Volume six • Number four

Spring 2018

Family Doctor

A JOURNAL OF THE NEW YORK STATE ACADEMY OF FAMILY PHYSICIANS

FEATURE ARTICLES:

- Zika – Update and Current Recommendations
- Wilderness Survival Strategies and Medical Improvisation
- Travel Medicine in Private Practice – Is This Right For Me?
- Fever in Returned Travelers

Focus:

Travel Medicine

Breakfast After the Bell:

Fighting Food Insecurity

School breakfast can help children meet their nutrition recommendations. This may be especially true for the 1 in 6[1] children who live in a household faced with food insecurity.

Success starts early! With Breakfast After the Bell.

To help our nation's children whose households have limited access to adequate food, we are committed to increasing student participation in School Breakfast Programs.

Collectively we will work together to:

- **Increase awareness** of the impact School Breakfast Programs can have on nutrition security, diet quality and student health.
- **Provide resources** to empower schools to champion school breakfast.
- **Inspire families** and communities to embrace school breakfast.
- **Empower children** to take action to help increase access to breakfast in their schools.
- **Support initiatives** to move Breakfast After the Bell for better participation

Maryland Academy of Family Physicians

National Medical Association Region 1

National Medical Association Region 2

American Academy of Pediatrics — Speaking for Maryland Kids! — Maryland Chapter, American Academy of Pediatrics

New Jersey Academy of Nutrition and Dietetics

New York State Academy of Family Physicians

NYSAND — New York State Academy of Nutrition and Dietetics

School Nurse — Delaware School Nurse Association

NHMA — National Hispanic Medical Association (Metro Region)

New Jersey State School Nurses Association — Leading, Teaching, Caring.

American Academy of Pediatrics — DEDICATED TO THE HEALTH OF ALL CHILDREN — NYS AAP — *The NYS AAP is a Coalition of AAP NY Chapters 1, 2 & 3*

American Academy of Pediatrics — DEDICATED TO THE HEALTH OF ALL CHILDREN — New Jersey Chapter

American Academy of Pediatrics — DEDICATED TO THE HEALTH OF ALL CHILDREN — DISTRICT OF COLUMBIA CHAPTER

americandairy.com

[1]U.S. Department of Agriculture Economic Research Service. Household Food Security in the United States in 2015

YOUR MILK COMES FROM A GOOD PLACE

AMERICAN DAIRY ASSOCIATION NORTH EAST

Family Doctor, A Journal of the New York State Academy of Family Physicians, is published quarterly. It is free to members of the New York State Academy and is distributed by mail and email. Non-member subscriptions are available for $40 per year; single issues for $20 each.

New York State Academy of Family Physicians
260 Osborne Road
Albany, New York 12211
www.nysafp.org
Phone: 518-489-8945
Fax: 518-489-8961

Letters to the Editor, comments or articles can be submitted by mail, fax or email to journaleditor@nysafp.org

Editor: Penny Ruhm, MS

Articles

Departments

Index of Advertisers

From the Executive Vice President

By Vito Grasso, MPA, CAE

Travel medicine invites consideration of the challenges of providing medical care in an atypical setting. While we have many interesting and informative contributions to this issue of ***Family Doctor***, I must confess that I have no particular insight to offer on the topic.

Increasingly, for many patients and physicians, the changing landscape of health care is removing the norm. Patients have access to information about health and health care services from an increasing variety of sources - most are internet based and may or may not be evidence based. Additionally, there is much public pressure to afford greater transparency in health care. Movements have developed to increase patient access to clinical notes and to create tools for patients to obtain comparative information about prices, complaints, hospitalizations, frequency of performing various procedures and other information to allow consumers to compare cost and quality when shopping for someone to perform a particular procedure or to provide ongoing care.

As patients navigate the evolving landscape of health care they may benefit from advice and assistance from their primary care medical home. There are an increasing number of tools available to help patients with their health care decisions. Indeed, the NYS Health Foundation will launch a project in April to enlist primary care practices in an effort to evaluate and recommend programs which offer tools for patients to use when shopping for health care services. NYSAFP and the NYACP will be partnering with them on this initiative. I invite members who are interested in educating their patients about how to shop for services or who have experience doing so, to contact me about this project.

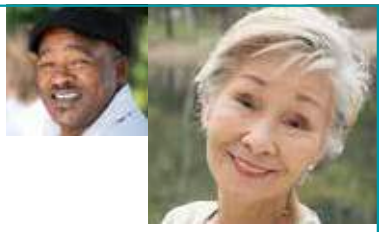
As I write this column, we have just completed our annual lobby day. More than three dozen family physicians and medical students participated.

We encouraged legislators to restore $20 million to the Medicaid program to preserve PCMH incentive funding. We lobbied for restrictions on the prior authorization process, single payer health care reform, continuation of the excess medical liability pool, funding for Doctors Across NY, the Women's Health Care initiative in the Governor's Budget and other policy priorities we feel will benefit members and your patients.

As has been my experience previously, the most impressive aspect of our lobby day was the passion and effectiveness of our members in telling specific stories to help legislators understand how the policies they consider will impact the lives of people who rely on family doctors for health care and guidance. Our support of prior authorization reform, for example, was underscored by personal stories of patients whose stability on medications was disrupted by ridiculous and unnecessary plan requirements which interrupted longstanding and effective care, solely for the purpose of re-establishing that the patient still needed the treatment they had been receiving for the chronic condition they have been diagnosed with.

You are fortunate to be a family physician with the privilege of caring for people and having their trust. You are also fortunate to be part of an organization that continually works to achieve a health care environment in which your patients can continue to rely upon you for the care they need and deserve.

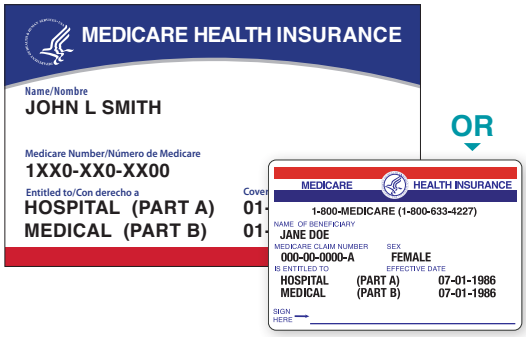
....the most impressive aspect of our lobby day was the passion and effectiveness of our members in telling specific stories to help legislators understand how the policies they consider will impact the lives of people who rely on family doctors for health care and guidance.



FIDELIS CARE®

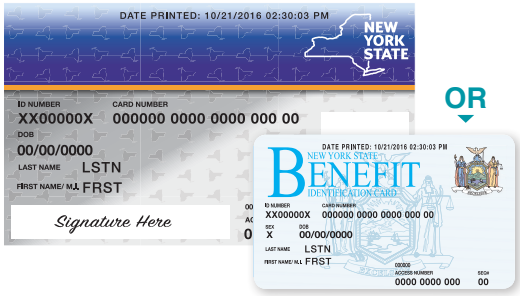
Medicare + Medicaid = More Benefits for You!

Medicare Card **NEW**



OR

Medicaid/Common Benefit Identification Card (CBIC) **NEW**



OR

You may be eligible for additional money-saving benefits through Fidelis Dual Advantage plans, including:

- **Monthly Over-the-Counter (OTC) Card (to pay for items like OTC medications, toothpaste, incontinence supplies, and more)**
- **Transportation**
- **Flexible Spending Dollars**
- **Dental**
- **Care Management support**
- **Top-quality doctors and hospitals**
- **Discounts for hearing devices***

This is not a complete listing of plans available in your service area. For a complete listing, contact the plan. The benefit information provided is a brief summary, not a complete description of benefits. For more information, contact the plan. Limitations, copayments, and restrictions may apply. Benefits, formulary, pharmacy network, premium and/or copayments/coinsurance may change on January 1 of each year. You must continue to pay your Medicare Part B premium. Out-of-network services may require more out-of-pocket expense than in-network services. Benefit restrictions apply. Fidelis Care is an HMO plan with a Medicare contract. Enrollment in Fidelis Care depends on contract renewal. *Fidelis Care partners with TruHearing for discounted purchases of hearing devices.

Call us today! 1-800-860-8707 TTY: 1-800-558-1125

Monday–Friday, 8:00 a.m.–8:00 p.m. from February 15–September 30

Monday–Sunday, 8:00 a.m.–8:00 p.m. from October 1–February 14

@fideliscare

www.fideliscare.org

H3328_FC 17123 Accepted

President's Post

By Sarah Nosal, MD, FAAFP

Each year seems to slip by just a bit more quickly than the last. And with spring upon us my brief year as your NYSAFP President soon draws to a close.

This year has been remarkable. Thank you to our amazing NYSAFP community who has embraced wellness, incorporating healthy eating, physical activity and mindfulness in our various meetings and activities throughout the year. Thank you to our program directors, faculty and educators who have trained the next generation of family physicians and welcomed students into their practices sharing the good work that we do. Thank you to our student, resident and new physician members who have kept us focused on where we are going. And thank you to our seasoned leaders who carry our history and remind us of whence we came.

We most recently completed a successful Lobby Day – representing our more than 6,000 members in Albany, and guiding our state legislators and our state budget to focus on our patients and the health needs of our communities. Lobby Day legislative priorities included:

- Access to Healthcare
- Support of Single Payer
- Prior Authorization Reform
- Women's / Reproductive Health
- Support the Governor's Women's Agenda
- Comprehensive Contraception Coverage
- Encourage Growth of Family Medicine in New York State
- Support Adequate funding for Doctors Across NY Loan Forgiveness
- Peer Review/Tort Reform
- Maintain Excess Medical Malpractice Program
- Equitable Payment
- Enhanced funding for Work as a Medical Home
- And more…

Thrilled about our NYSAFP priorities? Have other ideas about where our collective voice and energy might focus? It is time now to register for our NYSAFP Congress of Delegates (where NYSAFP policies are debated and come to be) coming up in June. Please contact the NYSAFP to connect with your local chapter and serve as delegate to speak on behalf of our members. NYS serves as an example to the rest of the country and the work we do here impacts the change that happens in communities throughout our nation.

Please join me in New Orleans for the American Academy of Family Physicians Congress of Delegates (AAFP COD) this October. Our NYSAFP Past-President, and current family physician and NYSAFP Alt-Delegate to AAFP COD, Dr. Tochi Iroku-Malize, will be running for the AAFP Board of Directors. We are thrilled to support her candidacy and welcome your participation in the election festivities.

Finally, I am proud to be a family physician and grateful to have been given the opportunity to work this last year in service to you and our New York State Academy of Family Physicians as your President. I look forward to working with you in the years to come in continued service to our Academy.

In Solidarity,
Sarah C. Nosal,
70th President, NYSAFP
@NYSAFP Prez
@SCNosalMD

Mark YOUR CALENDARS

S M T W T F S

UPCOMING EVENTS

2018

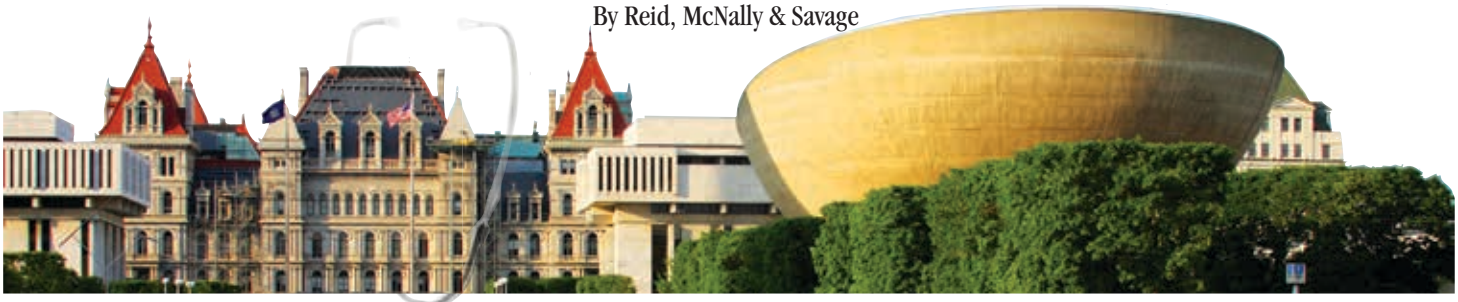
June 23-24
Congress of Delegates – 70th Anniversary
Hilton Garden Inn, Troy, NY

July 28-29
NYSAFP Summer Cluster
Hilton, Clifton Park, NY

September 15
Capital Region Family Medicine Conference
Siena College, Loudonville, NY

Albany Report

By Reid, McNally & Savage



The focus at the NYS Capitol is almost exclusively on state budget negotiations. Governor Andrew Cuomo released his SFY 2018-19 Executive Budget in January and in mid-March, the Senate and Assembly released their respective, one-house budget bills both responding to the Governor's proposals and staking a claim to priority items that they would like to see funded this year.

Following the release of the budget bills, both houses have started to convene joint budget conference committees to discuss and hash out their own differences. Three-way negotiations began with the Governor with a goal of reaching an on-time budget by the constitutional deadline of April 1st- the start of the new fiscal year. After many years of late budgets, Governor Cuomo has made on-time budgets a priority, which he has achieved every year.

The chart below outlines the budget proposals being currently negotiated that are of particular interest to physicians. Some of these items were identified as priorities for the Academy and were discussed by state legislators during the annual March lobby day, as detailed below. Note that none of these items are final. All are subject to negotiations to determine which proposals make it into the final budget, due April 1st. NYSAFP will continue to advocate for the inclusion of proposals that are beneficial to family physicians and patients and will oppose those that would be problematic.

SFY 2018-19 Budget Proposals of Particular Interest to NYSAFP

Governor's Proposal	Senate Proposal	Assembly Proposal
Excess Medical Malpractice Program Extends the Excess program for one year through June 30, 2019 and includes level funding of $127.4 million.	ACCEPTS	ACCEPTS
Doctors Across NY (DANY) Funding Includes $9,065,000 in funding for physician loan forgiveness and practice support under DANY.	ACCEPTS, adds $500,000 in additional funding	ACCEPTS
Expanded Scope of Practice for Certified Registered Nurse Anesthetists (CRNAs) Creates the profession of "certified registered nurse anesthetist" as a profession under NYS Education Law. Nurse anesthetists would be permitted to administer anesthesia without adhering to the existing requirement that a physician-anesthesiologist be physically present and immediately available to supervise the nurse anesthetist. A nurse anesthetist would be required to enter into a "collaboration" with "a licensed physician qualified to determine the need for anesthesia services." The physician need not be a physician-anesthesiologist. This proposal would also grant nurse anesthetists prescriptive authority and allow them to practice in general hospitals, hospital outpatient surgical departments, diagnostic and treatment centers, office based surgery centers and dental offices.	REJECTS	REJECTS
Opioid Monitoring Requirements Requires a treatment plan and attestation of prescriber monitoring including a patient-prescriber agreement when opioids are being prescribed for pain lasting more than three months. Plan would have to be updated twice in the first year and annually thereafter. Patients with cancer that are not in remission or in hospice are exempt from these requirements.	REJECTS and proposes a new opioid package (see below)	MODIFIES, by requiring written treatment plan to follow generally accepted national professional or governmental guidelines

Governor's Proposal	Senate Proposal	Assembly Proposal
Mental Health/Primary Care Integration Clarifies that Art. 28 or Art. 31/32 providers may provide integrated primary care, mental health and/or substance use disorder services when authorized to do so by OMH or OASAS per regulation without needing a second or third license/certification.	ACCEPTS	ACCEPTS
Patient-Centered Medical Home Cuts Medicaid funding for PCMH program by $10M state share, eliminating Level 1 & 2 incentive payments and tying continued incentive payments for Level 3 to VBP contracting.	REJECTS through language	REJECTS by providing $5M in funding
Commissioner Authority for Professional Misconduct • Authorizes the Commissioner to order a physician to stop practicing medicine if charged with a felony or in response to allegations of conduct that present a public risk. • Allows the Commissioner to obtain a warrant from a judge for probable cause of misconduct. • Reduces response time for a licensee to supply relevant documentation from thirty days to ten days.	REJECTS	ACCEPTS
Key Provisions of Women's Health Agenda Budget Bill Comprehensive Contraceptive Coverage Act: • Would codify coverage of all FDA approved contraceptive drugs, including emergency contraception and over the counter drugs. Where the FDA has approved one or more equivalent versions of contraceptives, coverage is only required for one version, as long as there is no cost sharing. Codify Roe v. Wade into State Law • Would codify the Supreme Court's Roe v. Wade decision by repealing certain sections of penal law. Establish the Maternal Mortality Review Board: • Would establish the Maternal Mortality and Review Board, consisting of fifteen multidisciplinary experts appointed by the Commissioner of Health, responsible for review and assessment of cause of death and factors leading to maternal death, Severe Maternal Morbidity and racial disparities in maternal outcomes. The Board will collect and review confidential information and develop recommendations for the Commissioner to improve care and management. Require the State Board of Medicine to include experts in women's health and health disparities: • This bill would require at least two physician appointees to the State Board of Medicine be experts in addressing women's health and reducing health disparities among demographic subgroups. Extend the Storage of Timeline for Forensic Rape Kits at Hospitals: • Extends the minimum amount of time in which hospitals are required to store evidence collection kits from 30 days to five years or when the victim turns 19, whichever circumstance provides the longest length of time. This bill would also require notification to the victim no less than 30 days before the evidence is destroyed.	NO ACTION INCLUDES separate proposal related to rape kits and retention for 20 years	PASSED own Reproductive Rights and Contraceptive Access bills ACCEPTS proposal to require insurance coverage of FDA contraceptive methods; Extends authority to 3/31/23 MODIFIES Maternal Mortality Review Board proposal confidentiality provisions
Pharmacist Administered Vaccines Proposes to allow pharmacists to administer flu shots to children aged 2 to 18 and proposed to remove sunsets in existing law	MODIFIES, by including a sunset of December 31, 2021	MODIFIES, by expressly requiring NYSIIS/CIR reporting and notification of physicians and includes a sunset of 12/31/19
Fentanyl Analogs Adds 11 new fentanyl analogs to the state's regulated controlled substances list	ACCEPTS	ACCEPTS

continued on page 12

Governor's Proposal	Senate Proposal	Assembly Proposal
n/a	**Senate Opioid Package** INCLUDES a package of new proposals to address opioid epidemic including: • requiring labels on certain opioid prescriptions to be red, with text in white large capitalized font stating "opioid controlled substances taken as directed may lead to addiction" • reducing initial prescription of II, III or IV opioid for acute pain from 7 to 3 days • requires prescriber, prior to issuing a II, III or IV opioid to consider CDC recommendations for alternative therapies and to not exceed 50 morphine milligram equivalents • requiring an enhanced written treatment plan requirements for opioid treatment of pain which lasts more than a month or past the normal healing (limits commercial insurance coverage for prescribing that is inconsistent with provisions) • requiring prescriber assessment, counseling and written, parental consent before minors receive first prescription of an opioid in a single course of treatment (does not apply to a medical emergency) • requiring NYSDOH to develop guidance on the use of opioid antagonists • limiting prescriptions for controlled substances written in the emergency department to a 3 day supply (currently it is 5 day) • creating an opioid alternative pilot project in 5 acute care emergency departments • requiring notification by a hospital/ emergency department to a practitioner that his/her patient is under treatment for an overdose and requiring consultation of prescription monitoring program by emergency department/ hospital practitioners when treating a patient for a controlled substance overdose • prohibiting prior authorization for outpatient substance abuse diagnosis and treatment • creating an ombudsman to assist consumers and providers with insurance issues including network adequacy • requiring NYSDOH to create a Recovering Expectant Mothers' Program, an Infant Recovery Centers Pilot Program; and a requirement to register the birth of infants with neonatal abstinence syndrome	n/a

NYSAFP Lobby Day: March 12, 2018

Under the leadership of President Dr. Sarah Nosal, Advocacy Chair Dr. Rachelle Brilliant, and EVP Vito Grasso, the 2018 NYSAFP lobby day which took place on Monday, March 12th was the most successful yet. Nearly forty participants saw their own State Senators and Assembly Members as well as legislators in key leadership positions, certain bill sponsors and other targeted legislators who are essential to achieving the Academy's legislative goals.

Five budget items were identified as priority topics for the lobby day and three legislative measures. These are summarized below.

Lobby Day Budget Priorities

- NYSAFP's opposition to the Governor's proposal to cut PCMH funding by $10 million and tying incentive payments to Value Based Payment contracts
- NYSAFP's support for the Governor's proposal to include $127,400,000 in funding for the Excess Medical Malpractice Program
- NYSAFP's support for the Governor's proposal to include $4,705,000 for the physician loan repayment program and $4,360,000 for the physician practice support program as part of Doctors Across New York
- NYSAFP's support for the Comprehensive Contraception Coverage Act
- NYSAFP's support for the Reproductive Health Act

Lobby Day Legislative Priorities

- NYSAFP's support for Prior Authorization Reform (S.7872, Hannon/A.9588, Gottfried) which the Academy helped to draft and introduce based on national principles developed by AAFP, AMA and other organizations. This legislation would:
- Assure that utilization review criteria are evidence-based;
- Require utilization review determinations involving health care services which require pre-authorization to be provided within 48 hours (or 24 hours in an emergency);
- Prohibit midyear formulary changes;
- Assure that once a prior authorization is received it will not need to be repeated and is valid for the duration of treatment; and
- Require that the health plan shall cover a service that was prior authorized with eligibility determined on the date of service and prohibit the denial of a claim on the basis that the patient's coverage was terminated retroactively
- NYSAFP's support for universal healthcare coverage through a single payer health system (New York Health - S.4840A, Rivera/A.4738A, Gottfried)
- NYSAFP's efforts to strengthen protections and penalties for assaults against physicians (legislation to be introduced soon)

We greatly appreciate the willingness of so many members to take time away from your busy practices to join us in Albany to lobby for NYSAFP's session priorities. We were able to cover a lot of ground and felt it was a highly successful day helping to move your advocacy agenda forward.

VIEW ONE
PREVENTION OF ALTITUDE ILLNESS

By David Colman, MD and Steven Heintz, MD

With ascent to high altitude, travellers who are not acclimatized are at risk of developing three broad categories of illness- acute mountain sickness (AMS), high altitude cerebral edema (HACE), and high altitude pulmonary edema (HAPE). These conditions represent a spectrum that may range from mild, requiring only change in activity, to severe or life threatening. Observational studies show low levels of awareness of health risks posed by AMS among travelers.[1] Family physicians play an integral role in counseling patients who are preparing for travel to destinations that may present hazards for altitude related illness.

While there are no prospective, randomized controlled trials evaluating the effectiveness of pre-travel altitude consultation, several interventions have been shown to be effective at reducing the incidence and severity of AMS in the traveller to altitude. This review will summarize the most effective studied interventions and review expert recommendations for the prevention of acute mountain sickness.

The first step in counseling a traveller to altitude requires assessing the patient's underlying risk. It is key to elicit any history of altitude-related illness. The second step involves assessing the risk of the destination. Given the risks associated with rapid ascent, the specific travel itinerary should be reviewed. Completing an ascent profile with a patient prior to travel may be useful in assisting the busy clinician in establishing risk.

Several popular travel destinations present the possibility of AMS and are summarized below. Colorado alone has more than 27 ski resorts above 2000 meters (6561 feet) - many of those with base elevations above 2500 meters (8202 ft). Many other North American areas have high altitude, including areas receiving millions of visitors each year.

Destination	Altitude
Salt Lake City, Utah	1228 m (4226 ft)
Park City, Utah	2133 m (7000 ft)
Breckenridge, Colorado	2926 m (9600 ft)
Cusco, Peru	3399 m (11,152 ft)
Quito, Ecuador	2849 m (9350 ft)

A common working definition of altitude is **High Altitude** (1500-3500 m) (4921 – 11,482 ft), **Very High Altitude** (3500-5500 m) (11,482-18,044 ft), and **Extreme Altitude** (higher than 5500 m) (18,044 ft). Typically, altitude illness occurs at

continued on page 15

One

Two

VIEW TWO
TREATMENT OF ALTITUDE ILLNESS

By Stephanie MacDonald, DO

High altitude illness is common in people traveling to areas of high altitude (around 2,500 meters or above). Though there may not be any areas of truly high altitude in New York State, there are certainly peaks right here in our own country where patients should prepare to experience symptoms from high altitude illness. Family physicians should expect that at some point in their career they will be asked to counsel patients prior to high altitude trips, directly treat them if they are practicing in high altitude areas, or deal with long term sequelae upon their patient's return. Despite proper preparation including prophylactic medication and appropriate equipment, symptoms of HAI are commonly experienced and will require treatment.

Treatment of high altitude illness should be determined according to severity of illness, so it is important to understand the difference between the three categories. HAI is composed of the following levels of severity: Acute Mountain Sickness (AMS), High Altitude Cerebral Edema (HACE), and High Altitude Pulmonary Edema (HAPE). These are well defined by the Lake Louise Criteria as seen in Table 1 below. In addition, there are worksheets available to assist providers in determining severity of illness based on symptoms.

Table 1: Lake Louise Criteria for Defining High Altitude Illness

CONDITION	CRITERIA
Acute Mountain Sickness	Headache and at least one of the following symptoms: Dizziness or lightheadedness; fatigue or weakness; gastrointestinal symptoms (nausea, vomiting, or anorexia); difficulty sleeping
High Altitude Cerebral Edema	Change in mental status or ataxia in a person with AMS, or change in mental status and ataxia in a patient without AMS
High Altitude Pulmonary Edema	At least 2 of the following symptoms: dyspnea at rest; cough; weakness or decreased exercise performance; chest tightness or congestion AND At least 2 of the following signs: crackles or wheezing in at least one lung field; central cyanosis; tachypnea; tachycardia

continued on page 16

2500 m (8202 ft) and above. Incidents have been reported at altitudes between 2000 and 2500 m (6561 and 8202 ft), but these remain rare. The incidence increases the higher the altitude.

Barometric pressure falls logarithmically with increasing altitude. As barometric pressure falls, there is a proportional decrease in the partial pressure of inspired oxygen, and thus the alveolar oxygen pressure as well. This may result in Hypobaric Hypoxia, the primary insult in altitude related illness.

The resulting hypoxia leads to fluid redistribution, endothelial cell dysfunction, and ultimately increased intracranial pressure. The risk is 3.5 times greater for those whose permanent residence is under 3000 feet and 2.8 times greater for those with prior history of AMS.[2] AMS is a condition characterized by headache, nausea and malaise that most commonly present in travelers at altitudes greater than 2500 meters. The hallmark of AMS is headache.

HACE is now thought to represent a progression of AMS and is characterized by symptoms of AMS and the presence of neurologic symptoms including altered mental status or level of consciousness, ataxia, or lassitude. HACE classically presents after 48 hours at altitude, but can occur earlier. Untreated, it can progress to coma and even death.

HAPE is another form of a hypoxia induced vasogenic edema, characterized by dyspnea and loss of exertional tolerance. If not identified and treated promptly, this may be followed by dyspnea at rest, cough and crackles on examination; pink frothy sputum can occur and is often a terminal sign. HAPE occurs mostly after 48 hours at altitude, and typically at altitudes above 3000 m (9842 ft). Risk is higher the higher the altitude, and risk is significantly higher in individuals who have had HAPE prior. The incidence is estimated at 10-25% of unacclimatized individuals at 2500 m (8202 ft); 50-85% at 4500-5500 m (14,783-18,044 ft), with an estimated mortality rate for HAPE at 50%.[3]

The patient with no history of altitude-related illness planning to take two or more days to travel to 2500-3000 m (8202-9842 ft), with subsequent increases of sleeping elevation of less than 500 m (1640 ft) daily is considered to be at low risk. Moderate risk patients are those without a history of altitude related illness who plan to ascend to 2500-3000 m (8202-9842 ft) in one day or will be ascending more than 500 m (1640 ft) daily. High risk patients include any with a history of HACE, or those with a history of AMS planning to ascend to 2800 m (9186 ft) or higher in one day.

Sample ascent profile for a 56 year-old man with no history of altitude-related illness travelling to Yellowstone National Park for an RV trip:

Day	Description	Starting altitude	Sleeping altitude	Overall Ascent
One	Fly to Jackson, WY	31 m (101 ft)	1,901 m (6236 ft)	1,870 m (6135 ft)
Two	Drive to Yellowstone	1,901m (6236 ft)	2,400 m (7874 ft)	499 m (1638 ft)
	Tour Yellowstone	2,400 m (7874 ft)	2,400 m (7874 ft)	0 m

Despite the physiologic effects that this patient may experience at his destination altitude, he will be at low risk of AMS as he will not be travelling above 2500 m (8202 ft). No medication prophylaxis is recommended.

Several medications have been shown in prospective, randomized controlled trials to decrease both the incidence and severity of AMS. For a patient at low risk for AMS, prophylactic medication is generally not necessary. Medication should be considered for patients with moderate or high risk ascent profiles.[4] Acetazolamide is a carbonic anhydrase inhibitor that induces a mild metabolic acidosis. It may be started one day prior to ascent and completed at time of descent. Several prospective, randomized-controlled trials support its role in preventing AMS. Given its proven efficacy and low risk for side effects, it should be considered first line. The recommended dose is 125 mg by mouth twice daily.

The corticosteroid dexamethasone has been shown to decrease AMS incidence in tactical or search and rescue (SAR) personnel with high risk ascent profiles. Its prophylactic use is not recommended for routine or adventure travel, and it remains outside of the scope of this review.

Ginkgo biloba has mixed studies evaluating its effectiveness for AMS prevention and cannot be routinely recommended.

Ibuprofen, a commonly available NSAID, has been shown superior to placebo at preventing AMS when given in doses of 600 mg three times daily. There are no head-to-head trials examining its efficacy compared with the more established treatment of acetazolamide. The routine use of ibuprofen for prevention of AMS is not recommended over acetazolamide, but it remains an option for those with allergies or intolerance.

Travelers to the Andes may encounter cocoa leaves, which are commonly chewed or prepared in tea to counteract the effects of altitude. There are no prospective, randomized controlled trials supporting the effectiveness of this intervention.

Pre-acclimatization involves simulation of a hypoxic sleeping environment prior to travel to altitude. Several commercial products are available, including face and full body tents that simulate the hypoxic environment of altitude. Manufacturers include Hypoxico and Higher Peak. Staged ascent describes a strategy of traveling to an intermediate altitude (2200 to 3000 m) (7217 to 9842 ft) prior to travel to a higher altitude destination. As an example, a traveler planning a trip to Breckenridge, Colorado (2926 m) (9599 ft) may choose to spend 3-4 days in Denver (1609 m) (5278 ft) prior to arrival. Anecdotes and small studies have shown modest effectiveness with these strategies, but the variability of treatment protocols makes the results difficult to generalize.

Altitude related illnesses compose a spectrum of diseases ranging from mild to severe and potentially life-threatening. A number of common destinations within the United States, and abroad, pose potential risk to travelers. After obtaining a medical history and planned itinerary, an ascent profile is useful in assessing the traveler's

continued on page 16

risk of development of altitude related illness. Several strategies and medications, including acetazolamide, ibuprofen and pre-acclimatization, may be useful in the prevention of altitude related illness.

Endnotes

1 Hatzenbuehler, J MD; Glazer, J MD; Kuhn, C MS. Awareness of Altitude Sickness Among Visitors to a North American Ski Resort. Wilderness and Environmental Medicine 20, 257-260 (2009)

2 Honigman, B MD; Theis, M MA; Koziol-McLain RN, MS; Roach, R MS; Yip, R PhD; Houston, C MD; Moore, L PhD. Acute Mountain Sickness in a General Tourist Population at Moderate Altitudes. Annals of Internal Medicine 1993; 118: 587-592.

3 Bartsch, P. MD; Swenson, E MD. Acute High-Altitude Illness. NEnglJMed 2013; 368:2294-302.

4 Luks, A MD; McIntosh, S MD MPH; Grissom, C MD; Auerbach, P MD MS; Rodway, G PhD, APRN; Schoene, R MD; Zafren, K MD; Hackett, P MD. Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Acute Altitude Illness: 2014 Update. Wilderness & Environmental Medicine, 25, S4-S14 (2014).

David Colman, MD *is a family physician in Albany, NY. He completed medical school at Tel Aviv University in Israel, and residency at Albany Medical Center. He is an Assistant Professor in the Department of Family and Community Medicine at Albany Medical College.*

Steven Heintz, MD *is a family physician from Plattsburgh, NY. After completing residency at the University of Vermont, he worked at Adirondack Medical Center in Tupper Lake and Saranac Lake, NY. He is currently the Medical Director of the Family Medicine Center at Champlain Valley Physicians Hospital in Plattsburgh.*

AMS tends to occur relatively soon after ascent (between 6-12 hours) and most commonly causes headache and malaise. Treatment is based on severity of symptoms, as mild illness can be treated conservatively. The mainstays of treatment of mild AMS include halting ascent immediately and resting. Medical treatment with acetazolamide 125mg to 250 mg twice daily may help with symptom control (in addition to helping with acclimatization). Treatment with dexamethasone may also help in alleviating symptoms (not acclimatization), but patients should be aware that symptoms will likely return with cessation of therapy. If symptoms are more moderate to severe, providers may introduce supplemental oxygen. Symptomatic therapy with acetaminophen, ibuprofen, or antiemetics may also be helpful.

Individuals with AMS should be monitored for any signs of worsening disease or progression to cerebral edema. As a good rule of thumb, patients who have moderate to severe AMS should be treated as if they have HACE. Though it may be difficult when traveling with a group, patients should be advised against continuing to ascend until symptoms have subsided. Descent is always an effective treatment, and should be seriously considered if symptoms are not improving or start to progress. Often descending 500-1,000 meters is sufficient. Hyperbaric therapy may also be considered at any stage, though usually needed less with AMS if descent is possible or supplemental oxygen is available.

HACE may take longer to present (1-3 days), and typically occurs at higher altitudes, but when recognized requires immediate intervention. Treatment of HACE must begin with immediate descent from the current location, which is best done quickly while the traveler is still ambulatory. If descent is not possible due to either weather or injury, then supplemental oxygen should be started to maintain oxygen saturation greater than 90%. The patient can also be placed in a portable hyperbaric chamber if one is available. These may be available at rescue stations.

Though medications are not to be used in place of descent, they may improve the patient's condition enough to assist in the descent. Medications that are used for treatment of AMS may also be used in HACE, including acetazolamide and dexamethasone. Dexamethasone can be started with an initial dose of 8 mg followed by 4 mg four times daily. If treated quickly and appropriately, patients can expect to recover over the course of several weeks. Patients who become comatose will require a hyperbaric chamber and most certainly a higher level of care. If cerebral edema reaches an irreversible stage it may result in death or permanent impairment.

HAPE occurs in <1% of people visiting high altitude, is more common in extreme altitude and may occur separately or concurrently with HACE. Because HAPE may take several days to evolve and is the leading cause of death from altitude illness, it is crucial that it be recognized early and that quick action is taken. Immediate descent is the first and most important aspect of treatment, and would ideally be more than 1,000 meters. Supplemental oxygen should be used to maintain oxygen saturation greater than 90%, and a hyperbaric chamber should also be used if descent is not immediate. There is limited evidence that treatment with medications such as nifedipine (20-30 mg every 12 hours), and phosphodiesterase-5 inhibitors can improve pulmonary edema. This latter medication works by selectively lowering pulmonary arterial

continued on page 17

pressure. In addition, expiratory positive air pressure masks can also help at this stage. Table 2 contains information about medications commonly used to treat HAI.

Table 2: Medications Used in Treatment of High Altitude Illness

Medication	Dose	Use
Acetazolamide	125-250 mg BID	Prevention and Treatment of AMS
Dexamethasone	4 mg every 6 hours (AMS) 8 mg, then 4 mg every 6 hours (HACE)	Prevention and Treatment of AMS and HACE
Nifedipine	20 mg every 8-12 hours	Prevention and Treatment of HAPE

Source: Adapted from UpToDate Table: "Pharmacologic treatment and prevention of HAI"

Patients returning from a trip to high altitude who suffered from HACE or HAPE may still not be fully recovered when returning to visit their PCP, so physicians should be able to recognize ongoing symptoms including memory storage and recall, concentration, finger tapping speed, and aphasia. These symptoms typically resolve over time. Additional counseling should also be done regarding future trips. Patients who require treatment for HAI may need to take special precautions on future trips, including shorter or more prolonged ascents.

Many travelers to high altitude destinations are children, some of which may present differently when affected by these illnesses. Signs of AMS in young children may be less specific and include fussiness, poor sleep, vomiting, or decreased appetite. Older children and adolescents may present more similarly to adults with headache being one of the most common symptoms. Treatment is based on symptom severity, but just as in adults ultimately includes descent, supplement oxygen as needed, and medications and hyperbaric chamber for more severe symptoms. Patients with certain chronic conditions should also be aware of the effects that treatment of HAI may have on them. For example, patients with diabetes who are receiving treatment with dexamethasone should be aware that prolonged use may increase the risk of hyperglycemia.

More and more people are traveling to high altitude locations both in this country and worldwide. As more patients continue enjoy the outdoors it is becoming increasingly important for family physicians to counsel patients on recognizing the symptoms of high altitude illness, as well as how to prevent and treat it when it occurs.

References

Altitude Illness. (n.d.). Retrieved from https://wwwnc.cdc.gov/travel/yellowbook/2018/the-pre-travel-consultation/altitude-illness

Fiore, D. C., MD, & Hall, S., MD. (2010). Altitude Illness: Risk Factors, Prevention, Presentation, and Treatment. American Family Physician, 1103-1110.

Gallagher, S. A., MD, & Hackett, P., MD. (n.d.). Acute Mountain Sickness and High Altitude Cerebral Edema. Retrieved from Up to Date

Hackett, P., MD, & Gallagher, S. A., MD. (n.d.). High Altitude Disease: Unique Pediatric Considerations. Retrieved from Up to Date

Hornbein, T. F. (1992). Long Term Effects of High Altitude on Brain Function. *Int J Sports Med, 13*, 43-45.

***Stephanie MacDonald, DO**, is a 3rd year family medicine resident at the University of Rochester Highland Family Medicine Program. After graduation in June 2018 she will begin her role as the primary care sports medicine fellow at the University of Rochester.*

COMBAT PARASITES: A CASE OF *SCHISTOSOMA HAEMATOBIUM* IN AFGHANISTAN

By Thaddeus M. Pajak, DO and Brent DiGiorgio

Introduction: Schistosomiasis is a parasitic infection characterized by the World Health Organization as a neglected tropical disease, which is estimated to affect 440 million individuals around the world. The acute symptoms of this infection are non-specific and pathognomonic features often do not present until the chronic stages. Family medicine physicians encounter common patient complaints such as hematuria, which encompass a broad differential diagnosis. A detailed occupational and recreational travel history is essential when parasitic infections are included in this differential. We present a case of gross hematuria and bladder mass in a United States military service member. His travel history included West Africa, United States (New Jersey and Louisiana), and South Korea prior to presenting with symptoms during a deployment to Afghanistan. This clinical case provides an excellent opportunity to review the etiology, epidemiology, clinical features, diagnosis, and treatment of both blood flukes and liver flukes which reside in the venous vasculature and livers of their definitive human hosts respectively.

Background: Trematodes, more commonly known as flatworms or flukes, belong to the phylum Platyhelminthes and include species found in over 90 countries worldwide. Human infection with these organisms is a significant source of morbidity and mortality worldwide, presenting concerns for physicians, travelers, and inhabitants of regions in which these organisms are found. Trematode infections are rare in high income countries due to adequate sanitation and hygiene which block transmission. However, international travelers and individuals in underdeveloped areas of Africa, Asia, and South America are susceptible to infestation.

It is estimated that 440 million individuals worldwide are affected by past or present *Schistosoma* infection.[5] Liver, lung, and intestinal trematode infection is estimated to affect around 60 million people, with 20 million of those individuals suffering from liver fluke infection. Infection often results in a high disease burden, with many infections resulting in multi-year chronic inflammatory disorders that appear after years of infection.

Clinically, trematodes are classified according to the tissues invaded by the adult stage of the fluke. These classifications include the bloodstream *(Schistosoma)*, biliary tree *(Clonorchis, Opisthorchis, Fasciola)*, intestines *(Fasciolopsis, Heterophyes)*, and lungs *(Paragonimus)*.[1]

Liver Flukes: The trematodes that infect the liver are all food borne and include three major species: *Clonorchis, Opisthorchis, and Fasciola.*[4] Acute illness due to *Clonorchis* and *Opisthorcis* infections is rare. If the infection is light to moderate, the patient may be asymptomatic for years or decades.[4]

Intermittent to chronic symptoms include fatigue, abdominal pain, anorexia, weight loss, jaundice, and diarrhea. Physical signs such as liver enlargement and tenderness are more frequent in the heavily infected. Ultrasound studies have shown gallbladder enlargement, biliary sludge, dysfunction, and stones in otherwise asymptomatic heavily infected individuals. Early pathologic changes include bile duct proliferation and pseudostratification of the biliary epithelium. These are followed by late findings, including metaplastic squamous cells and glandular proliferation. A small percentage of patients with chronic infection develop recurrent ascending cholangitis, pancreatitis, and even neoplastic changes.[4]

Fasciola species enter the liver directly through Glisson's capsule, and as a consequence infection results in an acute invasive stage and chronic biliary obstructive stage. The patient often becomes symptomatic after infection, with resolution of fever, anorexia, and abdominal pain. Patients may develop intermittent biliary obstruction, with symptoms including intermittent epigastrium pain which mimics cholecystitis. Ultrasound often reveals an intraluminal mass obstructing the extrahepatic biliary tree.

Diagnosis of infections with *Clonorchis* and *Opisthorchis* is typically done by identification of eggs in stool. Examination of multiple stool specimens may be necessary to identify lighter infections, and low egg counts may be seen in heavy infection with blockage of the biliary ducts.[4] Other studies such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI) can be done to identify common characteristics of infection such as cystic-like dilations of intrahepatic bile ducts. These modalities are often combined along with a history of raw freshwater fish consumption and physical exam findings to make the diagnosis.

Identification of stool in eggs is less reliable in early stages of *Fasciola* infection, as eggs are not found in stool specimens during the acute phase.[4] In acute cases, diagnosis must be based on clinical findings, right upper quadrant pain, altered intestinal function, fever, and elevated eosinophil counts. CT scans can also aid in diagnosis, as most patients have hypodense lesions and tracts in the liver. In the chronic phase, the diagnosis is made by finding *Fasciola* eggs in stool specimens, or at the time of surgery when eggs or adult flukes are removed from the biliary tree.

Blood Flukes: Schistosoma infection can be broken down into immediate manifestations, acute schistosomiasis, and chronic schistosomiasis. Acute schistosomiasis is known as Katayama fever[2] and is thought to be an acute immune reaction to the deposition of schistosoma eggs into host tissues. Symptoms begin anywhere from 14-84 days after contact with contaminated water, and include fever, headache, myalgia, right upper quadrant pain, and diarrhea. Hepatomegaly and splenomegaly may be present. Most patients have eosinophilia and positive serologic antibody tests.[1]

Chronic schistosomiasis may present as gastrointestinal and liver disease, genitourinary disease, or neurologic disease. Fibro-obstructive disease and granuloma formation in these locations is due to egg accumulation. Two species (S. mansoni and S. japonicum) are known to infect the intestine and liver, and S. haematobium is known to infect the genitourinary tract. Eggs retained in the gut wall induce a variety of cellular changes, including inflammation, hyperplasia, ulceration, microabscess formation, and polyposis.[2] These changes are accompanied by symptoms such as diarrhea, colicky pain, and hematochezia. Eggs deposited in the liver induce a granulomatous inflammatory response, resulting in fibrosis, obstruction of blood flow, portal hypertension, varices with bleeding, and splenomegaly.

Urinary tract disease is specific to S. *haematobium* infection.[2] Immediate signs of infection are rare. The first signs of disease are usually dysuria and hematuria, which can appear 10-12 weeks after infection. Deposition of eggs leads to granulomatous inflammation in a similar manner to gastrointestinal disease. Late manifestations of infection include nephrotic range proteinuria, bladder calcification, ureter obstruction, renal colic, hydronephrosis, and renal failure. Cystoscopy reveals areas of roughened bladder mucosa surrounded by eggs (sandy patches), which are pathognomic for disease.

Diagnosis of schistosomiasis infection is done through detection of schistosome eggs in feces or urine.[2] Up to three specimens may be required in some patients due to different extent of egg shedding. If negative urine and feces specimens are present in a patient with a typical clinical presentation, a biopsy of bladder or rectal mucosa may be used for diagnosis. Additionally, schistosoma antigen tests are available. These tests are not species specific but can be used to rule out infection in endemic areas and demonstrate a cure after treatment. Antigen tests become negative 5-10 days following successful therapy.[6]

Case Report: A 32 year old male presented for evaluation of a one week history of gross hematuria. He had not had this symptom before. At the time of presentation he was an active duty service member 35 days into a deployment to Afghanistan. He had been serving as a combat engineer and his occupational requirements were primarily mounted patrols (riding in a vehicle) for 8-10 hours per day. He denied any strenuous activity, long marches or prolonged training since arriving in theater. He denied any recent or previous genitourinary trauma. He denied dysuria, penile discharge, inguinal adenopathy, fevers, or chills, and denied any urinary hesitancy or retention. He did not experience night sweats or weight loss. The patient had a past medical history of latent tuberculosis which was diagnosed after a military deployment to Korea. He had no surgical history. Social history of smoking 1 pack of cigarettes per day for the previous 4 years and a monogamous sexual relationship with his wife for the previous 3 years and only protected intercourse before that time. His current medications included doxycycline 100 mg daily for malaria prophylaxis. The patient reported that he was born in the West African country of Ivory Coast but moved to the land locked West African country of Burkina Faso. He resided in this country until he emigrated to the continental U.S. 5 years prior to presentation. The patient reports that while growing up in Burkina Faso he frequented a lake for recreation and despite that he does not know how to swim, he would wade into the water or simply have his feet submerged.

On examination the patient was afebrile, normotensive, with normal heart rate and respiratory rate. He was well developed with normal muscle mass and bulk. The cardiopulmonary and abdominal examinations were normal. His genitourinary exam was normal, there was no blood at the urethral meatus, there was no penile mass, no inguinal adenopathy, and his bladder was not palpable.

A urine sample revealed both macroscopic and microscopic hematuria. A blood count did not reveal any leukocytosis, eosinophilia, anemia, or thrombocytosis. His electrolytes and creatinine were normal. Transabdominal ultrasound of the bladder, ureters, and kidneys was normal. The patient subsequently underwent computed tomography of the abdomen and pelvis with IV contrast, and no abnormalities were identified. He underwent cystoscopy of the urinary bladder which showed multiple nodular lesions in the bladder mucosa, with the largest at 2 cm in diameter. The patient was transferred to a military hospital in Europe, where urinary evaluation was negative for ova and parasites. He underwent transurethral resection of the mass described above, with the tumor at 2.0x2.4x0.4 cm when received by pathology. Microscopic evaluation revealed chronic and granulomatous inflammation with abundant eosinophils, histiocytes, and giant cells surrounding the schistosoma eggs deposited in the bladder wall. See Figure 1. The patient was treated with praziquantel 1200 mg x1, 1200 mg 4 hours later, and 600 mg 4 hours after the initial dose, and tolerated this medication without complication. He had a linear and sequential recovery after his cystoscopy with resolution of his hematuria at 10 days post procedure. He returned to Afghanistan and completed the remainder of his combat tour without recurrence of symptoms.

continued on page 20

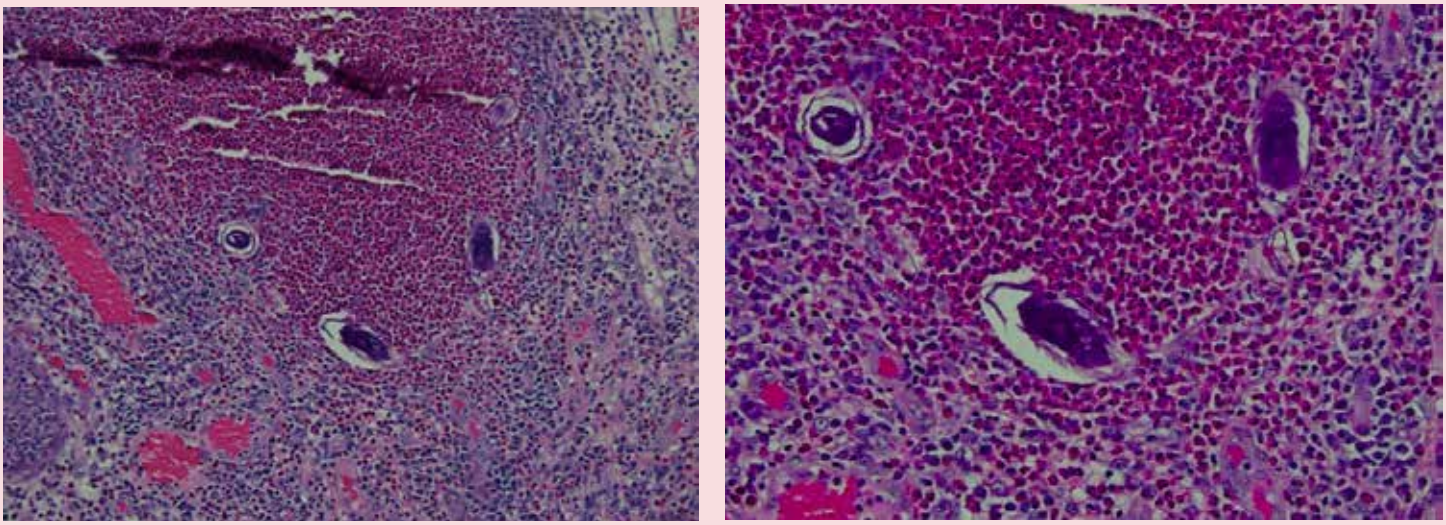


Figure 1 - Microscopic evaluation of bladder mass from patient described above. *Left-Schistosoma* eggs surrounded by chronic inflammatory changes. *Right-Schistosoma haematobium* eggs enlarged with identifying prominent terminal spine.

Discussion: Trematode infections are generally divided by the tissues they invade for clinical purposes.[1] Tissue invasion is essential to understanding the clinical course and long term complications of blood and liver flukes.

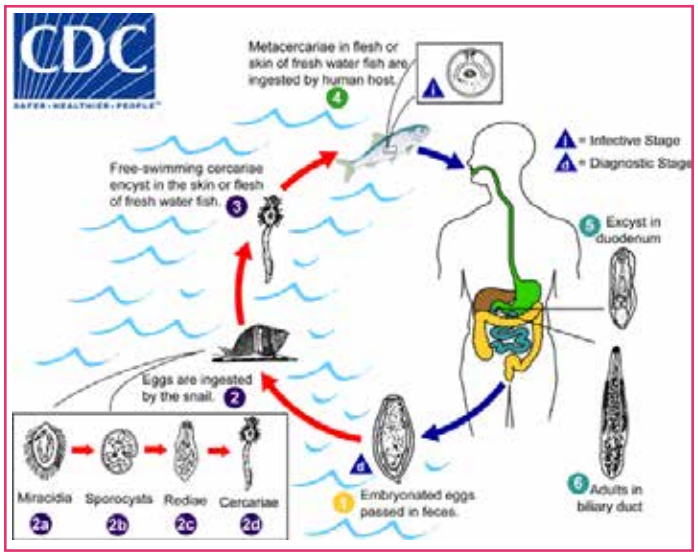
Life cycles for both blood and liver flukes involve a mammalian or human host for sexual reproduction, and one or more intermediate hosts such as snails or fish, where asexual multiplication of larvae occurs. (Figure 2) Human infection begins with direct penetration of skin or by ingestion of contaminated food or water. Adult flukes then mature within the human host, initiate sexual reproduction, and deposit eggs. The eggs are then excreted via the bowel or bladder. After leaving the host, eggs hatch and release free-living miracidia (ciliated larval stage) that seek an intermediate host. Within the intermediate host, cercariae (free swimming larval stage) reproduce asexually, are released, and infect humans.

Human infection with liver flukes *(Clonorchis and Opisthorchis)* begins with ingestion of raw or under cooked fresh water fish harboring this parasite. *Fascioliasis* begins with ingestion of aquatic plants or food items washed with water containing this organism. Larvae are released in the duodenum and mature into adults in the bile canaliculi.[1] Chronic or repeat infection will eventually lead to cholangitis and biliary obstruction. Although *Fascioliasis* is not associated with cancer, various species of *Chlonorchis and Opisthorchis* have been associated with cholangiocarcinoma.[1]

Schistosoma infections begin after direct contact with free swimming larval forms of the parasite. Larvae travel via venous system to the lungs, left heart, and into circulation. The larvae mature in the liver and unite specifically in the portal venous system.[1] Pairs of worms migrate to the mesenteric vessels of the bowel or bladder where females lay eggs. *S.mansoni and S. japonicum* will reside in the mesenteric vessels, *S. haematobium* (as described in the case above) will reside in the vesical plexus and veins draining the ureters. After production, eggs will pass from the lumen of blood vessels and into adjacent tissues. The eggs will be shed in either the feces or urine to restart the life cycle. Although chronic manifestations can be seen in the neurologic system, gastroenterologic and urologic are the most common, and the human host produces an immune response at the site of egg production. This granulomatous response is successful in destroying the ova but may result in local fibrous disease in the host. In the intestines, eggs cause ulceration and hyperplasia of the gut wall which can produce constipation, blood in the stool, and bowel obstruction. *Schistosoma* can produce inflammatory masses that mimic cancer, but the relationship between this parasitic infection and colon cancer is unclear.[1] Embolization of eggs to the liver can result in pre portal fibrosis but generally only occurs in patients with a heavy parasitic burden over many years. Co-infection with Hepatitis B virus may increase the risk of hepatocellular carcinoma. As described in the case report above urinary tract disease is a specific trait of *S.haematobium*. The genitourinary granulomatous response can result in hematuria proteinuria, calcifications of the bladder, obstruction of the ureter, hydronephrosis, and renal failure.[1] There is also evidence that schistosoma infection plays a role in some types of bladder cancer.[2]

Treatment: Chemotherapy with anthelmintic medications for liver and blood flukes is short in duration and effective. Praziquantel, which acts to increase cell membrane permeability causing parasitic disintegration, treats *Chlonorchis, Opisthorchis, and Schistosomiasis*. Specific dosing is noted in Table 1. Cure rates of greater than 90% have been observed in randomized controlled trials.[3] A single dose of Triclabendazole is required to treat *Fasciola*.

Chronic infection typically responds to the treatment regiments listed, but patients with structural changes are at risk for complications. Biliary, intestinal, and genitourinary structural changes may necessitate other medical therapies, interventions, and surgical procedures depending on the site and degree of structural changes.[1]



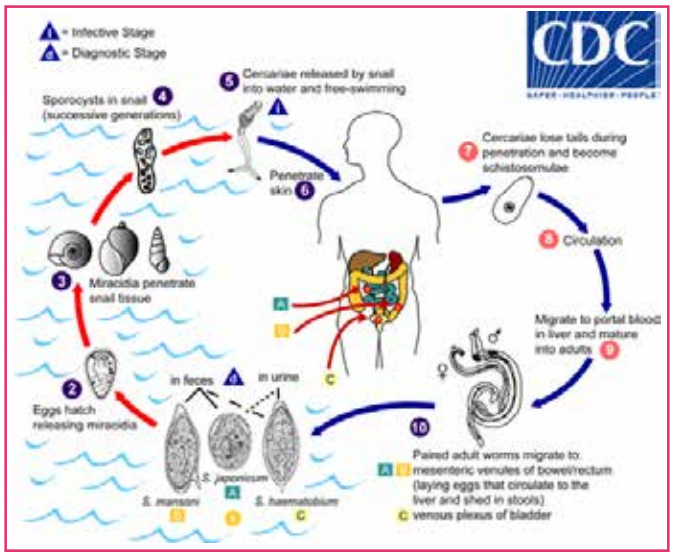


Figure 2: Left: Clonorchis Life Cycle. Right Schistosoma Life Cycle Reproduced from: Centers for Disease Control and Prevention. https://www.cdc.gov/parasites/clonorchis/biology.html

Table 1

Infection	Drug of Choice	Adult Dose and Duration
S. haematobium/ S.mansoni	Praziquantel	20 mg/kg, 2 doses in 1 day
S.japonicum/ S.mekongi	Praziquantel	20 mg/kg, 3 doses in 1 day
Chlonorchis and Opisthorchis	Praziquantel	25 mg/kg, 3 doses in 1 day
Fasciola	Triclabendazole	10mg/kg once

Source: Adapted from Harrison's Principles of Internal Medicine, Table 259-2 Drug Therapy for Human Trematode infections.

Conclusion: Worldwide trematode infection will continue to challenge family medicine physicians to consider these infections with common patient complaints. A sound understanding of the endemic regions, life cycle, clinical presentation, and pathognomonic features will allow family physicians to promptly diagnose and treat both blood and liver flukes.

Endnotes

1 Harrison's Principles of Internal Medicine 19 ed.United States: McGraw-Hill; 2015. Chapter 259, Schistosomiasis and Other Trematode Infections; p 1-14 via http://accessmedicine.mhmeedical.com(16 December 2017)
2 Ross et al. Schistosomiasis-Review Article. NEJM. 2002; 346:1212-1220
3 Jong et al.,Praziquantel for the treatment of Chlonorchis/Opisthorchis infections. JInfect Dis 1985; 152:637.
4 Maclean et al., Liver, Lung, and Intestinal Fluke Infections, Tropical Infectious Diseases, Second Edition Philadelphia, 2006,Chapter 117, Pages 1349-1369. Via https://www.sciencedirect.com/science/article/pii/B9780443066689501228 (1Feb 2018)
5 Colley et al.,Human Schistosomiasis. *Lancet*. 2014 June 28; 383(9936): 2253–2264.
6 Vant Wout et al., Schistosome circulating anodic antigen in serum of individuals infected with Schistosoma japonicum from the Philippines before and after chemotherapy with praziquantel. Trans R Soc Trop Med Hyg. 1992, 86(4):410

References

Weerakoon et al., Urogenital Schistosomiasis: No Longer a Diagnosis of the Developing World. Med Surg Urol 2013,2.2;1-3
Richter et al., Acute anuria after a family vacation to Corsica/France. Parasitol Res. 2016;115:1733-1735
Tzanetou et al., Urinary Tract *Schistosoma haematobium* Infection: A Case Report. J Travel Med. 2007; 14: 334-337
Agbor et al., Bladder outlet obstruction; a rare complication of the neglected schistosome, *Schistosoma haematobium:* two case reports and public health challenges. BMC Res Notes. 2016; 9:493

Thaddeus M. Pajak, DO, *is board certified in family medicine. A graduate of Edward Via College of Osteopathic Medicine, he is currently serving as a Major in the United States Army Medical Corps. He is the Medical Director of the Traumatic Brain Injury Clinic and a staff family physician at the Guthrie Ambulatory Health Clinic located at Fort Drum, New York.*

Brent DiGiorgio*, is a medical student at Geisinger Commonwealth School of Medicine in Scranton Pennsylvania. He is a graduate of Saint Francis University in Loretto, PA and his professional interests include primary care, hematologic disorders, and the influence of genetic testing on preventive medicine.*

By Clarisse Tallah, MD; Diana Nassar, MD; Kritika Reddy, MD; and Yar Pye, MD, MBA, FAAFP

Fever in Returned Travelers

INTRODUCTION

Fever is a common symptom leading to hospitalizations of returned travelers, and may be the one and only manifestation of a serious or life-threatening illness in a returned traveler.[1] In one report with nearly 25,000 ill returned travelers between 1997 and 2006, fever was a chief reason for seeking care in 28% of cases.[2] The International Tourism Organization forecasts international tourism to reach 1.8 billion by 2030, up from 1.2 billion trips in 2015. This increase comes with additional challenges as an increasing number of travelers are over the age of 60 years with coexisting conditions and consequently increased morbidity from infections plus an increasing multidrug resistance.[3] The rapidly changing outbreaks as seen most recently (e.g. Middle East Respiratory Syndrome Coronavirus – MERS-CoV: 2017- 2018, Zika Virus: 2015-2016 and Ebola: 2014-2015), emphasize the importance of keeping emerging pathogens as a differential for febrile etiology in returned travelers.

Most post-travel illnesses can be managed on an outpatient basis, but some patients, especially those with systemic febrile illnesses, may need to be hospitalized. The most common specific diagnoses of fever in returning travelers include malaria (21%), dengue fever (6%), mononucleosis, rickettsial infection and typhoid or paratyphoid fever.[4] 22-25% of patients go undiagnosed, which necessitates a risk-based approach of prioritizing the identification and treatment of life-threatening causes of fever especially when transmission rates are high.[3,5] Additionally, it requires alerting a public health official.

Obtaining a good history, diagnostic tests and knowledge on disease incubation is paramount to diagnosis.[6] Consultation with an infectious diseases physician is recommended when there is fever plus altered mental status, fever with local or advance lymphadenopathy, complicated management or unclear diagnosis.

HISTORY

Regular routine history plus extensive travel history is essential for diagnosis.

1. Geography: Countries visited or transited, dates and duration of travel for differentials of diseases common in certain geographical locations and incubation times (Table 1).
2. Transportation Means: Accommodations (patients who live with their family are shown to be at higher risk than their counterparts in hotels - touristic sites), activities (camping etc.), sex, animal exposure, arthropod exposure (fleas, ticks, etc.), needle or blood exposure, food and beverages (e.g. undercooked meat , unpasteurized milk, etc.), soil and water contact (e.g. boating, spelunking, etc.).
3. Pre-travel Preparation: Any chemoprophylaxis or vaccines prior to travel. Note however that some vaccinations are not 100% protective. Typhoid vaccines, for example, are only 70% efficient and cannot be 100% excluded as a differential if risk is present.[7]

PHYSICAL AND LABORATORY ASSESSMENT

A thorough physical examination is warranted for clues towards narrowing disease differentials (e.g. presents with lymph nodes, rash etc.). Table 2 shows infections to consider when fever is present with other findings. Common evaluation labs include: BMP, CBC with differential, liver enzymes, blood cultures, urinalysis with culture if abnormal, rapid diagnostic test and blood smears (e.g. for malaria or Babesia), stool labs, chest x-ray, serologic tests, urinary antigens, bone marrow aspirate/biopsy, biopsy of affected tissue, cerebrospinal fluid analysis and more as appropriate.

FIVE MOST COMMON INFECTIONS IN RETURNED TRAVELERS

For differentials of fever in returned travelers, it is also important to consider the most frequent reasons for fever: urinary tract infection, pneumonia and upper respiratory infection.[5]

Table 1 - Common causes of fever by geographical location[12]		
GEOGRAPHIC AREA	**COMMON TROPICAL DISEASE CAUSING FEVER**	**OTHER INFECTIONS CAUSING OUTBREAKS OR CLUSTERS IN TRAVELERS**
Caribbean	Chikungunya, Dengue, malaria (Haiti), Zika	Acute histoplasmosis, leptospirosis
Central America	Chikungunya, Dengue, malaria (primarily *Plasmodium vivax*), Zika	Leptospirosis, histoplasmosis, coccidioidomycosis
South America	Chikungunya, Dengue, malaria (primarily *P. vivax*), Zika	Bartonellosis, leptospirosis, enteric fever, histoplasmosis
South-central Asia	Dengue, enteric fever, malaria (primarily non-falciparum)	Chikungunya
Southeast Asia	Dengue, malaria (primarily non-falciparum)	Chikungunya, leptospirosis
Sub-Saharan Africa	Malaria (primarily *P. falciparum*), tickborne rickettsiae (main cause of fever in southern Africa), acute schistosomiasis, dengue	African trypanosomiasis, chikungunya, enteric fever, filariasis

MALARIA

Malaria is spread via the female *Anopheles* mosquito which harbors the sporozoite *Plasmodium*. Travelers particularly at risk for infection are children under the age of 3, and pregnant women. Symptoms typically present in coincidence with incubation period of *Plasmodium*. For *P. falciparum, P. ovale, and P. vivax* the incubation period is approximately two weeks, while that of *P. malariae* is closer to 18 days. Uncomplicated malaria symptoms are typically nonspecific and include chills, fever, fatigue, diaphoresis, headache, cough, nausea, vomiting, and abdominal pain. Of these symptoms fevers typically spike irregularly in early infection, whereas later in the course of infection fevers concur with release of merozoites from red blood cells. In *P. falciparum, P. ovale, and P. vivax* fevers can recur every 48 hours and in *P.malariae* fevers are more likely to recur every 72 hours. In severe cases the symptoms and physical findings are related to the pathological state of the red blood cell. In their infected state red blood cells are more prone to stick to vessels causing small infarcts and ultimately organ dysfunction. Pallor, petechiae, jaundice, hepatomegaly, and splenomegaly could be noted on physical exam. A quick diagnosis is crucial for adequate and appropriate treatment. The two most common diagnostic tools include light microscopy (identification of the parasite as well as quantifying the level of parasitemia), and rapid diagnostic tests (RDTs). Treatment is dependent on resistance patterns. In chloroquine resistance regions treatment is with two oral agents. Per WHO, an artemisinin based combination therapy (ACT) is first line shown to delay resistance. In chloroquine sensitive endemic regions, oral monotherapy with chloroquine is sufficient.

DENGUE FEVER

Dengue is a vector borne illness caused by infection of the DENV virus from the flavivirus genus. It is transmitted by a mosquito bite from the *Aedes aegypti or Aedes albopictus* mosquito. This illness presents with headache, retro-orbital pain, myalgia, and often rash. In more severe cases, the patient may have hemorrhagic manifestations due to increased vascular permeability and will present with ecchymosis, gum bleeding, and hematemesis. Symptoms develop approximately one week after a bite from an infected mosquito. There are three phases of infection consisting of a febrile phase, associated with high fever, myalgia, and eye pain; a critical phase, where hemorrhagic manifestations may present; and a recovery phase where patient may note fatigue but resolution of more severe symptoms. Diagnosis is clinical but immunoglobulin may be detected one week after infection. Treatment is supportive with emphasis on maintaining intravascular volume and hydration.

MONONUCLEOSIS - DUE TO EPSTEIN - BARR VIRUS OR CYTOMEGALOVIRUS

Mononucleosis is a herpesvirus that is spread by intimate contact (e.g. sharing utensils, food). Clinical features include fever, fatigue, adenopathy, and pharyngitis. Pharyngeal exudates may appear white and are often diagnosed as strep pharyngitis. Lymph node involvement is often symmetric in nature, and less common symptoms include rash, splenomegaly, and neurologic symptoms. While undergoing treatment, patients are urged to avoid contact sports. Patients can be found to have lymphocytosis as well as a high number of atypical lymphocytes on blood smear. Diagnosis is often clinical but patients should have a strep culture performed to rule out strep. The heterophile antibody test can also be performed. Management is supportive.

RICKETTSIAL INFECTION

These are vector borne illness with carriers (mites, ticks lice or fleas) that result in similar manifestation and are commonly acquired in a wide geographical distribution with an incubation period of 2 to 14 days. Presentation is fever, headache, myalgias, maculopapular rash spreading outwards, and at times an eschar known as tâche noire at the tick bite site, with enlarged nodes.[8,9,10] Diagnosis is by serology or PCR and treatment is with doxycycline.

ENTERIC FEVER

Caused by Salmonella enterica serotype Typhi (S. Typhi) and Salmonella enterica serovar Paratyphi A,B and C (S. Paratyphi) which is transmitted fecal-orally or through contamination of water or food with an incubation of 6 to 30 days. It is common in most developing nations with more than 70% of cases acquired in south-central or Southeast Asia and Southern Africa. Symptoms involve severe systemic illness with rising stepwise fever, chills, anorexia, malaise, vague abdominal pain, initially diarrhea then constipation upon presentation.[8,11] Clinically, the patient has bradycardia, pulse

continued on page 24

Table 2 - Common Clinical findings and associated infections[5]	
Common Clinical Findings	**Infections To Consider After Tropical Travel**
Fever and Rash	Dengue, Chikungunya, Zika, Rickettsial infection, Enteric fever (skin lesions may be sparse or absent), acute HIV infection, measles
Fever and Abdominal Pain	Enteric Fever, Amebic liver abscess
Undifferentiated Fever and Normal or Low White Blood Cell Count	Dengue, Malaria, Rickettsial infection, Enteric fever, Chikungunya, Zika
Fever and Hemorrhage	Viral hemorrhagic fevers (Dengue and others), Meningococcemia, leptospirosis, rickketsial infections
Fever and Arthralgia or Myalgia, sometimes persistent	Chikungunya, Dengue, Zika
Fever and Eosinophilia	Acute Schistosomiasis, drug hypersensitivity reaction, fascioliasis and other parasitic infections (rare)
Fever and Pulmonary Infiltrates	Common bacterial and viral pathogens, legionellosis, acute schistosomiasis, Q fever and leptospirosis
Fever and Altered Mental Status	Cerebral malaria, viral or bacterial meningoencephalitis, African trypanosomiasis, scrub typhus
Mononucleosis Syndrome	Epstein-Barr virus infection, CMV infection, Toxoplasmosis, acute HIV infection
Fever persisting >2 weeks	Malaria, enteric fever, Epstein-Barr virus infection, cytomegalovirus infection, toxoplasmosis, acute HIV infection, acute schistosomiasis, brucellosis, tuberculosis, Q fever, visceral leishmaniasis (rare)
Fever with onset >6 weeks after Travel	Plasmodium vivax or ovale malaria, acute hepatitis (B, c or E), tuberculosis, amebic liver abscess

– temperature dissociation, and "rose spots" which are faint salmon-colored maculopapular blanch, with pressure lesions on the trunk and abdomen. Hepatomegaly and intestinal bleeding can also be present. Labs are non-specific: low Hg, high (in children) or low (in adults) white count on CBC, abnormal LFTs. Diagnosis is made by culture blood, stool, urine, bone marrow and duodenal aspirates.[9] Symptomatic management is recommended for non typhoidal Salmonella species. Bactrim, 3rd generation cephalosporin, and/or chloramphenicol are used for typhoidal Salmonella with fluoroquinolone in travelers who have been to India due to multidrug-resistant strains.[11]

CONCLUSION

There are several available and free resources that allow for preparation before travel including the Center for Disease Control website and the app TravWell; travel clinics with surveillance networks on travel related morbidity (e.g. Geo-sentinel); and Global Antimicrobial Resistance (AMR) Surveillance System (GLASS) by the World Health Organization which foster standardized global AMR surveillance. With these resources, a thorough physical and available lab testing, the prevention, diagnosis and treatment of fever in returned travelers can be maximally optimized.

Endnotes

1 Wilson ME, Freedman DO. Etiology of travel-related fever. Curr Opin Infect Dis 2007; 20: 449-53
2 Wilson ME, Weld LH, Boggild A, et al. Fever in returned travelers: results from the GeoSentinel Surveillance Network. Clin Infect Dis 2007; 44:1560.
3 Thwaites, Guy E. F.R.C.P et all, Approach to fever in Returning Traveler: N Engl J Med 2017;376:548-60.
4 Freedman DO, Weld LH, Kozarsky PE, et al. Spectrum of disease and relation to place of exposure among ill returned travelers. N Engl J Med 2006; 354:119.
5 Evaluation of fever in the returning traveler Author: Mary Elizabeth Wilson, MD, Section Editor: Karin Leder, MBBS, FRACP, PhD, MPH, DTMH Deputy Editor: Elinor L Baron, MD, DTMH
6 Thwaites GE, Day NP. Approach to Fever in the Returning Traveler. N Engl J Med 2017; 376:548.
7 Typhoid immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Morb Mortal Wkly Rep 1994;43 (RR-14):1-7.
8 Suh KN, Kozarsky PE, Keystone JS. Evaluation of fever in the returned traveler. Med Clin North Am 1999;83:997-1017
9 Magill AJ. Fever in the returned traveler. Infect Dis Clin North Am 1998;12:445-69.
10 Guidugli F, Castro AA, Atallah AN. Antibiotics for preventing leptospirosis. Cochrane Database Syst Rev 2003;(2):CD001305.
11 Mermin JH, Townes JM, Gerber M, Dolan N, Mintz ED, Tauxe RV. Typhoid fever in the United States, 1985-1994: changing risks of international travel and increasing antimicrobial resistance. Arch Intern Med 1998;158:633-8
12 Travelers' Health. (2017, June 12). Retrieved March 28, 2018, from https://wwwnc.cdc.gov/travel/yellowbook/2018/post-travel-evaluation/fever-in-returned-travelers

References

Mary Elizabeth Wilson, MD, Evaluation of fever in the returning traveler. 2017; 3888: 26.0.
Vincent Lo Re III, M.D and Stephen J. Gluckman, M.D. Fever in the Returned Traveler 2003; 68- 7. World Health Organization.
Centers for Disease Control and Prevention.

***Clarisse Tallah, MD**, is a family medicine physician in her second year of residency at NYU Langone Brooklyn Campus in New York. She completed her medical training at Saint George's University School of Medicine specifically the Keith B. Taylor Global Scholars Programs and plans to pursue an obstetrics fellowship following residency graduation.*

***Diana Nassar, MD,** is a family medicine physician in her second year at NYU Langone Hospital-Brooklyn Campus program. She completed her medical training at Saint George's University School of Medicine. She has had an interest of global health and co-founded the UNICEF chapter at UNC-Chapel Hill as an undergraduate. She plans to pursue health policy following residency.*

***Kritika Reddy, MD**, is a family medicine physician in her first year at NYU Langone Hospital-Brooklyn campus program. She completed her medical training at Saint George's University School of Medicine. Throughout her first year of residency she has developed an interest in inpatient medicine and hopes to blend both primary care and inpatient medicine into her future practice.*

***Yar Pye, MD, MBA, FAAFP,** is an Interim Program Director and a site Medical Director at the Family Medicine Residency Program at NYU Langone Brooklyn. He completed his family medicine training at Lutheran Medical Center (now NYU Langone Brooklyn). His research interests involves QI projects using a parallel PDSA method, and behavioral health integration into primary care*

Travel Medicine Made Easy - Contents for a Travel EMR

By Eric Schnakenberg, MD

Our patients are on the move. Business travel is increasing with frequent trips of shorter duration to multiple destinations. Tourism and adventure travel are becoming increasingly popular. For every trip our patients take, risk is coming along for the ride. Depending on the destination, infectious disease risks to travelers need to be considered. Hepatitis A and hepatitis B are two of the most common vaccine preventable diseases that travelers are likely to encounter. Other vaccine preventable illnesses include influenza, typhoid, meningococcal meningitis, yellow fever, rabies and polio. Ensuring appropriate and timely malaria prophylaxis for your patient will go a long way towards keeping them safe during their journeys.

As a busy family physician I am often asked to provide travel medicine advice. Often, these trips not only involve travel for my patient but also include their spouse and their children.

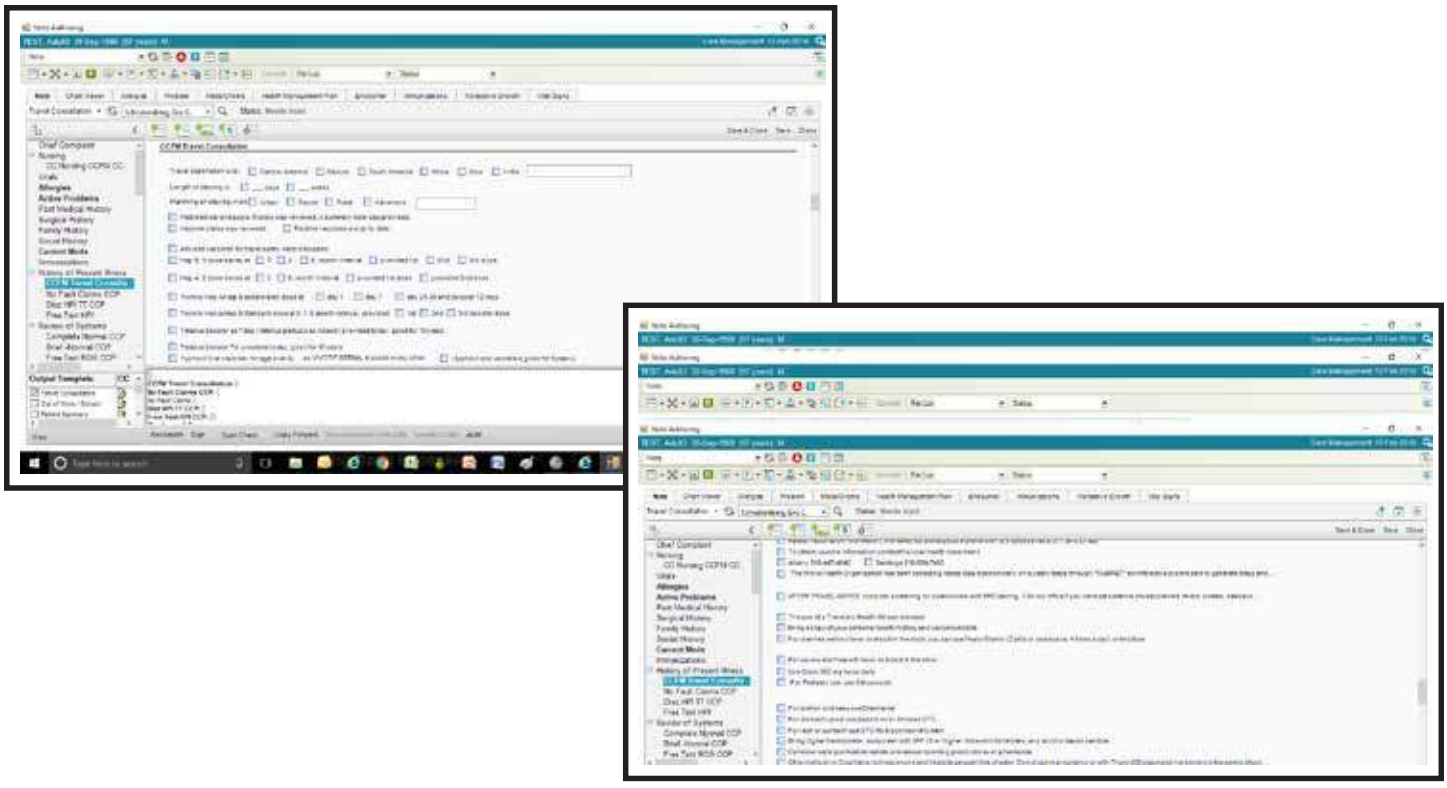
When there is a pre-scheduled visit I usually have time to prepare. Frequently however, I hear "Oh by the way I'm traveling to India and my kids are coming along." In that case I need to quickly figure out adult and pediatric medication needs and provide vaccine advice.

Over the years I've had to develop a response to travel medicine requests incorporating the nuances of malaria risks, traveling for the hajj, advising on acute mountain sickness for adventure seekers, rabies prevention advice, and providing counsel on simple things like management of UTI, traveler's diarrhea and jet lag.

With use of electronic records, EMR's, we should all be able to give rapid, quick and concise travel medicine advice. Most EMR's allow for template customization and /or fields for adding text templates. Even the most basic EMR will allow for simple copy and paste from a word document.

What follows is a sample travel template workflow. It starts with a simple medical summary sheet - the summarized, codified and customized patient problem list. The travel template includes the following work flows:

- Review and updating of standard vaccine and travel vaccine needs. Vaccine duration and follow-up schedules are included. For last minute travel requests, it includes an accelerated hepatitis A/B vaccine schedule.
- Review of malaria prophylaxis risks and advice on pediatric and adult dosing
- Advice for travel to the hajj
- Advice on AMS, acute mountain sickness
- Advice on rabies
- Advice on emerging travel pathogen's such as Dengue, chikungunya and tuberculosis
- Advice on a traveler's health kit
- After travel advice



continued on page 26

Travel Medicine Template

Travel destination is to:

( ) Central America, ( ) Mexico, ( ) South America, ( ) Africa, ( ) Asia, ( ) India ( ) free text

( ) Length of staying is xx days, xx weeks

( ) Planning on staying in an ( ) Urban trip area ( ) Resort trip area ( ) Rural trip area ( ) Adventure trip area

( ) A medical summary note was provided

( ) Vaccine status was reviewed

( ) Routine vaccines are up to date

( ) Travel vaccines were discussed

( ) Hep B- 3 dose series at 0 month, 2 month interval, 6 month interval; ( ) provided 1st dose ( ) provided 2nd dose ( ) provided 3rd dose

( ) Hep A- 2 dose series at 0 month interval, 6 month interval; ( ) provided 1st dose ( ) provided 2nd dose

( ) Twinrix Hep A/Hep B accelerated dose at day 1, day 7, day 21-30 and booster 12 months

( ) Twinrix Hep A/Hep B Standard dose at 0, 1, 6 month interval; ( ) provided 1st booster dose ( ) 2nd booster dose ( ) 3rd booster dose

( ) Tetanus booster as Tdap provided today, good for 10 years

( ) Typhoid oral vaccine is good for 5 years; ( ) Typhoid oral vaccine (for age over 6) provided today

( ) MMR (Measles, Mumps, Rubella) booster provided today

( ) IPV, polio booster provided today

( ) Influenza vaccine 0.5mg provided today

( ) Influenza pediatric vaccine 0.25mg was provided; ( ) second dose repeated in 4 week was advised

( ) Pneumonia vaccine provided today

( ) Menactra, meningoccal vaccine provided today

Malaria

( ) Malaria risk assessment and prevention strategies we discussed:

General advice for travelers to malaria-endemic areas and Zika, Dengue areas includes the use of personal protection measures. Use of insect repellent containing 30-35% DEET is very effective. Stay in well screened areas or air conditioned rooms. If needed, use of permethrin (Permanone RTU) sprayed bed nets is advised. Use of pyrethroid containing flying insect spray in living and sleeping areas during the evenings is advised. The CDC recommends avoiding travel to malaria endemic regions during pregnancy. If travel during pregnancy is necessary, the CDC advises use of chloroquine (or mefloquine in areas with chloroquine resistance). Dengue mosquitoes bite during the day. Malaria mosquitoes bite during the night. TO PREVENT DENGUE, USE DEET DURING THE DAY. TO PREVENT MALARIA, USE DEET DURING THE NIGHT.

( ) Malaria prevention; the use of chemoprophylaxis is advised

( ) Chloroquine is advised for travel to ( ) Central America ( ) Caribbean ( ) Dominica Republic ( ) Haiti

( ) Traveling in Mexico - malaria risk is limited to rural areas infrequently visited by travelers that include areas along the Guatemala and Belize borders in the states of Chiapa, Quintana Roo, Tabasco and in selected areas and in selected areas in the States of Nayarit, Oaxaca and Sinaloa. No malaria risks exist along the United States - Mexico border. No malaria risk exists in the major Mexican resorts along the Pacific and Gulf coasts.

( ) Chloroquine is taken once weekly, starting 2 weeks before travel, continued weekly during travel and continued for 4 weeks after travel. Chloroquine is well tolerated. For the few people who develop uncomfortable side effects, try taking it with meals or in divided twice weekly doses. The dose of chloroquine is once a week with the first dose of chloroquine 2 weeks before arrival in the malaria-risk area.

( ) Chloroquine adult dose 500 mg was provided

( ) Chloroquine pediatric dose 5mg/kg as the base

- ( ) for 11-20kg, 75 mg was provided
- ( ) for 20-30kg, 125 mg was provided
- ( ) for 30-40kg, 175 mg was provided

( ) For travel to chloroquine resistant areas- ( ) Panama's Darien and San Blas Province ( ) Northern South America ( ) Sub-Saharan Africa ( ) Pakistan ( ) India ( )The hajj, the use of Malarone is advised. Malarone is taken 2 days before travel, daily during travel and for 7 days after travel. Malarone should not be used for at least 10 days after last dose or oral typhoid vaccine.

( ) Malarone adult dose, 250 was provided

( ) Malarone, pediatric dose, as pediatric tabs was advised

- ( ) For 11-20kg, 62.5/25mg or one pediatric tab was provided
- ( ) For 21-30kg, 125/50mg or 2 pediatric tabs were provided
- ( ) For 31-40kg, 187.5/75mg or 3 pediatric tabs were provided

( ) Alternative medications for chloroquine resistance-

( ) Doxycycline 100 mg daily, starting 2 days before, during, and for 4 weeks after travel

( ) Larium (mefloquine) 250 mg, taken once weekly starting one week before, during and for 4 weeks after travel. Take Larium at least 3 days from the last dose or oral typhoid vaccine

The Hajj

( ) For travel to the hajj, proof of meningitis vaccine is required, not more than 3 years or less than 10 days before travel. Proof of polio vaccine is required. Visas cannot be issued without proof of meningococcal vaccination for all adults and children over 2 yrs. Children between 3 months and 2 years must show proof of vaccination with 2 doses of meningococcal vaccine with a 3 month interval between doses.

( ) Menstruation special concerns- women are not permitted to perform the tawaf around the Ka'aba stone if they are menstruating. If this is a concern consider hormonal suppression of menstrual bleeding.

Yellow Fever

( ) Yellow fever vaccine is not required for travel

( ) Yellow fever vaccination; yellow fever vaccination is required for travel to Sub-Saharan Africa, French Guiana, Tropical South America, and is advised for travel to Panama. To obtain an 'International Certificate of Vaccination Prophylaxis' (ICVP) for yellow fever or a waiver of exemption due to egg allergy, history of thymus disease or age over 60, you are advised to call your local DOH.

Acute Mountain Sickness (AMS)

( ) AMS, prevention:

We advise the use of Diamox 250mg, take one every 12 hours starting on the day of ascent and continuing for 3-5 days. This drug is a diuretic and you will urinate more so be sure to maintain extra fluid intake.

( ) Consider off label use of Viagra (sildafenil) 20 mg daily while at altitude for additional AMS prevention

( ) AMS emergency rescue- Consider dexamethasone 4 mg, three times a day and you must descend to lower altitude. The symptoms of AMS include headache, nausea, dizziness, loss of appetite, shortness of breath, disturbed sleep, and general feelings of malaise.

Rabies

( ) Rabies information for travelers:

Description: Rabies is an acute, progressive fatal brain infection, encephalomyelitis, caused by neurotropic viruses in the family Rhabdovirdae, genus Lyssavirus. The disease is almost always transmitted by an animal bite that inoculates the virus in wounds. Very rarely, rabies has been transmitted by exposures other than bites that introduce the virus into open wounds or mucous membranes, such as inhalation of infected dust and debris.

Risk for travelers: Rabies vaccination is not a requirement for entry into any country. However, travelers to rabies-endemic countries should be warned about the risks of acquiring rabies and educated in animal bite prevention strategies. Travelers with extensive unprotected outdoor exposure which might be experienced while bicycling, camping, hiking or engaging in certain occupational activities, could be at higher risk even if their trip is brief. Also, children are considered higher risk because of their tendency to play with animals and to not report bites. Casual exposure to cave air is not a concern, but cavers should be warned not to handle bats.

Rabies vaccination information: The rabies vaccine dose for pre-exposure prevention is a 3 dose series at 0, 7, and 21 days. To obtain vaccine information, contact the local health department, DOH.

Travelers Health Kit

( ) The use of a traveler's health kit was advised: Bring a copy of your personal health history and vaccine records.

For diarrhea with no fever or blood in the stool, you can use Pepto-Bismol (2 pills, 4 times a day) or Imodium.

For severe diarrhea with fever or blood in the stool:

( ) Use Cipro 500 mg twice daily

( ) For pediatric use, use Azithromycin 250 mg, 2 doses day one, one dose days 2-4

For motion sickness use Dramamine. For stomach upset use Pepcid AC or Prilosec OTC. For rash or sunburn use OTC hydrocortisone cream 1%. Bring digital thermometer, sunscreen with SPF 15 or higher, mole skin for blisters, alcohol based hand sanitizers.

Consider water purification tablets available at sporting goods stores or pharmacies. Chlorine/iodine (Coghlan's) is inexpensive and treats large quantities of water. Do not use in pregnancy or with thyroid disease and not beyond a few weeks of use. It kills bacteria, viruses, protozoa (not cryptosporidium) and parasites. Chlorine dioxide (Katadyn) is more expensive, kills the same as chlorine/iodine but also treats cryptosporidium only after 4 hours of water treatment. It has good palatability.

For sleep problems, avoid use of alcohol:

( ) Consider Tylenol PM

( ) An Rx for Ambien (zolpidem) ( ) 5mg ( ) 10mg at bedtime as needed was provided

After Travel

( ) After Travel Advice: consider screening for tuberculosis with PPD testing. Call our office if you have persistence of unexplained fevers, sweats, headaches, diarrhea, fatigue or rashes.

Keeping your patients safe during the travel experience is something we should all be able to do well. Consider adding a pre-planned travel medicine template to your armamentarium.

Most importantly, in a busy office, using a travel medicine template will help keep you on time during your 15 minutes of fame.

A copy of Dr. Schnakenberg's travel template is available for your use at www.nysafp.org

---

Eric Schnakenberg, MD *is a family physician and managing partner for Community Care Family Medicine, a nationally recognized advanced medical home. He was a member of the initial participating groups involved in the Institute for Health Care Improvement's Idealized Design of the Clinical Office Practice (IHI-IDCOP) initiative, a 3 year study group dedicated to the redesigning of the clinical office practice. He remains active in the use of IT applications for the clinical office practice and speaks often on office redesign.*

Travel During Pregnancy

By Laura Parente, MD; Chen Wang, MD; Maria Gervits, MD; Amrita Seehra, MD; and Rebecca Williams, MD, MHPE, FAAFP

Overview

Family physicians provide pretravel consultation. With the recent Zika epidemic, there is heightened awareness regarding the critical function of the family physician in providing travel advice for the pregnant traveler. Depending on travel destination and modality, the pregnant traveler may be exposed to infectious disease, venous thromboembolism, and challenges in accessing emergency care. Pretravel consultation should take into consideration all planned destinations, the length of travel, precautionary measures, food and water hygiene, vaccinations, and indication for chemoprophylaxis. In this paper, we present practical advice for travel preparation that can make travel during pregnancy safer for our patients.

Introduction

Pretravel consultation is largely underutilized by patients. In an airport survey administered to international travelers departing from John F. Kennedy Airport in New York, only 36% of all travelers sought travel health advice despite more than half having prepared for their journeys at least one month in advance.[1] In 2016, the United States (U.S.) Department of Commerce reports over 35 million overseas travelers; of those travelers, 51% were female travelers.[2] An analysis of data from U.S. travel clinics over a 5-year span demonstrated that approximately 33% of the 63,321 travelers who visited these travel clinics were of reproductive age.[3] Of those women, approximately 2% were either pregnant or breastfeeding. Pregnant persons are particularly susceptible to, and experience increased severity of, certain infectious diseases, and some infectious diseases, such as Zika virus and malaria, may result in adverse pregnancy outcomes. Additionally, safety concerns regarding live vaccines and certain antimicrobials may affect pretravel recommendations, resulting in the underutilization of destination-specific preventative interventions.

Assessment

Pretravel consultation (Table 1) should ideally take place between 4-6 weeks before departure in order to maximize the benefit of immunization and preventive measures. During this consultation, the provider should gather information regarding dates and locations of travel, anticipated itinerary with planned activities, and the mode of and reason for travel. They should also review the patient's medical history, social history, and immunizations in order to identify potential areas for focused counseling and risk reduction. Patients traveling for prolonged periods of time or traveling to visit friends and family are at increased risk for travel-related illnesses.[4] The risk is higher since these travelers more frequently eat local or home-cooked food, might take less precautions with preventing insect bites, and usually do not seek preventative advice from a physician prior to departure. For the pregnant traveler, a review of the prenatal history should be obtained as well. Pregnant travelers should also identify hospitals at their travel destinations in case emergent medical and/or obstetric care is needed. The CDC Travelers' Health webpage (https://wwwnc.cdc.gov/travel) is an easy-to-use resource to help identify destination-specific considerations.

Air Travel

Family physicians are often asked for advice on the safety of air travel during pregnancy because of the physiologic changes in pregnancy and because of the possibility of obstetrical emergencies during flight. Occasional air travel during pregnancy is generally safe.[5]

Airline cabins are pressurized to air pressure equivalent to 6000 to 8000 feet above sea level. This causes a decreased partial pressure of oxygen and can decrease oxygen saturation compared to sea level.[6] For most pregnant people, this will not cause fetal harm since fetal hemoglobin has a higher binding affinity for oxygen, and oxygen saturation in fetal circulation is lower than maternal circulation. However, people with severe anemia (hemoglobin less than 8.0 g/dL) or sickle cell disease may experience effects of low arterial oxygen saturation.

Cabin pressure and altitude can exacerbate discomforts of pregnancy without clear evidence of increasing complications for pregnant passengers. Nausea and vomiting of pregnancy can be accentuated by motion sickness. Diphenhydramine and meclizine are both Category B, and can be prescribed prior to flying. Behavioral or complementary therapies, such as staring at fixed points or resting with eyes closed (SOR C) may also be beneficial. Cabin humidity is typically less than 20% and can cause drying of mucous membranes and slightly increased insensible losses, but not enough to cause dehydration.[7] Travelers, pregnant or not, can use nasal saline sprays and increase fluid intake during flight to combat these discomforts.

Ionizing radiation, which has been shown to cause tissue damage, occurs in very small amounts during air travel. The National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection recommend a maximum radiation exposure limit of 1 milisievert (mSv) over the course of a pregnancy.[8] Most leisure travelers will not exceed this limit. Radiation exposure over a 10-hour flight is equivalent to 0.05 mSv.[9] For comparison, radiation exposure from one chest x-ray is equivalent to 0.1mSv.[10] Millimeter wave body scanners at airport security screening use radio waves, which is a form of non-ionizing radiation.[11] Except in rare large-dose occupational exposures, non-ionizing radiation has not been proven to be harmful to human tissue.

Among non-pregnant travelers, the rate of symptomatic venous thromboembolism (VTE) is 1 in 4600 flights in the month after a prolonged flight of 4 hours duration or more.[12] Pregnancy is considered an additional risk for VTE. Data specifically about travel-related DVTs in pregnancy is scant. The American College of Chest Physicians recommends simple, low-risk modifications for flights 4 hours for travelers with increased risk of DVT, including pregnant people: aisle seating to facilitate movement, frequent ambulation, in-seat calf exercises, and compression stockings. The benefit of pharmacologic prophylaxis including aspirin or low molecular weight heparin is unclear. American College of Chest Physicians recommends against aspirin for travelers at increased risk for VTE. Low molecular weight heparin for people who are pregnant and have additional risk factors for VTE (such as history of DVT, known thrombophilia) can be considered on an individual basis according to British Royal College of Obstetrician Gynecologists.[13] ACOG makes no recommendation regarding the use of pharmacologic anticoagulation for air travel.

Airlines restrict travel in pregnancy because they wish to avoid onboard obstetrical emergencies which may endanger the passenger and require emergency landing or rerouting of the flight. Most commercial airlines do not restrict travel prior to 36 weeks gestation. After 36 weeks, most airlines require a letter from the traveler's prenatal provider documenting an examination within three days of travel and confirming that the passenger is fit to travel. Travelers should check with their airlines for specific requirements. People with multiple gestation pregnancy should not fly after 32 weeks gestation due to the increased risk of preterm birth.[13]

Preventive Measures

Interventions commonly discussed during pretravel consultation, such as food and water precautions or protection against insect bites, will decrease the risk of many infectious illnesses in people who must travel during pregnancy. Please refer to Table 2 for disease specific recommendations.

For insect-borne illnesses such as malaria, Zika and yellow fever, the primary method of protection and prevention is insect avoidance. Using bed nets treated with insect repellant or permethrin, wearing protective clothing, applying insect repellent to exposed skin, and avoiding time outdoors are ways to effectively avoid insect bites. DEET, a common insect repellent, is effective in repelling insects and there is no clear evidence that appropriately applied DEET is dangerous in pregnancy.[14] The duration of protection is related to the concentration of DEET. Products with concentration of 20-30% are recommended, which will provide protection for 5 to 6 hours.

Contaminated food and water are a common route of transmission for enteric pathogens. Foods that should be avoided include unpasteurized milk and milk products, salads / salad bars, uncooked produce, and undercooked meats. Adequately chlorinated water is generally free of pathogens. However, when chlorinated water is not available, safe drinks may be limited to drinks made with boiling water (tea or coffee) or bottled beverages. Care should be taken to avoid ice or ice-containing drinks, as well as tap water.

Certain sexually transmitted pathogens may be prevented with barrier methods, such as condoms. These pathogens include HIV, Hepatitis B, Hepatitis C, and Zika virus. For patients who travel to Zika-prevalent areas or whose partner travels to those areas, caution should be taken to use barrier methods throughout the duration of the pregnancy.

Immunizations

All travelers should be up to date with their immunizations as per the recommendations listed by the Advisory Committee on Immunization Practices (ACIP) and Centers for Disease Control (CDC). In general, inactivated vaccines are considered safe. Live-attenuated vaccines are avoided during pregnancy due to the theoretical risk of perinatal infections that could result in congenital disease, e.g. varicella and rubella infections. Regardless of travel, pregnant people should receive the influenza, Tdap, and Hepatitis B vaccinations per ACIP and CDC recommendations. Hepatitis A is one of the most common vaccine-preventable illnesses in international travelers and the vaccine should be offered to pregnant travelers who are at risk.[14,15]

Several travel-specific vaccinations are available, most commonly for typhoid fever and yellow fever.

Yellow fever is a mosquito-borne disease endemic to tropical areas in South America and sub-Saharan Africa. The live attenuated yellow fever vaccine is recommended for individuals traveling to endemic areas in South America and sub-Saharan Africa. Despite the general contraindication to live attenuated vaccines during pregnancy, the yellow fever vaccine is the exception to the rule. The Centers for Disease Control recommends yellow fever vaccine during pregnancy if travel to endemic area is unavoidable and the risk of infection is high (location, season, and activities planned).[14,15] For people who receive their initial dose of yellow fever vaccine during pregnancy, it is recommended they receive one additional dose of the vaccine before the next travel that puts them at risk for yellow fever. If not pregnant at time of vaccination, the ACIP recommends avoiding conception for 4 weeks after vaccination.

continued on page 30

Typhoid fever is a life-threatening illness most commonly contracted during international travel. At present, there are two vaccines available against *Salmonella typhi*, the pathogen responsible for typhoid fever. There is an oral live attenuated vaccine (Vivotif) and the Vi capsular polysaccharide vaccine (Typhim Vi) for intramuscular use available in the United States. Presently, there is no available data on the safety of these vaccines during pregnancy. However, the benefits of vaccinating pregnant woman may outweigh the potential risks when potential for typhoid exposure is high. In those situations, the inactivated Vi capsular polysaccharide vaccine may be considered.[16]

For pregnant travelers who cannot postpone and must travel to areas where meningococcal disease is hyperendemic or endemic (such as countries within the African "meningitis belt" or during the hajj), vaccination is recommended. In the U.S., there are two meningococcal vaccinations available, the tetravalent meningococcal polysaccharide vaccine (MPSV4; Menomune) and the tetravalent meningococcal conjugate vaccine (MenACWY, sometimes abbreviated as MCV4; Menactra or Menveo). Both vaccinations are inactivated products and theoretically should not be associated with adverse pregnancy outcomes. Per the CDC's *Guidelines for Vaccinating Pregnant Women*, pregnancy should not preclude vaccination with either vaccine if indicated.[17]

Malaria Prophylaxis

Malaria is associated with increased risk of morbidity to mother and unborn child. The mainstay of prevention continues to be avoidance of insect bites. Antimalarial prophylaxis is recommended. Chloroquine is considered safe throughout pregnancy, and mefloquine is considered safe in the second and third trimesters.[18] There is presently insufficient information known about safety of atovaquone/proguanil in pregnancy. Proguanil is a folate antagonist. If atovaquone/proguanil is needed, high dose folic acid (5g) is recommended for pregnancy. Doxycycline is contraindicated due to side effects of altered bone growth and dental staining for the developing fetus. Primaquine is contraindicated in pregnancy since it will precipitate hemolysis in G6PD-deficient fetuses. An updated summary of countries where malaria is endemic and prophylaxis recommendations is available from the CDC website.

Acute Diarrheal Illness / Traveler's Diarrhea

Traveler's diarrhea is the most common travel-related illness reported. Preventative actions include hand hygiene with water and food safety measures. The treatment of choice is prompt and vigorous oral rehydration with an oral rehydration solution. Prophylactic antibiotics are not routinely recommended,[19] however, pregnant people with acute diarrheal illness are particularly susceptible to dehydration. Therefore, it is reasonable to provide a prescription for antibiotics to take if needed. A macrolide, such as azithromycin, is considered to be safe during pregnancy and lactation.

Table 1- Pretravel Consultation Checklist for Pregnant Travelers

Check for immunity to infectious diseases	- Update immunizations as needed per ACIP guidelines
Review policies and necessary paperwork	- Supplemental travel insurance, travel health insurance, and medical evacuation insurance - Check airline and cruise line policies for pregnant women - Letter from provider confirming due date and fitness to travel - Copy of medical records
Prepare for obstetric care at destination	- Check medical insurance coverage - Arrange for obstetric care at destination
Review signs and symptoms requiring immediate care	- Pelvic or abdominal pain - Bleeding - Rupture of membranes - Contractions or preterm labor - Symptoms of preeclampsia - Vomiting, diarrhea, dehydration - Symptoms of potential deep vein thrombosis or pulmonary embolism

Adapted from CDC – https://wwwnc.cdc.gov/travel/yellowbook/2018/advising-travelers-with-specific-needs/pregnant-travelers

Table 2. Common Travel Conditions and Prevention Recommendations

Mode of Transmission	Disease	Location	Recommendations
Insect bite	African Trypanosomiasis (African Sleeping Sickness)	Sub-Saharan Africa	Cover exposed skin Use insect repellant Stay in screened or air conditioned rooms Use bed net *For malaria, take antimalarial medications *For Yellow Fever, vaccinate if necessary *For Zika, use condoms if partner has traveled
	Chagas Disease (American Trypanosomiasis)	Mexico, Central & South America	
	Chikungunya	Africa, Asia, parts of Central & South America, islands in the Indian & Pacific oceans & the Caribbean	
	Dengue	Parts of the Caribbean & Pacific islands, Central & South America, Australia, Southeast Asia, Africa	
	Japanese Encephalitis	Asia	
	Malaria	Africa, Central & South America, parts of the Caribbean, Asia, Eastern Europe, the South Pacific	
	West Nile virus	Africa, Europe, the Middle East, west & central Asia, North America	
	Yellow Fever	Certain parts of South America & Africa	
	Zika – Also sexually transmitted	Mexico, Central & South America, Caribbean & Pacific islands, parts of Africa & Asia	
Animal bite	Rabies	Worldwide except Antarctica	Avoid animals Vaccinate only if high risk of exposure
Contaminated food/water	Cholera	Haiti, the Dominican Republic, parts of Africa & Asia	Avoid sick people Drink boiled/bottled/canned drinks Eat dry/packaged/well-cooked food Only ingest pasteurized dairy products Wash fruits/vegetables in clean water or peel yourself Wash hands often *For Hepatitis A, vaccine likely safe *For Typhoid Fever, can give Vi polysaccharide vaccine only if necessary *For Leptospirosis, avoid swallowing or other contact with flood waters, water from lakes/rivers/swamps, and soil that might be contaminated
	Hepatitis A	Worldwide except industrialized nations	
	Hepatitis E	South/Central Asia, tropical east Asia, Africa, Central America	
	Typhoid Fever	Worldwide except industrialized nations; more common in Asia, Africa, Latin America	
	Leptospirosis – Also in soil contaminated by animal urine	Worldwide, especially in flooded areas	
Contaminated freshwater	Schistosomiasis	Certain parts of Africa, South America, the Middle East, Asia, the Caribbean	Avoid contact with freshwater If unavoidable, filter or heat water prior to bathing
Blood/body fluids	HIV	Worldwide, but most common in Sub-Saharan Africa	Use condoms Avoid IV drug use, tattoos, piercings, acupuncture. If receiving medical/dental care, ensure equipment is disinfected/sanitized. *For Hepatitis B, vaccine is safe
	Hepatitis B	Worldwide, but more common in Asia, Africa, South America & the Caribbean	
	Hepatitis C	Worldwide, but more common in Asia & Africa	
Close contact with infected people	Meningococcal Disease (*Neisseria meningitidis*)	Worldwide, but most common in the "meningitis belt" of sub-Saharan Africa; those on Hajj pilgrimage to Saudi Arabia may also be at risk	Avoid sick people Wash hands often *For Memingococcal Disease, vaccine can be given if indicated *For Rubella, vaccine not recommended
	Rubella	Worldwide, except the US	
	Tuberculosis (TB)	Worldwide, but more common in sub-Saharan Africa, Asia, parts of Central & South America	

Reference: https://wwwnc.cdc.gov/travel/diseases Accessed 2/6/2018

continued on page 32

Table 3: Vaccine Recommendations During Pregnancy

	Vaccine	Type	Considerations
Safe	Tdap	Toxoid/Inactivated	Give during each pregnancy between 27-36 weeks to maximize passive antibody transfer
	Influenza	Inactivated	Can be given at any time during pregnancy
	Hepatitis B	Inactivated	High-risk for HBV infection and not immune
	Meningococcal	Inactivated	
	Rabies	Inactivated	
Contraindicated	bCG	Live	
	MMR		
	Varicella		
Special Circumstances	Yellow fever	Live	Give if high risk of infection
	Polio (IPV)	Inactivated	Only in high-risk
	Typhoid	Oral activated IM inactivated	Should use IM inactivated version in pregnancy
	Hepatitis A	Inactivated	
	Pneumococcal	Inactivated	Safety during 1st trimester of PPSV23 unknown No recommendations for PCV13
	Anthrax		Only recommended in post-event setting

Reference: https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/guidelines.html

Contraindications for Travel during Pregnancy

Travel is rarely contraindicated in pregnancy, however, medically complex pregnancies and certain obstetric complications may warrant recommendation for travel to be delayed. Risk of complications is highest during the first and third trimesters. Absolute contraindications include placental abruption, active labor, incompetent cervix, premature labor, premature rupture of membranes, suspected ectopic pregnancy, threatened abortion, and preeclampsia. Relative contraindications include abnormal presentation, fetal growth restriction, history of infertility, history of miscarriage or ectopic pregnancy, maternal age less than 15 years or greater than 35 years, multiple gestation, placenta previa or other placental abnormality.[20]

Endnotes

1 Hamer DH and Connor BA (2004), Travel Health Knowledge, Attitudes and Practices among United States Travelers. Journal of Travel Medicine, 11: 23–26.

2 U.S. Department of Commerce, International Trade Administration, National Travel and Tourism Office. 2016 Profile of United States resident travelers visiting overseas destinations (Outbound). Available at: https://travel.trade.gov/outreachpages/download_data_table/2016-Outbound-Profile.pdf (accessed February 19, 2018)

3 Hagmann SH, Rao SR, LaRocque RC, Erskine S, Jentes ES, Walker AT, Barnett ED, Chen LH, Hamer DH, Ryan ET (2017). Travel characteristics and pretravel health care among pregnant or breastfeeding US women preparing for international travel. Obstetrics & Gynecology, 130(6), 1357-1365.

4 Ericsson CD, Hatz C, Leder K, Tong S, Weld L, Kain KC, Wilder-Smith A, von Sonnenburg F, Black J, Brown GV, Torresi J. (2006). Illness in travelers visiting friends and relatives: a review of the GeoSentinel Surveillance Network. Clinical Infectious Diseases, 43(9), 1185-1193

5 ACOG Committee on Obstetric Practice. ACOG Committee Opinion No. 443. Air travel during pregnancy. Obstet Gynecol 2009;114:954–5

6 Centers for Disease Control and Prevention. (2017) CDC Yellow Book 2018: Health Information for International Travel. New York: Oxford University Press. Retrieved from https://wwwnc.cdc.gov/travel/yellowbook/2018/table-of-contents#58 (accessed February 19, 2018)

7 World Health Organization. International travel and health: Cabin humidity and dehydration. http://www.who.int/ith/mode_of_travel/chad/en/ (accessed February 4, 2018)

8 ACOG Committee on Obstetric Practice. ACOG Committee Opinion No. 443. Air travel during pregnancy. Obstet Gynecol 2009;114:954–5

9 Hezelgrave Natasha L, Whitty Christopher J M, Shennan Andrew H, Chappell Lucy C. Advising on travel during pregnancy BMJ 2011; 342:d2506

10 American College of Radiology. "Radiation Dose to Adults from Common Imaging Examinations". https://www.acr.org/-/media/ACR/Files/Radiology-Safety/Radiation-Safety/Dose-Reference-Card.pdf July 2017. Accessed February 4, 2018.

11 CDC Radiation from airport screening. Last updated December 7 ,2015. https://www.cdc.gov/nceh/radiation/airport_scan.htm (accessed February 4, 2018)

12 Kahn SR, Lim W, Dunn AS, et al. Prevention of VTE in Nonsurgical Patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012;141(2 Suppl):e195S-e226S. doi:10.1378/chest.11-2296

13 RCOG. Scientific impact paper no.1 Air travel and pregnancy. May 2013

14 CDC Guidelines for Vaccinating Pregnant Women: Yellow Fever. August 2016. https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html#yellowfev (accessed February 21, 2018)

15 Swamy GK, & Heine RP (2015). Vaccinations for pregnant women. Obstetrics and gynecology, 125(1), 212.

16 CDC Guidelines for Vaccinating Pregnant Women: Typhoid. August 2016. https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html#typhoid (accessed February 21, 2018)

17 CDC Guidelines for Vaccinating Pregnant Women: Meningococcal. August 2016. c.gov/vaccines/pregnancy/hcp/guidelines.html#mening-acwy (accessed February 21, 2018)

18 McGovern LM, Boyce TG, & Fischer PR. (2007). Congenital infections associated with international travel during pregnancy. Journal of travel medicine, 14(2), 117-128

19 Sanford C, McConnell A, Osborn J. The Pretravel Consultation. Am Fam Physician 2016 Oct 15; 94(8):620-627

20 Centers for Disease Control and Prevention. (2017) CDC Yellow Book 2018: Health Information for International Travel. New York: Oxford University Press. Retrieved from https://wwwnc.cdc.gov/travel/yellowbook/2018/table-of-contents#58 (accessed February 19, 2018)

References

ACOG Committee on Obstetric Practice. ACOG Committee Opinion No. 443. Air travel during pregnancy. Obstet Gynecol 2009;114:954–5.

American College of Radiology. "Radiation Dose to Adults from Common Imaging Examinations". https://www.acr.org/-/media/ACR/Files/Radiology-Safety/Radiation-Safety/Dose-Reference-Card.pdf July 2017. Accessed February 4, 2018.

Centers for Disease Control and Prevention. (2017) CDC Yellow Book 2018: Health Information for International Travel. New York: Oxford University Press. Retrieved from https://wwwnc.cdc.gov/travel/yellowbook/2018/table-of-contents#58 (accessed February 19, 2018)

CDC Radiation from airport screening. Last updated December 7 ,2015. https://www.cdc.gov/nceh/radiation/airport_scan.htm Accessed February 4, 2018.

CDC Guidelines for Vaccinating Pregnant Women. Meningococcal. August 2016. https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html#mening-acwy (accessed February 21, 2018)

CDC Guidelines for Vaccinating Pregnant Women: Yellow Fever. August 2016. https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html#yellowfev (accessed February 21, 2018)

CDC Guidelines for Vaccinating Pregnant Women: Typhoid. August 2016. https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html#typhoid (accessed February 21, 2018)

Ericsson CD, Hatz C, Leder K, Tong S, Weld L, Kain KC, Wilder-Smith A, von Sonnenburg F, Black J, Brown GV, Torresi J. (2006). Illness in travelers visiting friends and relatives: a review of the GeoSentinel Surveillance Network. Clinical Infectious Diseases, 43(9), 1185-1193.

Hagmann SH, Rao SR, LaRocque RC, Erskine S, Jentes ES, Walker AT, Barnett ED, Chen LH, Hamer DH, Ryan ET (2017). Travel characteristics and pretravel health care among pregnant or breastfeeding US women preparing for international travel. Obstetrics & Gynecology, 130(6), 1357-1365.

Hamer DH and Connor BA (2004), Travel Health Knowledge, Attitudes and Practices among United States Travelers. Journal of Travel Medicine, 11: 23–26.

Hezelgrave Natasha L, Whitty Christopher J M, Shennan Andrew H, Chappell Lucy C. Advising on travel during pregnancy BMJ 2011; 342:d2506

Kahn SR, Lim W, Dunn AS, et al. Prevention of VTE in Nonsurgical Patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012;141(2 Suppl):e195S-e226S. doi:10.1378/chest.11-2296. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3278052/

McGovern LM, Boyce TG, & Fischer PR. (2007). Congenital infections associated with international travel during pregnancy. Journal of travel medicine, 14(2), 117-128.

RCOG. Scientific impact paper no.1 Air travel and pregnancy. May 2013.

Sanford C, McConnell A, Osborn J. The Pretravel Consultation. Am Fam Physician 2016 Oct 15; 94(8):620-627.

Swamy GK, & Heine RP (2015). Vaccinations for pregnant women. Obstetrics and gynecology,125(1), 212.

Sur, D. K., Wallis, D. H., & O'Connell, T. X. (2003). Vaccinations in pregnancy. Am Fam Physician, 68(2), 299-304.

U.S. Department of Commerce, International Trade Administration, National Travel and Tourism Office. 2016 Profile of United States resident travelers visiting overseas destinations (Outbound). Available at: https://travel.trade.gov/outreachpages/download_data_table/2016-Outbound-Profile.pdf (accessed February 19, 2018)

World Health Organization. International travel and health: Cabin humidity and dehydration. http://www.who.int/ith/mode_of_travel/chad/en/ (accessed February 4, 2018)

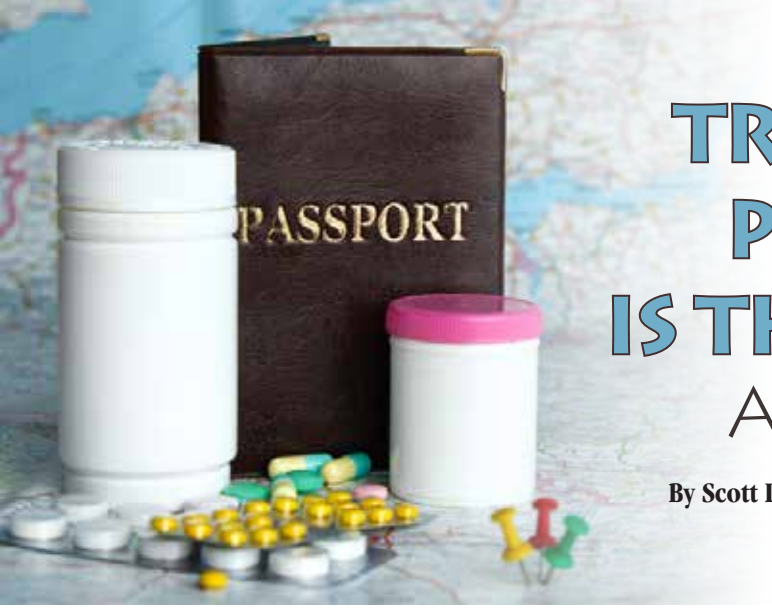
Laura Parente, MD, *is a faculty member in the Department of Family and Social Medicine at Montefiore Medical Center / Albert Einstein College of Medicine in Bronx, NY. She practices full spectrum outpatient primary care at a FQHC in the Bronx. Her practice area of interest is in maternal-child health.*

Chen Wang, MD, *is a maternity care fellow at the Department of Family and Social Medicine at Montefiore Medical Center/Albert Einstein College of Medicine in the Bronx, NY, where she also completed a family medicine residency.*

Maria Gervits, MD, *went to medical school at Albert Einstein College of Medicine and completed her family medicine residency and maternity care fellowship at the Montefiore Medical Center Residency Program in Social Medicine, where she now works as a faculty member. She works with residents on the labor floor doing vaginal deliveries and practices full spectrum outpatient primary care at a FQHC in the Bronx.*

Amrita Seebra, MD, *is a resident in Family and Preventive Medicine in the Department of Family and Social Medicine at Montefiore Medical Center/Albert Einstein College of Medicine. She is completing an MPH at the City University of New York School of Public Health and has special interests in full-spectrum reproductive health and justice, and advocacy for a single payer health system.*

Rebecca Williams, MD, MHPE, FAAFP*, is Assistant Professor, Albert Einstein College of Medicine and Director of Maternity Services for the Department of Family and Social Medicine at Montefiore Medical Center. She teaches and supervises Family Medicine and Obstetrical residents at Wakefield Hospital, Bronx, New York.*



TRAVEL MEDICINE IN PRIVATE PRACTICE – IS THIS RIGHT FOR ME?

A PROVIDER'S OPINION

By Scott L. Gross, MD, FAAFP and Tochi Iroku-Malize, MD, MPH, MBA, FAAFP

INTRODUCTION

Practicing travel medicine in a private practice setting can be a relatively simple undertaking, should not require a tremendous amount of research, and can be a rewarding and profitable experience.

What is travel medicine? Basically it encompasses counseling those of your patients who are contemplating travel anywhere around the globe and then providing appropriate immunization and preventative prescriptions for their travel. This information is readily available to all family physicians and can be gleaned from a few choice sources. The educational process may seem intimidating at first, but once you begin to research the necessary information, you will find that the knowledge base required is relatively limited and once absorbed, is quickly refreshed and can be easily accessed on the fly.

Practicing travel medicine is an obvious and logical extension of family medicine. Your patients and their families come to you for comprehensive medical care, bringing their children and spouses. It is only logical that they would mention their travel at a routine visit and may not even know that they need to take special precautions if they are planning an exotic trip. This is the perfect opportunity to educate them before they get sick. They might seek you out for advice for their trip, or their travel agent may suggest the need for travel vaccines. Rather than referring them to another colleague, or to a travel clinic, wouldn't it be nice to be able to offer the care in your office? Likewise, patients may have to make multiple trips to other physicians if they go to a clinician who does not see children and the entire family is traveling together. Treating the entire family before a trip can be quite satisfying, and your patients will certainly appreciate the advice and the convenience of a single trip to your office. Additionally, from a public health standpoint, a travel visit can be the perfect opportunity to check on the status of your patient's other immunizations. Perhaps they are due for routine immunizations. Again, you can accomplish this in the same setting.

OVERVIEW OF PROCESS

In my own experience, the first time I even considered adding travel medicine to my practice was 15 years ago. I had a long standing patient who was up to date on all of her routine immunizations and was planning a trip to Kenya. She was informed by her travel agent that she would need a yellow fever vaccine. She asked if I would be able to order a yellow fever vaccine for her. I told her I would look into it and read up a little about yellow fever vaccination. I recalled having seen yellow fever vaccine as an option when I had previously ordered vaccines on-line from my vaccine distributor; so I thought "why not?" I contacted the manufacturer to place an order only to find that yellow fever vaccines could only be purchased by CDC authorized yellow fever clinics. Well, that did not sit very well with me. After all, I am a board certified family physician. I should be able to treat anything! So I contacted the CDC to find out what was required. I was told that the CDC defers the decision of who can administer travel vaccines to the individual state departments of health. After contacting my department of health I requested an application, and began to look into what this process would entail.

I researched the risks and benefits. I read about the absolute and relative contraindications. I familiarized myself with the usual, as well as the rare side effects and ordered my first dose. I administered that dose shortly thereafter and was on my way to starting a travel medicine practice within my private family medical practice.

What became readily apparent however, was that most of the destinations which recommended or required a yellow fever vaccine also carried recommendations for other travel shots. I realized if I wanted to practice ethical and competent medicine, I needed to delve a little further into the other travel related diseases. I discovered that there were basically 10 different diseases I would need to brush up on if I was going to do my patients justice. The ten most common diseases which require discussion for travel are listed in Table 1 below.

Table 1
Travel Related Diseases

Cholera	Meningitis
Hepatitis A	Polio
Hepatitis B	Rabies
Japanese Encephalitis	Typhoid
Malaria	Yellow Fever

A recent issue with yellow fever vaccine has emerged. The company which manufactures yellow fever vaccine in the U.S., Sanofi Pasteur, has had recent production difficulties as a result of building a new factory, and not producing enough vaccine to hold them through the transition. Hence, there has been a shortage of YF-Vax in the USA since mid-2017. This shortage is expected to continue until mid-2018. In the interim, the FDA has permitted a few select sites to administer Stamaril, another Sanofi Pasteur yellow fever vaccine, licensed in France, under an investigational new drug (IND) program.

I have found that it is helpful to become familiar with some common travel tips based on the region of travel. Some of these include tips on food hygiene, potential need for water purification or drinking bottled water, effective insect repellent, and personal and financial safety tips while traveling. It is helpful in addition to review any outstanding routine vaccinations which may be needed. In addition, in the current environment, tips on prevention of sexually transmitted disease is important, as well as prevention of infecting others upon return from diseases such as Zika virus.

It is also helpful to become familiar with some of the common infectious diseases which may be contracted while abroad. In particular, travelers' diarrhea is among the most common diseases you can expect to treat. It helps to be current on the various etiologies of this disease such as bacterial, viral, and parasitic organisms.

The CDC's website is an excellent source for starting to familiarize yourself with the above diseases. The starting point for the online CDC website is: https://wwwnc.cdc.gov/travel. From there you can navigate to a virtual smorgasbord of references. There is a link to the CDC Health Information for International Travel (commonly called the Yellow Book). The CDC Yellow Book is a comprehensive listing of the multitude of infectious diseases worldwide and this publication is updated every two years. The Yellow Book contains recommendations for health professionals, disease updates, pre-travel health guidelines, and health specific advice.

The CDC website offers a link to their 'Clinician Resources' page. From this page navigate to continuing education courses through the 'Training and Continuing Education' website and log on as a new or an established user. Here you can register for a variety of continuing medical education courses, select download sites for satellite broadcasts, complete course evaluations and accumulate a transcript of continuing medical educational credits.

From the Clinician Resources page you can also find links to a yellow fever vaccination course. There are links to a variety of video presentations for health professionals on a wide range of travel related topics. There is also a link to the CDC page for 'Travel Medicine References' where you can find a clickable bibliography with links to general journal articles, professional travel medicine journals, reference books, and travel related websites (each of which offers specific articles from travel, vaccine, international and governmental websites).

Once armed with this knowledge, the next step was how to implement and then market this service. I must admit that my initial intent was not to start a travel medicine practice. It was just to treat my practice patients when they chose to travel. I purchased the necessary vaccines in small amounts on an as needed basis. As destinations came up I would research them more closely. The CDC destination page, at first, became quickly invaluable. I found short concise lists of recommended vaccines based on the location of travel in the particular country in question. I became familiar with the popular destinations within those countries to make my history taking more efficient. Having a computer in each exam room for EMR made this very easy. I would save a link to the destination page on each PC, and within seconds could review the recommendations with my patients.

I also developed a travel visit template for my EMR. I configured "fill ins" for the destination of travel, configured "drop downs" for the duration of travel and time of departure. I configured "radio buttons" for the type of travel (i.e. city, rural, suburban or jungle). I configured "yes/no" options for previous travel vaccinations, as well as common travel vaccine and medication questions such as: allergies to medications or vaccines, presence of immunodeficiencies or taking of chemotherapy agents, history of psychiatric diseases or thymectomy, possibility of pregnancy, etc. I configured "drop downs" for the four most common antimalarial medications.

The next step occurred without much effort. Once my name was listed on the CDC site of authorized yellow fever sites, I began to see a slow but steady increase in new patients requesting yellow fever vaccination. It turned out that there was only one other office nearby which offered travel vaccinations. Once in my office, I would review the other recommended vaccines or needed medications. After a while, like most competent practitioners find, satisfied travel patients began referring their friends and the travel portion of my practice began to grow. I started purchasing travel vaccines in larger amounts so I always had adequate stock of the most common vaccines. I gave a few lectures in the community, both to physicians on travel medicine topics via grand rounds and to community groups on vaccine information in general. Within time I had developed a significant travel medicine practice. Once aware of my interest and services, my colleagues began to refer their patients to me for travel medicine and I would refer them back to their primary physicians following their travel. It certainly did not take over my general family medicine practice by any means, but now I find I have at least 2-5 new travel patients scheduled per week. I do not do any specific advertising, but if I did, I am sure I could grow this portion of my practice to an even greater level.

continued on page 36

FINANCIAL CAVEATS

Some words of caution regarding the financial aspects of offering travel vaccinations are in order. First, although many of the vaccines that are commonly given to US residents are covered by insurance, be aware that many travel vaccinations are not. Those vaccines which we do not routinely give in the United States are often not covered. Patients and/or provider offices should check with insurance carriers before administration. The other option is to request payment at the time of service for all of those vaccines whose coverage is in question, then to refund payments to the patient if the vaccine is covered. It is always a good policy to have office staff clearly explain the financial aspects of this care at the time the patient schedules an appointment, including what payment options are available (i.e., cash, check, credit card, if available).

The second warning is that most of the more exotic vaccines are non-returnable to the manufacturer for expiration. So, providers may want to be conservative in the amount of vaccines kept on hand at any one time. Personally, I have found it most practical to stock all of the common routine and travel vaccines except for rabies and Japanese encephalitis. I find I do not give out many of these two specifically, and since they each require multiple doses, the risk of getting stuck with an unused dose is too high. For these two specific vaccines I explain to my patients that I need to special order them, and I have them leave a deposit in advance for the cost of the vaccine. Most patients are very understanding about this and it has not become a problem.

SUMMARY

Overall, my perception of the process has been positive. I have found the learning curve to be relatively shallow and the educational process has been quite enjoyable. There is a certain level of satisfaction in expanding one's knowledge base, especially into unique areas. There is certainly a knowledge gap in the lay community as well as in the medical community, and perhaps and an even more concerning level of illiteracy in the travel industry. Many travel agents and/or travel companies are fearful of discouraging potential travelers from booking vacations by providing complete traveler medical information. Likewise there can be fears of liability if they offer medical advice. Many just post a disclosure to consult with a medical professional prior to travel, while others only list whether any vaccines are required by law for entry or visa applications. The latter excludes all vaccine and medication prophylaxis other than yellow fever, since that is the only vaccine which is "required" (all others are only "recommended"). When my patients happen to mention in passing that they are planning a vacation, or traveling on business, it often comes as a shock to them when I question them about their vaccination status. This can lead to a detailed travel discussion and many times follow up appointments for their family members or traveling partners.

Given the degree of interconnectivity of world populations in this time of rapid communication, internet connectivity, increased trade and worldwide commerce, we can only expect to see increasing numbers of international travelers. With the increase in social media, video sharing, posting of vacation photos, and the like, more and more travelers are choosing remote and exotic destinations for vacation. And religious, social responsibility, community service and advocacy groups are traveling more often to expand their scope of assistance. These will all most assuredly increase the need for adequately informed and trained medical professionals to provide the required counseling and medical care for this expanding collective.

Practicing travel medicine in a private practice setting can be a rewarding and profitable experience. After a modest amount of research, re-learning some material from medical school, becoming familiar with the most commonly preventable diseases, obtaining certification for administering yellow fever vaccination, and ordering small amounts of the appropriate vaccines, you can be well on your way to assuring your patients have healthy, safe and enjoyable journeys.

References

Am Fam Physician. 1998 Aug; 58(2):383-98, 401-2. Travel medicine: helping patients prepare for trips abroad. Dick L.

Medical Considerations before International Travel David O. Freedman, M.D., Lin H. Chen, M.D., and Phyllis E. Kozarsky, M.D. N Engl J Med 2016; 375:247-260 July 21, 2016 DOI: 10.1056/NEJMra1508815

Aw B, Boraston S, Botten D, et al. Travel medicine: What's involved? When to refer? Canadian Family Physician. 2014; 60(12):1091-1103.

Prim Care. 2011 Dec; 38(4):643-79, viii. DOI: 10.1016/j.pop.2011.07.005. Immunization in travel medicine. Shepherd SM1, Shoff WH.

Am Fam Physician. 2009 Sep 15; 80(6):583-90.The pretravel consultation. Bazemore AW1, Huntington M.

Travel medicine: Part 1–The basics Kazuhiro Kamata et al 4 April 2017 Journal of General & Family Medicine

CDC Website: https://wwwnc.cdc.gov/travel

Scott L. Gross, MD, FAAFP *is board certified in family medicine and has been practicing in the community for thirty years, after receiving his medical degree from Stony Brook University School of Medicine and completing his residency in family medicine at Southside Hospital. He serves as Chair of Family Medicine at Huntington Hospital, Northwell Health and is an Assistant Professor of Family Medicine at the Zucker School of Medicine at Hofstra/Northwell. He holds academic positions as Clinical Assistant Professor of Family Medicine and Orthopedics at SUNY Stony Brook School of Medicine and Clinical Assistant Professor of Family and Community Medicine at Albany Medical College. He is a member of the AAFP and NYSAFP, and has a particular interest in immunizations and travel medicine.*

Tochi Iroku-Malize, MD, MPH, MBA, FAAFP *is board certified in family medicine as well as hospice and palliative medicine, receiving her medical degree from the University of Nigeria and completing her residency in family medicine at Southside Hospital. She earned her MPH in health policy and management from Columbia University's School of Public Health and an MBA from the University of Massachusetts. She has been an active member of the AAFP and NYSAFP, serving in a wide variety of leadership roles, including NYSAFP President in June of 2015. Dr. Iroku-Malize has a passion for continuous professional development and family medicine advocacy on local, regional and global levels, presenting on numerous topics including clinical medicine, public health & advocacy and academic medicine. She is Professor and Chair of Family Medicine at Zucker School of Medicine at Hofstra/Northwell.*

Wilderness Survival Strategies and Medical Improvisation

By Erika Sadeghi, MD and Rokhsanna Sadeghi, MD, MPH

Despite the increased popularity of computers, video games, and other electronics, there is still considerable interest in nature-based recreation among youth and adults. In just the Adirondack Park, for instance, there are more than 5 million visits for outdoor recreational activity every year.[1] This is in addition to the estimated 130,000 year-round residents and 45,000 seasonal residents who live within the park.[1] Given the large number of people who are involved in outdoors sports year-round, the potential exists for accidents, injuries and illnesses to occur in isolated areas, such as state-operated campgrounds or remote backcountry. Although first responders may be trained in search and rescue protocol, medical improvisation and creativity are sometimes necessary in the wilderness. The skills presented below may differ from traditional medicine, but the principles provide the best chance for survival for someone faced with a challenging environment or limited resources.

The 10 Essentials

In the wilderness, responders may not have the necessary resources but can learn to be resourceful. The "10 Essentials" listed in Table 1 will better prepare solo-hikers or group leaders in the wilderness. The basic contents of a backcountry medical kit should include at least one item from each category. Table 2 lists the basic contents of a first aid kit. These items are general guidelines, and if supplies are limited, the responders will need to improvise as best they can with implements from the wilderness. When using these essentials, keep in mind that the aging population has become more involved in outdoor and wilderness activities. Older victims are likely to have medical comorbidities, which can pose a new challenge for first responders who are providing care. Consider medical causes for a victim's illness in the wilderness, such as hypo- or hyperglycemia, hypertension, acute coronary syndrome, or cerebral vascular events. Also consider noncompliance with medications, lost or destroyed medications, or poor planning, such as people forgetting to pack their medications. With this in mind, remember to check bags if the victim is unresponsive without obvious signs of trauma.

Table 1: The 10 Essentials

Category	Examples
Navigation	Map, compass, GPS
Sun protection	Sunscreen, lip balm, cap/visor
Illumination	Headlamp, flashlight, flow sticks
Nutrition	Nonperishable food
Hydration	Water or procuring method
Fire starter	Lighter, matches, cotton ball with Vaseline
Emergency Shelter	Space blanket, plastic tarp, garbage bag
Insulation	Clothing, sleeping bag, padding
First Aid Kit	See Table 2
Knife	Swiss Army or other multi-tool

Table 2: First Aid Kit Checklist

First Aid Kit
Epi-pen, Benadryl, Prednisone
Latex gloves
12 cc syringe
14, 18 g angiocatheters
Wound care*
Tweezer, safety pin
Band aids
Blister care**
Duct tape
Headlamp/flashlight/illumination
Additional items***

*Wound care:4x4, 2x2, tegaderms, steristrips, dermabond or OTC alternative, antibiotic ointment

**Blister care: moleskin, adhesive foam, blistoban, second skin

***Additional items to consider: small wound stapler, scalpel, Sam splint, Foley catheter, surgical scrub, bandage/tissue scissors, needle drivers, forceps

continued on page 38

The "ABC's" of Wilderness Trauma

The "ABC's" of wilderness trauma care is not the typical protocol found in ER or hospital settings as outlined in Diagram 1. Upon arrival to the victim, assess the scene to ensure the safety of the non-injured members of the party and for further hazards such as rock fall, avalanche, or dangerous animals. Similar to basic life support protocol, if the victim is unresponsive, immediately determine if he or she is breathing. If no movement of air is detected, use a jaw thrust or chin lift technique to open the airway. The tongue can be wrapped with cloth or gauze and extracted in order to carry the base of the tongue out of the airway. A primitive, but potentially lifesaving maneuver to clear the airway with safety pins is depicted in Diagram 2. As shown, safety pins can be passed through the tongue and secured to the bottom lip or alternatively to a jacket zipper with a string. If the rescuer is alone, then consider improvisation of a nasal trumpet from a Foley catheter, a radiator hose, siphon tubing, or a small hydration bladder hose. Lastly, alerting others initiates the evacuation plan, including the level of assisted mobilization required.

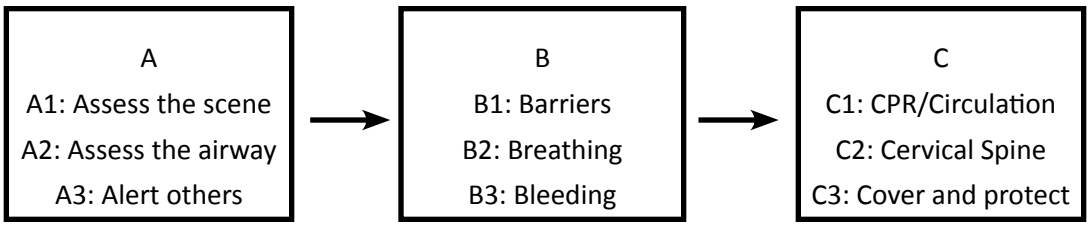


Diagram 1

Diagram 2

Next, a mouth-to-mouth barrier can be improvised using a plastic glove from the first aid kit found in Table 2, as depicted in Diagram 3. If the victim is not breathing, initiate ventilation with mouth-to-mouth rescue breathing. Any hollow tube can be used as a stethoscope, including a roll of newspaper, plastic tubing, short lengths of a wide hose, or a simple ear to chest in a quiet environment. Bleeding may not be apparent at first, especially in colder climates. Therefore, it is crucial to do a thorough exam by removing all layers of clothing. Obtaining vital signs on an unconscious victim in the wilderness is not simple. If the radial artery pulse is palpable, the systolic blood pressure is usually over 80 mmHg. If the femoral artery pulse is palpable, the blood pressure is usually above 70 mmHg. Heart and respiratory rate can be counted and a general sense of temperature can be assessed by palpation. Next, the cervical spine should be comprehensively assessed with mental status, neurologic function, point tenderness, swelling or step-off. Prior to evacuation, a cervical collar must be applied to protect the cervical spine against axial load. The collar should be rigid and allow access to the victim's mouth.

Diagram 3

Diagram 4

The collar can be created from a padded hip belt, fanny pack, and secured with towels as shown in Diagram 4. If a fracture is suspected, the victim will need professional evacuation with at least 8 people. Otherwise, there are many ways to carry out ill or injured individuals, including building a litter using various materials. Improvised spine boards include an internal frame pack, snow shovel system, or inverted pack system. The patient should be covered and protected from rain, wind, and sun during transport.

Wilderness Orthopedic Emergencies

Once a victim is deemed stable, determine the extent of orthopedic injuries. A rapid orthopedic assessment is outlined in Table 3. Evaluation of the extremities requires assessment of circulatory, nerve, skeletal, and joint function. Expose the extremities to assess for deformity, crepitus, tenderness, swelling, and open wounds. Every joint should be evaluated for range of motion and vascular supply.

Each fracture has several critical aspects in its management to consider. First, correct the loss of circulation and nerve supply due to deformity. Second, prevent the induction of infection if the skin is compromised. Finally, obtain reasonable alignment of bone fragments so that adequate healing takes place. Before reducing, check and compare the pulses beyond the fracture site on the left and right side of the victim and check for abnormal sensation. Straighten gross deformities of angulated fractures with gentle in-line traction. After correcting the angulation, circulation should improve.

Musculoskeletal injuries account for 70-80% of wilderness injuries and almost anything can be splinted. Splints, such as a SAM splint, are lightweight, compact, and easy to use. They are designed to provide traction through the injured extremity. With proper splint application, the injured limb can be immobilized securely in a functional position until definitive care is reached. Improvised splints and immobilizers can be used for finger, elbow, wrist, pelvic, femur, or knee injuries. A SAM splint can be molded into various configurations. For example, diagram 5 demonstrates a splint for wrist or forearm fractures. The sugar-tong splint, shown in (A) prevents pronation and supination and has the advantage of greater security and protection than (B), the volar splint because of its anterior-posterior construction. Tape, elastic wrap, or self-adherent wrap can be used to secure the splint.

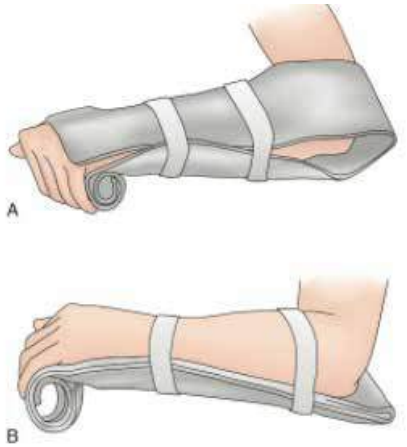


Diagram 5

Table 3: Rapic Orthopedic Assessment

Vascular	Assess the color and warmth of the extremity distal to the injury
Nerve	Assess for light touch and pinprick sensation and motor function. For spinal injuries, check the dermatomal distribution
Skeletal	Visible deformity may be present with a fracture or dislocation
Joint	Check range of motion and minimal function to allow for stability

Conclusion

The above information provides an introduction and guide to wilderness medicine, but formal training is necessary to master these skills. Nevertheless, basic medical knowledge with some common sense and improvisation may help reduce morbidity and mortality in the remote backcountry. There is a saying etched into signs throughout the Adirondack Park: leave nothing but footprints, take nothing but pictures, and kill nothing but time. The spirit of exploration and adventure will forever fuel the field of wilderness medicine, but the hope is to enjoy the adventure without injury.

Endnotes

1 Adirondack Forest Preserve. New York State Department of Environmental Conservation.
2 Available at: http://www.dec.ny.gov/lands/5263.html.

References

Auerbach, Paul S. Medicine for the Outdoors: The Essential Guide to First Aid and Medical Emergencies. Elsevier Health Sciences, 2015, pp 21 – 28; 67
Auerbach, Paul S., Tracy A. Cushing, and N. Stuart Harris. Wilderness Medicine. Elsevier Health Sciences,
2007. 5th Edition, pp 573-580
Bledsoe, Gregory H., Michael J. Manyak, and David A. Townes. Expedition and wilderness medicine.
Cambridge University Press, 2008, pp 39-43
Cordell, H. Ken. "The latest on trends in nature-based outdoor recreation." Forest History Today Spring
(2008), pp 4-10.
Duff, Jim, and Ross Anderson. Pocket First Aid and Wilderness Medicine: Essential for expeditions:
mountaineers, hillwalkers and explorers-jungle, desert, ocean and remote areas. Cicerone Press
Limited, 2017, Part 1: The Fundamentals.
Forgey, M. W. D. Wilderness medicine: beyond first aid. Rowman & Littlefield, 2017, pp133 – 143.

Erika Sadeghi, MD *is a sports medicine fellow at Brown University. She received her medical degree from St. George's University and completed her family medicine residency at St. Joseph's Hospital in Syracuse, NY. She is board certified in family medicine and has special interest in community, sports, and wilderness medicine.*

Rokhsanna Sadeghi, MD, MPH *is an emergency medicine attending at Finger Lakes Health in Geneva, NY. She received her medical degree from Upstate Medical University. After finishing residency at the Cleveland Clinic/MetroHealth, she returned to New York where she earned her MPH and completed a fellowship in international emergency medicine at the University of Rochester.*

Zika – Update and Current Recommendations

By Sonya Narla, DO, MA and Sarah Hudson, MD

Overview

In February 2016, the World Health Organization (WHO) declared Zika infection a Public Health Emergency of International Concern. By that time, Zika virus transmission had been reported by over 20 countries and territories in the Americas. Although no longer an official public health emergency, Zika remains on the forefront of medical and travel news and is of particular concern as men, women, and infants displaced by hurricanes arrive in New York from Zika endemic areas in the Caribbean. New diagnoses require reporting to the Department of Health. Family physicians are often first-line clinicians for patients with Zika questions – ranging from casual questions during routine physical exams to more specific visits for pre-travel consultations and family planning – and it is our duty to provide patients with up to date recommendations and guidance.

Background

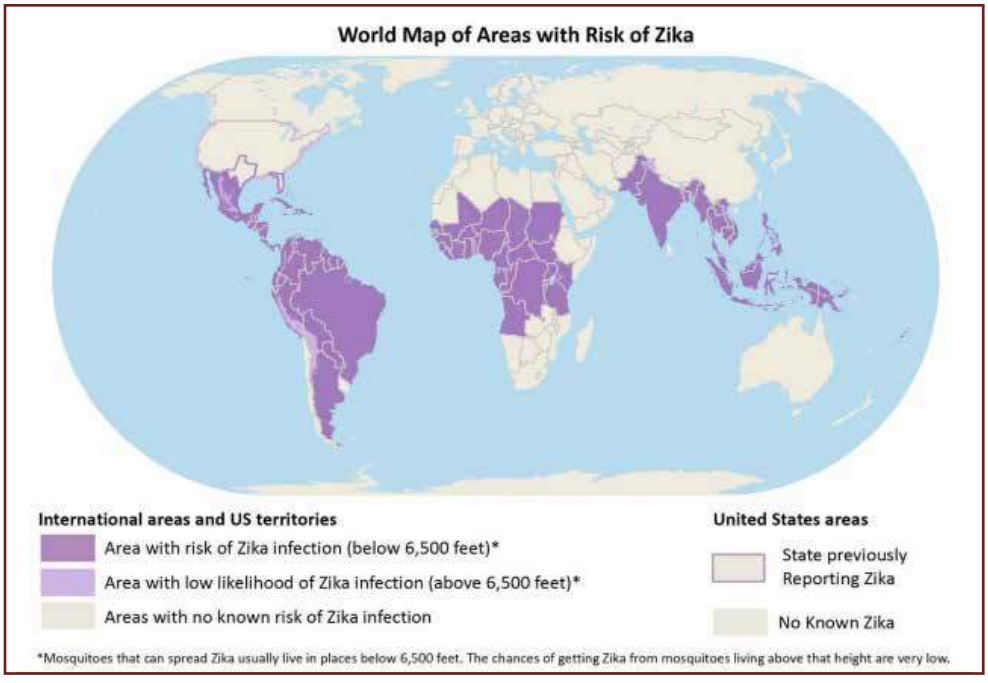
Zika virus (ZIKV) is an arthropod-borne flavivirus primarily spread via the bite of an infected Aedes mosquito. Travelers seeking to avoid transmission should know that the Aedes mosquitoes bite during both the day and the night, and also spread viruses such as Dengue and chikungunya.[1] Notably, Zika virus can also be spread through sex, blood transfusions/exposures, and from an infected mother to fetus. Symptoms of Zika virus infection include acute onset low-grade fevers, maculopapular pruritic rash, arthralgias, and conjunctivitis, and occur in roughly 20% of patients – the other 80% may remain asymptomatic. Risks of birth defect or abnormality with congenital ZIKV exposure range from 10-42%, and include fetal loss, microcephaly and/or brain abnormalities, growth restriction, and other dysmorphisms.[5]

Local and Worldwide Epidemiology

According to a recent bulletin released by the New York State Department of Health (NYS DOH)[8], there has been a dramatic decrease in Zika incidence. Through the end of 2017, there have been nearly 1,500 cases of Zika virus infection diagnosed in persons residing within New York State. However, just 11 cases per month were diagnosed between June and December 2017. Zika transmission has been documented throughout much of Asia, Africa, Central/South America and the Caribbean, with lower risk in locations above elevations of 6,500 feet. Within the United States, there have been limited cases of primary transmission reported in Miami, FL and Brownsville, TX.

Preventive Recommendations

The CDC, WHO and NYS DOH strongly recommend that all pregnant women avoid any travel to areas with risk of Zika. If travel cannot be avoided, strict adherence to other preventive measures should be followed. Men and women with potential ZIKV exposure need to take precautions in order to avoid fetal transmission (see Table 1 below).[4] If a female partner travels to an area with Zika risk, the couple should consider waiting 2 months after Zika exposure or 2 months after onset of symptoms before trying to get pregnant. If a male partner travels to an area with Zika risk, the couple should consider waiting 6 months after Zika exposure or 6 months after onset of symptoms before trying to get pregnant. If both a male and female partner travel to an area with Zika risk, the couple should consider waiting 6 months before trying to get pregnant. During this time period, couples should use condoms, condoms with other contraceptives, or practice abstinence in order to minimize the



Specifics about Zika transmission can be found on an interactive map here: https://wwwnc.cdc.gov/travel/page/world-map-areas-with-zika

risks of ZIKV transmission and associated birth defects should the female became pregnant. Condoms should be used for vaginal, anal, oral sex and also with use of sex toys.

If traveling to an area with Zika risk, patients should be advised to protect themselves against mosquito bites. Insect repellents that contain DEET, Picaridin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone are all approved by the Environmental Protection Agency (EPA) and CDC as effective and safe – even for pregnant and breastfeeding women. OLE and PMD should not be used under the age of 3. The efficacy of non-EPA approved natural repellants is unknown. In addition to topical mosquito repellents, patients should be advised to wear long sleeves and long pants when able. Permethrin treated clothing is also available and can be effective in non-resistant areas. If not keeping windows closed with air conditioning, physicians should advise patients to use screens in windows and sleep with a mosquito net. Finally, because mosquitos lay eggs near and in water, patients should avoid stagnant water sources and be sure to clean outdoor vessels like flower-pots, bird-baths, and buckets.[7]

Testing, Reporting, and Follow Up

Who to Test?

Women should be questioned for potential Zika exposure at every prenatal visit. Testing is recommended in the following patients:[1,4]

1. Persons with recent possible exposure and symptoms consistent with ZIKV (pregnant or not).
2. Asymptomatic pregnant women with ongoing possible ZIKV exposure (e.g. frequent travel).
3. Pregnant women with recent possible exposure to ZIKV who have ultrasound findings consistent with possible congenital ZIKV infection.
4. Infants with clinical findings concerning for possible congenital ZIKV syndrome.
5. Normal infants born to mothers with positive ZIKV testing.

Testing could also be considered in the following patients, based upon a shared decision making model: asymptomatic pregnant women with possible recent but not ongoing exposure, and infants without concerning clinical findings, but born to mothers with possible ZIKV exposure. Testing is NOT recommended for preconception screening or nonpregnant, asymptomatic patients.

Suggested time frame to wait before trying to get pregnant	
Possible exposure via recent travel or sex without a condom with a partner infected with Zika	
Women	Men
Wait at least 8 weeks after symptoms start or last possible exposure	Wait at least 6 months after symptoms start or last possible exposure

Source: ACOG Practice Advisory; Interim Guidance for Care of Obstetric Patients During a Zika Virus Outbreak[4]

Testing, which can include ZIKV PCR/NAAT (for acute infection) or IgM (which will become positive 1-3 weeks following infection), can be obtained through the NYS DOH lab free of charge.[8] Test interpretation can be difficult, as IgM levels may remain elevated for months after an infection. For women with documented evidence of ZIKV infection, serial ultrasounds should be considered to assess fetal neuroanatomy and growth velocity, though there is no ZIKV-specific data to guide the timing of these assessments. [4] Infants born to mothers with possible ZIKV infection should have ABR (auditory brainstem response) hearing evaluation at birth, and should be routinely evaluated with age-appropriate vision and developmental monitoring, and should be considered for Early Intervention Program (EIP) referral.

Healthcare providers must report suspected cases of Zika virus infection to their state, local, or territorial health department.[1] Physicians in New York State should contact the Department of Health via the Zika Information Line for consultations, pre-approval, and to arrange lab specimen transportation to Wadsworth Laboratory. The NYS DOH Zika Information Line is 1-888-364-4723 (Monday – Friday 9am-5pm). According to the NYS DOH, "pre-approval should be obtained prior to submitting specimens. Specimens arriving at the lab without pre-approval will have delays in testing or will not be tested." [6]

Physicians in New York State WILL encounter questions about Zika virus, whether for travel recommendations, care of immigrants and refugees, or providing pre-conception counseling for men and women. Asking questions regarding travel, and providing adequate counseling including guiding patients towards reliable sources of further information regarding the Zika virus, should be a part of most visits involving infants and individuals of childbearing age.

Endnotes

1 CDC (https://www.cdc.gov/pregnancy/zika/testing-follow-up/patient-counseling-couples.html)
2 WHO Zika Factsheets (http://www.who.int/mediacentre/factsheets/zika/en/)
3 Up-to-date "Zika Virus Infection: Overview" (https://www.uptodate.com/contents/zika-virus-infection-an-overview)
4 ACOG Practice Advisory: Interim Guidance for Care of Obstetric Patients During a Zika Virus Outbreak https://www.acog.org/Clinical-Guidance-and-Publications/Practice-Advisories/Practice-Advisory-Interim-Guidance-for-Care-of-Obstetric-Patients-During-a-Zika-Virus-Outbreak
5 AAFP "Local Zika Transmission in U.S. Tied to Rise in Birth Defects (https://www.aafp.org/news/health-of-the-public/20180130mmwrzika.html)
6 NYS DOH https://www.health.ny.gov/diseases/zika_virus/docs/instructions_on_specimen_collection_at_birth.pdf
7 EPA https://www.epa.gov/insect-repellents
8 1/24/18 NYS Department of Health Advisory/ Zika Virus Update

***Sonya Narla DO, MA**, is a PGY2 family medicine resident at the University of Rochester, where she is on the Global Health Track. She has done extensive work abroad in Ghana, South Africa, and Honduras. Her other interests include OMT, bioethics, and medical writing.*

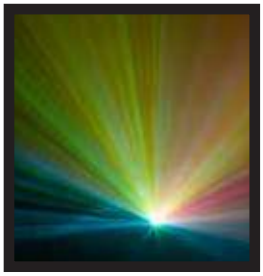
***Sarah Hudson, MD**, is an Assistant Professor of Family Medicine at the University of Rochester. She is board certified in family medicine and has special interest in working in underserved communities, obstetrics, and women's health.*

Resource Websites:

NYS Department of Health Website
https://www.health.ny.gov/

Centers for Disease Control Zika Website
https://www.cdc.gov/zika/

Wadsworth Laboratory Website
https://www.wadsworth.org/



Family Medicine Strong

Hello to my fellow family physicians. As I write this piece, it is hard to imagine that this is actually spring! The weather outside is quite chilly, the trees are bare and we are all still wearing multiple layers to school and work. I try to wear the hat of optimism each day in order to allow fresh ideas and innovation into the space around me. I have to admit that it takes a little extra effort on some days to dust that hat off and put it on. Yet I continue to do so.

Regardless of your position in the current political climate, it is refreshing to see that the generation that will eventually be responsible for the world in which we live, are not complacent and are willing to voice their opinions as well as take action. For years the seasoned generations have complained that the younger generations were not willing to "work as hard" or "be accountable", and so here we have it.

Being involved with medical education (my day job) means I am in contact with students, residents, faculty and community physicians each trying in their own way to gather, process and utilize new information in order to provide the best possible care for their patients and communities. And so I do my best to advocate for resources that will allow them to grow as clinicians. Advocating for less time with regulatory and redundant tasks and more time caring for patients is important.

Research is also important. It informs what we do and how we do it. As family physicians, we cannot rely solely on the work that has been done by others for subsections of patients. We need to continue to support research on the complicated people that come into our practices day after day. And we should support the family physicians who are willing to be part of the research world – it takes a special type of person and commitment to be a part of the process. Their work will benefit all of us.

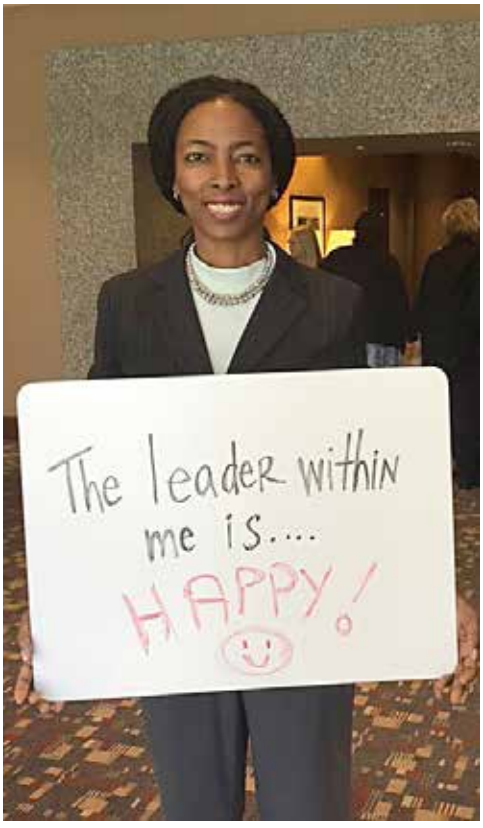
The future – whether we want to believe it or not – it is coming faster than we can imagine. Family medicine practiced tomorrow will inevitably involve more technology and will require that the students we train today are equipped to manage these practices. We will likely have telemedicine in most primary care offices, especially remote locations. We will have virtual group sessions for patients and family physicians alike. Staying on top of the technology will not be easy, but we will need to rely on our colleagues who are facile in these areas to enable us understand the processes and continue to serve our communities.

So I'm looking outside my window and despite the way it looks, the birds are chirping, which means that there is hope. Hope on all fronts in terms of advocacy, medical education, research and practice transformation. Hope for the family physician who is practicing in a small town providing care for thousands of people on her own, and for the one who is part of a multispecialty health care conglomerate with little autonomy at the current time. We must be doing something right, as this year was the best match for our specialty in decades.

We are strong.

We've got this.

Tochi Iroku-Malize, MD, MPH, MBA, *is the inaugural chair of family medicine at Northwell Health and professor and chair of family medicine for the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. She has been involved in numerous leadership capacities with NYSAFP and the AAFP since her residency years, serving as a past president of NYSAFP, and currently as the alternate delegate from New York to the national Congress. Dr. Iroku-Malize has worked for over the past three decades on clinical, research and academic initiatives to enhance health and equity for providers and patients across various communities locally, nationally and internationally, and has been active in advocacy work on behalf of the Academy in both Albany and DC for over a decade.*



NYSAFP Receives New York State Health Foundation Grant

Do your patients ask questions about the cost or quality of the health care services, referrals or drugs? Are you interested in helping your patients make informed health care decisions? Do you want to learn about resources to support you in making referrals to specialists? Does your staff encounter patient questions about cost or quality that they aren't sure how to best respond or refer?

There are resources and tools to help support you and your staff and opportunities to connect patients to these information resources for their decision-making. Although consumer information tools are available, use of price and quality websites and tools is low, as many people are unaware of them. Consumers often look to their physicians and their staff as a source of price and quality information.

This February, NYSHealth awarded NYSAFP a grant to make physicians and their staff members aware of available price and quality tools and spread their uptake among patients.

Under this grant, NYSAFP will engage clinical and nonclinical staff at family medicine practices to connect patients to available price and quality tools and resources. NYSAFP will be one of two hubs of statewide associations of primary care providers to participate in this initiative. Through this initiative, we will educate primary care providers on how to engage patients in conversations about cost or quality choices. Providers who become early adopters will receive assistance on how to incorporate use of decision assistance tools into a practice's culture. NYSAFP will identify technical assistance needs of practices and target resources appropriately. Finally, NYSAFP will collect feedback from providers regarding their experiences discussing consumer decision-making tools with patients and share that information with tool developers and other national initiatives.

We are looking for a number of practices and physician champions willing to work with us on this initiative. Mini-grants funding will be available to practices to help develop creative strategies to pilot these tools with their patients and spread awareness among staff. We want to enlist members who want to be on the vanguard of health care information and join us in this experiment, helping to test what works, what doesn't, and how these resources can benefit patients, doctors, practice staff, and the patient experience. If you are interested or would like additional information, please contact vito@nysafp.org or penny@nysafp.org.

Official Notice of NYSAFP Congress of Delegates

The 70th annual Congress of Delegates of the NYSAFP will meet June 23-24, 2018 at the Hilton Garden Inn in Troy, NY. All members are invited and encouraged to attend the Congress, to participate in discussions of current issues and to debate Academy policy. Delegates to the Congress include delegates elected by county chapters and family medicine residency program chapters, members of the board of directors, past presidents, delegates selected by resident and student members, and delegates selected from counties that do not have a component chapter. County chapters are entitled to two delegates and alternates. Counties with more than 100 members have an additional delegate and alternate for each additional 100 members. In counties where there is no component chapter, any member(s) interested in becoming a delegate must provide written notice to the Speaker of the Congress. If more than one member in a county where there is no component chapter want to be delegates, the Speaker will conduct an election not less than 30 days prior to the Congress and will limit participation in that election to members in good standing of that county. Although all members may participate in the Congress, only delegates may vote.

The Congress is an annual meeting of the membership of the NYSAFP. This is the forum wherein active members voice their opinions on Academy positions and operations and present suggestions for Academy programs and positions. Resolutions which have been submitted in advance and reports of commissions and officers are presented at the Congress. Reference committees meet and hear testimony regarding resolutions and reports. The reference committees make recommendations regarding resolutions and reports. Any member may submit a resolution. Resolutions should be submitted to the NYSAFP no later than 60 days (by April 23, 2018) prior to the Congress to be published in the Delegates Handbook. Resolutions may also be submitted at the Congress, but the Congress may decline to consider resolutions, which were not presented 60 days prior to the opening of the Congress. For guidelines on writing resolutions, go to www.nysafp.org – members- governance – COD – COD Resolution Template.

The Congress also conducts elections. Elections will be held for the following offices at the Congress: president-elect, vice president, secretary, treasurer, director (3 positions), new physician (alternate years), delegate to the AAFP Congress, and alternate delegate to the AAFP Congress, speaker and vice speaker. The three director positions are for 3-year terms. The AAFP delegate and alternate positions are for 2-year terms. The new physician position is a 2-year term. All other offices are for 1-year terms. There will also be a dinner and installation ceremony.

If you are interested in becoming a delegate and live in a county that does not have an organized county chapter, contact EVP Vito Grasso at vito@nysafp.org or 518-489-8945 for information on how you can become a delegate. Registration and additional information for attendees, sponsors, exhibitors and advertisers is available at www.nysafp.org, by clicking on Events.

Letter to the *Editor*

Regarding *Medical Aid in Dying: Another Perspective*, By James Cozens, MBBS Published Fall 2017, Volume six, Number two, Page 22

To the Editor:

We read with great interest the article by James Cozens, MBBS on a series of European and Canadian cases arising from potential misinterpretations of the practice of medical aid in dying and established laws (or lack thereof) that authorize this end-of-life care option. We were appalled to learn of the actions of Dr. Harold Shipman, his criminal violations of the medical profession and exploitation of the patient-physician relationship. We were, however, surprised that Cozens would chose to cite the lurid acts of a mass murderer in what might have been an otherwise thoughtful discussion. These experiences have no bearing on pending medical aid-in-dying legislation in New York or active medical-aid-in-dying laws anywhere in the United States.

The experiences of other countries are often referenced as evidence of the potential for abuse. But in the 40 years of combined experience with medical aid in dying across the seven authorized jurisdictions in the United States, there has not been a single substantiated accusation of abuse or coercion, and the core requirements for these laws have remained unchanged. Fears that authorization of medical aid in dying would harm people with disabilities, the elderly, the frail, the uninsured or any marginalized groups have been debunked by 20 years of careful study and have no merit.

For example, Disability Rights Oregon (DRO) confirms it "has not received a complaint of exploitation or coercion of an individual with disabilities in the use of Oregon's Death with Dignity Act."[1] In addition, according to a Journal of Medical Ethics report about the Oregon Death with Dignity Act: "Rates of assisted dying in Oregon … showed no evidence of heightened risk for the elderly, women, the uninsured … people with low educational status, the poor, the physically disabled or chronically ill, minors, people with psychiatric illnesses including depression, or racial or ethnic minorities, compared with background populations."[2]

Policymakers are specifically charged with finding middle ground and balance in order for society to function. The potential misinterpretations or abuses described by Cozens happen when laws do not clearly delineate behavior approved by society. In the United States, medical aid-in-dying laws draw these distinctions.

The seven jurisdictions currently authorizing medical aid in dying either through statute or court decision include Oregon,[3] Washington,[4] Montana,[5] Vermont,[6] California,[7] Colorado[8] and the District of Columbia.[9] Each jurisdiction's regulatory and procedural requirements differ slightly, but all include the same strict eligibility criteria and guidelines that meet the highest standard of care as described in clinical criteria published in the Journal of Palliative Medicine.[10]

To be eligible for medical aid-in-dying, an adult must be terminally ill with a prognosis of six months or less to live and mentally capable of making his or her own healthcare decisions. Health providers, insurance companies, family and friends must not influence their decisions. To do so is a criminal action punishable by law, typically a felony offense mandating a prison sentence.

In addition to the strict eligibility criteria, each state's legislation establishes core safeguards, including that the attending physician must inform terminally ill adults requesting medical aid in dying about other end-of-life options, including comfort care, hospice care and pain control, and the terminally ill adult must self-administer the aid-in-dying medication.

In contrast to many of the laws in European countries and Canada, euthanasia has not been legalized in the United States, nor have there been any credible efforts to legalize it. The U.S. laws are specific in that only a terminally ill, mentally capable individual can request and self-administer the aid-in-dying medication. No medical provider or healthcare proxy may substitute decision-making or administer the medication. Just as an attempt to coerce a terminally ill individual to request medical aid in dying is a serious crime, it also is a serious crime for anyone other than the terminally ill individual to administer the aid-in-dying medication. Interestingly, after Oregon authorized medical aid in dying with strict criteria, the Netherlands and Belgium began to adopt more transparent end-of-life care practices, including allowing patients the option to self-administer medication, thus enabling a trend from euthanasia to medical aid in dying.[11]

While it is reasonable to be aware of circumstances occurring across the global community of medicine, we must recognize that many are beyond our scope of control and even our responsibility. The eligibility criteria and core safeguards embedded into U.S. medical aid-in-dying laws, including the proposed New York Medical Aid-in-Dying Act, strike a balance by ensuring patient safety, promoting autonomy and self-determination, and by replacing covert action with a transparent, regulated medical practice.

David Pratt, MD, MPH *is the former Medical Director of Care Choices in Schenectady, New York and can be reached at dpratt1@nycap.rr.com*

Corinne Carey, JD *is the current New York Campaign Manager for Compassion & Choices and can be reached at ccarey@compassionandchoices.org*

Endnotes

1 Letter from Bob Joondeph, Executive Director, Disability Rights Oregon to Ronald Halpern, Cultivation manager, Compassion & Choices, Feb. 10, 2016. https://drive.google.com/file/d/0B3IuDjCAxxv7WmhZVWNZMEt4Wms/view
2 Margaret P Battin, Agnes van der Heide, Linda Ganzini, Gerrit van der Wal, Bregje D Onwuteaka-Philipsen. Legal physician-assisted dying in Oregon and the Netherlands: evidence concerning the impact on patients in "vulnerable" groups. Journal of Medical Ethics, Volume 33, Issue 10, 2007. http://jme.bmj.com/content/33/10/591
3 Oregon Death With Dignity Act. Oregon Revised Statute. Chapter 127. Enacted October 27, 1997. Available from http://public.health.oregon.gov/ProviderPartnerResources/EvaluationResearch/DeathwithDignityAct/Pages/ors.aspx.
4 Washington Death With Dignity Act. Complete Chapter 70.245 RCW, Complete Chapter. Enacted November 4, 2008. Available from http://apps.leg.wa.gov/RCW/default.aspx?cite=70.245.
5 Montana Supreme Court Ruling Baxter v. Montana. December 2009 Available from https://www.compassionandchoices.org/wp-content/uploads/2017/01/Montana-Supreme- Court-Opinion.pdf
6 Vermont Patient Choice and Control at the End of Life Act. Act 039, Chapter 113. Enacted May 2013. Available from http://www.leg.state.vt.us/docs/2014/Acts/ACT039.pdf
7 California End of Life Option Act. SB-128 End of Life. Enacted October 2015. Available from http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB128&search key words=
8 Colorado End of Life Options Act, Proposition 106, Passed November 8, 2016, Pending implementation. Retrieved from: http://coendoflifeoptions.org./wp-content/uploads/2016/06/Full-Text-of-Measure.pdf
9 District of Columbia, Death with Dignity Act, Available from: https://custom.statenet.com/public/resources.cgi?id=ID:bill:DC2015000B38&cuiq=24bec244-9665-58c1-94ba-c4c04c13963a&client_md=a68309e3dfe31df465ec5a24ba617a4b&mode=current_text
10 Orentlicher David, Pope Thaddeus Mason, Rich Ben A., Physician Aid-in-Dying Clinical Criteria Committee. Journal of Palliative Medicine. February 2016, 19(3): 259-262. doi:10.1089/jpm.2015.0092.
11 Emanuel EJ, Onwuteaka-Philipsen BD, Urwin JW, Cohen J. Attitudes and Practices of Euthanasia and Physician-Assisted Suicide in the United States, Canada, and Europe.*JAMA*. 2016;316(1):79-90. doi:10.1001/jama.2016.8499.

Care ELEVATED

GLENS FALLS HOSPITAL **SEEKS EXPERIENCED BC FAMILY PRACTITIONERS**

Glens Falls Hospital is proud to offer opportunities to talented BC Family Practitioners in our Glens Falls-Broad Street Medical Center Primary Care location.

Join an elite primary care practice that is part of a Hospital-based, multi-specialty network. Practice a full spectrum of Family Medicine, *outpatient only*, with support from an integrated team of medical specialists and Hospitalist programs.

Contact Antoinetta Backus, *Physician Recruitment*
abackus@glensfallshospital.org | 518.926.1946

PLUS **TOP BENEFITS**

- Full-time position, 40 hour work week
- **Enhanced compensation** with full benefits
- Sign-on bonus, relocation and **loan forgiveness**

Glens Falls Hospital

3rd Annual Writing Contest Winning Entries

When Life Becomes Unbearable –

By Lois Van Tol, MD

"I want you to help me end my life."

I stared in silence at the words on the computer screen. I had no idea what to say.

I had just arrived at the home of my patient Ben, a 58 year-old man who was recently diagnosed with amyotrophic lateral sclerosis. After offering me coffee, his wife had left to take their dogs for a walk and to afford us privacy for the visit.

Ben had started having slight difficulty speaking only a few months earlier but his ALS was progressing rapidly and his speech was now so slurred that he was no longer able to make himself understood, even to his wife. So he typed on his laptop computer with two index fingers as we sat at his kitchen table.

Ben lives with his wife out in the country in a small cabin that they bought a couple of years ago after Ben had to quit working due to a severe arm injury he sustained while at his job as a machinist. The cabin and the land surrounding it had been used as a dumping area and Ben had worked relentlessly to clean up the land and repair the cabin, turning it into a rural paradise.

After a long silence, I asked, "Why do you want to end your life?" Ben wrote that he knew what was going to happen to him and that he would not be able to even go to the bathroom by himself. He already did not want people to see him because he knew that he did not look or sound normal. He rejected my suggestions about home health aides and speech devices and said he felt that killing himself was really the best thing he could do and again asked for my help in doing this.

Over the course of my career as a family physician, I had sometimes wondered what I would do if a patient ever asked me to assist them in suicide. Even though I thought that people should have this choice, I didn't know if I would ever be able to help in deliberately causing someone's death. I felt a little relieved that I could explain to Ben that it was currently illegal for me to assist him in dying, feeling that this settled the question. He quickly responded that no one would need to know and that he really wanted me to help him and again typed out his anguished thoughts and feelings about what was happening to his body.

Again, I had no idea what to say, so we sat silently for a long time. Then I noticed photos on the wall of his son and daughter, so I asked about them and learned that his son, who lived nearby, would likely be getting married soon. I asked about the ducks and chickens I had seen in the yard and Ben wrote about how much he enjoyed taking care of his birds, riding on his tractor, taking care of his land and being with his wife and children. We talked for over 2 hours about what was still so good about his life.

When his wife returned from walking the dogs, Ben gave me permission to tell her what we had been talking about. She did not know that he was considering suicide and was shocked and saddened to hear that he was thinking about this. After more discussion, Ben promised that he would not try to kill himself, but I think we all understood that this promise could change in the future.

Just the day before, I had learned that the state legislature was considering a bill that would legalize physician-assisted suicide, so I explained to Ben that it was possible that the law would change in New York. As I said this, I realized that I still had no idea what I would do if the law passed and Ben asked for my help again, but he seemed comforted by the thought that it might be an option for him to end his life before it became unbearable.

When we went outside, he showed me the porch he had constructed on the front of his cabin from wood he had milled himself, his beloved tractor, the sturdy chicken coop that he built, his ducks and his silky white chickens.

As he walked me to my car, I told him that I would visit again soon but that if he killed himself I would be so mad that I would never speak to him again. He gave me a long hug and was still laughing when I left.

Lois Van Tol *is a practicing family medicine physician in Rochester, NY.*

Our winning entry by Dr. Lorne Campbell was featured in our previous issue of FD (Volume 6-Issue 3)
Runners up were Lois Van Tol, MD; and Quynh Chu, MD, and Natalie Hinchcliffe, DO – their winning entries follow:

A Happy Man –

By Quynh Chu MD

John is a mid-thirty-year old man with moderate intellectual disability, who lives with his parents at home. He is non-verbal but could make sounds to respond to questions. He uses gestures for simple communication and is able to follow commands. I met John during a medicine rotation. He was admitted to the hospital due to severe dehydration from continuous vomiting and diarrhea, and was assigned to my care. He was treated successfully, and deemed stable to be discharged home.

The morning of his discharge, I walked into his room with the good news that he could go home. His dad, who sat at the bedside with John most of the time, seemed happy initially. But his face turned worried, his eyebrows furrowed, and after a moment of silence, he suddenly broke into tears. I was surprised by his response and sat down next to him to ask what had happened. He shared with me that he was afraid John would be fired from his job due to multiple absences. I felt even more surprised, probably as I had not expected him to have a job, given his health and intellectual limitations. Quickly I learned that John had been working as a garbage-man at a small office, collecting trash after staff had departed for the day. Having that job means the world to John. It makes him feel connected to society, and provides a sense of normalcy in his world. He is cheerful to go to work, where he meets people who would say "Hi John", ask "How are you", smile at him, and sometimes help pull out dustbins to make his work easier. Since the job has helped his social and emotional health tremendously, and it was challenging for John to find employment, his dad was extremely concerned his son might lose something that helped inform his identity.

I watched as tears silently ran down on his dad's cheek. Then I turned to John, who was smiling broadly and vigorously waving his hands. I believe he was trying to convince us he felt better, so that he could go home and get back to work. Suddenly, I felt overwhelmed with emotion. My heart wrenched forcefully, and my eyes became blurred with tears. I found it difficult to hold a professional demeanor in that moment. I felt relieved that John's dad stepped towards the window to hide his face, so he did not know I was crying too. From behind, I put my hand on his shoulder, softly told him that I felt his concern and I was so sorry. Later I came to talk with our case managers, but there was not much that they could do to help his situation. I left a careful discharge summary for his outpatient follow up, so the issue would not be forgotten. I wrote a letter to his employer, not just to provide an excuse for his absence, but to explain his personal situation and how important the work is for his overall wellbeing. I told John's dad none of my work was a 100% guarantee, but I truly wished John the best.

Six months later, I received a thank-you note in my mailbox at work. It said that John was doing well. He had lost his job after all. But he and his dad did not stop the job search. His new vocational portfolio now included my letter. He finally was accepted for a similar position at a local retail department store.

I close my eyes and imagine John's smile. He must be the happiest garbage-man that I have ever known. I am changed by having met John, who was so successful in creating meaning and happiness in his life, despite apparent challenges and limitations in the estimation of others. His story is such a beautiful jewel in the collection that informs my identity as I grow, every day, in my profession.

Quynh Chu, MD, *is a resident at the Institute for Family Health Mid-Hudson Family Medicine Residency Program in Kingston, NY, and an upcoming fellow at University of Pittsburgh Faculty Development Fellowship Program at the time of this story.*

Natalie Hinchcliffe, *DO's story "Sexual Assault and the Three C's" was published in a previous issue of Family Doctor. Volume 5-Issue 2, Fall 2016.*

New York State Academy of Family Physicians
260 Osborne Road
Albany, NY 12211

Highlight on VACCINATIONS 4 TEENS

Features a robust Resource Library of materials for family physician offices, including:

- **Back-of-office materials**
  - Q&A to address questions from teen patients and parents/guardians
  - Three educational videos from Dr. Margot Savoy, MD, MPH, FAAFP and AAFP liaison to ACIP, on:
    - The value of the immunization platforms and making the most out of the 11-12 and 16-year-old visits
    - Tips for using the schedule
    - Standing orders and activating staff as champions
  - Links to other educational videos on meningococcal and HPV vaccination
  - A fact sheet on the importance of addressing under-vaccination

- **Front-of-office materials**
  - Reminder communications for parents/guardians
    - Letters/emails
    - Postcards
    - Text messages
  - Teen vaccination overview poster/handout
  - Template digital and social media content directed to teens and parents/guardians
  - Personal testimonials

Visit www.aafpfoundation.org/vaccinations4teens to download these resources.