandered down to the river to take a look at the border. It was a bright moonlight night and one could look very readily across the small brook which is about what the Rio Grande is during dry weather.

I had an idea that the minute we struck the border



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there would be some exciting moments – perhaps wild shooting or attacks from across the river, but this night everything seemed peaceful – in fact as I walked down to the river bank I came to an infantry man (not a Rhode Island guardsmen, I am glad to say), on guard with his rifle leaning up against a fence while he engaged in a game of dice with another nearby sentry. The game quickly broke up, however, as I approached and I drew the man into conversation. He pointed out the Mexican sentry on the other bank of the river pacing up and down calmly smoking a cigarette. He also told me that two or three nights ago one of his sergeants had been shot by someone from across the way and that almost every night a few shots stray across. I decided that it might be just as well to return to the train as it was fairly bright that night – too bright to be out anyway, so without any noticeable haste, of course, returned to my train expecting to be shot in the back at any moment.” ❖