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Groupthink: What’s So Great About Teamwork?
KAITLYN MCLEOD, BS, MD’20; EDWARD FELLER, MD, FACP, FACG

Introduction
“She’s a great team player,” a common accolade, may not always be a good thing. Working in groups is neither inherently good nor successful. When effective and efficient, group processes facilitate problem-solving and decision-making and are vital to achieve success.¹ Working alone deprives an individual of collaboration, input, validation, and varied knowledge. This commentary explores how interactive, small-group processes in Medicine, as in other disciplines, can also have negative effects leading to impaired learning and sub-optimal decisions. Our discussion will focus on small teams, work or study groups, committees or panels that approach a specific problem.²

Why can small groups or teams lead to poor decisions?
Successful groups typically use collaboration, open communication and shared decision-making; ideally, each member has a voice. However, group interactions tend to favor clear, harmonious choices. At times, teamwork may deteriorate into an artificial homogeneity. Groupthink is a group conformity bias where pressure from oneself, peers, or leaders to produce consensus may limit discussion because potential dissenters self-censor, change or suppress a contrary opinion or evidence despite actual underlying disagreement.¹ The result can limit group performance by generating fewer and less creative ideas.² Perhaps surprisingly, the factors that affect idea generation, such as trust in teammates, group stability, cohesion and shared brainstorming can accentuate groupthink.³

What aspects of collaboration facilitate groupthink?
Group membership can be a powerful trigger to go along with the crowd. Peer pressure to achieve a consensus in homogeneous groups may influence a team member to endorse ill-formed opinions of other members. Insecure, new or lower-status members may focus on inclusion, friendship, acceptance and self-esteem conferred by group affiliation. Thus, non-conforming individuals may modify or censor their opinions to avoid group rejection, stigma and feelings of inadequacy. In a simple example, Nobel laureate Daniel Kahneman reported studies demonstrating that when a line of individuals incorrectly answers an easy problem, such as medical students measuring blood pressure, the next student is more likely to mimic their mistake rather than respond correctly, termed a herding or bandwagon effect.⁶

‘Wisdom of the crowd’ versus individual judgment
In 1906, Francis Galton collected individual responses for a ‘guess the weight of the ox’ competition, an example of “Wisdom of the Crowd,” a belief that the aggregate of solutions from a group of individuals is a superior problem-solving strategy than the majority of individual solutions. The median guess, 1,207 pounds, was less than 1% off of the actual weight of 1,198 pounds.⁷ But, wisdom of the crowd is most accurate when applied to numerical estimates with a correct response such as the number of jelly beans in a jar. The cognitive process in such estimates or specific fact-based questions is not analogous to typical medical decision-making. Aggregate wisdom can be inappropriately applied to complex group decisions which lack a precise answer. We must also note that collective wisdom strategies can work. For example, in Medicine, selecting the diagnosis of a majority of individual dermatologists or radiologists typically outperforms individual diagnoses in mammographic screening and skin-cancer detection.⁸

Groupthink is often resistant to logical reasoning or specific de-biasing training. These predispositions, which can distort communications, are frequently unconscious and automatic contributors to sub-optimal judgment.⁹ (Table 1).

Groupthink is not static or immutable. Its expression may be magnified by contextual influences during the work day which may be ignored, undetected or downplayed (Table 2).
Embracing dissent in teams

Group conflict or uncertainty may disrupt, distract or poison individual and collective success. But, striving for consensus or unanimity can undermine healthy skepticism by undervaluing the benefits of inter-member disagreement. By avoiding conflict, groups may never ask “what are we missing?” Conflict may foster creative ideas by expanding the range of options. Comfort expressing non-conforming ideas thrives when individuals feel safe despite heated debate. Conflict can destroy groups or be a productive, energizing source of learning, leading to superior outcomes.

Conclusion

Medical education and clinical medicine occur frequently in small groups or teams. Collaborative decision-making most frequently leads to better choices. Familiarity with negative consequences of potential group conformity biases can facilitate better group dynamics and improve group decisions. We must be wary that groupthink exists. Sometimes, teamwork can and does fail.

References


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Embracing dissent in teams

Group conflict or uncertainty may disrupt, distract or poison individual and collective success. But, striving for consensus or unanimity can undermine healthy skepticism by undervaluing the benefits of inter-member disagreement. By avoiding conflict, groups may never ask “what are we missing?” Conflict may foster creative ideas by expanding the range of options. Comfort expressing non-conforming ideas thrives when individuals feel safe despite heated debate. Conflict can destroy groups or be a productive, energizing source of learning, leading to superior outcomes.
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**Physician overextenders**

JOSEPH H. FRIEDMAN, MD

I recently learned from a scheduling secretary that my new patients frequently ask, “Am I going to see Dr. Friedman?” She told me that patients often find themselves referred to specialists by their primary care physician (PCP), only to see physician extenders and not the physician. Many patients also tell me they’ve never even seen their [PCP], only the physician assistant (PA) or the registered nurse practitioner (RNP).

I am a strong believer in physician extenders, the cadre of RNP’s and PA’s who have been increasing the amount and quality of care in the U.S. I have had the pleasure to work with some on a day-to-day basis and can attest to the benefits they provide. However, there is a limit to their capabilities and their increasing use as subspecialists without oversight has unnerved me.

A recent patient, transferring care from another state, thanked me after her examination. “That’s the most complete exam I’ve had since I saw the PA in my previous neurologist’s office. The doctor never examined me.” What should one think of a neurologist who doesn’t examine a patient? The neurological exam is the heart of the discipline.

I have referred patients with gait abnormalities to orthopedists to determine if a particular joint problem or set of joint problems might explain a peculiar gait. I consider myself a clinical gait specialist. I have given medical grand rounds at other universities on assessing gait disorders. I give a talk every year to geriatric internal medicine fellows, and occasional gait lectures to other groups. Gait disorders may be complex and I am often stumped, and therefore request opinions of others, who I believe will have more knowledge or experience in some aspect of the problem, since walking problems are often due to more than one contributing problem, like a brain disease plus bursitis. Most physicians, including neurologists and orthopedists, are uneasy assessing gait disorders. So, imagine my surprise to see my referral addressed by a PA. I’ve seen patients referred by a neurologist to a neurosurgeon, who saw only the neurosurgeon’s PA who then sent the patients to me. The first neurologist would have sent the patient to me directly if he wanted my opinion. He wanted the neurosurgeon’s, which he never got.

I sent a patient to a spine specialist because I wanted to be sure that her scoliosis was due only to Parkinson’s disease and not to an intrinsic spine problem. The patient told me that the PA told her that she had degenerative joint disease and scoliosis due to Parkinson’s disease, which is what I had thought, but I wasn’t sure if this assessment was correct, which is why I sent to patient to the orthopedist in the first place, and without an orthopedist’s opinion, still don’t know if it is correct. I wouldn’t have thought twice about it if I knew this was the spine specialist’s opinion. I sent a letter to the spine orthopedist to ask if I needed in the future to specify that he needed to see the patient! Not only that, but the same day I asked a patient why he limped after his hip replacement. He didn’t know. “Didn’t the orthopedist who operated on you say something?” “I never saw the orthopedist.” “Never?” “He came to the emergency department before the operation, but I never saw him again.” In seven months! Luckily, this has not been the experience of most of my patients who have had hip or knee replacements, but the fact that this was deemed acceptable behavior was a surprise to me.

I understand the need for physician extenders and have worked with them. When I worked with RNP’s, I used them only to see patients who I had first evaluated, and I considered relatively stable. If the patient was found to have not been stable, the RNP would get me so that I could review the case, at that time. I can’t imagine why a fellow physician would refer a patient for a non-physician evaluation. I’ve had patients tell me...
they were referred by a rheumatologist to an orthopedist and saw the health “extender.” Imagine, a doctor, possibly a specialist in a related discipline, sends a patient to another specialist in a closely related discipline and sees someone, perhaps a PA with 2 years of training, for an opinion. Aside from betraying a profound lack of respect for the referring physician, it displays one of the many weaknesses in our health care system. We train too few doctors, burden them with time intensive requirements that are not reimbursed and then use less well-trained health professionals to help compensate. This allows more patients to be seen in a timely manner, but for consultations, it may actually delay being seen, since the patient may have to wait again, several weeks, or months, to see the doctor.

It upsets me to think that my surgical colleagues think more of their PAs than they do of their medical colleagues or me. I am generally not keen to refer my patients to newly graduated surgeons, since they lack much experience. Why would a PA or an RNP be an appropriate substitute?

I now have my patients check to make sure they will see the doctor, and call me for an alternative referral if not. I may lose doctors I’ve dealt with over the years but why tolerate a drop in quality?

I am further asking you, the reader, to do the same. Physician extenders have a major role to play in health care. They can provide special services, like follow-ups after an operation, learning to identify danger signs so that they can call the doctor on call, to change dressings, reassure the patient and further supplement the routine care that used to be provided by registered nurses. They can likely sew up some lacerations, apply casts, assist in the interventional radiology suite, insert canulae and catheters, and follow patients in the office who have well-defined problems. If they can substitute for the doctor completely, why not get rid of the doctor and save a lot of money?

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Joseph H. Friedman, MD, is Editor-in-chief Emeritus of the *Rhode Island Medical Journal*, Professor and the Chief of the Division of Movement Disorders, Department of Neurology at the Alpert Medical School of Brown University, chief of Butler Hospital’s Movement Disorders Program and first recipient of the Stanley Aronson Chair in Neurodegenerative Disorders.
Helping Prevent Unintended Teen Pregnancy in Rhode Island Impacts All of Us

DIANA WOHLER, MD; MINOO D’CRUZ, MD; JORDAN WHITE, MD, MPH

In the late hours of a balmy summer night in Pawtucket, our patient pushed hard, cheeks puffed out and red with effort, beads of sweat at her temples. Her baby boy was delivered, dried off, and wrapped in a blanket before being handed to her. She held the crying newborn, visibly overcome with exhaustion and fear. At 16 years old she was scheduled to start her junior year that fall. Parenthood was not a part of her immediate plans. Now, as a new mother with limited support, life would have to wait.

Having easy access to a low-cost clinic with confidential services that addresses unintended pregnancy and reproductive health is essential to improving the health of teenagers in Rhode Island (RI), according to the Rhode Island Department of Health (RIDO), and helps them meet their educational and economic goals.

Fortunately, there are three such clinics in the state, housed within public high schools in Woonsocket, Central Falls, and West Warwick. These provide a range of low-cost and confidential reproductive health services, including contraceptive services and supplies, to teenagers, thereby reducing barriers to care. These clinics provide these services under the federal Title X program that awards nearly 1.2 million dollars to RIDO, the state’s Title X grantee. The majority of funds are distributed to eight community-based clinics throughout RI.

However, federal Title X funding is at its lowest in nine years. Additionally, new regulations from the U.S. Department of Health and Human Services (HHS) eliminate the requirement that Title X sites offer a broad range of medically approved family planning methods and nondirective pregnancy options counseling including the discussion of abortion. These regulations have been challenged by groups including the American Medical Association; however, if these rulings are enforced by the HHS, this action will restrict teenagers’ access to clinics with comprehensive contraceptive and family planning services and would have important repercussions on teenage health in Rhode Island.

There is a great public health need for these services. About one in four high school students in Rhode Island report that they are sexually active. Of those teens who are sexually active in RI, 88% depend on at least one form of birth control during their last reported sexual encounter. In RI, there are approximately 20 teen girls out of 1000 every year who experience an unintended pregnancy.

These pregnancies have long-lasting impact. Unintended teen pregnancy is linked to greater risk of future disadvantages in education, employment, housing and family structure. Only 50 percent of teen mothers have a high school diploma by age 22, versus 90 percent of women who do not give birth as a teen. Ensuring that teens have access to birth control is one of the best strategies to boost the graduation rate. Providing publicly funded contraception to one female teenager costs $239 a year; researchers estimate a savings of approximately $6 in medical costs for every $1 spent on contraceptive services.

Title X-funded school-based clinics in RI make a difference in helping prevent unintended teenage pregnancy. Based on our analysis of publicly available data from the Rhode Island Department of Health, teen pregnancy and birth rates were significantly lower over time in Woonsocket, where a Title X-funded school clinic has existed for several years. Central Falls, which has the highest teen pregnancy rate in the state, saw an overall decrease in teen pregnancy rates after the introduction of Title X-funded programming at the high school’s clinic.

To address the shortfall in federal Title X funding, we urge the Rhode Island House of Representatives and Legislation to appropriate state funding to Title-X funded school-based clinics to allow them to continue providing fundamental reproductive health care, including a full range of contraceptive services and supplies. Specifically, we urge the House to reconsider H7928, introduced by Representative Kazarian last January, which would annually appropriate state funds for contraceptive services; we also ask that they reconsider and include school-based clinics in this appropriations bill. This action will save millions in taxpayer funds and would contribute to the goal of our state’s teenagers fulfilling their potential.
References
1. Adolescent Sexual Health 2016-2020 RI Profile, Rhode Island Department of Health.
3. https://www.nationalfamilyplanning.org/title-x_budget-appropriations

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SIASCONSET, NANTUCKET

Sankaty Head Light as it looked circa 1850s to 1870s (lower right), with lighthouse keeper’s cottage. It opened on February 1, 1850, the first lighthouse in the U.S. equipped with a Fresnel lens. Historians and the general press of the period reported that fishermen called the light “a blazing star.”

In its 169-year history it has had numerous renovations and upgrades, and was automated in 1965. Now on the National Register of Historic Places, it was acquired by The ‘Sconset Trust in 2007. During that year it was moved back from its original site due to severe bluff erosion.

PHOTO COURTESY WILLIAM BINDER, MD

William Binder, MD, Co-Editor-in-Chief of the Rhode Island Medical Journal (RIMJ), checks the latest issue on Nantucket. In the background is the historic Sankaty Head Light (1850) on the easternmost portion of the island in the village of Siasconset.

Congress appropriated funds for the Sankaty and other U.S. lighthouses and harbor equipment on August 14, 1848. The Sankaty lighthouse was funded for $12,000. The name of the lighthouse is reported to be a Wampanoag term for high land or cold hill.
Rhode Island may be small in size, but it continues to have a major impact on the health of people around the world. In this special Global Health issue of the Rhode Island Medical Journal (RIMJ), we present nine articles on innovative research, training, and advocacy projects led by Rhode Island physicians and students that span five continents.

In the spirit of “think globally, act locally,” Odette ZERO, et al. describe the ongoing work of the Brown Human Rights Asylum Clinic to provide pro bono medical affidavits for asylum seekers in Rhode Island, supporting their claims of torture or violence in their home countries.

Africa
A series of articles focus on projects in sub-Saharan Africa. AMITA KULKARNI, et al. describe a unique collaboration between Women and Infants Hospital at Brown University and Kibagabaga Hospital in Rwanda to improve management of obstetric fistula, a common and debilitating diagnosis for tens of thousands of women who lack access to emergency obstetric care. ALISON HAYWARD, et al. report on a survey conducted by Brown faculty in collaboration with the local Uganda Village Project in rural eastern Uganda to determine the unmet need for modern contraception. LINDSAY DREIZLER, et al. report the preliminary results of Project ECHO, a novel tele-mentoring program training health care providers in rural Kenya in point-of-care ultrasound techniques. And STEPHANIE C. GARBERN, et al. describe efforts to build emergency care research capacity at Rwanda’s main government referral hospital.

Asia
In South Asia, MONIQUE GAINEY, et al. report on novel research conducted by Brown faculty with local colleagues at the International Centre for Diarrhoeal Disease Research, Bangladesh, on the development of new mobile health decision support tools for managing dehydration from cholera and other severe diarrheal diseases.

Latin America
In Latin America, KATELYN MORETTI, et al. describe the rollout of the World Health Organization’s Basic Emergency Care training in rural Colombia, as well as their new projects related to the care of recently arriving Venezuelan refugees and Colombian citizens internally displaced by decades of conflict. And NEESHA NAMA, et al. report on a bilateral, trainee-driven medical exchange program between Rhode Island Hospital and Hospital Regional Universitario José María Cabral y Báez in the Dominican Republic.

Global
Members of the Brown faculty are also fighting multi-drug resistant TB all around the globe. The article by DARIA SZKWARKO, et al. relates the details of efforts to confront the threat in Peru, Kenya, and Ukraine. These physicians are working on efforts to improve case detection rates and reduce drug resistance through broadened access to diagnostics and treatment.

The articles included in this Global Health special issue present just a few of the multitude of ongoing collaborations between Rhode Island physicians and colleagues based around the world to improve the care of some of the world’s most vulnerable populations. Little Rhody certainly has much to be proud of on the global stage.

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https://brownasylumclinic.wixsite.com/bhrac
Addressing Global Human Rights Violations in Rhode Island: The Brown Human Rights Asylum Clinic

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ABSTRACT
The Brown Human Rights Asylum Clinic (BHRAC) is a medical student-led organization affiliated with Physicians for Human Rights that collaborates with medical and mental health clinicians, lawyers, and community organizations to provide pro bono medical affidavits to undocumented individuals seeking legal status in the United States. Affidavits can document and corroborate the physical and psychological evidence of trauma alleged by asylum seekers, leading to better legal outcomes. This article describes our innovative program, partnerships, and workflow, as well as demographics and statistics from our past seven years of operation. Since its founding in 2013, BHRAC has conducted 55 medical evaluations, the majority involving Spanish-speaking female-identifying individuals from Guatemala, El Salvador, and the Dominican Republic. Thirteen individuals have been granted legal status, one individual was denied status, and the rest of the cases are pending. BHRAC has experienced a marked increase in affidavit requests. This paper serves as a call to action for medical professionals to become involved in this work.

KEYWORDS: asylum, human rights, immigration, medical affidavits

INTRODUCTION
In 2017, 68.5 million people globally were forcibly displaced from their homes by violence, conflict, and persecution, with the United States (U.S.) receiving 331,700 asylum applications from 168 countries.1 Although the number of asylum seekers arriving in the U.S. has risen since 2013, paths toward legal resettlement have diminished as application approval rates have dropped.2 Asylum seekers are those who have left their country of habitual residence because of a “well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group, or political opinion.”3 In the U.S., granting of asylum authorizes an individual to live and work in the country, sponsor immediate family members for asylum, apply for a green card after one year, and eventually apply for citizenship.4 Alternative forms of relief exist for victims of human trafficking, domestic violence, and other crimes.

Physicians for Human Rights (PHR) coordinates a network of clinicians and medical student-run clinics to provide pro bono medical affidavits supporting asylum seekers’ claims of torture or violence in their home countries. Clinician-evaluators play a critical role in establishing the applicant’s credibility by conducting examinations to document and corroborate the physical and psychological evidence of trauma alleged by asylum seekers. While the average U.S. asylum approval rate was 37.5% in the early 2000s, it rose to 89% when professional evaluations accompanied the cases.4 For these reasons, immigration attorneys value medical affidavits, often encouraging clients to spend money on this service. In many cases, however, undocumented immigrant clients do not have the means to pay for an evaluation, and their case may suffer for it.

Twenty-two non-governmental organizations, academic hospitals, and medical schools across the country, including the Brown Human Rights Asylum Clinic (BHRAC), train clinicians to conduct medical evaluations and write affidavits. Student-run clinics offer the advantage of shifting the burden of time, correspondence, and affidavit drafting to medical students, freeing clinicians to perform evaluations more frequently.5 Asylum medicine offers a space for interdisciplinary collaboration and partnership, experiential learning between clinicians and medical students, and the opportunity for international and local impact at the intersection of global health and human rights.

HISTORY OF BHRAC
BHRAC was created in 2013 by five Warren Alpert Medical School (AMS) students in partnership with PHR to respond to the growing number of undocumented immigrants in Rhode Island and southern Massachusetts who were seeking asylum in the U.S. due to experiences or threats of persecution, torture, and violence in their home countries. BHRAC has since conducted an annual PHR training for evaluators and medical students to learn how to perform evaluations and write affidavits for asylum seekers. Currently, 42 health professionals and 87 medical students have been trained to conduct this work.

In the first years of operation, BHRAC received asylum cases exclusively from PHR. Attorneys from all over the U.S. submit applications to PHR, which processes them...
and forwards affidavit requests to medical school-affiliated asylum clinics. An increasing number of dedicated Rhode Island clinicians and AMS medical students has allowed BHRAC to increase its capacity to accept cases from local community partners such as Sojourner House, a domestic and sexual violence prevention organization, the Roger Williams University Law School Immigration Clinic, a pro bono legal clinic for immigrants who need assistance obtaining lawful permanent residence; Clínica Esperanza, a free clinic for uninsured adults living in RI; the Alliance to Mobilize Our Resistance (AMOR), an alliance of several community organizations dedicated to providing community support to victims of hate crimes and state-sponsored violence, and local immigration law offices. In response to local need, BHRAC now provides affidavits to undocumented individuals seeking legal status through other avenues besides asylum.

**BHRAC WORKFLOW**

After receiving a client referral from PHR or a local partner, BHRAC assigns the case to one of four Case Coordinators (CC) at AMS, who then communicate with Rhode Island’s network of 42 PHR-trained clinicians, including attending and resident physicians from Internal Medicine, Family Medicine, Emergency Medicine, Psychiatry, Medicine-Pediatrics, Nephrology, Triple Board (Pediatrics, Child and Adult Psychiatry) and mental health professionals such as licensed social workers and psychologists. Clinicians who are able to collaborate on the case respond with their availability. CCs contact specific evaluators if, for example, the client has a gender preference for the evaluator or is younger than age 18.

**Case description example**

Client is a 32-year-old Guatemalan woman seeking a psychological evaluation for her asylum case. Female evaluator preferred. The client speaks Spanish, is not in detention, and is not requesting oral testimony at this time. The client is from an indigenous group and fears returning to her home country. She is a survivor of childhood sexual abuse and as an adult, was a victim of physical abuse and repeated death threats by her partner. She continues to suffer from insomnia, nightmares, and severe anxiety in daily interactions. The attorney is requesting a completed affidavit in two months.

The CC provides the evaluator’s availability to the legal team, who then communicates with the client and secures a non-family member interpreter, if needed. Once the clinician, legal team, and client confirm a date and time, the CC emails the pool of 75 PHR-trained medical students to identify two scribes who will attend the evaluation and help write the medical affidavit.

The CC communicates with designated staff at Clínica Esperanza or Sojourner House to schedule a private room for the evaluation, with an examination table if needed. Then, the CC emails all parties with a description of the case, the date, time, and location of the evaluation, and resources for conducting the evaluation and writing the medical or psychological affidavit. If available, the evaluator reviews medical health records, previous statements, and other documents provided by the legal team.

Prior to the evaluation, the evaluator reviews confidentiality, informed consent, and the purpose of the evaluation with the client, as well as addresses the sensitive nature of the information to be gathered. Often, evaluators start with questions about the client’s demographic information, family, childhood, medical, and social history. After these introductory questions, the evaluator reviews why the client came to the U.S. and assesses any trauma sustained before or after migration that would influence the client’s ability to return to their home country. The evaluator then performs an extensive psychological evaluation, which includes a mental status exam and standard mental health screens (e.g. PHQ-9, GAD-7, PCL-C, PHQ-15). In addition, a physical exam may also be performed to document any evidence of torture or abuse. The recorded trauma history should be as precise and detailed as possible in order to assess consistency with physical and mental symptoms. Some clients, however, may not be able to provide complete or detailed accounts due to emotional distress, language barriers, and memory problems related to physical or mental trauma. In order to minimize re-traumatization, clinicians strive to conduct the evaluation in an empathetic, trauma-informed manner while maintaining objectivity. Evaluations typically last two to four hours. Medical care is not offered during or after the evaluation, as the evaluator’s role is to gather the client’s evidence for future legal proceedings. Evaluators can, however, include recommendations about the need for further medical or psychological care in the final affidavit. BHRAC has also created a community resource guide and case navigation program to aid clients in need of follow-up services.

In keeping with the Istanbul Protocol, the international guidelines for investigating and documenting torture adopted by the United Nations in 1999, the affidavit documents evidence of torture or abuse, provides expert opinion on the degree to which clinical findings corroborate allegations of abuse, and informs adjudicators on the behavioral, physical, and psychological sequelae of trauma through clinical observations and diagnostic tests. After the evaluation, the medical students write the narrative portion of the affidavit and send a draft to the evaluator to complete. The evaluator then sends a signed copy of the completed affidavit to the legal team before the requested deadline. Evaluators may be asked to testify in person or by telephone or videoconferencing at future judicial hearings.

BHRAC recognizes that clinicians and medical students exposed to difficult narratives of trauma and violence are at greater risk of vicarious trauma from the emotional burdens of listening and responding to these stories. Through debriefing opportunities, case discussions, and community
events, BHRAC hopes to create a space for “vicarious resilience” thereby building insight, empathy, and strength among medical students and clinicians to continue this important work.5

**BHRAC CLIENT DEMOGRAPHICS**

As of May 2019, BHRAC has completed 55 total medical evaluations: 26 in the preceding year, with 13 new cases currently in progress. Of the past 55 evaluations, 49 evaluations were conducted in Spanish, 4 in English, and one evaluation each in Arabic and Cantonese. The client base was 69.6% female and 30.4% male. Clients have ranged from 13 to 80 years in age, with the average age being 30.7 years. Clients’ primary reasons for seeking asylum include domestic violence (60%, n=33), gang violence (27%; n=15), ethnic discrimination (4%; n=2), and other (9%, n=5) (Figure 2).

**DISCUSSION**

The impact and reach of our program has grown each year. The majority of our clients are seeking asylum, but since partnering with Sojourner House, Clinica esperanza, AMOR, and Roger Williams University Immigration Clinic, we have also conducted evaluations for non-asylum applications.

Most of our clients are Spanish-speakers, over half of whom are female-identifying and hail from Guatemala, El Salvador, and the Dominican Republic (Figure 1). This is different from the national average, where the leading nationality for asylum applications is Venezuelan. While Guatemalan applicants make up 61% of BRAC’s client base, the national application rate for Guatemalan applicants is only 9%.10

It is of note that more than half of our case results are still pending, reflecting the slow nature of immigration legal proceedings (Figure 3). In the U.S., as of July 2018, there were over 700,000 pending immigration cases and the wait time on average for an immigration hearing was over 2 years. Patience is essential to asylum work, and slow turnaround can be discouraging to evaluators and students. However, the first 12 BHRAC clients were all granted asylum. Of all the cases with a court decision, only 1 BHRAC case has ever been denied asylum. Compared to the national asylum acceptance rate of between 28–46% per year between 2009 and 2018, this provides testament to the importance of our clinic’s work.10
A current challenge is the number of evaluation requests received. While we have a large network of evaluators, a smaller pool ends up conducting the bulk of cases. Many evaluators have busy clinical schedules and can only take on one or two cases per year. Others do not feel comfortable conducting evaluations on their own and request to shadow an experienced evaluator; however, coordinating with two different clinician schedules can be difficult. To improve engagement with our network, we have expanded communication efforts via email, community events, and trainings, increased transparency on our impact results and workflow, and are building resources and a mentorship system for new evaluators. Another challenge is coordinating between multiple parties to organize the evaluation, a time-intensive task that requires rapid problem solving and consistent monitoring of email by busy medical students and clinicians. Every spring, BHRAC leadership is transferred to rising second-year medical students. Strain is placed on the outgoing board during transition periods to maintain clinic operations while training the next board. The current board has made efforts to solidify and document institutional knowledge to minimize transitional issues.

**CONCLUSION**

Since 2013, The Brown Human Rights Asylum Clinic (BHRAc), a medical student-led organization affiliated with Physicians for Human Rights, has collaborated with RI medical and mental health clinicians, lawyers, social service organizations, and immigrant communities to provide pro bono medical affidavits for undocumented individuals seeking legal status in the U.S. Affidavits can document and corroborate the physical and psychological evidence of trauma alleged by asylum seekers, leading to better legal outcomes. The clinic also offers a unique opportunity for medical students to learn by observing culturally competent and trauma-informed clinicians conduct skilled evaluations, while offering clinicians and students a setting to practice global health and human rights work in RI.

Our local work takes on the critical global health imperative to address the human rights violations around the world that spur migration to communities like RI. We hope this paper will serve as a call to action for interested medical and mental health clinicians to join our clinic as evaluators, mentors, and human rights advocates. To learn more and participate in our annual Physician for Human Rights training, email Brown.asylum.clinic@gmail.com.

**References**

3. Physicians for Human Rights. Asylum and other relief for immigrant victims of violence and persecution [Fact sheet]. 2015. Retrieved from https://static1.squarespace.com/static/54c1a793e4b0b73c478253dc/1/t/551a212ea1e4b05e8ec0b667c7/1427805476/5/551aa12ee4b05e8ec0b667c7/551a212ea1e4b05e8ec0b667c7/asylum-and-other-relief.pdf.

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**Disclaimer**

The views expressed herein are those of the authors and do not necessarily reflect the views of the Alpert Medical School or Physicians for Human Rights.

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Obstetric Fistula Repair in Sub-Saharan Africa: Partnering to Create Sustainable Impact for Patients and Trainees

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ABSTRACT
Obstetric fistula, an abnormal connection between a woman’s genital tract and urinary tract or rectum, can be physically and psychosocially debilitating. We describe a sustainable obstetric fistula surgical trip model that includes providers from Women and Infants Hospital at Brown University. These surgical trips provide pre-operative, surgical, and post-operative care to patients with fistulae at Kibagabaga Hospital in Kigali, Rwanda.

To ensure patients are prepared for the recovery process after fistula surgery, the team created a post-operative education curriculum that includes illustrative visual aids and teaching guides translated into Kinyarwanda, focusing on topics including urinary catheter care, wound care, and pain management. Through this program, the team is committed to restoring women’s dignity through fistula repair as well as providing a model for delivery of sustainable surgical care in low-resource settings. Involvement of trainees into a global health team like this can benefit both the trainee and the patients served.

KEYWORDS: global health, obstetric fistula, women’s health

BACKGROUND
Obstetric fistula, an abnormal connection between a woman’s genital tract and urinary tract or rectum, affects between 50,000 to 100,000 women worldwide each year.¹ The most common cause of obstetric fistula globally is protracted, obstructed labor which can often be prevented, in part by timely access to obstetric services. Women experiencing obstructed labor may labor for multiple days, causing tissue necrosis due to fetal head compression within the pelvis, and a subsequent vesicovaginal fistula (connection between the bladder and vagina) or rectovaginal fistula (connection between the rectum and vagina). Women who suffer from obstetric fistula experience constant incontinence of urine, feces, or both, that causes physical complications as well as social isolation, including rejection from their husbands, families, and communities at large. Acknowledging this devastating yet preventable condition, the World Health Organization (WHO) has prioritized the prevention and management of obstetric fistula in its Sustainable Development Goals as a means of improving global maternal health. The surgical repair of a vesicovaginal or rectovaginal fistula can alter the course of a woman’s life; however, the lack of training of local physicians and inadequate resources for evaluation and repair are some of the many reasons the majority of these women are unable to be treated for their condition.

SUMMARY OF IOWD FISTULA SURGERY PROGRAM HISTORY AND ACCOMPLISHMENTS
Benefits of global health experiences for trainees are well-recognized. Global health experiences broaden medical knowledge, foster an improvement in diagnostic, examination and procedural skills, and develop a deeper appreciation for public health issues, professionalism, and cultural sensitivity. In addition, trainees who have global health experiences are more likely to practice medicine among underserved and multicultural populations, and/or work internationally in the future.² Recognizing this, the Division of Urogynecology and Reconstructive Pelvic Surgery within the Department of Obstetrics and Gynecology at Women and Infants Hospital has sponsored Dr. B. Star Hampton, Professor of Obstetrics and Gynecology at the Warren Alpert Medical School of Brown University, and a Fellow in Female Pelvic Medicine and Reconstructive Surgery (FPMRS) to travel to Sub-Saharan Africa as part of an obstetric fistula repair team organized by the International Organization for Women and Development (IOWD) since 2008.³ As part of their training, the FPMRS fellows have a unique opportunity to take part in the evaluation and management of complicated surgical patients, giving them insight into the care of obstetric fistula as well as global health efforts. The Division of Urogynecology at Women and Infants is one of the few FPMRS Fellowships in the nation to sponsor a fellow on a yearly basis. The design and curriculum of this program has served as a national model. Many graduated FPMRS fellows now include global health work in their careers, attributing this experience as life-changing. Dr. Hampton has extended the opportunity to be part of this surgical team to medical students at Alpert Medical School and Obstetrics and Gynecology residents at Women and Infants who have demonstrated a unique interest in obstetric fistula and global health, as well as a level of maturity and cultural competency to integrate into a challenging work environment.
Initially Dr. Hampton traveled with IOWD to Niger, but since 2010, the organization has moved their team to Kibagabaga Hospital in Kigali, Rwanda. Dr. Hampton serves as the team leader and lead surgeon for an annual two-week surgical mission, one of three per year organized by IOWD. During this mission, an average of over 150 women are triaged, many of whom have traveled hours to days for help, and usually more than 50 women undergo fistula repair surgery. Over the last eight years in Rwanda, the program has evaluated approximately 3,500 patients and operated on close to 1,200 women suffering from fistulae. The team works directly with Rwandan care providers, and educates these providers on evaluation and treatment of obstetric fistula, as well as post-operative care, with an aim to be a sustainable program.

**POST-OPERATIVE PATIENT EDUCATION**

Ensuring that patients understand the care they receive is at the core of “patient-centered care,” but in practice, it is not always easy. Here in the United States, challenges related to patient education including providers’ lack of time, varying levels of health literacy among patients, and cultural barriers are common. During their global health experience with IOWD at Kibagabaga Hospital, trainees on the surgical team have the unique opportunity of having ample time to spend with patients, many of whom have traveled hours to seek care for their fistulae and stay on hospital grounds for two to four weeks after surgery. It is essential, however, for team members to be cognizant of cultural differences between foreign care providers and Rwandan patients, as well as patients’ limited formal education and health literacy.

The idea for a post-operative educational curriculum for the obstetric fistula patients at Kibagabaga Hospital came about after a need was expressed by multiple stakeholders: Dr. Hampton and the team of visiting surgeons who had been performing fistula repair surgeries for over five years at the hospital, Rwandan care providers, and most importantly the patients. Previous literature has noted the limited understanding among patients undergoing fistula repair about the surgery itself and the subsequent post-operative healing. In addition to the expected post-operative risks associated with any surgery, fistula repair surgeries are often time-intensive and complex. They require prolonged post-operative bladder drainage with an indwelling Foley catheter for one to two weeks, sometimes longer, in order for the tissue to remain tension-free and heal. Recovering from surgery with a urinary catheter is inconvenient and uncomfortable at baseline. This can be further challenging for women in a low-resource setting like Rwanda. For the patients who presented for fistula surgery to Kibagabaga Hospital, many of them lived hours or days away and had limited access to qualified health care providers if surgical or catheter complications arose. Additionally, many had not openly shared their plan for surgery with their husbands and families so felt a sense of pressure to return back to their homes quickly to resume their responsibilities and also were concerned about how to avoid sexual intercourse without disclosing their condition. To address these potential complications, patients had accommodations on the hospital grounds in order to recover following surgery and allow the Fistula team to follow them post-operatively.

Dr. Hampton and trainees that traveled with her to Rwanda in February 2017 (AK, AM) undertook the task of creating a formalized curriculum to standardize, and make accessible to patients, information regarding post-operative expectations. The curriculum focused on common issues patients would experience post-operatively including urinary catheter care, wound care, pain management, and worrisome signs or symptoms that warranted prompt medical attention. Aware that a majority of our patient population was illiterate, large visual aids provided the basis for the patient education modules with supplemental teaching guides translated into Kinyarwanda to aid the Rwandan providers in group and individual discussions.

It was imperative that the project was a collaboration, from development to implementation, between the US-based team and the Rwandan colleagues in order to be successful. The initial project concept was discussed with both IOWD’s Executive Director and the lead nurse who oversees the fistula program at Kibagabaga Hospital. Having long-term, personal relationships with these partners and their buy-in was vital in moving the project forward. A proposed outline of curriculum content was shared electronically with Rwandan partners, who provided critical feedback that was both constructive and enlightening. For example, during a unit discussing perineal hygiene, the US team suggested use of perineal bottles to keep the area clean. Rwandan partners reminded the team that something as simple as a perineal bottle was not readily available or affordable for most patients. Rwandan partners also encouraged clarification and simplification of instructions and language. Did perineal baths require soap? Many patients didn’t have daily access to soap but a simple bucket with clean water and a wash cloth would suffice.

**Figure 1. Simple instructional drawings for visual teaching.**
Once content was finalized, an illustrator (SA), who had traveled with the surgical team on prior missions and was familiar with setting and patients, created simple instructional drawings for visual teaching (Figure 1). Rwandan partners helped ensure illustrations were clear and appropriate. Feedback regarding details such as the color of clothing the woman was wearing and the position she was sitting in was essential for illustrations to be accurate and useful. This iterative process was not only helpful in ensuring the US team brought the best educational materials to the patients, but also allowed for connection and idea sharing, creating a team dynamic between Rwandan and US colleagues that everyone felt a part of even before meeting on the ground in Kigali.

Once in Kigali, the curriculum was used to lead a large-group workshop with over 80 women about post-operative care and what they might expect (Photo above). Careful consideration was taken regarding workshop structure and leadership, with the fistula program’s lead nurse and physician (AN) running the workshop as they not only spoke the language fluently but were known and well-respected by the patients. They had a deep understanding of the emotional, physical, and social impacts fistula had on individual women in the group. With this leadership, the workshop became an interactive safe space, where women felt comfortable talking about the most intimate parts of their bodies and asking questions they may not have otherwise asked. After the large workshop, the US team worked closely with a group of Rwandan medical students to reinforce educational topics with individual patients after their surgeries. Patients were informally surveyed about perspectives on the educational modules and overall found the illustrations and group sessions helpful, with many stating that it answered questions they may have had but were too afraid to ask. One patient, a 43-year-old woman who lived with a rectovaginal fistula for 15 years after a vaginal delivery underwent surgery with the IOWD team. She recounted the shame she experienced surrounding her fecal incontinence, not telling anyone about it, including her husband who she continued to have intercourse with despite pain because she was afraid he would leave her. She was feeling desperate after she asked a midwife who told her there was nothing that could be done for her due to the lack of skilled doctors. After her fistula repair, she remarked that the curriculum and illustrations were very helpful, stating “you cannot heal if you do not follow them” and that they “give clear instructions, they help when you forget, they show you clear pictures as examples of how to behave.”

The initial implementation of the post-operative education modules was successful and through ongoing collaboration with and feedback from Rwandan colleagues and patients, content has continued to be updated (Photo below). The project has also been a lesson in the challenges of...
sustainability. While the core US and Rwandan members of the program have been involved for a number of years, there is often turnover each year among visiting team members, Rwandan medical students, and hospital staff. Further, with a long-standing program like this, there are multiple priorities each mission that need to be balanced. This can make it difficult to maintain continuity and excitement around any single initiative. In order to address this, the team’s goal is to have the education modules revisited during each surgical mission by appointing a champion within both the US and Rwandan care teams each trip to ensure close follow-up and follow-through.

**CONCLUSION**

Obstetric fistula is both physically and psychologically debilitating. IOWD and its surgical teams continue to work to help restore women’s dignity, allowing them to reintegrate into their families and communities. Through integration into this experience, trainees can better understand how to deliver sustainable surgical care to patients in low-resource settings, as well as dedicate time to projects such as the patient education initiative described here. Involvement of trainees into a global health team thus not only benefits the trainee, but can positively impact the patients served.

**References**


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A Collaborative Family Planning Program in Rural Uganda Utilizing Community Health Workers

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ABSTRACT
In 2015, a household survey was conducted in rural eastern Ugandan villages to determine fertility rate, prevalence of childbirth in the hospital setting, use of and unmet need for modern contraception. There remains a high fertility rate as well as high unmet need for contraception in the surveyed villages. However, Uganda Village Project’s community health worker-based family planning program has shown promise to address these concerns.

KEYWORDS: Uganda, family planning, reproductive health, community health workers

BACKGROUND
In rural Uganda, there are many barriers to accessing reproductive healthcare, family planning counseling and contraception. According to the most recent Uganda Demographic and Health Survey (DHS), women in Uganda experience a large gap between wanted fertility rate and actual fertility rate. Wanted fertility rate is the average number of children a woman wants to have by the end of her childbearing years. Actual fertility rate is the total number of children a woman has by the end of her childbearing years. For Ugandan women in rural areas, such as the region served by Uganda Village Project, actual fertility rate was 1.3 children higher than the wanted fertility rate. The large gap among women in rural area suggests that there is a need for more family planning counseling and contraception. The DHS suggests that 32% of sexually active unmarried women have an unmet need for family planning.1

In rural Uganda, lack of access to health centers and pervasive misinformation about contraception pose as large barriers to women and girls accessing contraception. These barriers, among others, help to explain why 1 out of every 4 women living in rural areas become pregnant or have their first child between ages 15 and 19.1 Pregnancy and childbirth-related complications are the leading cause of death for girls aged 15 to 19.2,3 Pregnant adolescents also experience a significantly higher rate of severe neonatal conditions such as preterm delivery, low birthweight infants, and stillbirth. They also face a higher risk of perinatal systemic infections, eclampsia and endometritis.4

Uganda Village Project (UVP), a grassroots nonprofit based in eastern Uganda, has partnered with community health workers (CHW) and local health center staff to assess the family planning needs of the community and to provide necessary and desired access to family planning programs to women and adolescent girls living in rural Uganda.

RESEARCH SETTING AND PARTNERSHIP
Uganda Village Project was co-founded by Alison Hayward, MD, MPH, a member of the faculty of the Department of Emergency Medicine of the Warren Alpert Medical School of Brown University. Since 2003, UVP has partnered with villages to improve community health through implementation of the Healthy Villages Initiative. The objective of this initiative is to provide a set of programs addressing community health needs prioritized by residents of target villages, including malaria prevention, HIV/AIDS testing and counseling, safe water, sanitation and hygiene, obstetric fistula awareness and support, and family planning/reproductive health services. In order to achieve this objective, UVP partners with community leaders, community health workers on Village Health Teams (VHTs) and local health center staff to promote community health and to perform household-based needs assessments throughout target villages. Through conducting a series of surveys in the region, Uganda Village Project has obtained a detailed combination of demographic information and health indicators from a large randomized sample of our target population in order to provide the most needed health interventions to rural Ugandan villages.

PROGRAM DESCRIPTION
The UVP family planning program is integrated into the Healthy Villages Initiative. Family planning outreaches are run by UVP staff, Village Health Team family planning representatives and family planning nurses from local health centers (HCs). Before the scheduled outreach, a family planning representative from the Village Health Team helps mobilize women from the village to attend the event. On the day of the outreach, the family planning nurse and a UVP staff member travel to the target village, conduct an educational session, and provide one-on-one contraception
counseling to the women in the village. After counseling, the nurse provides each woman the contraception method of her choice. Outreaches occur every 12 weeks to ensure clients are able to receive timely contraceptive injections or pill refills for continuous use.

Men are typically not recruited to attend these events. In the past, female attendees have refused birth control if a man in the village was present at the outreach, as they fear he might disclose her birth control use to her husband. Based on anecdotal evidence and observation, it has become clear that family planning is not widely accepted among men in the villages. This creates additional barriers to women achieving family planning goals and ensuring healthy, desired pregnancies. To help break down this barrier, Uganda Village Project has taken steps to ensure that men are also receiving necessary family planning education.

METHODS
In 2015, community leaders from Bukakaire, Kitukiro and Nabiire villages provided the study team with a list of households in their village. The study team assigned each household a number and then used a random number generator to choose which houses to survey. By the end of the data collection period, a total of 351 households, from across the three villages, had completed the household-level needs assessment survey as a part of the Healthy Village Initiative.

The household-level needs assessment was a quantitative survey that included modules on household demographics, malaria, family planning, obstetric fistula, water, sanitation, hygiene, and HIV, as well as including child anthropometry with measurements of the height, weight, and mid upper arm circumference of household children. The family planning module was completed by the female head of the household. Descriptive statistical analysis was performed on all collected data using StataSE. The study protocol was approved by both the Uganda National Council of Science and Technology and the Brown University Institutional Review Board.

RESULTS
Out of the 351 households interviewed, 323 females completed the family planning module of the survey. The age of the women completing the survey ranged from 17 years old to 100 years old, with the average age being 37 years old. The self-reported total fertility rate was 6.29, which was slightly higher than Uganda’s total fertility rate, which is 5.4, as well as higher than the 5.9 rate reported for Uganda’s rural areas. 121 (49.8%) of the women interviewed had given birth in the past 12 months and the overwhelming majority (87.7%) of those births occurred in a hospital setting.

Of the 323 women interviewed, 71% were not currently using a form of modern contraception. Out of those women, 52% reported that they would like to be. The most commonly cited reasons for not using modern contraception included fear of after effects (43%), advanced maternal age/infertility (19.5%), and desire to become pregnant (10.7%).

DISCUSSION
There is currently a significant unmet need for contraception and family planning programs in rural villages in eastern Uganda, as elucidated by UVP’s household survey results. The limitations of this survey included the format of household surveying being less likely to reach certain populations, such as women who work outside the home in the town or trading center, or adolescent females who would be attending secondary school. Our survey was only completed by female heads of the household, whereas the Uganda DHS has continually shown a greater need for family planning services amongst unmarried, sexually active women. Thus, the need amongst the population overall, including adolescent females and unmarried young adults, is likely even higher than these figures reflect.

Illustrating the barriers faced by women in the village in seeking family planning services, a large majority of the women surveyed were not using any modern method of birth control, and more than half those women stated they would like to be. Concerns about the safety of modern birth control methods are high in this population, since rumors of embarrassing or dangerous side effects are prevalent. Future efforts by Uganda Village Project will be aimed at further assessment of the specific needs of adolescent and young, unmarried females in our target communities and how they can better be served, as well as trying to improve accessibility of discreet family planning services for those who do not wish to attend public educational events.

CONCLUSION
By surveying villages at the household level, assessing the specific needs of village residents, and providing educational and interventional outreaches focused on reproductive health and the provision of family planning services in conjunction with local public health centers, Uganda Village Project hopes to continue to work to address the needs of people living in rural eastern Uganda.
References

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Disclaimer
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Tele-ECHO for Point-of-Care Ultrasound in Rural Kenya: A Feasibility Study

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ABSTRACT

BACKGROUND: Geographical isolation limits continuous point-of-care ultrasound (PoCUS) education for healthcare providers in rural Kenya. This study evaluates the use of the Project ECHO [Extension for Community Healthcare Outcomes] videoconference platform to connect health care providers in rural Kenya with PoCUS trainers at Brown University.

METHODS: Twelve PoCUS trainees from 11 clinics were included in the study. Every week, trainees participated in a 2-hour Tele-ECHO session via Zoom. Attendance was logged onto iECHO. A Qualtrics survey was used to collect participant feedback.

RESULTS: Trainees faced difficulty with computer-based Wi-Fi connection and mostly used smartphone-based Internet. Whatsapp messaging was preferable to email for Tele-ECHO notifications. Work obligations kept some trainees from participating. The majority of participating trainees felt that the didactic material was relevant to their practice.

CONCLUSION: Telementoring through Project ECHO was found to be an acceptable adjunct to PoCUS training for rural trainees. Internet access was primarily smartphone-based.

KEYWORDS: ultrasound, Tele-ECHO, training, rural, Kenya

BACKGROUND

The use of point-of-care ultrasound (PoCUS) benefits patient screening, accuracy of diagnosis and management for a wide range of indications in low- and middle-income countries (LMICs). Several studies examining patient outcomes in low-resource settings revealed ultrasound findings made significant contributions to treatment plans in medical, surgical and obstetric care specialties. Evidence of the advantages of PoCUS as well as improvements in cost and ease of use has contributed to growing interest in applications for ultrasound services in LMICs. However, challenges in training and poor access to ultrasound machines persist around the world. In a survey of health care professionals in LMICs in 2015, providers identified lack of training, insufficient access to equipment and inadequate maintenance as the most significant barriers to ultrasound use. Additional issues include the lack of robust frameworks for image review and feedback largely due to poor infrastructure and limited Internet connectivity.

Different telemedicine and teleradiology platforms have been employed to bridge the gap between providers in remote areas and specialists at teaching institutions. International telehealth services reveal significant improvements to quality of patient care, patient diagnosis, and cost.

While telemedicine programs provide direct patient care, telementoring services train health care providers who can then provide these services locally with the benefit of building local capacity. Education-oriented telementoring programs contribute to improved access to specialty care. For example, telementoring programs were shown to be a feasible and effective option for training health care providers in low-resource settings in Guatemala.

For ultrasound instruction specifically, several studies have demonstrated that remote training programs offer a viable option. Telementoring services that expand ultrasound training have been shown to improve provider knowledge and specificity of differential diagnoses. A pilot study revealed beginner ultrasound users were able to identify an ejection fraction after telementoring training through Google Glass technology. Telementoring is a useful supplement to PoCUS training programs in resource poor areas because it enables specialists to provide remote support, education and feedback to their trainees. It also allows for continued training without requiring trainees to leave their already under-resourced facilities for extended training in an academic center.

In 2013, a point-of-care ultrasound (PoCUS) training program was developed to train rural Kenyan providers on point of care ultrasound applications, including the Extended Focused Assessment with Sonography for Trauma (E-FAST), thoracic ultrasound, basic ECHOcardiography and focused obstetric ultrasonography. This program was coupled with ultrasound machine donation. Based on feedback from trainees, the main barriers that impede routine use of PoCUS include lack of guidance while scanning at their facilities, lack of frequent feedback on their scans and limited interaction with trainers outside of the scheduled sessions 3 times
a year. Therefore, the goal of this pilot study was to explore the utility and acceptability of Project ECHO as a telementoring platform to connect PoCUS trainees in rural Kenya with trainers from Brown University for the purpose of continued education and feedback.

**PROJECT ECHO**

Project ECHO (Extension for Community Healthcare Outcomes) is a telementoring platform developed with the primary aim of providing continuous medical education, guided practice and capacity building by connecting specialists to health care providers working in remote low resource areas. It is distinct from telemedicine in that the focus is not on virtual patient care, but on developing local experts who can then provide high quality care at their own institutions. The platform uses a ‘Hub’ and ‘Spoke’ model whereby specialists or experts at the Hub and community-based health care providers at several spoke sites schedule regular Tele-ECHO clinics through video conferencing. Providers present patient cases and ask questions about best practices. Experts provide advice and mentorship, supplemented with didactics and demonstration of skills and modeling. Project ECHO has inbuilt tools that allow for program evaluation at every stage of implementation, making it particularly well suited for this project.

**METHODS**

We assessed the utility and acceptability of the Tele-ECHO clinic sessions among PoCUS trainees in rural Kenya. Twelve trainees from 11 clinics (Figure 1) were included in the study. Trainees were medical officers (medical school graduates who have also finished 1 year of internship), clinical officers (graduates from a 3-year clinical medicine diploma program), nurses, and radiographers. These trainees were among a cohort that had received prior PoCUS training, and had a donated ultrasound machine for use at their health care facility. The study participants received funds to purchase 3G-network access through their smartphones. Training sessions took place once a week from June 22 through August 18, 2018. Every week, participants received a link to log on for a 2-hour Tele-ECHO session via Zoom. (Figure 2) Topics covered included: E-FAST for trauma, establishing intra-uterine pregnancy, diagnosing ectopic pregnancy, 2nd and 3rd trimester dating, establishing presentation, placental location, and fetal heart rate. Attendance was logged onto iECHO (an in-built tracking feature within the project ECHO platform).

A Qualtrics survey was sent to participants via Whatsapp on July 31, 2018 after 6 weeks of training sessions to collect participant feedback. The survey included 7 multiple-choice questions regarding their perception of the training sessions, with the option to fill in additional comments. Participants were asked about quality of the teaching sessions, Internet quality, relevance of training content, and barriers to participation.

**RESULTS**

Of the 12 trainees, 50% participated in the survey including 2 clinical officers, 2 radiographers, 1 medical officer and 1 nurse. The majority of participants in the survey felt the didactic material was valuable and well presented. Among
participants in the survey, 83% selected they Strongly agree the material was relevant to their practice. All participants selected Agree or Strongly agree that the cases were relevant and 83% selected they Strongly agree the material was clear and well presented. When asked if the sessions increased their confidence in ultrasound scanning, 66% replied Strongly agree or Agree. Participants primary concerns were related to their ability to participate in the Tele-ECHO sessions. Three participants endorsed poor Internet connection, and 66% reported their work schedule prevented them from attending the entire session at times.

As most trainees experienced technical difficulties accessing the Internet through their work computers, smartphone-based Internet access was found to be superior. All our trainees had their own smartphones, but they required financial support to purchase Internet bundles that would allow them to participate in 2-hour Tele-ECHO sessions every week. Zoom was selected as the videoconference platform as it performs well in low bandwidth settings. Whatsapp messaging was preferable to email for the purpose of sending Tele-ECHO notifications and for scheduling sessions.

DISCUSSION

The results of the Qualtrics survey suggest telementoring through Project ECHO is an acceptable adjunct to prior PoCUS training for rural health care providers. Our trainees were willing to participate, and felt the material presented was not only relevant to their practice but also helped them improve their confidence in ultrasound scanning. These findings are consistent with various studies that have examined the feasibility and efficacy of Tele-ECHO training programs in health care. A study on a Tele-ECHO training program in India regarding oral cancer screening and smoking cessation revealed significant knowledge gain among health care providers.17 Telementoring programs in different locations across the United States also revealed enhanced specialty knowledge and ability to care for patients.18,19

These studies support our findings that telementoring is a feasible option to improve specialty knowledge among local providers. However, a study through the University of Washington Medicine Telehealth network showed no improvement in primary care providers’ knowledge in treating chronic pain.20

Further research is therefore needed to assess the efficacy of telementoring among our trainees.

The second key finding from this study is that the technology required for telementoring in rural Kenya is available, but financially prohibitive. Internet access is primarily achieved through smartphone use that most health care providers already own due to increasing smartphone presence in African countries. However, Internet connection through the smartphone is costly in Kenya, ranging from $10 to $100 per person per month. Therefore, we had to provide funding for trainees to purchase Internet bundles for their phones. As a result, trainees were able to download the Zoom videoconferencing mobile application and to participate in 2-hour Tele-ECHO sessions. The trainees also had the option to create a hot spot using the Internet services purchased form their cell phone network.

The third key finding was that trainees struggled to attend the Tele-ECHO sessions due to competing clinical obligations. This is an expected finding given the low number of health care workers in rural Kenya. Our trainees work long hours to take care of their patients, and continued medical education is difficult to prioritize in these settings.

This study’s primary limitations include small study size and low response rate to the survey. However, our experiences from this small pilot study and the responses we received gave us useful insight into the key feasibility question: “Can Tele-ECHO work as an adjunct to PoCUS training in rural Kenya?” Our findings indicate that it can work if Internet access is subsidized and if health care facilities can provide protected time for trainees to participate.

CONCLUSION

This feasibility study found that telementoring is an acceptable adjunct to established PoCUS training programs in rural Kenya. Participants found the content to be relevant and helpful to their practice. Videoconferencing via Zoom is feasible using smartphones. However, Internet access through these phones can be cost prohibitive, and future telementoring programs should keep this in mind. Health care facilities should be encouraged to release trainees from clinical duties so they can participate in telementoring sessions. Future research is recommended to examine specific areas of knowledge gain to continue to improve training programs for participants.

References


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Building and Sustaining Partnerships in Health Workforce and Research Capacity in Rwanda

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ABSTRACT
Rwanda’s ambitious Human Resources for Health (HRH) program comes to an end this year, having made great strides towards achieving its aim to create a large, diverse and competent health workforce, and will have graduated over 4,500 healthcare professionals since its inception in 2012. The HRH program was based on strong collaborative relationships between Rwandan and United States academic institutions and faculty and now stands poised to enter a new phase focused on sustaining the many gains achieved. Fostering career development of new Rwandan faculty and building health research capacity are key components to sustaining the mutually beneficial partnerships that have been forged over the past seven years, with the goal of creating strong Rwandan health researchers that can advance knowledge of best practices for patient care and public health, appropriate to the Rwandan context and other resource-limited settings.

KEYWORDS: human resources for health, medical education, resource-limited, Rwanda, research capacity-building

INTRODUCTION
From 1989–1997, the average life expectancy for citizens of the East African nation of Rwanda was less than 30 years—the lowest of any nation in the world. However, during the past two decades intensive reconstruction in Rwanda’s health sector has yielded markedly steep declines in premature mortality for its population of approximately 12 million people. Backed by the Rwandan government’s “Vision 2020” initiative launched in 2000 that established health equity as a fundamental priority among other key goals for the country, numerous investments and programs in healthcare have been made; as a result, Rwanda’s average life expectancy is now over 67 years—substantially higher than its surrounding neighbors—and continues to improve each year. Today, the majority of Rwandans have health insurance, and there is near-universal coverage for childhood vaccinations as well as access to highly active antiretroviral therapy (HAART) for people living with human immunodeficiency virus (HIV). The country has been hailed as a “beacon of hope” by many, including former Prime Minister of the United Kingdom Tony Blair, for the many advances in health that the country has achieved since the devastation of the 1994 Rwandan genocide which claimed the lives of over 800,000 people.

HUMAN RESOURCES FOR HEALTH IN RWANDA
Prior to 2011, Rwanda had fewer than 0.84 health providers (physician, nurse, or midwife) per 1,000 people. Rwanda was far from meeting the World Health Organization’s target minimum number of health providers (4.45/1,000 people) laid out in the Sustainable Development Goals. While the country had greatly expanded access to basic health care through a robust community health worker system, there remained an enormous need for trained health providers as well as specialists.

The creation of a strong health education infrastructure was recognized as a key priority in order to produce a high-quality health workforce and thereby sustain the improvements in health outcomes achieved in Rwanda. In 2012, the Rwandan Ministry of Health’s (MOH) Human Resources for Health (HRH) workgroup developed a strategy to “develop and implement long-term plans to increase...
the quantity, quality and diversity of healthcare training.” Together with the Clinton Health Access Initiative and a consortium of 22 United States academic training institutions, a 7-year (2012–2019) partnership was formed to train the next generation of Rwandan health professionals. Funding for this program was primarily provided by the US Centers for Disease Control and Prevention and the Global Fund for HIV, TB, and Malaria.

Faculty from the Warren Alpert Medical School of Brown University were among the core international faculty that partnered with Rwanda’s HRH program to lead new training programs in emergency medicine, internal medicine as well as pediatrics. Other specialties prioritized for training programs in collaboration with other US academic institutions were in general surgery, obstetrics and gynecology, anesthesiology, psychiatry and neurosurgery as well as training programs in nursing, health management, and oral health. Core visiting faculty typically were deployed for 6–12 months, with visiting faculty paired or “twinned” with a Rwandan faculty member to share academic and teaching responsibilities. The program was designed so that new graduates of HRH training programs would longitudinally replace visiting faculty, with the goal that all teaching and care delivery would be assumed by Rwandan faculty at the conclusion of the program. To ensure retention, graduates are required to sign a mandatory 4–5 year contract in the public sector. Now, nearing the projected end of the HRH program, it will have graduated over 4,500 students.

In November 2018, the first class of Rwandan emergency medicine specialists graduated, joining graduates from multiple other specialties, and marking the formal handover of the emergency medicine residency training program to the new Rwandan faculty. However, the partnerships and professional connections forged over the past seven years are planned to continue in the form of intermittent visiting faculty to assist the teaching duties, as well as in growth of research collaborations between Rwandan and US researchers. These partnerships, especially in research, are key to sustaining the growth of Rwanda’s academic medical institutions and for creating strong clinical researchers that will drive evidence-based improvements in patient care and public health appropriate to the sub-Saharan African context.

**RESEARCH CAPACITY IN LMICS**

Key and complimentary to the development of a sustainable healthcare workforce is the investment in and development of research programming. This requires knowledge-generating infrastructure for research which engages and empowers healthcare providers to be able to address the most important, impactful and appropriate issues existing in these settings. Although research is recognized as necessary for health system development in LMICs, to date, barriers to effective research implementation persist particularly in the African context. These barriers are multifactorial but driven largely by financial, infrastructure and human resource aspects as well as prioritization of clinical care to research needs. In the financial domain there has been a historic disconnect of priorities among funders from high-income settings in which financial support has not been most efficiently allocated to meet local research needs. Furthermore, in most LMICs there is limited infrastructure to support research endeavors. This limitation is demonstrated in the forms of limited availability of accessible research training programs, institutional research agendas and review boards able to provide ethical oversight. In relation to human resources there exist fewer trained researchers per capita in LMICs versus HICs despite the fact that the majority of morbidity and mortality globally occurs in LMICs. Associated with this deficiency is a resultant lack of guidance and mentorship resources in LMICs, all of which is compounded by frequent migration of trained researchers.

It has been increasingly realized that research conducted primarily in HIC settings cannot be feasibly translated to LMIC settings, and in some cases, simply implementing guidelines designed for HIC to LMIC settings may even be harmful. One of the most notable instances of this phenomenon was the landmark FEAST trial from 2011 that showed that among pediatric patients with sepsis in sub-Saharan Africa intravenous fluid bolus administration actually increased mortality risk, contrary to findings from HICs. Similar findings showing discrepancies in outcomes between HIC and LMIC settings have been shown in a multitude of other studies and urge for research appropriate to LMIC contexts to be significantly scaled up.

**RESEARCH CAPACITY IN RWANDA**

Health research in Rwanda has historically been neglected due to a lack of sufficient staff, greater prioritization of clinical care, and paucity of mentorship. The HRH program has made significant impact on research, largely through the development of research curriculums integrated in residency programs, and by fostering collaborative research projects, which have resulted in a substantial number of publications to date. Additionally, several teaching hospitals (Kigali University Teaching Hospital, Butare University Teaching Hospital, King Faisal Hospital, Rwanda Military Hospital) have now formalized the position of a Research Division serving as an Institutional Review Board/Ethics Committee in charge of coordinating all research endeavors in the teaching hospitals.

To date, more than 80 studies have been published from partnerships between Rwandan and US researchers including: research on the use of a simplified echocardiogram strategy for heart failure diagnosis, the epidemiology and outcomes of trauma patients, and predicting mortality risks among intensive care unit patients. Notably, the impact
on clinical care of the HRH training programs has also been shown, most recently with a study that showed a significant decline in ED mortality from 6.3% to 1.2% after the implementation of the EM residency program.\textsuperscript{18} Research such as the development of the Kigali modification of the Berlin definition of acute respiratory distress syndrome (ARDS) as well as for the use of the quick sepsis organ failure assessment (qSOFA) score in assessing risk of mortality among ED patients show promise for the creation of context-appropriate clinical tools specific to resource-limited settings.\textsuperscript{18,19}

Efforts to bolster research capacity in Rwanda have focused primarily on research curriculum development and research support. Each resident physician in Rwanda is required to complete a research project as part of their Master of Medicine [the degree received upon completion of residency program] thesis requirement. As an example of the research programs spearheaded by individual specialties, within the emergency medicine training program, research training has been supported by the Tina and Richard V. Carolan Grant for Emergency Care which has facilitated the creation of a module-based research course that has been integrated into the didactic curriculum. The Carolan Grant has also provided funding for a research coordinator fellowship; this dedicated Carolan research fellow teaches the research curriculum and assists Rwandan residents with their research theses. Finally, the Carolan grant provides funding for seed grants that residents can use to support their own research projects or so that they can present their research at regional and international conferences, and also funded a backup medical supply project to help trainees obtain the material supplies needed to provide patient care and reduce stockouts. The results of these projects have been presented by Rwandan EM residents at the Society for Academic Emergency Medicine (SAEM) Annual Meeting and at the International Conference for Emergency Medicine [ICEM] in Seoul, South Korea this year.

Residents have displayed great enthusiasm and creativity in their research projects. Recently completed projects designed and implemented by current residents include an evaluation of gender differences in patterns of injury and trauma, an association between tuberculosis diagnosis during Rwanda’s dry versus rainy season [a topic previously studied but still poorly understood in many regions of the world], and evaluating mortality outcomes in patients with traumatic intracranial bleeding by operative or non-operative management. The success of the research capacity-building programs has most recently been exemplified by a grant that was obtained by two Rwandan emergency medicine physicians [faculty Dr. Chantal Uwamahoro and resident Dr. Vincent Ndebwanimana] to study interfacility transfers between district hospitals to Kigali University Teaching Hospital.

\textbf{FUTURE DIRECTIONS FOR TRAINING AND RESEARCH IN RWANDA}

Retention of new graduates is fundamental to maintaining a strong health workforce in Rwanda. In order to retain graduates, continued professional development and leadership programs are needed as well as funding to support increased numbers of faculty and to improve equipment and supplies available in teaching hospitals. With regard to career development, Rwandan faculty have had opportunities to give lectures abroad, and Rwandan trainees have participated in clinical rotations in the United States and also have had the opportunity to engage in regional and international conferences. Furthermore, as an example of reciprocal educational exchange, the Rwandan EM residents recently led the fourth “Emergency Medicine in the Tropics” course – an educational program designed and led by Rwandan clinicians and trainees to teach tropical medicine to their counterparts from high-resource settings. Rwanda has also recently begun to host trainees from other sub-Saharan African countries within their residency programs.\textsuperscript{20} Other efforts to expand and improve the quality of the healthcare workforce are initiatives to develop Rwanda’s pre-hospital emergency care system through dedicated training for pre-hospital providers.

Future goals for research development in Rwanda include leadership training and expanded opportunities for Rwandan resident physicians and faculty to disseminate their research. Leadership training is important for building administrative capacity and producing caring, charismatic and effective individuals. As a part of leadership training efforts, international researchers from academic institutions

\textbf{Figure 2. Rwandan resident Dr. Francois Regis Twagirumukiza teaching participants from the Emergency Medicine in the Tropics course held in May 2019.}
work one-on-one with Rwandan faculty and resident physicians to provide guidance, counselling and mentorship. The Carolan grant also provides funding for an annual EM leadership retreat.

CONCLUSIONS

Putting in place measures to sustain Rwanda’s achievements in health education and research is a foremost priority of both the Rwandan MOH and the HRH program. A key part of strengthening the capacity of Rwanda’s academic medical institutions will be to support career development of Rwandan faculty through continued mentorship and leadership development, as well as to maintain existing partnerships between Rwandan and US institutions in fostering improved research capacity. Research studies designed and led by Rwandan faculty and trainees are especially needed, with continued mentorship from experienced researchers in order to develop strong Rwandan principal investigators who can produce evidence on how to address the most pressing health concerns facing the region. Also crucially needed are the resources to continue to increase access to residency programs, and increased support for Rwandan trainees with interest in academic medicine.

References


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Developing a Novel Mobile Health (mHealth) Tool to Improve Dehydration Assessment and Management in Patients with Acute Diarrhea in Resource-Limited Settings

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ABSTRACT
Dehydration due to diarrhea is one of the main causes of death worldwide, yet no clinical tools for accurately assessing and managing dehydration in patients with acute diarrhea have been created for low- and middle-income countries (LMICs). In 2012, Brown University’s Department of Emergency Medicine began partnering with the International Centre for Diarrheal Disease, Bangladesh in order to address some of these gaps. Out of this partnership, the DHAKA Score, a clinical diagnostic model for assessing dehydration in children under five years of age with acute diarrhea, was developed. Building upon the success of the DHAKA Study, researchers at both institutions have launched the NIRUDAK Study earlier this year to develop and validate similar age-specific clinical diagnostic models yet shifting the patient population to those over five. Improving diagnostic approaches and fluid management may reduce unnecessary utilization of already limited healthcare resources as well as the morbidity and mortality that occurs due to misdiagnosis.

KEYWORDS: dehydration assessment, diarrhea management, mHealth, developing country or LMIC

BACKGROUND
Globally, diarrhea remains one of the most common and deadly acute conditions, second only to upper respiratory infections. According to the Global Burden of Disease Study in 2015, there were nearly 2.4 billion cases of acute diarrheal illness globally.1 However, there may, in fact, be many more cases as medical care is sought in fewer than 30–50% of cases in resource limited settings.2 While the typical course of diarrheal illness is self-limiting and benign, approximately 5% of cases in adults and older children (21.5 million diarrheal episodes annually) result in higher disease severity thus requiring advanced medical management.3 Despite recent strides in combating mortality, diarrheal disease is still the 5th leading cause of years of life lost globally, accounting for more than 1.3 million deaths annually, including 813,000 deaths in adults and children over five years of age.4

While a sizeable body of research on diarrheal illness in children under five years of age exists, less is understood about diarrheal illness in older children and adults. In comparison to the common viral causes of diarrheal illness in children less than five years of age, such as rotavirus and norovirus, bacterial causes predominate in older children, adolescents, adults, and the elderly globally.4 Worldwide, Vibrio cholerae O1/O139 and Enterotoxigenic Escherichia coli (ETEC) are the most common causes of acute diarrhea in hospitalized patients over five years of age, while Salmonella and Shigella species were the most common etiologies in outpatient settings.5 Evidence suggests that the elderly are especially at risk for higher diarrhea morbidity and mortality in both high-income countries as well as in low- and middle-income countries (LMIC). In the United States, 83% of all diarrheal deaths occur in patients over age 65.6,7 In Dhaka, Bangladesh, patients over 60 years of age with acute diarrheal illnesses are more likely to require hospital admission and have a more severe course of illness than younger patients.6,7 This difference in disease severity could be attributed to various reasons including age-related structural and functional gastrointestinal tract changes, underlying chronic illnesses, concomitant use of medications, impaired sense of thirst, poor baseline nutrition and hydration status or a more subtle clinical presentation of diarrheal illness.6

Based on their Integrated Management of Childhood Illness (IMCI) strategy, the World Health Organization (WHO) currently recommends assessing children under five years of age presenting with acute diarrhea for dehydration and classifying their level of dehydration severity into three categories: severe, some, or none based on the presence of four different clinical signs.7 For children with severe dehydration, immediate treatment with intravenous fluid is recommended, while those with some dehydration should receive oral rehydration solution (ORS). Those with no dehydration require only expectant management.7 The IMCI dehydration algorithm still remains the most common clinical tool for assessing dehydration status. However, several studies have found it to be a poor predictor of dehydration when compared to the gold standard of percentage weight change with rehydration.8–10

Several research institutions and organizations have attempted to develop better tools for assessing dehydration in children. The most commonly used diagnostic dehydration scales include the Clinical Dehydration Scale (CDS; created at the Hospital for Sick Children in Toronto) and the Gorelick Scale (developed at the Children’s Hospital of Philadelphia).8 While prior studies have found these tools to...
be relatively accurate for predicting dehydration in young children in high-income country settings, they have not been well validated in low- and middle-income countries nor have they been tested in older children or adults.\textsuperscript{8,11–15} the Gorelick scale, and the Clinical Dehydration Scale (CDS) Misclassification of dehydration is a significant diagnostic problem as underestimation of a patient’s dehydration status could potentially result in further medical complications, such as acute renal failure or even death, while overestimation could result in increased risk of hospital-related adverse events, additional hospital expenses as well as increased burden on the patient’s family, especially in low- and middle-income countries.\textsuperscript{8,14,16}

RESEARCH SETTING AND PARTNERSHIP

Initially founded in the early 1960s under the South-East Asia Treaty Organization, Cholera Research Laboratory (now known as the International Centre for Diarrhoeal Disease Research, Bangladesh or more simply icddr,b since 1978) has developed an international reputation as a preeminent research/treatment center for developing and testing interventions specifically designed to meet the needs of Bangladesh and other LMICs.\textsuperscript{17} Such areas of research include malnutrition, respiratory disease, vaccine testing, maternal and child health and health systems. Research conducted at icddr,b has produced innovative solutions to some of the most prominent global health concerns and generated evidence that has influenced health policy globally. A few of the its most notable achievements include the development of the ORS, providing key evidence underpinning the WHO’s decision to recommend zinc as a way to shorten the duration and prevent future cases of diarrhea, providing data that illustrated maternal immunization with tetanus toxoid before pregnancy protects mothers from neonatal tetanus, and detailing treatment guidelines for severe malnutrition that are now standardized protocol endorsed by the WHO.\textsuperscript{17} icddr,b’s commitment to developing high-quality research studies has led to its robust network of scientific collaborators and implementing partners worldwide. In 2012, Brown University’s Department of Emergency Medicine began partnering with icddr,b in order to address some of the above-mentioned gaps in diagnostic tools to assist clinicians in assessing and managing dehydration in patients with acute diarrhea in LMICs. Through a five-year research grant from the United States National Institutes of Health (NIH) Fogarty International Center (PI Levine, K01TW009208), researchers at Brown University and icddr,b collaborated on the DHAKA Study together to develop and test new clinical prediction models, ultrasound-based tools and mobile health tools for assessing dehydration in young children under five in Bangladesh.

DEHYDRATION ASSESSMENT IN YOUNG CHILDREN

As part of this research, the DHAKA (Dehydration: Assessing Kids Accurately) Score, the first clinical diagnostic model for assessing dehydration in children under five years of age with acute diarrhea in LMIC settings, was developed.\textsuperscript{16} The DHAKA Score was empirically derived and externally validated in a low-income country, to avoid the limitations of the other models, like CDS.\textsuperscript{12,13} Using the gold standard of percent weight change with rehydration, the DHAKA Score categorized patients as severe dehydration (>9% weight change), some dehydration (3–9% weight change) or no dehydration (<3% weight change).\textsuperscript{18} Of children enrolled in the study, 49% had no dehydration, 37% had some dehydration and 14% had severe dehydration.\textsuperscript{16} Each 1-point increase in the DHAKA Score was found to predict an increase of 0.6% in percent dehydration and increase the odds of dehydration by 1.4.\textsuperscript{14,16} When compared to the IMCI algorithm, both the accuracy and reliability of the DHAKA score were superior.\textsuperscript{16}

The use of mHealth tools can also facilitate the evaluation of dehydration in patients with diarrhea, with a study
showing greater reliability when an mHealth-supported WHO algorithm was used rather than the standard WHO algorithm printed on a laminated card. In conjunction with clinical predictor tools, point-of-care ultrasound can be a useful adjuvant in predicting dehydration in children with diarrhea. By measuring aorta-to-IVC ratio, point-of-care ultrasound has been shown to be a significant predictor of the percent dehydration, with each 1-point increase predicting a 1.1% increase in the percent dehydration. However, the sensitivity and specificity were not sufficiently robust for it to be used as an independent screening tool.

**DEHYDRATION ASSESSMENT IN OLDER CHILDREN AND ADULTS**

Despite the progress in evaluating and developing a clinical diagnostic scale, the patient population for such diagnostic tools has predominantly been children under five years of age. This leaves out a significant portion of patients who are also affected by diarrheal illnesses – those over five. As such, researchers at Brown University and icddr,b have continued their partnership and launched the NIRUDAK Study earlier this year at icddr,b’s Dhaka Hospital (Figure 1) to address the above-mentioned limitations. NIRUDAK, which means “dehydrated” in Bangla, stands for Novel Innovative Research for Understanding Dehydration in Adults and Kids. The overall objective of this prospective study is to develop and validate new age-specific clinical diagnostic models to assess dehydration, thereby building upon the success of the DHAKA Study. However, the focus of the study will be in patients over five years of age presenting with acute diarrhea. Once these age-specific models are developed, they will be incorporated into a mobile health application so that clinicians will not only be able to more accurately diagnose dehydration severity but will also better determine the optimal management strategy for patients with acute diarrhea.

The aim of the NIRUDAK Study is threefold:

1. To derive and internally validate three age-specific clinical diagnostic models for the assessment of dehydration severity in older children/adolescents, adults and the elderly.
2. To incorporate these models into a mobile health tool to be used by clinicians.
3. To validate this mobile health tool in a new population of patients.

NIRUDAK Study’s research aims will be accomplished through two large, prospective observational studies, which will occur in three phases over the next five years. The first phase will focus on achieving Aim 1. During this derivation phase, data on clinical signs and symptoms shown to correlate with dehydration severity will be collected from patients presenting to the rehydration unit of icddr,b. Using advanced machine learning techniques, the best clinical predictors for each individual age group will be selected against the gold standard of percent weight change with rehydration to develop diagnostic models. The second phase, or formative phase, will use the models from the derivation phase to develop an innovative new mobile health tool to guide clinicians in the management of dehydration. Formative focus groups and in-depth interviews will also be conducted to further improve its usability. Finally, in the validation phase the application’s accuracy and reliability will be validated in a new population of patients presenting with acute diarrhea at icddr,b.

Since early June 2019, 503 patients have been enrolled in the first phase of the NIRUDAK study with 53% of them being males and 47% females. So far, 97% of patients enrolled in the study have sufficient follow-up information to calculate their percent weight change with rehydration, our gold standard measure for dehydration. Among those enrolled in the study, 83.1% were characterized as being severely dehydrated by triage nurses and received IV fluid, while the rest were characterized as having some dehydration and given ORS. However, according to the study’s gold standard of percent weight change, only 11.1% were severely dehydrated and should have received IV fluids while 60.7% had some dehydration and 28.2% of patients had no significant dehydration. (Figures 2,3)
CONCLUSION

Developing such models, like the DHAKA Score and the upcoming NIRUDAK Score, and incorporating them into mobile health applications has the potential to help clinicians rapidly and accurately not only determine the severity of dehydration in patients with acute diarrhea but also choose the optimal rehydration strategy. Those 28.2% of enrolled patients who were admitted with no significant dehydration would have most likely received expectant management at home rather than IV fluids and/or ORS with the help of such diagnostic tools. While the intended use of this tool will be in hospitals or clinics by hospital staff, one of the major uses will be during epidemics of cholera in humanitarian settings, where the numbers of patients can overwhelm available resources. Additionally, this tool can be incorporated into international/local guidelines for dehydration management. Making such distinctions in characterizing dehydration could reduce unnecessary utilization of already limited healthcare resources. More importantly, improved diagnostic approaches and fluid management may in turn be shown to reduce both the morbidity and mortality that occurs as a result of misdiagnosis.

References


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Disclaimer

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From Rhode Island to Colombia: Brown University Emergency Physicians Lead a Collaborative Consortium in a Post-Conflict Colombia

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ABSTRACT

INTRODUCTION: Colombia represents a country in transition, from decades of devastating civil war to a post-conflict era of peace building, to the recent management of the influx of thousands of Venezuelan migrants. Brown University, along with Colombian partners, are leading the way in an international, multi-institutional consortium with the goal of emergency medicine capacitation across Colombia.

PROGRAM IMPLEMENTATIONS: Through these collaborative efforts, exchange programs for residents and faculty alike have been successfully established. A baseline assessment of emergency medicine education for medical students is underway. By the end of 2019, the Harvard Humanitarian Initiative (HHI) will launch an online tool in multiple languages, including Spanish, to help medical and nursing educators conduct systematic needs assessments of the way in which conflict has impacted medical and nursing schools.

CONCLUSIONS: Successful avenues for collaboration and partnership are described between Brown Emergency physicians and Colombian collaborating universities. These programs help to build capacity in Colombia and also provide education and support for residents and faculty at Brown University. Current work will see these programs grow into the future.

KEYWORDS: Colombia, emergency medicine, development

INTRODUCTION

Colombia is a country of both immense progress as well as challenges. Colombia’s 5 decades of internal armed conflict between the government, guerrilla groups, paramilitaries and drug cartels has led to the 2nd largest number of internally displaced people (IDP) in the world.1,2,3 Currently, Colombia has transitioned into a post-conflict era although challenges remain.4,5,6 Most recently, the Colombian government has opened its border, welcoming over 1 million migrants escaping the regime and famine in Venezuela.

In the context of this changing landscape, Brown emergency medicine (EM) providers have partnered with Colombian EM physicians to create a multi-institutional, international consortium with the goal of improving emergency care delivery and emergency medicine training. The partnerships have been grown since initial collaboration seven years ago. Students and residents participate for 2–6 weeks during an elective time period with funding from the medical school or residency program. Bogotá offers an ideal setting in Latin America with accessible housing near the universities, no extra immunizations required nor extra security procedures needed. Colombia has become a major tourist attraction in South America and travel to the main cities is safe.

To this end, the consortium has focused on the development and support of exchange programs, the implementation of the WHO Basic Emergency Care (BEC) training targeted at low-resource settings, the creation of community-based public health projects for IDP and ex-FARC (Fuerzas Armadas Revolucionarias de Colombia/Revolutionary Armed Forces of Colombia) vulnerable populations, and humanitarian disaster relief work for the Venezuelan migrant population.

DEVELOPMENT AND GROWTH OF EMERGENCY MEDICINE THROUGH EXCHANGE PROGRAMS

The team, led by Christian Arbelaez, MD, MPH, Vice Chair for Academic Affairs in the Department of Emergency Medicine at Brown, has been aiding in the development of emergency medicine through clinical exchanges, educational programs, academic collaborations, and leadership development.7,8 Recognizing the educational value of understanding care in different settings and cultures, the team has established bi-directional exchanges. Numerous emergency physicians and trainees from Colombia have completed formal US observerships which include tailored training experiences, providing participants with skills to take back and incorporate into home departments.

Recently, the team has established an exchange between EM residents at Brown University and Universidad Javeriana in Bogotá, Colombia. Since coming to Brown University, Dr. Arbelaez has been able to leverage the unique resources in Rhode Island to continue his international work with local support from Brown Emergency Physicians, Lifespan, and Brown University. Thus, two inaugural Brown residents made the trip to Colombia this past March, working in San Ignacio Hospital, one of the busiest institutions in Bogotá.
Through this exchange, the residents gained a broader understanding of healthcare in a global environment. Exposed to new patterns of departmental flow and patient management, they were able to witness excellent quality care ongoing at San Ignacio while sharing their own experiences at Brown. They partnered with the simulation center to assist in teaching, and gained from the knowledge of local faculty who taught them innovative procedural techniques such as subclavian-guided central lines.

In recognizing that language is integral to cultural and interpersonal understanding, the residents also focused on cultural immersion and language development by enrolling in the Language Center of Universidad Javeriana. Their experience led to a deeper appreciation for the work of emergency physicians abroad and the value of international collaboration. The team looks forward to welcoming residents from Universidad Javeriana to Rhode Island Hospital in the near future. In addition, potential exchanges for additional specialties are being explored.

Focusing at all levels of education, the team has also created opportunities for faculty development. Several academic projects describing the state of emergency medicine and of the residency programs in Colombia have been published with faculty from Colombian universities. In October 2019, the team will welcome Dr. Leonar Aguiar Martínez as guest lecturer. Dr. Aguiar learned medicine through the years of conflict in Colombia, with first-hand experience as a new physician practicing in the Northern city of Cúcuta. As his career progressed, he witnessed the transition of the country into a post-conflict era. Dr. Aguiar became instrumental in the establishment of emergency medicine as a new specialty in Colombia bringing home expertise gained through an advanced fellowship in emergency medicine at the Ronald Reagan Institute of Emergency Medicine at George Washington University in Washington, D.C.

Now, he practices as an attending physician within the Emergency Department at San Ignacio Hospital. During a lecture series for health professionals, students and the community, Dr. Aguiar will share his expertise on both the clinical practice of emergency medicine in the changing landscape of a post-conflict Colombia, as well as the development of emergency medicine as a specialty in Latin America.

**IMPROVEMENT OF EMERGENCY CARE DELIVERY IN RURAL AREAS THROUGH WHO BASIC EMERGENCY CARE (BEC) TRAINING**

Initial results from WHO BEC rollouts in Africa indicate that providing basic emergency medical training in a low-resource setting results in a significant increase in knowledge of such care. Currently involved in the course translation, the team is planning to pilot a novel application of the BEC in Bogotá by integrating a training-of-the-trainers course into the medical school curriculum. This will arm new graduates...
both with the knowledge and ability to teach acquired emergency skills across rural Colombia. Despite great strides, most emergency care in Colombia is provided by medical graduates with no residency or specialty training. This is especially true in rural, limited-resource settings. Introduced in May, a national longitudinal survey is currently following new physicians during their first six months out of medical school to assess their confidence and knowledge of emergency care. Using this information, the team will assess how to best support emergency medicine education during medical school for these future general practitioners.

**CREATION OF COMMUNITY-BASED PUBLIC HEALTH PROJECTS FOR IDP AND EX-FARC VULNERABLE POPULATIONS AFFECTED BY THE CONFLICT**

In conjunction with colleagues from the Harvard Humanitarian Initiative and the Open Hands Initiative (OHI), Drs. Arbelaez and Patiño crossed cultural barriers to bring students from the Harvard School of Public Health and the Universidad de Antioquia together. OHI is a non-profit foundation that is based in New York City. Using a public health lens, their innovative course guided students through an examination of the reforms in education, transportation and urban design that led to the transformation of the city of Medellín, Colombia. It also asked students to assess current healthcare hurdles faced by the city’s internally displaced population and create solution-driven recommendations and briefings, which they presented to stakeholders in Bogotá. Some of the students became involved in public health projects in an IDP settlement through connections they established during the course. Universidad de Antioquia and Brown University Faculty remain in touch.

In 2017 Universidad de Antioquia hosted the 3rd National Congress of Emergency Medicine in Colombia, with participation of Drs. Arbelaez and Patiño, who also came back in July 2018 to visit Universidad de Antioquia as part of their work as Ambassadors of the American College of Emergency Medicine to Colombia.

The Harvard Humanitarian Initiative, in close collaboration with the team, has conducted a survey to understand the impact of conflict on medical and nursing education in Colombia during the period of 1990–2016. Preliminary findings included the major socioeconomic and mental health impacts on medical and nursing students from rural and conflict-affected areas. Severely restricted access to medical education within these communities exacerbated the lack of local health care providers. The importance of shifting attitudes in the classroom towards students who may have formerly been combatants emerged as a theme, as did the profound need for soft skills such as conflict resolution and patient advocacy training for students of medicine and nursing who participate in a year of governmental social service (Servicio Social), practicing in resource-limited settings.

Conflict-related social trauma has affected faculty, students, and patient populations, and the struggle to embrace coexistence in disparate parts of Colombian society extends to patient populations. In order to help promote a cadre of healthcare providers for low-resource areas, it will be necessary to improve access to medical and nursing education for a wider range of low-income students; it will also require thoughtful incentives to promote graduates to work in these areas past the 6–12 month of Servicio Social. Most medical and nursing faculty report that graduates participating in the Servicio Social program – especially when they are assigned to conflict-affected areas or “Red Zones” – lack adequate mental and emotional preparedness to succeed at providing healthcare. Possible interventions were suggested, including mental health and security trainings for those interested in the Red Zone or active conflict area work. New cross-disciplinary research related to the growth of post-conflict studies in Colombia may pose multiple opportunities for addressing healthcare needs.

**HUMANITARIAN DISASTER RELIEF WORK FOR THE VENEZUELAN MIGRANT POPULATION: FUTURE DIRECTIONS**

Looking forward, the team is examining how to best aid in the current Venezuelan crisis. As part of the Ministry of Health, Health Cluster, Brown emergency physicians have been participating in regular meetings with the local Pan American Health Organization office to identify the best way to support ongoing efforts to provide emergency care to Venezuelan immigrants. To this end, the team is working to finalize a concept note for emergency medicine training of providers along the Northern border and secure external funding.

**SUMMARY**

After a signed peace agreement, Colombia entered into an era of rebuilding and reconciliation. It is now facing new challenges with the arrival of over 1 million migrants due to the humanitarian crisis in Venezuela. Colombia’s healthcare sector, considered one of the most advanced and robust in the region, is now faced with the difficult challenge of providing care to a large migrant population settling throughout the country.

Brown Emergency Medicine is currently spearheading a multi-institutional, international collaborative team dedicated to supporting emergency providers across Colombia as they continue face new challenges. However, the benefit is mutual, as students, residents and faculty come together across cultures and institutions to share, learn, and collaborate from Rhode Island to Colombia.
References


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An Overview of the Rhode Island Hospital-Cabral y Baez Medical Exchange Program

NEESA NAMA, MD; MEGHAN MCCARTHY, BS; AMANDA NOSKA, MD; AMOS CHARLES, MD; MARTHA SANCHEZ, MD

ABSTRACT

In recent years, there has been a surge in the number of global health programs directed by academic institutions. Global health programs take many forms, focusing on different curricular goals such as knowledge attainment of endemic diseases, community service projects, and improved foreign-language skills. This is an expository paper describing the origins and evolution of the medical exchange program between Rhode Island Hospital and Hospital Regional Universitario José María Cabral y Báez. The exchange program is unique because it is trainee-driven and has strived to maintain a bilateral educational exchange over the past 15 years. Future goals for the program include further developing a research curriculum for both institutions and creating a longitudinal relationship with a community-based state-funded clinic in Santiago, Dominican Republic.

KEYWORDS: global health, international medical exchange program, bilateral exchange, international medical elective

“What is true in the US may not be true in the Dominican Republic... This rotation offers students a chance to both teach skills that might be useful to folks in the Dominican Republic, but also to learn and hone a unique skill set required for the practice of international medicine that allows for education to be reciprocal, mutually respectful, and ideally equally beneficial to all involved.” — Amanda Noska, MD, Infectious Disease physician who participated in the Dominican Republic exchange program in 2017

International medical exchange (IME) programs are becoming increasingly more common in academic medical training in the United States (US). According to a survey by the Association of American Medical Colleges, as many as 30% of medical students report participating in a global health program during their time in medical school and an estimated 20% of US-based residency programs offer global health training.1,2 These IME programs typically offer short-term, service-learning electives at a host institution located in a resource-constrained setting, and often feature opportunities for medical trainees to observe the provision of care and engage with clinical research projects at the international site.1 A growing body of literature suggests that IME experiences have a strong positive impact on medical trainees by increasing their awareness about a wider range of diseases, improving their language skills, and exercising their cultural competency.3,4 Few IME programs, however, develop sustainable and bidirectional collaboration between the sites, like that between Rhode Island Hospital (RIH) and Hospital Regional Universitario José María Cabral y Báez (HRUJMCB).5

In 2004, the RIH Department of Medicine entered into an educational exchange agreement with the Department of Internal Medicine (IM) at HRUJMCB in Santiago, Dominican Republic (DR). HRUJMCB is a public, regional hospital that serves as the safety-net, tertiary care center for the northern half of the DR and as the main teaching hospital for three medical schools located in Santiago. The partnership was primarily spearheaded by Edward Wing, MD, an Infectious Disease (ID) physician who was Chief of Medicine at RIH and the Miriam Hospital (TMH) from 1998 to 2008 and the Dean of Alpert Medical School from 2008 to 2013. The partnership grew under the leadership of Mark Fagan, MD, Joseph Diaz, MD, Michael Stein, MD, Amos Charles, MD, and Jael Rodriguez, MD. The current director of the exchange program is Martha Sanchez, MD, an ID physician at RIH and TMH. In the DR, the program is led by Claudia Rodriguez, MD, and Francisco Mejia, MD, both IM physicians at HRUJMCB.

After considering other locations in Central America and the Caribbean, the RIH Department of Medicine chose HRUJMCB as the site for the educational exchange program primarily because of the interest of HRUJMCB faculty in participating in an academic collaboration. Additionally, the sizeable population of Dominicans in Rhode Island (RI), the ease of travel to Santiago, and the desire of many Brown University IM residents and medical students to gain international experience in a Spanish-speaking country made Santiago an advantageous location to put down roots. According to 2017 Census estimates, around 52,070 Dominicans live in Rhode Island, representing 5.1% of the total population of Rhode Island and the highest concentration of Dominicans in the US.6 Time spent in Santiago allows RI medical providers to have a better understanding of the culture, language, and social issues of their Dominican patients.

The program was established to be a mutually-beneficial partnership and bilateral educational exchange program in which IM residents from RIH would rotate at HRUJMCB, and IM residents from HRUJMCB would rotate at RIH and TMH in RI annually. The curriculum for participants in the DR evolves yearly with the leadership of the medical student coordinator and program director. The curriculum in
the DR includes rounding with inpatient teams at HRUJMCB, participating in morning report, social activities with HRUJMCB residents, and an outpatient experience. In the past, the Brown University students, residents and attendings participated in health outreach efforts at an outpatient clinic called “Pequeños Pasitos” located in the mountains serving an impoverished area of Santiago. They also worked in bateys, which are settlements around sugarcane mills primarily occupied by Haitians. Over time these experiences evolved and occasionally dissolved depending upon the sustainability of the rotation and the needs of the individual programs. More recently the exchange program has collaborated with a Primary Attention Unit, which is a state-funded clinic, that serves the community of Palo Amarillo in Santiago. Primary Attention Units are clinics that provide first-level care to a specific community. In this clinic, Brown University medical teams work together with the local general practitioners providing outpatient care and home visits. During this time, qualified Brown University medical providers have the opportunity to give educational talks on preventive medicine topics to the community. The curriculum for Dominican residents from HRUJMCB in RI is comprised of IM and subspecialty inpatient rotations at RIH and TMH, simulation laboratory training, case discussions, and journal clubs. The visiting residents are also integrated in the different academic activities of the IM residency program, such as grand rounds and morbidity and mortality conferences. IM residents from HRUJMCB who have participated in the program have expressed how the experiences from their time working in Providence hospitals have led to systematic changes in their practice of medicine in Santiago, including improvements in patient-centered care and the practice of evidence-based medicine. In addition, with the support of faculty leadership, they have shifted the hierarchical residency training structure to one that is more inclusive of participation from medical students and interns in academic activities. A recent HRUJMCB resident who participated in the exchange stated, “We leave Providence with a broader knowledge base and feel empowered to bring changes to our institution.”

Every year, a third-year Brown University medical student is selected to work as the coordinator of the exchange program. The coordinator is given the task of recruiting and guiding the team of students, residents and attendings that will participate in the elective, as well as developing and executing a four-week curriculum that aligns with the program’s goals and philosophies (Table 1). Academic tools that coordinators have used include reading materials on cultural competency, case discussions on the challenges in the diagnosis and management of diseases in a resource limited setting, case presentations of patients seen at HRUJMCB, and weekly “Brown Rounds,” which are hospital rounds led by Brown University faculty in HRUJMCB.

A new and developing facet of the exchange program is an experience of medical provision in Haiti. The Dominican Republic and Haiti share the Island of Hispaniola, and the migration of people and culture is very common. As many as 1 million Haitians live and work in the Dominican Republic, and a substantial number of patients at HRUJMCB are of Haitian descent. To better understand the history, culture, and medical infrastructure of Haiti, a one-week elective in Haiti took place in February 2018 where participants observed and rounded at Fort Liberté Hospital and the public hospital in Cap-Haïtien. More recently, the exchange program has partnered with Henry Paul, MD, and the nonprofit organization named NOAH, which aims to provide lasting healthcare and medical resources to the community of Fort Liberté. There have been many challenges to setting up a rotation in Haiti including finding a hospital to partner with, medical interpreters to translate between Haitian Creole and English, safe housing, food, and transportation for the participants. In order to assess any potential barriers, Dr. Charles and the coordinator travel to Haiti prior to the start of the elective to assure the safety and feasibility of the trip. We hope to continue this component of the elective as it provides valuable knowledge and skills for medical students and residents.

Table 1. Goals of the Rhode Island Hospital - Cabral y Baez Exchange Program

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<th>Primary Goals</th>
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<tbody>
<tr>
<td>(1) Ensure that participants’ goals and values align with those of the community in which they are working by recognizing the active process of developing a sensibility to the suffering of others and working to prevent their marginalization.</td>
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<tr>
<td>(2) Further develop participants’ cultural competency by actively practicing the values of humility, introspection, solidarity, and social justice while rotating at Cabral y Baez.</td>
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<tr>
<td>(3) Understand the clinical presentation and management of common serious illnesses in the DR, including stroke (ischemic and hemorrhagic), complications of uncontrolled HTN, complications of uncontrolled HIV (CNS manifestations, opportunistic infections, malignancies), complications of uncontrolled DM, pneumonia and pulmonary effusions, COPD, ulcers (venous and arterial), anemia secondary to GI losses, soft tissue infections (cellulitis, fasciitis, abscesses), complicated UTI, PE, TB, and tropical diseases such as leptospirosis and dengue.</td>
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<tr>
<td>(4) Understand the structure of the Dominican healthcare system, the major causes of morbidity and mortality in the DR and the ways in which they differ from morbidity and mortality in the US.</td>
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<tr>
<td>(5) Increase understanding of Dominican culture.</td>
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<td>(6) Assist the Cabral y Baez residents that rotate at Brown University.</td>
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<table>
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<th>Secondary Goals</th>
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<tr>
<td>(1) Understand preventive health measures for travelers to the DR.</td>
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<td>(2) Understand the structure of medical education in the DR.</td>
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<td>(3) Develop skill in working within the medical education system at Cabral y Baez.</td>
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<tr>
<td>(4) Develop skill in the cost-effective evaluation of illness in a resource-scarce environment.</td>
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<td>(5) Develop increased competence in Spanish.</td>
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insight on the healthcare challenges that Haitians face, but unfortunately local political uprisings limited our ability to travel safely to this location in 2019.

The formalized cultural competency training is a new addition to the exchange program’s curriculum. Cultural competency for medical practitioners can be defined as the ability to demonstrate compassion, respect, and responsiveness to patient needs, regardless of their gender, age, culture, race, religion, disability, and sexual orientation. A 2005 JAMA article shows that resident self-reported preparedness to deliver cross-cultural care lags well behind other clinical and technical areas. Although cross-cultural care was perceived to be important among residency program and medical school directors, there was little clinical time, training, formal evaluation, or role modeling in cultural competency issues. The exchange program in Santiago provides the perfect opportunity to practice and improve both American and Dominican students’ cultural competency. The curriculum has integrated a series of readings and introspective exercises with an attempt to expand and assess participants’ knowledge, skills, and attitudes relating to the provision of healthcare for diverse patient populations. To assess the impact of this curriculum we have implemented pre-and post-departure surveys for the participants. Feedback from participants revealed that students want to know more about the medical system in the DR and the state of medical educational trips in the US in order to better appreciate their experience.

The program has faced various challenges over the years: identifying the personal and professional trainee factors that ensure a successful cohort of participants, developing travel requirements that create a safe experience for participants, and recruiting attending physicians and residents to the program. Program leadership has addressed this issue by conducting annual information sessions about logistics, curriculum, and goals of the elective early in the year.

In the future, we would like to increase opportunities for Brown University students and residents to rotate and pursue research in collaboration with the local residents at HRUJMCB. This would strengthen the alliance between RIH and HRUJMCB by increasing the amount of time members from the two institutions interact, and would benefit Cabral y Baez by bringing in resources and scientific attention to key issues that this under-resourced hospital faces such as antimicrobial stewardship efforts, multidrug resistant tuberculosis, and hepatitis C diagnosis and treatment.

In summary, the exchange program between RIH and HRUJMCB takes on a new form guided by each year’s coordinator, program director, and cohort of participants. However, the central principles and goals of the program have remained constant since its inception. By emphasizing the importance of an annual, long-term commitment, rather than being a “drop-in and drop-out” experience, a mutually-beneficial educational exchange program has been sustained over the last 15 years. To ensure a truly bidirectional and reciprocal educational exchange, ongoing intentional efforts and invitations continue to be made by Brown University participants: (1) teachers accompany learners to the Dominican Republic to ensure that the education systems at HRUJMCB are not overburdened by the presence of Brown learners, and (2) when the residents from HRUJMCB arrive in Providence, efforts are made to pair them with Brown attendings and residents who have previously participated in the exchange program in the Dominican Republic. Adhering to these principles allows the program to meet its original goal while adapting to the innovations and initiatives of each new cohort of participants.

References

Disclaimer
The views expressed herein are those of the authors and do not necessarily reflect the views of other academic institutions.

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Tuberculosis: An Epidemic Perpetuated by Health Inequalities

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ABSTRACT
Tuberculosis (TB) is the leading single-agent infectious disease killer worldwide. The World Health Organization (WHO)’s End TB Strategy aims to achieve tuberculosis (TB) elimination by 2030, and in September 2018, the United Nations General Assembly held a High-Level Meeting on TB to address the urgency of the TB epidemic and the health inequalities that continue to propel it. The meeting endorsed an ambitious, comprehensive approach to the TB epidemic that incorporates universal health coverage and tackles the social determinants of this disease. In this article, we provide an overview of the key strategies promoted in this meeting and introduce work by five Rhode Island-based physicians that align with these goals.

KEYWORDS: Tuberculosis, End TB Strategy

INTRODUCTION
The World Health Organization (WHO)’s End TB Strategy aims to achieve tuberculosis (TB) elimination by 2030 – a formidable goal given that Mycobacterium tuberculosis is the leading single-agent infectious disease killer worldwide.¹ In 2017, approximately 10 million people fell sick with TB, and 1.6 million people died from the disease.² Multidrug-resistant TB (MDR-TB), which accounted for 558,000 incident TB cases in 2017, further complicates the fight against TB. MDR-TB treatment requires a longer regimen with more toxic drugs. Globally, the treatment success rate for MDR-TB is only 55% compared to 83% for drug-susceptible TB.²,³

Drug-susceptible TB treatment was developed >50 years ago and costs less than 10 USD/course. Why, then, has so little progress been made in the fight against a curable, preventable disease, when significant reductions in mortality have been achieved against more difficult-to-treat conditions? In the past century, high-income countries (HICs) have achieved drastic reductions in TB incidence through a combination of improved living standards and dedicated public health infrastructure/resources. Yet, the disease continues to devastate impoverished, marginalized populations in low- and middle-income countries (LMICs), for whom optimal TB care is often deemed “impractical” and not “cost-effective.” Although progress has been made towards improving TB care in LMICs, technologies and interventions considered essential for combating TB in HICs – such as universal drug susceptibility testing (DST) and treatment of latent TB infection (LTBI) – have only been recently recommended for widespread implementation.

In September 2018, the United Nations (U.N.) General Assembly held a High-Level Meeting on TB (HLM-TB) to address the urgency of the TB epidemic and the health inequalities that continue to propel it. This meeting marked the third time in history that the U.N. has convened to discuss a specific disease. The priority actions for Heads of State and Governments adopted by the 1000 HLM-TB delegates reflected five key points: (1) reach all people by closing the gaps on TB diagnosis and prevention; (2) transform the TB response to be equitable, rights-based, and people-centric; (3) accelerate development of new diagnostic and treatment tools; (4) invest the necessary funds to fight the epidemic; and (5) commit to decisive and accountable global leadership, including regular reporting and programmatic review.⁴ These goals convey that an effective, comprehensive response to the TB epidemic must incorporate universal health coverage and tackle the social determinants of this disease.⁵ In this article, we provide an overview of the key strategies promoted in this meeting and introduce work by five Rhode Island-based physicians that align with these goals.

REACHING ALL PEOPLE:
FINALLY PRIORITIZING CHILDREN
For decades, pediatric TB has been ignored as health officials prioritized contagious adult cases as the drivers of the epidemic. Therefore, children represent a higher proportion among estimated missing, unregistered TB cases. Children, particularly those < two years of age, are at highest risk for rapid progression to severe TB disease.⁶ Additionally, diagnosing TB in children is challenging due to its paucibacillary nature and the inability for most children to produce sputum.⁷ Rapid, prompt diagnosis is required in young children, but our current testing strategies are limited. Dr. Silvia Chiang and her colleagues at Partners In Health-Peru and Harvard Medical School have conducted studies in Peru to identify the barriers to childhood TB diagnosis and to develop strategies to improve this process.⁸
Detecting childhood TB is further complicated by its non-specific clinical presentation; the signs and symptoms usually are much more subtle than those of adult TB. Kenya’s National TB Program recommends that healthcare workers in all pediatric outpatient settings screen children for TB symptoms, but the high patient-to-healthcare worker ratio is a formidable barrier to this goal. Dr. Daria Szkwarko is leading a study on how to increase screening for childhood TB through the use of a mobile health intervention, which is being piloted in waiting areas at a large county hospital in western Kenya. A community health volunteer (CHV) uses a tablet-based screening application to conduct a symptom screen with parents/caregivers. If the application notifies the CHV that the child has presumptive TB based on two or more symptoms, the CHV gives the parent/caregiver a notification card, which informs healthcare workers that this child is at risk and requires further evaluation. This novel intervention also aligns with the emphasis placed at the HLM-TB on developing digital technologies for TB prevention, treatment, and care.

**INCREASING CASE DETECTION: FIND THE MISSING**

Globally, only 64% of estimated drug-susceptible TB cases and 25% of MDR-TB cases were registered and reported in 2017.2 Finding and treating missing TB cases is key to TB elimination. Every global TB treatment site has a method of reporting TB cases to its national Ministry of Health. These data have been used for tracking the epidemic, but not for evaluating the quality of care. Dr. E. Jane Carter is working with her colleagues at The International Union Against TB and Lung Disease to institute TDBData4Action, a new method to examine locally derived TB data to improve finding missing cases and the quality of care. After eighteen months, the project has retrained all county and sub-country TB coordinators in Kenya and increased case detection.

Work by Dr. Chiang and Dr. Natasha Rybak found that the number of children receiving treatment for MDR-TB in Kyiv City, Ukraine, was much lower than the projected number of pediatric MDR-TB cases.9 This finding is unsurprising since Ukraine is among ten countries with the largest gaps between the number of patients started on MDR-TB therapy and estimates of MDR-TB incidence.10 To find missing childhood TB cases (both drug-susceptible and MDR) in Ukraine, Dr. Rybak is leading a pilot study to estimate the number of missed pediatric TB cases that end in death. Ukraine’s Ministry of Health mandates autopsies in all individuals who die before age eighteen. Dr. Rybak, Dr. Chiang, and their collaborators at Boston University are reviewing pediatric autopsy data to identify possible TB-related deaths. The medical records of these children will then be reviewed to further evaluate the possibility that their deaths were caused by TB. This work will generate preliminary data that will lead to a more comprehensive effort to identify missed TB cases in Ukraine.

**CLOSING THE GAP ON PREVENTION**

LTBI represents the time period between initial infection with *M. tuberculosis* and development of symptomatic disease. LTBI can last for years or decades in immunocompetent individuals, or may be as short as weeks in people living with HIV [PLWHIV] or young children. Highly effective preventive therapy that significantly reduces the risk of progression from LTBI to TB disease has been available since the 1960s; however, its use has been limited to HICs. More recently, preventive therapy has been extended globally to PLWHIV and to children <5 years of age who have been in contact with contagious TB patients. As previously mentioned, young children are particularly vulnerable to TB: compared to non-household contacts, child contacts have a 70% increased risk of TB infection,11 and a 66% increased risk of mortality.12 Yet, implementation of preventive therapy for young children has been slow - the rate of preventive therapy initiation in child contacts < 5 years was estimated to be 23% of those eligible in 2017 globally.2 Drs. Carter and Szkwarko have been working to improve the child contact management care cascade (identification, screening, treatment initiation, treatment completion) since 2011.13,14 Most recently, Drs. Carter and Szkwarko collaborated with colleagues at Center for Health Solutions to implement a clinic-based child contact management strategy across 100 facilities in Kenya. Of 2022 child contacts < 5 years exposed to contagious TB identified, 149 (7%) were diagnosed with TB disease, and 1613 (80%) initiated preventive therapy.

**ADOPTING A PATIENT-CENTERED APPROACH**

Adolescents – defined by the WHO as persons aged between 10–19 years – make up a large proportion of LMICs populations. They have an increased risk of progression from TB infection to disease, have poor adherence to TB therapy, and tend to congregate in group settings – all factors that lead to adolescents comprising a significant proportion of the global TB burden.4,15-17 Adolescence is a critical time for physical, psychosocial, and cognitive development – all of which may be jeopardized by TB disease and treatment. However, adolescents have been neglected in TB research and policy, mostly because standard TB reporting practices group 10- to 14-year-olds with children and 15- to 19-year-olds with adults.2 Many knowledge gaps remain with respect to adolescent TB, such as risk factors for poor treatment outcomes, and the impact of adolescent TB disease and treatment on long-term health and wellbeing.

To address these gaps, Drs. Chiang and Rybak are conducting two studies in Ukraine. The first is an analysis of >5000 cases of adolescent TB disease to identify risk factors
for loss to follow-up, death, and drug resistance. The second is a qualitative study to characterize the impact of TB disease and treatment on quality of life in adolescent TB survivors. In Peru, Dr. Chiang and her collaborators at Partners In Health-Peru are interviewing >100 adolescent TB survivors, parents/guardians of these adolescents, and healthcare providers to evaluate TB treatment adherence facilitators and barriers. Informed by these interviews, Dr. Chiang and her collaborators will then enroll 400 adolescents at the start of TB treatment and develop a clinical prediction tool of poor treatment adherence for adolescent TB. Through this study, the investigators will also be able to answer other questions, such as the prevalence of depression among adolescents with TB disease.

**COMBATING DRUG RESISTANCE THROUGH ACCESS TO DIAGNOSTICS AND TREATMENT**

In the 1990s, many LMICs relied on loans from international financial institutions to support public health programs; as a result, these programs prioritized interventions that provided high return on investment. Therefore, TB control guidelines focused on diagnosis by sputum microscopy instead of the more expensive culture, and empirical use of first-line drugs for drug-susceptible TB rather than conducting DST to construct regimens based on these results. In the United States and other HICs, combating MDR-TB outbreaks by tailoring individualized regimens based on DST results became the standard of care. However, in most LMICs, the management of MDR-TB remained the same. As TB treatment policy diverged between HICs and LMICs, the MDR-TB epidemic in LMICs worsened and became the most common form of antimicrobial resistance globally.

Today, the creation of rapid molecular TB diagnostics that require less laboratory expertise have facilitated the diagnosis and prompt treatment of MDR-TB worldwide. The roll-out of Xpert MTB/RIF (Cepheid, California) in 122 high TB-burden countries led to an eight-fold increase in MDR-TB case detection by the end of 2015. However, major disparities continue, and only 39% of patients who are diagnosed with MDR-TB receive the recommended panel of DST for second-line drugs. Dr. Tara Bouton and colleagues, with support from the Brown University Global Health Initiative, have shown in Ghana that even at international academic centers, meeting DST guidelines remains a challenge. Traditional MDR-TB regimens include ≥5 drugs administered for 18-24 months. Toxicity for second-line regimens is high, with up to 62% of patients developing hearing loss with second-line injectable therapy. In most TB-prevalent settings, patients are infrequently monitored for adverse events. Approval of the first new MDR-TB drugs in 50 years has made possible all-oral and shorter therapies. Dr. Bouton, through collaborations at Boston University and in South Africa, is examining the roll-out of new drugs and the impact of their empirical use on drug resistance.

**CONCLUSIONS**

The HLM-TB has focused the world’s attention – and more importantly garnered political commitment at government levels – on ending TB by 2030. The attendees’ commitment to address TB by focusing on the health inequalities that propel the epidemic is a major step forward. By reaching vulnerable populations, increasing case detection, adopting a patient-centered approach, and combating drug resistance through improved access to diagnostics and treatment, local Rhode Island physicians are helping to lead the way to ensure that ending TB is no longer a dream but a possible reality.

**References**


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Feasibility of a Regional Approach to an Obstetrics and Gynecology Transition to Residency Course

HOPE Y. YU, MD; ELISE N. EVERETT, MD; LAURA BAECHER-LIND, MD, MPH; BRITTANY STAR HAMPTON, MD

ABSTRACT

OBJECTIVE: To demonstrate the feasibility of a regional Obstetrics and Gynecology (Ob/Gyn) Transition to Residency Course (TRC) through compliance, satisfaction, and sustainability.

METHODS: We implemented a two-week, multi-institutional regional TRC (RTRC) for fourth-year medical students matched in Ob/Gyn or Family Medicine from four New England medical schools. Curriculum was developed to meet Ob/Gyn Milestone One (M1) and Core Entrustable Professional Activity (CEPA) objectives. Compliance, satisfaction, and sustainability were identified as feasibility outcomes.

RESULTS: From 2015-2018, a total of 63 fourth-year students have participated. The number of students remained stable each year. All students attended 100% of sessions. There was an average of >9/10 in all satisfaction metrics all four years. The number of faculty members from each institution remained stable over the four years.

CONCLUSION: A RTRC is feasible as measured through compliance, satisfaction, and sustainability.

KEYWORDS: obstetrics, gynecology, residency, education, regional

BACKGROUND

Transition to residency courses (TRCs) have been developed in many specialties such as general surgery, neurosurgery, and otolaryngology to help prepare rising postgraduate year-1 (PGY-1) residents for the responsibilities and demands of their respective residency programs.1-9 These TRCs have increased in popularity over the last decade to address the wide variability of the fourth year medical school curricula and concern among residency program directors about the preparedness of incoming post-graduate year one (PGY1) residents.10-11 In response to the emerging literature documenting a performance gap at the transition point between medical school and residency training, the Association of American Medical Colleges (AAMC) defined the Core Entrustable Professional Activities (CEPAs) in 2013. These are 13 activities that all medical students should be able to perform upon entering residency, regardless of their future career specialty. Furthermore, specialty-specific objectives, such as the Milestone objectives in Obstetrics and Gynecology (Ob/Gyn), were developed by the AAMC and specialty organizations (American Board of Obstetrics and Gynecology [ABOG] and the American Congress of Obstetricians and Gynecologists [ACOG]) to standardize trainee evaluation and advancement in their field.

Milestone One objectives (M1) outline skills that all matriculating Ob/Gyn PGY1s are expected to have mastered. While a TRC constructed upon the M1 objectives would be the most efficient approach in preparing Ob/Gyn PGY1s, the development of such a course at a single institution can be limited by cost, facility resources, availability of faculty, and the relatively low number of students entering Ob/Gyn.12 Multi-institutional collaboration for Regional Transition to Residency Courses (RTRCs) allows for pooling of resources for a larger number of learners, and also encourages innovative teaching methods, inter-professional education, and networking opportunities.7 Leaders in Neurosurgery, a specialty also with a relatively low number of students entering its field annually, have published on their success in development and implementation of RTRCs at six locations for rising PGY1 residents.8,9 We conducted a multi-institutional Ob/Gyn RTRC to assist fourth-year medical students in the transition to residency. Our aim is to describe and evaluate the development and implementation of this regional approach and to demonstrate feasibility through compliance, satisfaction, and sustainability of the RTRC. To our knowledge, our curriculum is the only RTRC that exists in the field of Ob/Gyn.

METHODS

Setting and Participants

The multi-institutional Ob/Gyn RTRC has been held annually since April 2015. The course is conducted at the University of Vermont Larner College of Medicine (UVM) in Burlington, Vermont. Regional institutions whose faculty and students participate in the course include UVM in Burlington, Vermont; Warren Alpert Medical School of Brown University (AMS) in Providence, Rhode Island; Tufts University School of Medicine (Tufts) in Boston, Massachusetts; and as of 2018, University of Massachusetts (UMass) in
Worcester, Massachusetts. These regional institutions are approximately a 0-hour, 4-hour, 3-hour, and 3.5-hour drive from UVM, respectively. Five institutions were asked to participate based on pre-existing professional relationships amongst faculty, with one declining because they already ran a similar single-site course at their own institution.

Case-based sessions are conducted in the Larner Classroom, a multimedia classroom specially equipped for team-based learning. All simulations occur at the UVM Clinical Simulation Laboratory. The Simulation Laboratory occupies 9,000 square feet and includes inpatient and outpatient rooms for high-fidelity simulation and standardized patient sessions, a multi-purpose room that can be an emergency room, operating room, or intensive care unit, a laparoscopic skills training room, and large debriefing rooms for low-fidelity simulation. The Simulation Laboratory is also equipped with video/audio capabilities for interactive teaching and live feedback.

This course is made available to all fourth-year UVM, AMS, and Tufts medical students matched into a residency program in Ob/Gyn or Family Medicine. In 2018, this course was also made available to UMass students. The course is advertised via email from clerkship directors at each institution. Students from AMS, Tufts, and UMass are able to register for the course through the Visiting Student Application Service (VSAS).

Participating faculty are across multiple specialties, including midwifery, nursing, and anesthesiology and are invited from all participating institutions. Faculty lead case-based sessions, simulation, and small group discussion based on their areas of expertise, and are recruited by the clerkship directors at the respective institutions.

**Intervention**

The RTTC is a two-week curriculum aimed to cover all Ob/Gyn M1 and CEPA objectives. The curriculum includes 30 hours of case-based learning, 30 hours of high- and low-fidelity simulation including sessions with standardized patients, and 20 hours of small group discussion (Tables 1 and 2). Small group discussions focus on topics of professionalism, communication, and reflection domains.

Participants’ knowledge and confidence were assessed before and immediately after completion of the RTTC. Knowledge was assessed with the APGO Preparation for Residency Knowledge Assessment Tool, a 107-question interactive, web-based examination to measure the didactic knowledge of incoming Ob/Gyn interns based on the ACGME level 1 Milestones. Confidence in three domains, M1 and CEPA objectives, ability to perform technical skills, and ability to perform duties of an intern, was assessed with a 77-question survey using a 10-point Likert scale with “1” indicating strongly disagree and “10” indicating strongly agree. Participant’s satisfaction with each session was assessed using a 5-question survey for the small group and case-based sessions and a 6-question survey for the skills and simulation sessions. These surveys measured faculty engagement, knowledge of subject area, presentation of material, and relevance of session to residency training, using

### Table 1. Sample Week 1 curriculum schedule

<table>
<thead>
<tr>
<th>WEEK 1</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00–9:00</td>
<td>Handoffs</td>
<td>L&amp;D Communication</td>
<td>Patient Safety</td>
<td>Informed Consent</td>
<td>Giving Bad News</td>
</tr>
<tr>
<td>9:00–10:30</td>
<td>Case #1: Prenatal Care</td>
<td>Case #1: Postpartum Care Breastfeeding Contraception</td>
<td>Case #1: Annual Exams</td>
<td>Case #1: Pelvic Pain</td>
<td>Case #1: FHT</td>
</tr>
<tr>
<td>10:30–12:00</td>
<td>Case #2: Normal Labor</td>
<td>Case #2: Postpartum Complications</td>
<td>Case #2: Contraception</td>
<td>Case #2: Vulvar/Vaginal Complaints</td>
<td>Case #2: IOL, VBAC, Postdates</td>
</tr>
<tr>
<td>12:00–1:00</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
</tr>
<tr>
<td>1:00–4:00</td>
<td>Station #1: Rule Out Labor</td>
<td>Station #1: NSVD, shoulder dystocia, breech maneuvers</td>
<td>Station #1: Breast Exam</td>
<td>Station #1: C-section</td>
<td>Station #2: Role-playing–Informed Consent</td>
</tr>
<tr>
<td></td>
<td>Station #2: OB Exam</td>
<td>Station #2: Role-playing—Lactation</td>
<td>Station #2: Pelvic Exam</td>
<td>Station #3: Circumcision</td>
<td>Station #3: Role-playing—Contraception</td>
</tr>
<tr>
<td></td>
<td>Station #3: NSVD Second birthing</td>
<td>Station #3: Knots/Suturing</td>
<td>Station #3: IUD Placement</td>
<td>Station #4: Role-playing—Giving bad news</td>
<td>Station #4: Residents as Teachers</td>
</tr>
<tr>
<td>4:00–5:00</td>
<td>Burmout</td>
<td>Relationships</td>
<td>Work/Life Balance</td>
<td>Teams</td>
<td></td>
</tr>
</tbody>
</table>
CONTRIBUTION

a 10-point Likert scale with the same numbering system as the confidence survey. Results of the knowledge and confidence measures will be reported in a separate manuscript.

Logistics and Cost
Students and faculty from institutions other than UVM provided their own travel to UVM and were responsible for personal food costs during the course. UVM students and faculty provided housing for all non-UVM participants (faculty and students) free of charge. Sessions in which non-UVM faculty participated were scheduled over consecutive days to maximize convenience. For 2015 and 2016, each of the 3 institutions contributed $500 for the costs of simulation supplies, compensation for standardized patients and materials for team building activities. For 2017 and 2018, the cost of the course was supported through an education innovation grant from Tufts University School of Medicine.

Feasibility outcomes
Compliance, satisfaction, and sustainability of the RTRC were identified as feasibility outcomes. Compliance is measured by the percentage of participants completing the majority of sessions. The course is defined as feasible if compliance is greater than 75%. Satisfaction was measured using the satisfaction surveys described above. Sustainability of the RTRC was assessed by evaluating faculty participation and repeat participation in subsequent years, number of participants and faculty across each year, and change in cost.

RESULTS
From 2015 to 2018, a total of 63 fourth-year students have participated, 52 of which were matched into an Ob/Gyn residency and 11 of which were matched into a Family Medicine residency. These students were from UVM (n=39), AMS (n=15), Tufts (n=8), UMass (n=1).

Compliance
In our RTRC, between 2015 and 2018, we had 100% compliance with all students (n=63) attending 100% of sessions.

Satisfaction
Student perception of effectiveness of faculty engagement, knowledge of subject area, presentation of material, and session relevance to residency averaged at least 9.0/10 for all four years and for all session types (small group discussions, case-based sessions, and simulation sessions). Student perception of effectiveness of preparatory material in facilitating learning during the sessions averaged >8.7/10 all four years. Student perception that the simulation sessions improved their confidence in the targeted skills averaged >8.9/10 all four years.

Sustainability
The total number of faculty members that participated 2015-2018 was 29, 34, 35 and 34, respectively. 62%, 80%, and 67% of faculty from UVM, AMS, and Tufts attended multiple RTRCs, respectively. The number of students that

<table>
<thead>
<tr>
<th>WEEK 2</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00–9:00</td>
<td>OB Anesthesia</td>
<td>OB Handoffs</td>
<td>Residents as Teachers</td>
<td>Communication, Interprofessional Education</td>
<td>Careers</td>
</tr>
<tr>
<td>9:00–10:30</td>
<td>Case #1: Abnormal Labor</td>
<td>Case #1: Bleeding in Pregnancy</td>
<td>Case #1: Abnormal Pap/ Squamous</td>
<td>Case #1: Urinary Incontinence, Pelvic Prolapse</td>
<td>Case #1: Abnormal Uterine Bleeding</td>
</tr>
<tr>
<td>10:30–12:00</td>
<td>Case #2: Fetal Assessment</td>
<td>Case #2: Hypertension in Pregnancy</td>
<td>Case #2: Abnormal Pap/Adeno</td>
<td>Case #2: Paging Curriculum</td>
<td>Case #2: Pelvic Mass</td>
</tr>
<tr>
<td>12:00–1:00</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
</tr>
<tr>
<td>1:00–4:00</td>
<td>Station #1: C-section</td>
<td>Station #1: Postpartum Hemorrhage/Atony</td>
<td>Station #1: LEEP, Office procedures</td>
<td>Station #1: Pelvic Exam, Pessary Fitting</td>
<td>Station #1: Gyn Instruments</td>
</tr>
<tr>
<td></td>
<td>Station #2: Fetal Heart Tracing</td>
<td>Station #2: Eclamptic Seizure</td>
<td>Station #2: Knots/Suturing</td>
<td>Station #2: Knots/Suturing</td>
<td>Station #2: Gyn U/S</td>
</tr>
<tr>
<td></td>
<td>Station #3: Episiotomy, Laceration repair</td>
<td>Station #3: OB ultrasound</td>
<td>Station #3: Scrub training, aseptic technique</td>
<td>Station #3: Laparoscopy</td>
<td>Station #3: Laparoscopy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Station #4: Cystoscopy</td>
<td>Station #4: Hysteroscopy, D&amp;C</td>
</tr>
<tr>
<td>4:00–5:00</td>
<td>Mentoring</td>
<td>Research &amp; Fellowships</td>
<td>Feedback</td>
<td>Sterile technique, Patient positioning, Foley catheter insertion</td>
<td>Debrief, Evals, Feedback of Bootcamp</td>
</tr>
</tbody>
</table>

Table 2. Sample Week 2 curriculum schedule
CONTRIBUTION

participated from 2015–2018 was 13, 17, 17 and 16, respectively. The budgets for 2015, 2016, 2017 and 2018 remained unchanged (Table 3).

Table 3. Sample RTRC Budget

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Cost</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team-building exercise materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffee mugs</td>
<td>50</td>
<td>$4/mug</td>
<td>$400</td>
</tr>
<tr>
<td>Team shirts</td>
<td>20</td>
<td>$4/shirt</td>
<td>$80</td>
</tr>
<tr>
<td>Standardized Patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient volunteers</td>
<td>6 hours</td>
<td>$0/hr</td>
<td>$0</td>
</tr>
<tr>
<td>UVM-employed, non-invasive exams</td>
<td>21 hours</td>
<td>$23/hr</td>
<td>$483</td>
</tr>
<tr>
<td>UVM-employed, invasive exams</td>
<td>9 hours</td>
<td>$46/hr</td>
<td>$414</td>
</tr>
<tr>
<td>Larner Classroom</td>
<td></td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Simulation Center</td>
<td></td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Simulation supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-section</td>
<td>8 models</td>
<td>$31.25/model</td>
<td>$250</td>
</tr>
<tr>
<td>Circumcision (Miniature hot dogs)</td>
<td>20 models</td>
<td>$0.50/model</td>
<td>$10</td>
</tr>
<tr>
<td>Vaginal laceration repair (Beef tongue)</td>
<td>20 models</td>
<td>$1/model</td>
<td>$20</td>
</tr>
<tr>
<td>Hysteroscopy (Butternut squash)</td>
<td>20 models</td>
<td>$2/model</td>
<td>$40</td>
</tr>
<tr>
<td>Endometrial biopsy (Papayas)</td>
<td>20 models</td>
<td>$2/model</td>
<td>$40</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$1737</td>
</tr>
</tbody>
</table>

DISCUSSION

To our knowledge, we have developed the first RTRC in the field of Ob/Gyn and have demonstrated feasibility in terms of compliance, satisfaction, and sustainability. The number of students and faculty (local and visiting) has remained stable over the past four years with high rates of compliance and satisfaction for all sessions each year. Since 2015, our RTRC has maintained a high faculty to student ratio with the majority of faculty from all institutions returning for at least one additional year. Impressively, eighty percent of visiting faculty returned for at least one additional year. It is important to note that any variation in faculty members is due to availability rather than dissatisfaction with the course.

We believe our RTRC has many benefits. While this course was designed to improve knowledge, technical skill, and confidence acquisition, it also provides opportunities for networking, wellness, and professional identity formation. A large component of the success of this course can be attributed to the generosity of students and faculty who are willing to host. This significantly minimized costs for visiting students and faculty while concurrently encouraging networking opportunities. Over the last four years, it has been apparent that students are motivated to optimize their preparation for residency as demonstrated by the high participation rate of UVM students and the willingness of non-UVM students to travel to and attend a two-week course at another institution. Finally, the state-of-the-art facilities at UVM are able to accommodate large groups and multiple simultaneous sessions which has allowed us to efficiently cover the wide range of topics in M1 and CEPA in only two weeks. A limitation to our data collection may be that there is inherent bias in satisfaction scores since all students had already matched in their respective residency programs.

While the regional approach to our curriculum is unique in Ob/Gyn and shown to be feasible in the Northeast region, the geographic proximity between institutions may be more of a barrier in other regions such as the Northwest or Midwest where distances are greater between institutions. Nevertheless, the literature has shown that faculty are willing to donate the time for such courses, and they draw benefits themselves by participating [Deutsch et al. 2013]. These benefits include ability to demonstrate teaching efforts for curriculum vitae (CV) building and promotion, exposure to curricular development at other institutions, and opportunities to network with educators in their region to build a regional and national reputation.

At this time, the field of neurosurgery has made it a requirement for their incoming residents to attend one of the six established RTRCs around the country [Fontes et al. 2014; Selden et al. 2011]. We believe that the field of Ob/Gyn can adapt a similar model. With the implementation of M1 objectives in Ob/Gyn, there are clear guidelines upon which to build a curriculum for incoming residents as we have done. With the assistance of leaders in ACOG, Association of Professors of Gynecology and Obstetrics (APGO), and Council on Resident Education in obstetrics and Gynecology (CREOG), this curriculum could be delivered regionally in April and May of the fourth year with a mandate that matched students attend one session. Additionally, to bridge the gap between undergraduate and graduate medical education, students could be evaluated with an assessment documenting the student performance of the M1 and CEPA objectives sent to both the medical school and the residency program. Knowledge gaps and weaknesses across regions, or even nationally, can be identified to improve undergraduate medical education in the clerkship or fourth year. By demonstrating the feasibility of our RTRC curriculum, we encourage our leaders in medical education to implement similar regional courses nationally in order to better standardize the preparedness of incoming Ob/Gyn residents.
References


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The views expressed herein are those solely of the authors.

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Possible Fatal Ciguatera Fish Poisoning?
LEONARD A. MERME, DO

KEYWORDS: ciguatera; food poisoning; fish poisoning

Headlines streamed across the Internet in June stating, “Young Texas couple die from unidentified illness in Fiji.” According to news reports, these two individuals apparently developed nausea, vomiting and diarrhea, along with paresthesias of their extremities and/or weakness. Both eventually succumbed to their illness. Although the cause of death has not been established to date, there is a narrow differential diagnosis. Based on their apparent symptomatology and geographic location, they may have developed ciguatera fish poisoning.1 This is a food-borne illness that develops after consuming reef fish containing ciguatoxins. These heat-stable toxins are from dinoflagellates that grow in association with algae on coral reefs. The toxin works its way up the food chain to fish such as snappers, groupers, and barracuda. Affected fish cannot be identified by altered odor or taste. The toxins activate the voltage-gated sodium channels in cell membranes, increasing sodium ion permeability which depolarizes cells. Within hours of eating affected fish, gastrointestinal, neurologic, and cardiac symptoms predominate; although rare, fatalities have been reported.2

Other seafood-related illnesses are in the differential diagnosis including Scombroid, shellfish poisonings, and puffer-fish toxicity. Although the couple with possible ciguatera fish poisoning were in Fiji at the time, cases have occurred in the southern US and the Caribbean.3 The diagnosis is usually made based on a history of recently eating reef fish, and if possible, identifying the toxin in the fish that were consumed. Treatment is mainly supportive, but includes IV mannitol for severe cases.4,5 Details for clinicians and patients have been published.5 For the unfortunate couple in Fiji, it is unclear if this diagnosis will be eventually proven or ruled out.

References

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Editors’ Notes
1. Ciguatera fish poisoning is infrequently seen in RI, but there appears to be an increasing incidence in the US and Caribbean. Climate change may be responsible as sea surface temperature increases of 1°C is related to an increase in poison control calls for ciguatera fish poisoning. (Gingold DB, Strickland MJ, Hess JJ. Ciguatera Fish Poisoning and Climate Change: Analysis of National Poison Center Data in the United States, 2001–2011. Environ Health Perspect. 2014;122: 580-586)

2. RIJM reached out to the Centers for Disease Control and Prevention (CDC), prior to publication, to ascertain whether a cause of death for the Texan couple had been established. The media office reported on July 26 that “The Ministry of Health and Medical Services in Fiji requested CDC assistance in the public health investigation of the deaths of an American couple who passed away while visiting Fiji in May. CDC has completed testing on samples received from Fiji. CDC results do not suggest that an infectious disease caused these deaths. CDC and a partner laboratory conducted additional tests and have not identified a non-infectious cause of death. CDC has shared results of its tests with the Tarrant County, Texas health department and other partners, and at this time has concluded its involvement in the public health investigation.

“While we at CDC sincerely hoped we would be able to provide an answer about what led to these deaths, it is common in our work with medical examiners around the country and around the world for deaths to remain unexplained.”
In a previous column, the Rhode Island Department of Health (RIDOH) documented a rapid and steady increase of cancers of the thyroid among Rhode Island women and men between 1995 and 2016. In 1995, thyroid cancer accounted for 1% of primary malignant cancers diagnosed within adults. During the ensuing two decades, thyroid cancer diagnoses more than tripled, accounting for 3% of 2016 adult cancer cases. For this report, we further assessed demographic and tumor characteristics and incidence changes between 1995 and 2016 to better understand patterns and underlying reasons for the rising rates of thyroid cancer in Rhode Island.

METHODS

Since October of 1986, the Rhode Island Cancer Registry (RICR) has collected cancer case reports. Since 1995, this effort has been supported in part by the Centers for Disease Control and Prevention National Program of Cancer Registries (CDC NPCR), a federally-mandated program that supports state-based cancer surveillance and sets standards for quality, complete and timely cancer case collection and data management. Using the RICR data, we extracted invasive malignant thyroid cancers (ICD-O-3 site/behavior: C739/3) diagnosed in adults aged 20 years and older, from January 1, 1995 through December 31, 2016. Thyroid cancer incidence, disease progression and prognosis differ by age, histologic type, size and stage at diagnosis. This study assessed histologic subtypes and coded “papillary,” “follicular,” “medullary,” “anaplastic,” and “other,” using ICD-O-3 (Table 1). Tumor sizes were grouped into two cohorts, “<2 cm” and “≥2 cm.” Stage at cancer diagnosis was classified as “localized,” “regional,” or “distant,” using the “Derived Summary Stage 2000” system [https://training.seer.cancer.gov/ss2k/2000/]. Since the coding systems have been used to record size and stage of cancers since 2004, size and stage summaries were limited to cancers diagnosed between 2004 and 2016, the most current full year of data available in the RICR.

SAS v9.4® statistical analytic software (SAS Institute Inc., Cary, NC) was used to count frequencies and calculate age-adjusted rates per 100,000 residents using the 2000 US standard population [https://seer.cancer.gov/stdpopulations/], by cancer type, diagnosis year, sex and age group (20–54 years and ≥55 years). Incidence rates and rate ratios of two distinct 11-year periods (1995–2005 vs. 2006–2016) were estimated, and we evaluated magnitudes of rate differences over the study period. State population estimates for rate denominators were obtained from the National Cancer Institute Surveillance, Epidemiology, and End Results Program (NCI SEER; https://seer.cancer.gov/popdata/download.html). Jointpoint Regression Analysis software v4.6.0.0 (http://surveillance.cancer.gov/jointpoint/) was also used to calculate and assess trends between 1995 and 2016 with statistical significance testing of annual percent change (p-value<0.05).

RESULTS

Thyroid cancer incidence changes by sex

From 1995 to 2016, women’s thyroid cancers comprised a majority of the state’s diagnosed cases; 2,503 women and 830 men were diagnosed with malignant thyroid cancers in Rhode Island during that period (Table 2). Compared to 1995–2005, the rates in 2006–2016 for both sexes doubled (rate ratio for women=2.08; rate ratio for men=1.98, Table 2). Women still had far greater incidence rates than men (37.9 compared with 13.1, Table 2).

Thyroid cancer by subtype and sex, and incidence changes

Thyroid cancers in Rhode Island are predominantly papillary carcinomas – 89% and 83% of the cases of women and men, respectively (Table 2). Papillary cancer was three times more commonly diagnosed among women than men. Figure 1 demonstrates that nearly all thyroid cancer increases between 1995 and 2016 were attributable to increases in the papillary subtype. From 1995 to 2016, diagnoses of thyroid cancer overall and of the papillary thyroid cancer subtype increased steadily, on nearly identical parallel slopes, by 6% among females and 5% to 5.5% among males each year (Figure 1). Approximately 9% of all thyroid cancers were follicular...
Table 2. Malignant thyroid cancer counts and incidence rate changes among Rhode Island adults (ages ≥ 20 years), by sex and cancer subtype, 1995–2016 Rhode Island Cancer Registry

<table>
<thead>
<tr>
<th>Gender</th>
<th># (%) of Cases 1995–2016</th>
<th>Rate (95% CI)*</th>
<th>Rate Ratio (b/a) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1995–2005 (a)</td>
<td>2006–2016 (b)</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All thyroid</td>
<td>2,503</td>
<td>18.2 (16.9-19.5)</td>
<td>37.9 (36.1-39.8)</td>
</tr>
<tr>
<td>Papillary</td>
<td>2,226 (89%)</td>
<td>16.3 (15.1-17.5)</td>
<td>34.0 (32.3-35.8)</td>
</tr>
<tr>
<td>Follicular</td>
<td>200 (8%)</td>
<td>1.3 (1.0-1.6)</td>
<td>3.0 (2.5-3.6)</td>
</tr>
<tr>
<td>Other*</td>
<td>77 (3%)</td>
<td>0.6 (0.4-0.9)</td>
<td>0.9 (0.6-1.2)</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All thyroid</td>
<td>830</td>
<td>6.6 (5.9-7.5)</td>
<td>13.1 (12.1-14.3)</td>
</tr>
<tr>
<td>Papillary</td>
<td>688 (83%)</td>
<td>5.3 (4.6-6.1)</td>
<td>11.0 (10.0-12.0)</td>
</tr>
<tr>
<td>Follicular</td>
<td>84 (10%)</td>
<td>0.8 (0.5-1.1)</td>
<td>1.3 (0.9-1.7)</td>
</tr>
<tr>
<td>Other*</td>
<td>58 (7%)</td>
<td>0.5 (0.3-0.8)</td>
<td>0.9 (0.6-1.3)</td>
</tr>
</tbody>
</table>

* Medullary, anaplastic and all other subtypes were combined.
† Rates are per 100,000 and age-adjusted to the 2000 US Population Standard.
CI = confidence interval
ns = not a significant difference in rate ratio at p value=.05 level

Table 3. Malignant papillary thyroid cancer counts and incidence rate changes among Rhode Island adults (ages ≥ 20 years) by sex and age group, 1995–2016 Rhode Island Cancer Registry

<table>
<thead>
<tr>
<th>Gender (age in years)</th>
<th># (%) of Cases 1995–2016</th>
<th>Rate (95% CI)*</th>
<th>Rate Ratio (b/a) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1995–2005 (a)</td>
<td>2006–2016 (b)</td>
<td></td>
</tr>
<tr>
<td>Women (age in years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papillary cancer</td>
<td>2,226</td>
<td>16.3 (15.1-17.5)</td>
<td>34.0 (32.3-35.8)</td>
</tr>
<tr>
<td>20-54</td>
<td>1,490 (67%)</td>
<td>17.7 (16.3-19.3)</td>
<td>34.9 (32.7-37.2)</td>
</tr>
<tr>
<td>≥55</td>
<td>736 (33%)</td>
<td>12.9 (11.1-14.9)</td>
<td>31.8 (29.2-34.6)</td>
</tr>
<tr>
<td>Men (age in years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papillary cancer</td>
<td>688</td>
<td>5.3 (4.6-6.1)</td>
<td>11.0 (10.0-12.0)</td>
</tr>
<tr>
<td>20-54</td>
<td>384 (56%)</td>
<td>4.9 (4.1-5.8)</td>
<td>9.1 (8.0-10.3)</td>
</tr>
<tr>
<td>≥55</td>
<td>304 (44%)</td>
<td>6.4 (5.0-8.0)</td>
<td>15.3 (13.4-17.5)</td>
</tr>
</tbody>
</table>

* Rates are per 100,000 and age-adjusted to the 2000 US Population Standard.
CI = confidence interval
carcinomas [Table 2]. Although case counts were not as significant as those of papillary cancers, elevated incidence of follicular thyroid cancers were significant in both sexes over the study period. Women’s follicular thyroid cancers incidence rate was twice as high between 2006 and 2016 as it was from 1995 to 2005 (rate ratio=2.38, Table 2). Among men, a similar but smaller extent of increased follicular thyroid cancer emerges (rate ratio=1.61, Table 2).

The remaining subtypes (anaplastic, medullary and other histologic subtypes combined) were less common – 3% and 7% of thyroid cancers among females and males, respectively [Table 2]. Their rate changes over the study period were not statistically meaningful, due to small numbers of reported cases [less than three per year on average].

Papillary thyroid cancer by sex and age, and incidence changes

Demographic characteristics were summarized for papillary thyroid cancer. For both age groups (20–54 and ≥55 years), and for both women and men, papillary cancer incidence rates increased between the first decade studied and the second [Table 3]. Although more cases were diagnosed among younger adults, the older adult cohort (≥55 years) showed higher rate ratios than the younger cohort [rate ratios for women: 2.47 among ≥55 years vs. 1.97 among 20–54 years; rate ratios for men: 2.39 among ≥55 years vs. 1.87 among 20–54 years].

Papillary thyroid cancer by tumor size and stage

Most papillary thyroid cancers were diagnosed at small sizes (<2 cm) and at localized stages [Figure 2]. More women were diagnosed when their tumors were smaller than 2 cm and localized, compared with men (52% vs. 38%, Figure 2). Men were more likely to have papillary thyroid cancer diagnosed at larger sizes (≥2 cm) and at extended stages [when their tumors had spread to regional sites or lymph nodes, or metastasized – 18% vs. 10%, Figure 2].

DISCUSSION

The above assessment of demographic and tumor characteristics of thyroid cancer diagnosed among Rhode Island adults provides a more complete picture of thyroid cancer incidence by sex, age group, cancer type, and stage at diagnosis. However, these findings are subject to the following limitations: [1] further histologic variants in each subtype cancer were not differentiated or confirmed, using supplemental pathologic or treatment reports; and [2] additional risk factors that may contribute to development of cancer, such as ionizing radiation exposure history in childhood, genetic mutations, family history, comorbidity [e.g., obesity, diabetes], or lifestyle factors [e.g., physical activity, dietary intake, smoking history, etc.] were not collected in the registry database and are therefore not included in this study.

The incidence of thyroid cancer in Rhode Island (overall and papillary) was three times higher among women than men during the study period, consistent with national incidence trends. In 2016, thyroid cancer was the fifth most commonly diagnosed cancer among Rhode Island women. Men also experienced a rapid and steady increase of thyroid cancers, statewide and nationally, and it was typically diagnosed at later stages among Rhode Island men. Late-stage diagnosis of papillary thyroid cancer with larger tumor sizes among Rhode Island men is particularly concerning, since it may lead to worse prognoses and higher mortality rates.

The literature suggests that higher utilization of diagnostic tests using imaging may have resulted in more cases of thyroid cancer being diagnosed. Improved thyroid cancer diagnoses alone may not explain patterns and changes in thyroid cancer incidence. Higher rates among women, particularly during reproductive years, may imply roles of biologic hormones. Exposure to ionizing radiation may also play an important role in thyroid cancers, particularly the papillary subtype. Other risk factors, behavioral or environmental, may differentially affect individuals’ lifetime risks. Increases in cancer detection among older adults may reflect opportunistic screening effect, symptom-based screening, increased risk as age advances, unknown factors, or multifactorial influences. More studies are needed to determine factors that may have influenced these increased cancer rates.

References

3. Rhode Island Cancer Data. Rhode Island Department of Health (RIDOH). http://www.health.ri.gov/pmc/articles/PMC4586174/


Acknowledgment
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We thank all dedicated Rhode Island cancer registrars in the central and local hospital registries for their quality cancer surveillance and reporting.

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

<table>
<thead>
<tr>
<th>VITAL EVENTS</th>
<th>REPORTING PERIOD</th>
<th>12 MONTHS ENDING WITH MARCH 2019</th>
<th>Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MARCH 2019</td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td>Live Births</td>
<td>886</td>
<td>11,328</td>
<td>10.7*</td>
</tr>
<tr>
<td>Deaths</td>
<td>964</td>
<td>10,566</td>
<td>10.0*</td>
</tr>
<tr>
<td>Infant Deaths</td>
<td>9</td>
<td>64</td>
<td>5.6#</td>
</tr>
<tr>
<td>Neonatal Deaths</td>
<td>7</td>
<td>54</td>
<td>4.8#</td>
</tr>
<tr>
<td>Marriages</td>
<td>279</td>
<td>6,669</td>
<td>6.3*</td>
</tr>
<tr>
<td>Divorces</td>
<td>230</td>
<td>2,991</td>
<td>2.8*</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Underlying Cause of Death Category</th>
<th>REPORTING PERIOD</th>
<th>12 MONTHS ENDING WITH SEPTEMBER 2018</th>
<th>Rates(b)</th>
<th>YPLL (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SEPTEMBER 2018</td>
<td>Number (a)</td>
<td>Number (a)</td>
<td></td>
</tr>
<tr>
<td>Diseases of the Heart</td>
<td>194</td>
<td>2,458</td>
<td>232.5</td>
<td>3,097.0</td>
</tr>
<tr>
<td>Malignant Neoplasms</td>
<td>189</td>
<td>2,218</td>
<td>209.8</td>
<td>4,962.5</td>
</tr>
<tr>
<td>Cerebrovascular Disease</td>
<td>36</td>
<td>474</td>
<td>44.8</td>
<td>472.0</td>
</tr>
<tr>
<td>Injuries (Accident/Suicide/Homicide)</td>
<td>82</td>
<td>930</td>
<td>88.0</td>
<td>12,555.0</td>
</tr>
<tr>
<td>COPD</td>
<td>38</td>
<td>511</td>
<td>48.3</td>
<td>405.0</td>
</tr>
</tbody>
</table>

(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 1,056,298 (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

July 29–August 1, Monday–Thursday
AMA State Advocacy Roundtable

August 5, Monday
National Community Health Centers Week

August 6, Tuesday
RIMS Physician Health Committee: Herbert Rakatansky, MD, Chair
MD 2023 Orientation at Alpert Medical School: Peter A. Hollmann, MD, and staff
Governor’s Overdose Task Force Harm Reduction Working Group

August 7, Wednesday
Meeting to discuss potential charter school application
Meeting regarding proposed primary care physicians PAC

August 8, Thursday
Meeting with Neil Sarkar, Interim President, RI Quality Institute, regarding Current Care

August 9, Friday
RIMS Notes issue production

August 12, Monday
RIMS closed in observance of Victory Day

August 13, Tuesday
RIMS Physician Health Committee: Herbert Rakatansky, MD, Chair

August 14, Wednesday
Board of Medical Licensure and Discipline
Governor’s Overdose Prevention and Intervention Task Force

August 15, Thursday
Meeting with RI Primary Care Physicians Corporation regarding Medicaid
Substance Use Policy Education and Recovery (SUPER) fundraiser

August 16, Friday
Meeting with Senate staff regarding commission to study the impact on access to medical, dental, and mental health.

August 20, Tuesday
OHIC Aligned Measure Sets Review
Health Insurance Advisory Commission

August 22, Thursday
RI Foundation “Meet and Greet” with Secretary of the Executive Office of Health and Human Services

August 23, Friday
RIMS Notes issue production

August 27, Tuesday
OHIC Aligned Measure Sets Review
Medicaid Accountable Entities Open Discussion

August 28, Wednesday
Meeting with proposed charter school board of directors: Brad Collins, MD, Immediate Past President

August 29, Thursday
Meeting with Blue Cross Blue Shield of RI regarding pre-diabetes program grant funding
Conference call with IQVIA regarding new detailed Rhode Island opioid views

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Contact Marc Bialek for more information: 401-331-3207 or mbialek@rimed.org

Neighborhood Health Plan of Rhode Island is a non-profit HMO founded in 1993 in partnership with Rhode Island’s Community Health Centers. Serving over 185,000 members, Neighborhood has doubled in membership, revenue and staff since November 2013. In January 2014, Neighborhood extended its service, benefits and value through the HealthSource RI health insurance exchange, serving 49% the RI exchange market. Neighborhood has been rated by National Committee for Quality Assurance (NCQA) as one of the Top 10 Medicaid health plans in America, every year since ratings began twelve years ago.

RIPCPC is an independent practice association (IPA) of primary care physicians located throughout the state of Rhode Island. The IPA, originally formed in 1994, represent 150 physicians from Family Practice, Internal Medicine and Pediatrics. RIPCPC also has an affiliation with over 200 specialty-care member physicians. Our PCP’s act as primary care providers for over 340,000 patients throughout the state of Rhode Island. The IPA was formed to provide a venue for the smaller independent practices to work together with the ultimate goal of improving quality of care for our patients.
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Rhode Island seeing increase in non-fatal overdoses

*Warning comes as law enforcement reports increased circulation of counterfeit pills*

In light of recent increases in opioid overdose-related emergency department visits, the Rhode Island Department of Health [RIDOH] reported that law enforcement is seeing an increase in the circulation of counterfeit pills that contain fentanyl.

Hospitals in Rhode Island are required to report all suspected, non-fatal opioid overdoses within 48 hours to RIDOH. RIDOH and the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals (BHDDH) review weekly opioid overdose data and issue a warning to first responders and city and town leadership in a region if that region’s weekly overdose threshold has been exceeded. (Weekly thresholds are based on historic overdose data and population data.) Rhode Island’s threshold as a whole is 42 overdoses per week.

Between August 12th and August 18th, there were 44 reports of suspected, non-fatal opioid overdoses in Rhode Island. The statewide average for opioid overdose-related emergency department visits for the first six months of 2019 has been 31 per week. Of the 44, there were 18 opioid overdoses in Providence, where the overdose threshold is 16. There were eight reported opioid overdoses in the region that includes Cranston, West Warwick, and Coventry. The threshold for this region is eight overdoses.

While RIDOH has noted these increases, Rhode Island law enforcement agencies have reported an increase in the circulation of counterfeit pills in the illegal drug market. These counterfeit pills are sold illegally and look identical to opioid prescription pain medications [such as Percocet®, OxyContin®, and Vicodin®], and may contain lethal amounts of illegally-made fentanyl. Twenty-one of the 44 people who overdosed received initial toxicology screenings. Of those 21 people, 19 were positive for fentanyl.

In 2018, 72% of all Rhode Island drug overdose deaths involved fentanyl.

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**How to Think & Act Like a Dermatologist**
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Warren Alpert Medical School | Providence, RI

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Warren Alpert Medical School | Providence, RI

**Changing the Culture of Pain Treatment**
Saturday, October 19, 2019
Community College of Rhode Island | Warwick, RI

**2019 CTC-RI Annual Learning Collaborative**
Thursday, October 24, 2019
The Crowne Plaza Hotel | Warwick, RI

**Brown Annual Orthopedics Symposium**
Saturday, October 26, 2019
Warren Alpert Medical School | Providence, RI

**Brown Advanced Cardiovascular Therapies Symposium**
November 9, 2019
Warren Alpert Medical School | Providence, RI

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Tufts Health Plan and Harvard Pilgrim Health Care sign definitive agreement to combine organizations

WELLESLEY, WATERTOWN, MASS. – Harvard Pilgrim Health Care and Tufts Health Plan announced on August 14 their intent to combine their nonprofit organizations. The new organization, yet to be named, will become one of the region's largest nonprofit health services organizations, providing health coverage in all segments of the market regardless of a person's age, income, life circumstance or health status.

The new organization will serve close to 2.4 million members in Massachusetts, Maine, Connecticut, New Hampshire and Rhode Island, offering employer-sponsored plans; Medicare and Medicaid plans; Qualified Health Plans; and plans for those who are dually eligible for Medicare and Medicaid.

The board of directors will comprise equal representation from both organizations and will be chaired by JOYCE MURPHY, who currently serves as chair of the board for Harvard Pilgrim Health Care.

TOM CROSSELL, president and CEO of Tufts Health Plan, will serve as CEO of the new organization. MICHAEL CARSON, who serves as president and CEO of Harvard Pilgrim Health Care, will serve as president and oversee the organization's diverse business lines and subsidiaries.

“Through the combination of two strong organizations with a commitment to non-profit health care in New England, we will be able to provide even greater value to consumers, as well as improve access to care throughout the region,” said JOYCE MURPHY, chair of the board for Harvard Pilgrim Health Care.

“Building upon our collective synergies and strengths – which includes being among the top-rated health plans in the country for quality – will unlock value that can be immediately reinvested in our members and the communities we have the privilege of serving,” said GREG TRANTER, chair of the board for Tufts Health Plan. “I am excited about the future.”

“Our communities and consumers today face four major hurdles in health care: affordability, access, quality of health and a fragmented health care experience across various stakeholders and health systems. Through our shared vision, we believe we can tackle these issues and bring more value to the communities we serve,” said Tom Croswell, president and CEO of Tufts Health Plan.

The new organization will harness the combined strengths of the respective organizations and bring value to the community by:

- Improving affordability through scale and administrative cost efficiencies, providing high value, more affordable health plans to consumers
- Increasing access through geographic reach and product diversity by enhancing population health capabilities, enabling care for underserved communities and offering a broader set of insurance choices across age and income groups
- Improving quality of health through enhanced capabilities for population health and clinical engagement. The new organization will build upon a rich legacy of provider collaborations, promoting investments in population health capabilities
- Streamlining customer experience through investment in innovative tools and capabilities

Philanthropy, community engagement and corporate citizenship will remain a priority for the new organization - both Tufts Health Plan and Harvard Pilgrim Health Care have a rich history of supporting the communities they serve and are committed to building upon that strength. In 2018 alone, both organizations’ combined giving totaled more than $9 million.

The agreement, which was unanimously approved by both boards, is subject to multiple local and federal regulatory approvals during which time the organizations remain independent companies.
With $12.5M grant, Brown to create research center on substance misuse and chronic disease

PROVIDENCE (BROWN UNIVERSITY) – With a new National Institutes of Health grant expected to total $12.5 million over five years, Brown University will expand its research on substance misuse and launch a new Center of Biomedical Research Excellence (COBRE).

Based at the University’s School of Public Health, the Center for Addiction and Disease Risk Exacerbation (CADRE) will focus on the intersection of substance use and disease. The center will establish at Brown a laboratory for collecting blood and other samples from patients to measure chemical markers, such as those of inflammation or stress. And the grant will support four early-career faculty members as they study substance use and chronic diseases – research questions on the interplay between alcohol and HIV on inflammation, for example, or whether cannabis can substitute for opioids in treating rheumatoid arthritis.

“Everyone knows about the relationship between tobacco use and lung cancer, but there are many other links between substance use and chronic disease,” said PETER MONTI, director of the Center for Alcohol and Addiction Studies (CAAS) at Brown and a professor of behavioral and social sciences who will lead the new COBRE. “Understanding the mechanisms through which substance use affects chronic disease is a central part of the research we endeavor to do with this grant. If we can reduce the burden of substance use – for example, smoking and its impact on cardiovascular disease – there will be a trickle-down effect on health and health care cost savings.”

The grant will establish a clinical laboratory at CAAS and the school. The lab will be staffed by a full-time research nurse so that, for example, study participants will no longer have to go elsewhere for a simple blood draw. JENNIFER TIDLEY, a professor of behavioral and social sciences and psychiatry and human behavior, will lead the laboratory. Eventually, the services at the lab will be available to researchers across all of Brown, Monti said.

In addition, the grant will fund two $50,000 pilot projects each year focused on understanding and addressing the higher burden of substance use and chronic disease among racial and ethnic minorities. It will also provide financial support for the center to recruit and fund two postdoctoral fellows from groups underrepresented in biomedical sciences.

The center will take advantage of numerous other COBRES at Brown and its affiliated hospitals – including Brown’s Center for Central Nervous System Function, Butler Hospital’s Center for Neuromodulation, Rhode Island Hospital’s Center of Biomedical Research Excellence on Opioids and Overdose, and Advance Clinical and Translational Research. And one of the projects led by an early-career researcher will take advantage of a close collaboration with the Carney Institute for Brain Science-affiliated MRI Research Facility.

Among the new research projects:

ELIZABETH ASTON, an assistant professor of behavioral and social sciences (research), will conduct a double-blind clinical trial to study the effect of two key components of cannabis – cannabidiol, also known as CBD, and tetrahydrocannabinol, also known as THC – on pain levels, mood and inflammation among people living with rheumatoid arthritis. The study could guide clinical decisions around the use of cannabis instead opioids for the management of rheumatoid arthritis symptoms. Her mentors will be JANE METRIK, an associate professor of behavioral and social sciences (research) and psychiatry and human behavior (research) and DR. NANCY SHADICK, a rheumatoid arthritis expert at Brigham and Women’s Hospital.

CAROLINA HAASS-KOFFLER, an assistant professor of psychiatry and human behavior and behavioral and social sciences, will study the interplay between alcohol and HIV on inflammation in the brain and human body. Both HIV infection and heavy drinking are known to cause inflammation, but how drinking increases the severity of brain inflammation and potentially hinders the immune system in people living with HIV is unknown. Monnig will study the effects of drinking on inflammation in HIV-positive and HIV-negative individuals using blood assays, MRI scans and cognitive tasks. Her mentors will be Monti, and RON COHEN, a neuropsychologist at the University of Florida.

The focus and principal researcher for a fourth major project to be funded by the grant will be confirmed as the center launches.

The COBRE is supported by an Institutional Development Award from the National Institute of General Medical Sciences (grant number P20 GM130414).
Brown researchers: Higher vitamin A intake linked to lower skin cancer risk

Researchers found that people who ate high levels of vitamin A were 17 percent less likely to get the second-most-common type of skin cancer years later.

PROVIDENCE [BROWN UNIVERSITY] – People whose diets included high levels of vitamin A had a 17 percent reduction in risk for getting the second-most-common type of skin cancer, as compared to those who ate modest amounts of foods and supplements rich in vitamin A.

That’s according to researchers from Brown University, who unearthed that finding after analyzing data from two long-term observational studies.

Cutaneous squamous cell carcinoma is the second-most-common type of skin cancer among people with fair skin. Vitamin A is known to be essential for the healthy growth and maturation of skin cells, but prior studies on its effectiveness in reducing skin cancer risk have been mixed, said EUNYOUNG CHO, an associate professor of dermatology and epidemiology at Brown.

“Our study provides another reason to eat lots of fruits and vegetables as part of a healthy diet,” said Cho, who is also an associate epidemiologist at Brigham and Women’s Hospital. “Skin cancer, including squamous cell carcinoma, is hard to prevent, but this study suggests that eating a healthy diet rich in vitamin A may be a way to reduce your risk, in addition to wearing sunscreen and reducing sun exposure.”

The findings were published on July 31th in the Journal of the American Medical Association Dermatology.

The research team led by Cho looked at the diet and skin cancer results of participants in two large, long-term observational studies: the Nurses’ Health Study, which followed 121,700 U.S. women from 1984 to 2012, and the Health Professionals Follow-Up Study, which followed 51,529 U.S. men from 1986 to 2012.

Between the two studies, some 123,000 participants were white (and thus had significant risk of developing skin cancer), had no prior history of cancer and completed the dietary reports multiple times. Among these individuals included in the team’s subsequent analysis, a total of 3,978 cases of squamous cell carcinoma were reported and verified within the 24- or 26-year follow-up periods.

Both studies also asked the participants about hair color, the number of severe sunburns they had received in their lifetime and any family history of skin cancer, and the researchers adjusted for these and other factors. The studies did not, however, ask participants about their avoidance of mid-day sun, known to be a major risk factor for skin cancer.

After grouping the study participants into five categories by vitamin A intake levels, the researchers found that people in the category with the highest average daily total vitamin A intake were 17 percent less likely to get skin cancer than those in the category with the lowest total vitamin A intake.

Those in the highest category reported eating on average the amount of vitamin A equivalent to one medium baked sweet potato or two large carrots each day. Those in the lowest category reported eating a daily average amount of vitamin A equivalent to one-third cup of sweet potato fries or one small carrot, which is still above the U.S. Recommended Dietary Allowance of vitamin A.

The team also found that the majority of vitamin A came from the participants’ diets, particularly from fruits and vegetables, rather than from animal-based foods or vitamin supplements. Plant-based sources of vitamin A include not only sweet potatoes and carrots, but leafy green vegetables and fruits like apricots and cantaloupe. Milk, some types of fish and liver are rich sources of animal-based vitamin A.

Cho cautioned that too much vitamin A, particularly from supplements and animal sources, can lead to nausea, liver toxicity, increased risk of osteoporosis and hip fracture, and even birth defects. Side effects from high levels of plant-based vitamin A are minimal, she added.

The researchers also found that eating high levels of other plant-based pigments similar to vitamin A – such as lycopene, commonly found in tomatoes and watermelon – was associated with decreased risk of skin cancer.

Other authors on the paper from Brown University include DR. JONG-WOO KIM, now at Inje University Sanggye-Paik Hospital in South Korea; MIN KYUNG PARK, WEN-QING LI and DR. ABRAR QUreshI.

The research was supported by the National Institutes of Health (grant numbers CA186107, CA87969, CA167552 and CA198216) as well as a research career development award from the Dermatology Foundation.
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Dr. Hwamee Oh named director of imaging research for The Memory and Aging Program at Butler Hospital

The Memory and Aging Program at Butler Hospital has named Hwamee Oh, PhD, as director of imaging research. Dr. Oh has also joined the Butler Hospital staff as a cognitive neuroscientist and has been named assistant professor in the Department of Psychiatry and Human Behavior at Brown University, an affiliate of the Memory and Aging Program.

Dr. Oh is a cognitive neuroscientist with expertise in multi-platform imaging that combines functional, structural, and diffusion MRI with amyloid and tau PET to detect changes in memory systems with aging and Alzheimer’s disease. In her new role at the Memory and Aging Program, Dr. Oh will build upon and enhance the program’s research focusing on using imaging to detect the development of Alzheimer’s disease before symptoms become apparent and offering patients the best chance at slowing the progression of the disease through early intervention.

“We’re thrilled that Dr. Oh has joined our team,” said Dr. Stephen Salloway, director of neurology for the Memory and Aging Program at Butler Hospital and the Martin M. Zucker professor of psychiatry and human behavior and professor of neurology at the Alpert Medical School of Brown University. “The expertise that Dr. Oh brings to our team will be extremely valuable as we continue to move forward with research that’s aimed not only at treating Alzheimer’s and dementia, but at preventing it. The ability to predict that a person will likely develop Alzheimer’s before symptoms appear offers patients the best chance at slowing the progression of the disease, or even one day preventing it altogether.”

Prior to joining Butler Hospital and Brown University, Dr. Oh was the assistant professor at Columbia University from 2014 to 2017, working in the Department of Neurology and Taub Institute for Research on Alzheimer’s Disease and the Aging Brain. From 2017 to 2019 she served as assistant research professor at the State University of New York – Stony Brook. She has authored or co-authored 22 peer-reviewed publications with an emphasis on biomarker research and detecting Alzheimer’s risk in older adults.

Dr. Oh received her bachelor of arts degree in English and master of arts degree in Psychology at Ewha Women’s University in Seoul, followed by a PhD in Biopsychology from the State University of New York – Stony Brook in 2009. She went on to complete a five-year post-doctoral fellowship on the neuroscience of aging and Alzheimer’s disease in a world-class laboratory at UC Berkeley.

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Appointments
Recognition

Southcoast Hospitals Group named Best Regional Hospital by U.S. News & World Report

FALL RIVER – Southcoast Hospitals Group, which includes Charlton Memorial Hospital, St. Luke’s Hospital, and Tobey Hospital, has been named a Best Regional Hospital by U.S. News & World Report. The system is ranked #8 in Massachusetts and #2 in the Providence R.I. metro region.

Best Regional Hospitals are hospitals that offer a full array of services with high performing ratings in specialties, procedures and conditions. Southcoast Hospitals Group scored high performing ratings in the adult specialty, urology, in colon cancer surgery, and in the treatment of Chronic Obstructive Pulmonary Disorder (COPD) and heart failure.

Out of the 98 Massachusetts inpatient, long-term acute care and rehabilitation hospitals considered by US News & World Report only 9 made the Best Regional Hospital list placing Southcoast Hospitals Group in the top 10 percent for Massachusetts hospitals and top 13 percent in the nation. For the 2019–2020 rankings and ratings, U.S. News evaluated more than 4,500 medical centers nationwide in 25 specialties, procedures and conditions. Only 569 hospitals across the US made the list of Best Regional Hospitals.

Miriam ranked by U.S. News & World Report for Best Regional Hospital, urology services

The Miriam Hospital received two prestigious accolades when U.S. News & World Report came out with its annual Best Hospitals report for 2019–2020: The Miriam was not only named a Best Regional Hospital, as it has in years past, it also attained a national ranking for its urology services.

In making the Best Regional Hospital list, The Miriam joined 569 other U.S. hospitals – just one in 10 medical centers across the country – and was ranked the top hospital in Rhode Island. To make the list, hospitals must have received ratings of high performing in three or more specialties. The Miriam was actually classified as high performing in five areas: diabetes and endocrinology, gastroenterology and GI surgery, geriatrics, neurology and neurosurgery; and pulmonary and lung surgery.

Hospitals can also make the Best Regional Hospital list if they attain a national ranking in just 1 of 12 specialties and The Miriam met that criteria as well. For the first time, its urology services were ranked nationally, landing 27th on a list of 50 hospitals deemed to have the best urology program in the country. At The Miriam, urology services scored “excellent” in such vital areas as patient experience, 30-day survival rates and discharging patients directly home rather than to another medical facility.

“We are thrilled The Miriam Hospital ranked in the top 2% of urology institutes in the country. Together with urologic surgeons, oncologists, nephrologists, registered nurses, dietitians, therapists, social workers, researchers and so many others, we have developed a comprehensive urology program in Rhode Island that is unparalleled,” said urologic surgeon Gyan Pareek, MD, co-director of The Miriam’s Minimally Invasive Urology Institute (MIUI) and director of The Miriam’s Kidney Stone Center. “This recognition is an honor and testament to our entire team of caregivers, educators and researchers.”

Images in Clinical Medicine

Original, high-resolution images which have not been published elsewhere will be considered for publication. Submit 2–4 images.

Submissions should include:

**Brief title:** 8 words or less

**Content:** Relevant clinical information, findings, clinical course, and response to treatment if initiated. Limit: 400 words

**Legends:** All labeled structures in the image should be described and explained in the legend. Any identifying information should be removed from the image.

**Author information:** Names, professional degree, academic/hospital affiliations, address, email and telephone number.

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SEPTEMBER 2019
Rhode Island Medical Journal

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Westerly – University Orthopedics this month opened their newest location adjacent to the Westerly Hospital campus. Operating out of Westerly Hospital, physicians in this location will provide a full spectrum of services including sports medicine treatment, spine care, and adult reconstruction surgery.

In anticipation of the practice’s newest location, University Orthopedics welcomed several doctors to its team of specialized physicians. Newly hired and current physicians that will be providing care at the Westerly site include THOMAS BARRETT, MD, a fellowship-trained adult reconstructive surgeon with advanced training in the diagnosis and treatment of arthritis; STEPHEN B. GROSS, MD, an experienced orthopedic surgeon who can treat a variety of muscle, joint and bone injuries; MICHAEL HULSTYN, MD, who specializes in adult and pediatric sports medicine surgery, shoulder and knee surgery; and DOMINIC KLEINHENZ, MD, an orthopedic surgeon with a specialization in treating neck and back problems.

“We welcome these physicians to the Westerly Hospital medical staff,” said PATRICK L. GREEN, president and CEO of Westerly Hospital. “The expansion of orthopedic care at Westerly Hospital will greatly enhance access for our patients seeking the highest quality care close to home.”

“University Orthopedics is pleased to be able to provide the same level of high quality service to residents of Westerly,” said DR. EDWARD AKELMAN, President of University Orthopedics. “We recognized the need for specialized orthopedic care in Westerly and we have finally laid down the groundwork to better serve these patients.”

University Orthopedics expands to Westerly; adds physicians
Newport Hospital celebrates ribbon cutting for transformed Emergency Department

Newport Hospital celebrated the expansion and renovation of its emergency department – and the naming of the unit as the John A. and Hope H. van Beuren Emergency Department – during a ribbon-cutting ceremony on August 14 that was attended by more than 100 people, including hospital leaders, community supporters and the philanthropic family whose van Beuren Charitable Foundation has been an extraordinary partner in the project.

The $12.5 million project, which is nearing completion, is almost doubling the number of treatment rooms from 17 to 29 beds, and increasing the overall footprint to over 20,000sq. ft. with a capacity to server 40,000+ patients annually. The completed project will realize a state of the art, patient inspired environment of care, to best meet the growing and evolving healthcare needs of Newport County. Key innovations include a dedicated Behavioral Health Pod, a dedicated Clinical Decision Unit for observation of patients, Results Lounge, and a tripling of the Triage Space, while ensuring the advancement and excellence of care. The entire Emergency Department expansion, main entrance, lounges and waiting areas, incorporate evidence-based design features, which support and advance excellence in healthcare delivery and the comfort and well-being of patients and their loved ones.

“Today marks a proud day in Newport Hospital’s long-standing history. Our donors have once again rallied around a significant healthcare initiative. The new Emergency Department provides an innovative healing environment that matches the excellence in care we provide,” said CRISTA DURAND, president of Newport Hospital. “I would like to acknowledge the resiliency of our providers and staff, who have not wavered during a year plus of construction during our busiest season. This is a testament to their talents and commitment to our community.”

The project benefited from the extraordinary generosity of the van Beuren Charitable Foundation, through a $3M grant, and led to the unit being named after long-time hospital philanthropists John A. and Hope H. van Beuren.

Lifespan to open urgent care center in Warwick

The first Lifespan Urgent Care will open this month in Warwick at 17 Airport Road, a program of Lifespan Physician Group.

Clinic hours will be 8 am to 8 pm Monday through Friday, and 8 a.m. to 6 p.m. on Saturday, Sunday, and some holidays. (Closed New Year’s Day, Thanksgiving, and Christmas.) Lifespan will soon be announcing the date of the opening of the Warwick facility as well other Lifespan Urgent Care locations.

Additional outstanding financial support came from The Alletta Morris McBean Charitable Trust. A long-time supporter of the hospital, the trust awarded a challenge grant, matching $1.5 million in donations early in the campaign.

“Beyond the Building: The Campaign for Newport Hospital” began with a $10 million “silent phase” during which gifts were received from the Newport Hospital Foundation Board of Trustees, individuals and organizations. The campaign was later opened up to the broader Newport County community, whose strong connection to Newport Hospital was evident in the outpouring of financial support for the 146-year-old community hospital. To date, through the support of nearly 400 donors, the $12.5 million goal has been achieved. The emergency department expansion is being fully funded on philanthropy, a further testament of how close Newport Hospital is to the heart of the community.

The physical transformation of the department includes a four-bed behavioral health unit, providing patients more privacy and dignity. Visits by patients with addiction and/or mental health issues have increased by 17 percent during the last three years and now represent eight percent of all emergency room visits. Another major improvement is a new “clinical decision unit,” deemed to be a national best practice for patients who need extended treatment and observation but who may not require a costly admission as an inpatient.
Obituaries

**DR. JOSEPH BARUCH**, 95, passed away on July 7, 2019. He was the beloved husband of the late Erna Baruch. Born in Hungary, Dr. Baruch was a Holocaust survivor who, after World War II, moved to Israel after some years in Austria, where he graduated from the Medical University of Innsbruck in 1951.

He came to the United States in 1954. From 1955 until his death, he was a resident of Rhode Island and worked as a psychiatrist for the State of Rhode Island until his retirement in 1984.

He is survived by his son, Benjamin Baruch, and his wife Elizabeth; son Michael Baruch, two grandchildren, one nephew, and two cousins.

Contributions to his memory may be made to the American Jewish Joint Distribution Committee, JDC, PO Box 4124, New York 10163 or www.jdc.org/ways-to-give.

**DR. JAY MARSHALL ORSON**, 91, passed away on Friday August 9, 2019. A beloved pediatrician, Dr. Orson specialized in pediatric endocrinology and was a Clinical Associate Professor Emeritus of Pediatrics at Brown University. He was born in Yonkers, NY. In 1956, he married actor Barbara (Tuschner) Orson. Together, they raised three children: twin daughters, Beth and Diane, and son Ted.

Dr. Orson was committed to serving children and families from all walks of life across the state and around the world. He co-founded Pediatrics Associates in the early 1960s. Parents would start calling the Orson home every morning at 6 a.m., and he’d drive his VW Beetle at all hours in all weather around Rhode Island making house calls. During his career, Dr. Orson traveled to teach and work in Uganda and Australia, and after retiring, volunteered as a reading tutor in the public schools. He also provided expert testimony on complex medical issues for the Social Security Administration well into his 80s.

Dr. Orson was an iconoclast with a unique, inquisitive mind. A great supporter of the arts, he loved to “jog” on Blackstone Blvd, go blue-fishing, and spend time with family and friends.

In addition to his children, he is survived by sons-in-law Tim Moran and Robert Elner, daughter-in-law Iris van der Walde, grandchildren Josh and Jacob Orson, Emily and Max Moran and Julia Elner.

Donations in his memory may be made to Hasbro Children’s Hospital, Pediatric Palliative Care, PO Box H, Providence, RI 02901.

**DR. PAUL EDWARD POIRIER**, 82, died August 18, 2019 at his home in Naples, FL. Born January 4, 1937 in Putnam, CT, he was the son of Lionel and Marie Poirier. Paul proudly served his country as a Navy corpsman, stationed in Jacksonville, FL.

He graduated from University of Connecticut and the University of Miami School of Medicine. After completing medical school, Paul worked as an orthopedic surgeon in Warwick, RI, and was a loving father to his five children, Michael, Matthew, Courtney, Jonathan, and Stacy. In his retirement, Paul volunteered with Senior Friendship Center. Paul is to be inducted into the Hall of Fame at Killingly High School, where he received 10 varsity letters. Along with his family, he had a passion for sports, especially the Red Sox, the Patriots, and the UConn Huskies.

In addition to his wife, Betsy, and four of his children, Paul is survived by his seven grandchildren, Eric, Emma, Franklin, Andrew, Dylan, Hope, and Asher. Paul was predeceased by his son Michael, his parents, his two siblings, and his first wife Patty. Paul was a great man, a great husband, a great father, and a great Pepe.

Donations in memory of Paul may be made to the Senior Friendship Center in Naples, FL or a charity of your choice.

**DR. WALTER J. SCOTT**, of Smithfield, and Vero Beach, FL, who was a pioneer in the field of rehabilitation and sports medicine in Rhode Island, as well as the former executive vice president of Miriam Hospital in Providence, Chief Executive Officer of Orlando General Hospital in Orlando, FL, and chairman of the Board of Trustees of Cranston General Hospital in Cranston, passed away on August 18, 2019.

Born in Cranston, he was the son of the late Dr. Kenneth A. Scott and Dr. Anna (Keaney) Scott, and the stepson of the late Dorothy Scott. He was a graduate of Mt. Pleasant High School and went on to obtain degrees from Johnson & Wales University, Moorehead State University, Xavier University and the University of Sarasota. While attending Johnson & Wales, he founded the Alumni Association and is inducted into the Hall of Fame at Moorehead State University.

After a successful career in hospital administration, he returned to private practice, and founded Providence Physical Therapy and Sports Medicine that he led for over 40 years, with offices throughout the state of Rhode Island.

He was a member of the American College of Orthopedic Medicine, the American College of Sports Medicine, The Royal Society of Health, American College of Medical Administrators,

He is survived by his wife of 47 years, Carole (Bolas) Scott; his loving sons Christopher Scott, and his wife Brenda, of Feeding Hills, MA, and Jeffrey Scott, and his wife Jessica, of North Smithfield; his adored grandchildren, Jillian, Katelyn, Benjamin, John and Lucy; his brother Dr. Richard Scott, and sisters, Dr. Diana Beattie, Nancy Weaver, Martha Scott, Elizabeth Duliban and the Rev. Patricia Zifcak; and several nieces and nephews, and godchildren whom he loved dearly.

Beyond healthcare he had the spirit of an entrepreneur, and owned several businesses including restaurants, a cheese shop and a card store. One of his defining qualities was his desire to give back to society through philanthropy and determination that helped improve athletic training facilities in high schools in RI, the renovation of the Duke University Diet and Fitness Center and the renovation of Christ Church-Lincoln.

His passion for public service led him to serve on numerous boards including: the cooperation of Cranston General Hospital, Johnson & Wales University, and the DFC Board of advisors for Duke University Medical Center. He was the former president of the Cumberland-Lincoln Rotary Club and a Paul Harris Fellow; he was also a member of the Elks Lodge #14, B.P.O.E. for more than 50 years.

His deep connection to faith led him to serve in numerous capacities at both Christ Church Lincoln and Christ Church Vero Beach. In Lincoln he served as the Senior Warden, and as a member of the vestry, on search committees, and as a chalice bearer and lay reader. In Vero Beach he was an active member of the altar guild.

Contributions in Walter’s memory to Christ Church, P.O. Box 245, Lincoln, R.I. 02865 or http://www.christchurchlincoln.org/giving would be appreciated.