

# JUCM™

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VOLUME 10, NUMBER 1

THE JOURNAL OF URGENT CARE MEDICINE®



Urgent Care  
Association  
of America



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The Official Publication of the UCAOA and UCCOP

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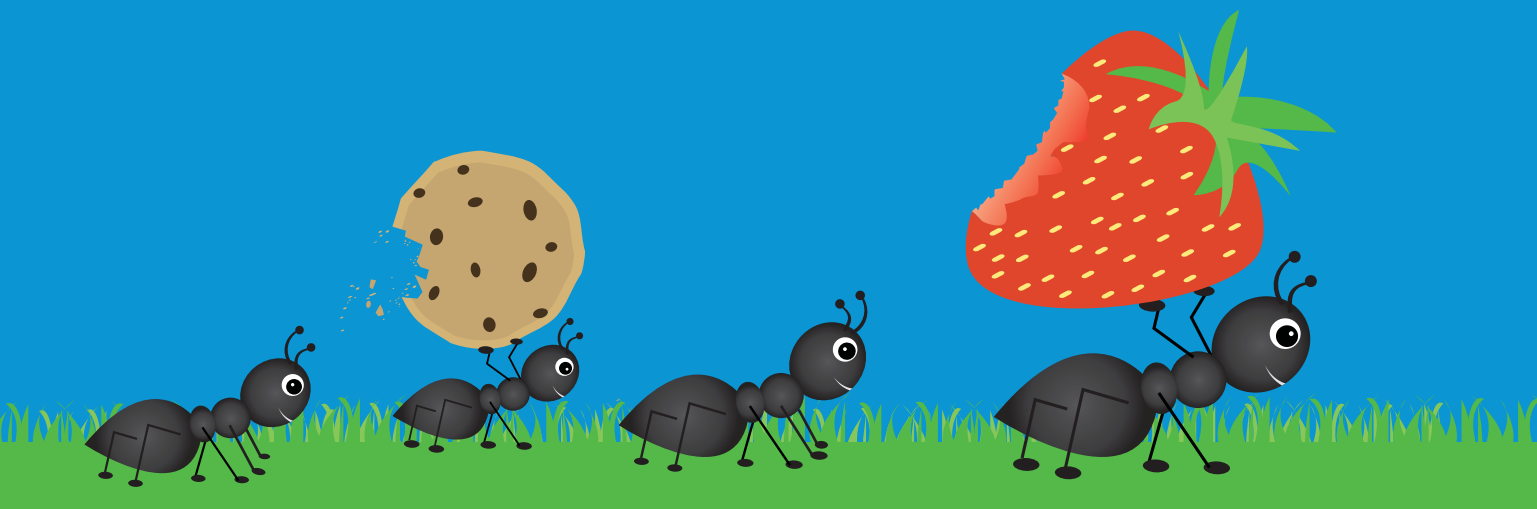
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## Managing Hypertensive Emergencies in the Urgent Care Setting

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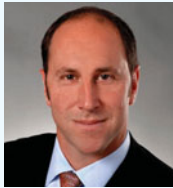
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## LETTER FROM THE EDITOR-IN-CHIEF

# Value-Based Reimbursement Is Premature, But That Won't Stop It



Private payor reimbursement trends nearly always follow Medicare's lead, and at no other time in history has the physician-reimbursement model been so scrutinized. In an attempt to control unwieldy health-care spending, payors are understandably

looking to be creative. When they look at the drivers for increased health spending, one thing is clear: Diagnostic testing and imaging services grew far faster since 2000 than any other health-care service. According to MedPAC (the Medicare Payment Advisory Commission), the volume of these services grew from 2000 to 2011 by 91% and 79% respectively, whereas evaluation and management (E/M) services grew by 37%. What's more, tests and imaging services cost more per encounter than E/M services do, thereby influencing overall spending more significantly. Enter value-based payment models.

The idea is to reward what is seen as high-value care and penalize what is seen as low-value care. Comparative effectiveness studies, many of which are funded by federal agencies with ties to Centers for Medicare & Medicaid Services, have been issuing verdicts on tests, procedures, and advanced diagnostics that, when linked to specific diagnoses, demonstrate no benefit. Once the payors had their evidence, all they needed were ways to track and measure quality and medical necessity so that they could begin to impose their new payment model. If you are wondering who came up with the cluster headaches known as ICD-10 (*International Classification of Diseases, 10th Revision, Clinical Modification*) and PQRS (Physician Quality Reporting System), well, now you know. And it's no secret who has been stuck with the bill for their implementation. It's like paying admission to your very own house of torture!

Meanwhile, back in reality, operating expenses for physician practices continue to outpace reimbursement at dramatic rates. If you follow the trends of the Medicare Economic Index (MEI), you know that practice expenses have in fact been climbing 200% faster than reimbursement rates over the last decade. The MEI is a measure of all practice expenses, including compensation for staff, rent, equipment, and technology. More depressing is that inflation increased at a rate of 33% versus the 9% rate increase for fee-for-service (FFS) reimbursement

over the same period. Effectively, cost-of-living *and* practice expenses are increasing more than three times as quickly as revenue. Worse, these trends reflect practice income *before* the bulk of electronic medical record integration and *before* the ICD-10 circus came to town. Name two more costly initiatives than these since 2000 . . . go ahead, I dare you.

With margins being what they are in most physician practices, how can we possibly survive this onslaught? Why, see more patients, of course! So we should see patients faster than ever before, which decreases quality, increases errors, and decreases patient satisfaction? Aren't these just the measures being proposed for value-based payments? Now, I am sure someone will be quick to remind me that these new payment systems will allow physicians to actually see fewer patients because value-based reimbursement will be higher . . . right? Well, sort of. The value-based payment formulas are complicated and confusing, but the down arrow here is that physicians are looking at  $\pm 2\%$ , on the basis of their performance. In other words, you are cordially invited to increase your effort (aka expense) and decrease your overall efficiency, all in the hopes of getting a 2% payment bump. While this little experiment is being played out, most of your patients continue to get reimbursed under the FFS model. So unless you find ways to treat value-based-payment patients differently than FFS patients, all this effort will actually *decrease* your income.

Urgent care physicians and operators should not fool themselves into thinking that value-based payment models will not be relevant to our industry. Regardless of how this plays out, is it simply not a good idea to add any new payment schemes—with their rules to learn and audits to fear—until we fix the dramatic and growing gap between practice expenses and reimbursement. Continuing to add new models dooms the system to failure. ■

Lee A. Resnick, MD, FAAFP  
Editor-in-Chief, JUCM, *The Journal of Urgent Care Medicine*





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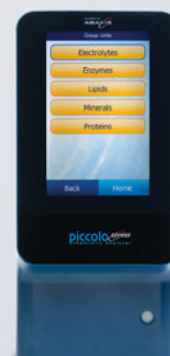
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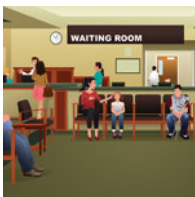
### CLINICAL

## 9 Managing Hypertensive Emergencies in the Urgent Care Setting

Up to 40% of U.S. patients each year require treatment for elevated blood pressure. As a urgent care provider, you must be able to lower these patients' blood pressure without overshooting and thus causing decreased organ perfusion—and know when not to treat hypertension aggressively.

*Jon Juhasz, MD*

### PRACTICE MANAGEMENT



## 19 Improving the Patient Experience by Thinking Differently About Waiting

Attracting and retaining urgent care patients entails more than reducing waiting time. It also requires understanding and managing patients' expectations and perceptions.

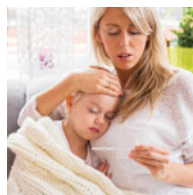
*Michael Burke, MBA, and Garrett Bomba, MD*

### CLINICAL

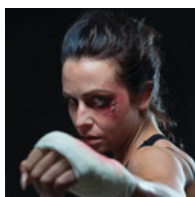
## 27 Fever Phobia: Urgent Fears in Urgent Care

Fear of fever leads many parents to treat their children with antipyretics, often at incorrect and dangerous doses. Urgent care providers must educate parents that fever itself is not dangerous but that instead, dehydration and respiratory distress are.

*Deena R. Zimmerman, MD, MPH, IBCLC; Nahum Kovalski, MD; Baruch Hain, BA; and Joshua Lipsitz, PhD*



### CASE REPORT



## 33 Mixed Martial Arts Injuries

Mixed martial arts—organized *Fight Club*-style fighting—is now hugely popular. Fighters can present with dramatic physical injuries that may cause less-obvious but serious conditions to go undiagnosed.

*Samantha Debold-Hawley, MS-3, and John Shufeldt, MD, JD, MBA, FACEP*

### IN THE NEXT ISSUE OF JUCM

The urgent care model is evolving. Author Michael F. Boyle, MD, MBA, FACE, takes on the issue of improving access to health systems and integrating population health management through various types of urgent care.

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*JUCM The Journal of Urgent Care Medicine* supports the evolution of urgent care medicine by creating content that addresses both the clinical practice of urgent care medicine and the practice management challenges of keeping pace with an ever-changing healthcare marketplace. As the Official Publication of the Urgent Care Association of America and the Urgent Care College of Physicians, *JUCM* seeks to provide a forum for the exchange of ideas and to expand on the core competencies of urgent care medicine as they apply to physicians, physician assistants, and nurse practitioners.

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## JUCM CONTRIBUTORS

Just like last month, we have two clinical articles for you this month: a review and a report on original research. That has been possible because our readers are turning into prolific authors, and we thank you. We dare you to try to overwhelm us with your many well-written clinical reviews and research reports, case studies, practice management articles, and Insights in Images. Add to the literature on urgent care medicine.



In our cover article, Jon Juhasz, MD, Major, MC, SFS, USAF, explains why it is vital that urgent care practitioners be able to identify hypertensive emergencies so they can immediately start lowering these patients' blood pressure and then transfer them to an emergency department.

Juhasz is board-certified in emergency medicine. He is a Combat Medic in the U.S. Air Force and has served in both Iraq and Afghanistan, flying combat aerovac on six different aircraft and providing care for wounded soldiers. He is currently stationed at Wright-Patterson Air Force Base, Dayton, Ohio.

Deena R. Zimmerman, MD, MPH, IBCLC, Nahum Kovalski, MD, Baruch Hain, BA, and Joshua Lipsitz, PhD, report that their research in the urgent care setting shows that 90% of parents mistakenly believe that fever in their children can have bad health consequences. Fever phobia is not a benign phenomenon. It leads up to 50% of parents to treat with antipyretics, often at incorrect and dangerous doses. The authors conclude that urgent care practitioners must provide a consistent message that fever is not dangerous.

Zimmerman is Director of Research and Senior Pediatrician at Terem Emergency Medical Centers in Jerusalem, Israel; Kovalski is Chief Executive Officer at Nahum Kovalski Medical Technology Consulting in Jerusalem, Israel; Hain is affiliated with Terem Emergency Medical Centers in Jerusalem, Israel; and Lipsitz is a Professor of Psychology at Ben-Gurion University of the Negev in Beersheba, Israel.

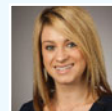


In our *Practice Management* section, Michael Burke, MBA, and Garrett Bomba, MD, provide concrete steps for reducing how long your patients must sit in your urgent care center's waiting area and for decreasing their aggravation. Following these steps will improve your patients' experience, and your center will get good word of mouth. The authors tell how two urgent care centers made waiting easier and what positive affects the centers experienced.

Burke is founder and Chief Executive Officer of Clockwise.MD, based in Atlanta, Georgia. Bomba is Medical Director of Pentucket Medical ExpressCare, in Lawrence, Massachusetts, and is board-certified in emergency medicine.

In our case report, Samantha Debold-Hawley, MS-3, and John

Shufeldt, MD, JD, MBA, FACEP, discuss the dramatic injuries that participants can sustain in mixed martial arts, one of the fastest-growing sports in the United States. But they caution urgent care practitioners that such injuries can make it easy to miss some less-obvious damage from atypical mechanisms of injury.



Debold-Hawley is a fourth-year medical student at Texas Tech Health Science Center in Lubbock, Texas. Shufeldt is Principal at Shufeldt Consulting in Scottsdale, Arizona, and is on the Editorial Board of the *Journal of Urgent Care Medicine*.

### Also in this issue:

In *Health Law and Compliance*, attorney and compliance professional **K Royal, JD, CIPP/E, CIPP/US**, shows how likely it is that your urgent care center will face a data breach. Of all U.S. industries, health care has the highest data-breach cost per record, at \$363. She provides you with plenty of practical measures for dealing with data breaches.

**Sean M. McNeeley, MD**, and the **Urgent Care College of Physicians** review new abstracts from the literature on bacterial versus viral infections, chronic sinusitis, antibiotic resistance in gonorrhea, bronchiolitis, low back pain, drugs in categories D and X, migraines, and a modified Valsalva maneuver.

In *Coding Q&A*, **David Stern, MD, CPC**, discusses coding for treatment of open fractures versus closed fractures.

Our *Developing Data* piece provides statistics on the most frequently performed blood tests at U.S. urgent care centers in 2014. ■

### To Submit an Article to JUCM

**JUCM**, *The Journal of Urgent Care Medicine* encourages you to submit articles in support of our goal to provide practical, up-to-date clinical and practice management information to our readers—the nation's urgent care clinicians. Articles submitted for publication in **JUCM** should provide practical advice, dealing with clinical and practice management problems commonly encountered in day-to-day practice.

Manuscripts on clinical or practice management topics should be 2,600–3,200 words in length, plus tables, figures, pictures, and references. Articles that are longer than this will, in most cases, need to be cut during editing.

We prefer submissions by e-mail, sent as Word file attachments (with tables created in Word, in multicolumn format) to [editor@jucm.com](mailto:editor@jucm.com). The first page should include the title of the article, author names in the order they are to appear, and the name, address, and contact information (mailing address, phone, fax, e-mail) for each author.





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## FROM THE CHIEF EXECUTIVE OFFICER

A rising tide  
lifts all the  
boats.

Be the  
change you  
want to see.



Founded by visionaries who understood the need for a dedicated association to serve the unique interests and needs of urgent care, the Urgent Care Association of America (UCAOA) is now nearing the end of its 11th year. Leading the organization is a blend of new yet highly committed, multidisciplinary health-care providers, urgent care center owners, center operators, and industry leaders. These volunteers have driven incredible growth and change. Yet there is a feeling that we must continually reassess and reinvent who we are and how we can deliver the resources and services that you need.

It is the voice of many, the strength of numbers, and the vision of the elected and appointed ranks of volunteers who lead and create the direction UCAOA will take. How is your voice being heard? If you have views that may be complimentary to or distinctly different from what you see happening today, have you stepped up? The theory behind “A rising tide lifts all the boats” for UCAOA depends upon the willingness of a committed few leaders and a cadre of energetic and diversified volunteers who represent the multitude of models of urgent care, health-care providers at all levels, and industry representatives to be part of the rising tide, not anchors.



**P. Joanne Ray** is chief executive officer of the Urgent Care Association of America. She may be contacted at [jray@ucaoa.org](mailto:jray@ucaoa.org).

Take the first step by being a part of our virtual planning team to weigh in on the priorities and direction for the future of UCAOA. This process will require your input electronically and via phone over a 2-month period (November and December) and will help to gather strong member-driven feedback that we will carry into the UCAOA board planning process in 2016 as we expand upon our current strategic initiatives. Your input will ensure that your voice is heard and that the needs of your team are highlighted. If you would like to take a more active role as a volunteer, the oar is extended. We welcome your energy to help lift the tide for all of urgent care. To join the virtual planning team or discuss the volunteer opportunities that best meet your skill sets and interests, please send an email to me at [jray@ucaoa.org](mailto:jray@ucaoa.org) with the subject line “Planning Team.” A call for team members will also be sent out through *UCAccess* in October. You are important to this process, whether you are new to the industry or have been involved since the very beginning. ■

We salute the founders of UCAOA: Don Kilgore, Dr. John Koehler, Dan Konow, Dr. William Meadows, Dr. Lee Resnick, Marge Simat, and Dr. David Stern. We also salute the individuals who have served as board members over the past 11 years: Dr. Jeff Collins, Kathy Crampton (deceased), Dr. Don Dillahunty, Dr. William Gluckman, Jim Gore, Dr. Jimmy Hoppers, J. Dale Key, Dr. Peter Lamelas, Cindi Lang, Ken Palestrant, Kevin Ralofsky, Dr. Marc Salzberg, Laurel Stoimenoff, and Amy Tecosky. The current board includes Dr. Robert Kimball (President), Steve Sellars (President-Elect), Dr. Roger Hicks (Treasurer), Dr. John Kulin (Secretary), Dr. Sean McNeeley (Treasurer-Elect), Dr. Nathan Newman (Immediate Past President), Alan Ayers, Logan McCall, Barb McKee, Dr. Pamela Sullivan, Damaris Medina, and Jeanne Zucker.



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## Managing Hypertensive Emergencies in the Urgent Care Setting

**Urgent message:** Health-care practitioners frequently see patients in urgent care centers who have elevated blood pressure. It is vital that they be able to identify hypertensive emergencies to immediately start lowering such patients' blood pressure and then transfer them to an emergency department, to avoid hypertensive damage to the brain, heart, and kidneys.

JON JUHASZ, MD

### Introduction

Elevated blood pressure (BP) is very common in the urgent care setting, oftentimes from pain or from chronic hypertension (HTN). HTN is generally defined as a sustained BP >140/90 mm Hg. It affects approximately 40% of patients presenting to U.S. emergency departments (EDs) each year.<sup>1</sup> Furthermore, it is very important to identify a very small subset of patients who meet the criteria for hypertensive emergency. That is the focus here: identifying and treating patients who have a true hypertensive emergency, as defined by a BP acutely elevated BP from baseline (no specific cutoff value but usually >180/120 mm Hg) plus *evidence of end-organ damage*. These patients need an appropriate organ-system work-up and should be referred immediately to an ED. Even though hypertensive emergencies make up only 0.2% of ED patient visits, it is extremely important

Jon J. Juhasz, MD, Major, MC, SFS, USAF, is board-certified in emergency medicine. He is a Combat Medic in the U.S. Air Force and has served in both Iraq and Afghanistan, flying combat aerovac on six different aircraft and providing care for wounded soldiers. He is currently stationed at Wright-Patterson Air Force Base, Dayton, Ohio.



not to miss this true emergency. HTN-related brain damage, either from hypertensive encephalopathy, hemorrhagic or ischemic stroke, or head trauma, make up approximately 40% to 50% of U.S. cases each year. Car-

diac damage from severe HTN accounts for approximately 30% to 40% of U.S. cases each year and manifests as heart failure, cardiac ischemia, and acute pulmonary edema. Kidney damage (acute kidney injury, nephrosclerosis, or tubular necrosis) constitute about 10% to 15% of hypertensive emergencies.<sup>2,3</sup> Aortic dissection and eclampsia are less-prevalent causes of HTN syndromes that need aggressive emergency management.

### Clinical Scenarios

Given that the brain, heart, and kidneys are the primary organs damaged in hypertensive emergencies, what follows are three clinical scenarios (one per organ system) that are based on actual patients presenting to an urgent care center or ED. The focus should be on identifying or ruling out life-threatening conditions. It is important to concentrate on red flags, or the lack thereof, that indicate end-organ damage. With this perspective, this article explores key points from the history of present illness, physical examination, diagnostic work-up, medical management, and appropriate disposition.

- **Case 1—painkiller for a headache:** A 79-year-old man with past medical history of HTN presents to an urgent care center with a 2-day history of headache. The patient states that currently he is “just fine” and only has a mild headache. He says he just needs a painkiller for his headache and would like to go home. He has been brought in by his daughter because she noted that earlier today during their phone conversation, he had slowed speech and decreased attentiveness. She states he is usually pretty good about taking his medications and is probably fine but wants him “checked out.” The patient says that sometimes he “just gets tired” during the day and that his daughter is overreacting. The patient’s BP is 217/103 mm Hg (mean arterial pressure [MAP], 141 mm Hg), and he states it has been running a little high lately, but the daughter says, “Not that high.”
- **Case 2—just a prescription refill:** A 68-year-old obese woman with past medical history of “only mild heart failure” says that she could not get an appointment to see her primary-care provider this week and she is “here just for a medication refill.” She emphasizes that she only needs a simple refill prescription because she has been out of her Lasix (furosemide) for the past 4 days. You note that she is speaking in 5- to 6-word sentences, and she does say that she was quite winded from walking in from the parking lot. She eventually reveals that

her shortness of breath has been worsening and that her legs are more swollen than usual. Her BP is 179/148 mm Hg.

- **Case 3—worn out:** A 52-year-old man reports being light-headed after working in his yard all day on a warm, sunny day. The patient says he has no history of illness but reports that he has not seen a physician for years. He says his wife made him come in because he did not look well. He says that he is “really worn out” from his labors today and that he probably “overdid it” and should have drunk more water. He recalls urinating when he woke up this morning but thinks that he may have urinated only one other time today. He is currently thirsty. His BP is 211/151 mm Hg.

These scenarios serve here as references to elucidate appropriate treatment of patients with severely elevated BP in the urgent care setting.

### Red Flag Signs and Symptoms

Whenever a patient’s BP is remarkably elevated above baseline (again, there is no official cutoff, but the one common in clinical settings is >180/120 mm Hg), then our focus is to search for any signs or symptoms of end-organ damage. If either parameter of their BP is >180/120 mm Hg and the patient is completely asymptomatic, then we call this *severe asymptomatic HTN*. These patients can undergo a work-up, be given a diagnosis, and treated as outpatients in accordance with the Eighth Joint National Committee (JNC 8) guideline released in 2014 on treating high BP in adults.<sup>4</sup> However, the focus here is on what constitutes significant end-organ damage that would necessitate transferring the patient from an urgent care center to an ED for admission and further management of their hypertensive emergency.

### Hypertensive Brain Damage

Most argue that a moderate to severe headache alone with markedly elevated BP without any other neurologic signs or symptoms is *insufficient* to meet criteria for a hypertensive emergency. Moreover, the same can be said for epistaxis or dizziness. However, if the patient is exhibiting *any neurologic dysfunction* (i.e., difficulty with vision, hearing, balance, coordination, speech, agitation, delirium, altered mental status, or focal neurologic findings) related to their surges in elevated BP, then a hypertensive emergency should be suspected. These symptoms are caused by cerebral edema from an enor-

mous amount of pressure in the capillary beds, causing swelling of the brain that can even lead to seizures and coma. The patient in case 1 (“painkiller for a headache”) initially did not exhibit any of the red flags, but his history of difficulty with speech and decreased attentiveness during a recent phone conversation *should absolutely not be dismissed* as caused by tiredness. Patients may minimize their own symptoms, but if urgent care providers also give in to this minimization, it could be disastrous for both patients and providers.

### **Hypertensive Heart Damage**

Acutely elevated systemic BP places an increased strain on the heart to pump and overcome the patient’s increased systemic vascular resistance. This increased workload on the heart can cause or exacerbate heart failure and may lead to cardiac ischemia. Symptoms can include chest pain, chest tightness, shortness of breath, dyspnea on exertion, increased peripheral edema, tachycardia, respiratory distress, and orthopnea. Acute pulmonary edema ensues when the heart can no longer compensate and overcome the increased systemic vascular resistance. Our patient in case 2 (“just a prescription refill”) might have reported a history of “only mild heart failure,” but given her increased shortness of breath, she will likely need much more than a refill of her Lasix. Often this agenda—to get a prescription and continue on one’s merry way—might work if it was only 1 day of excess fluid. However, after 4 days of being overloaded with fluid, her heart is now being excessively strained and her pulmonary edema is manifested in her shortened sentences. Additional history further revealed that she had to rest twice, approximately every 30 to 40 feet, on her way in from the parking lot. She also reported using an extra two pillows to help her sleep the previous night.

### **Hypertensive Kidney Damage**

The kidneys become stressed when overpressurized fluid is bursting through the glomeruli. Acute elevations of BP wreak havoc on the glomeruli and nephrons, leading to glomerular ischemia, tubular necrosis, and microscopic hematuria. Activation of the renin-angiotensin pathway only exacerbates the problem. Oftentimes the patient might have recently taken extra diuretics or might have decreased their fluid intake, and this further accelerates the effects of the renin-angiotensin activation, leading to acute kidney injury (AKI). AKI is defined as an increase in serum creatinine by  $>0.3$  mg/dL, or a 50% increase in serum creatinine, or urine output of

$<0.5$  mL/kg per hour over 6 hours.<sup>5</sup> The patient often reports a vague, poorly defined illness that is likely caused by the patient’s elevated uremia, possible electrolyte disturbances, and hypovolemia. The patient may report decreased fluid intake and may feel thirsty. They may have not properly hydrated in the setting of increased fluid loss from sweating after heavy labor or exercise. These combined effects usually result in decreased urinary output. The patient in case 3 (“worn out”) had the majority of the aforementioned symptoms: vague illness, poor fluid intake, increased fluid loss from hard labor on a warm day, and decreased urinary output. He likely has had HTN for years but does not see a physician regularly enough for his condition to be diagnosed. He now unknowingly relies greatly on his urgent care provider to protect his kidneys from further thrashing and complete renal failure.

### **Work-Up and Treatment**

In all patients who present any of the symptoms or red flags, it is important to use a monitor for frequent BP checks. Proper management of hypertensive emergencies relies heavily on accurate BP measurements. This often means that if the BP was initially assessed by an automated machine, then it should be verified manually for accuracy and then rechecked frequently on the monitor. The patient’s symptoms can deteriorate if the BP continues to rise. A decrease in BP should also correlate with a decrease in symptoms.

### **Physical Examination Pearls**

An organ-system approach to examination is essential. For example, in patients with symptoms indicating possible brain ischemia, a complete neurologic examination should be performed, including a cranial nerve examination, cerebellar examination, and a fundoscopic examination. How often do we actually spend several minutes attempting funduscopy? Well, this is exactly the time to do just that. Papilledema and hypertensive retinopathy are well described in hypertensive states. Although the examination findings are sometimes difficult to fully appreciate without dilation, the clinician may find cotton wool spots and flame hemorrhages in addition to papilledema.

The patient in case 1 (“painkiller for a headache”) initially had completely normal findings on neurologic examination. Approximately 30 minutes into the examination, his daughter came out of the examination room and reported that “he is doing it again.” The patient had become agitated, his speech was slowed, and his



responses were slow but angry. He had no focal motor deficits. His BP was immediately retaken, and it had spiked to 269/146 mm Hg.

### **Laboratory Tests and Imaging**

In patients with a hypertensive emergency, the following tests and imaging are commonly ordered on the basis of the target organ that is facing damage:

- Electrocardiography, looking for signs of cardiac ischemia
- Chest radiography, focusing on evidence of pulmonary edema and cardiomegaly. Although electrocardiographs (ECGs) and chest radiographs are commonly ordered, both have a very poor sensitivity (failing to identify problems in 75% of patients) for finding left ventricular dysfunction in hypertensive heart disease.<sup>6</sup>
- Complete blood count (CBC), with differential, because occasionally in HTN syndromes, a hemolytic uremic syndrome may develop, and some argue that a blood smear is justified to rule out a microangiopathic hemolytic anemia
- Serum electrolytes, with a focus on blood urea nitrogen (BUN) and creatinine levels, compared with previous findings
- Cardiac enzymes, especially when symptoms may suggest cardiac ischemia
- Pro-brain natriuretic peptide, if patients have a history and/or symptoms of congestive heart failure
- Urinalysis, looking for microscopic hematuria and elevated protein levels
- Urine pregnancy test in females of childbearing age, to exclude preeclampsia
- Head computed tomography (CT), in patients with symptoms of neurologic dysfunction. In the majority of patients with hypertensive encephalopathy and cerebral ischemia, findings on head CT should be normal. Head CT is much better than magnetic resonance imaging at identifying cerebral hemorrhage, head trauma, or other mass effects.
- Chest CT with intravenous (IV) contrast, in search of possible aortic dissection
- Renal ultrasound, usually completed during admission, to rule out renal artery stenosis

### **Correcting the Hypertension**

In most symptomatic HTN syndromes, the goal within the first 1 to 2 hours is to reduce the mean arterial pressure by 20% to 25%. It is important not to overshoot when correcting a patient's BP, because this can exacer-

bate end-organ damage.<sup>7</sup> Patients with long-standing HTN adapt to their hypertensive state via an autoregulatory process. This process shifts the cerebral blood flow according to the degree of their baseline hypertensive state. This means that if the BP is aggressively overcorrected (i.e., the patient's BP is decreased to within a normal range of <140/90 mm Hg), then the patient's cerebral blood flow can potentially drop off a cliff to a state that is equivalent to a normotensive patient exhibiting hypotension. Emphasis should be placed on reducing the BP to a point at which the patient's symptoms resolve. Depending on the degree of elevation, if a reduction of 20% to 25% does not reverse symptoms of end-organ damage, then a reduction of 30% to 40% may be needed. The patient in case 1 was asymptomatic on initial presentation but became symptomatic when his BP spiked to 269/146 mm Hg (MAP, 187 mm Hg) from 217/103 mm Hg (MAP, 141 mm Hg). The goal in his case should be to return his BP to an asymptomatic level, knowing that at 217/103 mm Hg, the patient has no symptoms.

As a patient's baseline mean arterial BP increases, the baseline pathophysiology can change so that potentially the cerebral blood flow could drastically drop but still be within the normotensive range. This should be kept in mind when correcting a patient's BP, and a gentle correction should be emphasized. Because of the real possibility of ischemia from overshooting while controlling the patient's BP, it is generally recommended that the patient's BP not be decreased by more than 25% to 30% in the first 24 hours of treatment.

### **Diagnoses That Necessitate Aggressive Blood Pressure Control**

There are a *few exceptions* to the general rule to gently decrease the patient's BP. More-aggressive BP management is required for the following:

- **Aortic dissection:** It is recommended to achieve heart rate control first with  $\beta$ -blockers (ideally to a heart rate of <60 bpm). The heart rate is decreased first in order to decrease the shear forces on the aortic wall. The  $\beta$ -blockade is followed by an  $\alpha$ -mediated blockade (usually with a calcium-channel blocker) to a goal systolic BP (SBP) of 100 to 120 mm Hg.
- **Intracranial hemorrhage:** SBP goals have recently changed for this condition. The goal used to be a SBP of <180 mm Hg, but more recent evidence suggests a SBP of <140 mm Hg is superior. In reference to intracerebral hemorrhage, the main body of evidence comes from two recent trials, the Intensive

A high-angle photograph of a swimmer in a pool, viewed from above. The swimmer is in the center of the frame, wearing a purple swim cap and purple swim trunks, and is in a streamlined position. The pool is blue with white lane lines. A purple starting block is visible at the top of the pool. The background is a light blue sky.

## A short course in acute bacterial skin and skin structure infections (ABSSSI)

**Short course**—6-day course of therapy

**Flexible**—Once-daily, IV or oral administration with no dose adjustments needed for renal or hepatic insufficiency, weight, race, gender, or age

**Low incidence of adverse events**—The most common adverse reactions occurring in patients taking SIVEXTRO® (tedizolid phosphate): nausea (8%), headache (6%), diarrhea (4%), vomiting (3%), and dizziness (2%)

**Potency**—Consistent antimicrobial activity against susceptible Gram-positive bacteria, including MRSA

**Indication:** SIVEXTRO is an oxazolidinone-class antibacterial indicated for the treatment of adults with acute bacterial skin and skin structure infections (ABSSSI) caused by susceptible isolates of the following Gram-positive microorganisms: *Staphylococcus aureus* (including methicillin-resistant [MRSA] and methicillin-susceptible [MSSA] isolates), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* group (including *Streptococcus anginosus*, *Streptococcus intermedius* and *Streptococcus constellatus*), and *Enterococcus faecalis*.

**Usage:** To reduce the development of drug-resistant bacteria and maintain the effectiveness of SIVEXTRO and other antibacterial drugs, SIVEXTRO should be used only to treat ABSSSI that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

### Selected Important Safety Information

**Patients with neutropenia:** The safety and efficacy of SIVEXTRO in patients with neutropenia (neutrophil counts  $<1000$  cells/mm<sup>3</sup>) have not been adequately evaluated. In an animal model of infection, the antibacterial activity of SIVEXTRO was reduced in the absence of granulocytes. Alternative therapies should be considered when treating patients with neutropenia.

***Clostridium difficile*-associated diarrhea (CDAD),** ranging from mild diarrhea to fatal colitis, has been reported with nearly all systemic antibacterial agents, including SIVEXTRO. Evaluate all patients who present with diarrhea following antibiotic use. Careful medical history is necessary because CDAD has been reported to occur more than two months after the administration of antibacterial agents. If CDAD is suspected or confirmed, antibacterial use not directed against *C. difficile* should be discontinued, if possible.

**Development of drug-resistant bacteria:** Prescribing SIVEXTRO in the absence of a proven or strongly suspected bacterial infection or prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

**Before prescribing SIVEXTRO, please read the accompanying Brief Summary on adjacent pages.**

 **SIVEXTRO®**  
(tedizolid phosphate)  
200 mg injection / 200 mg tablet

IV=intravenous.



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Learn more at [SIVEXTRO.com](http://SIVEXTRO.com)



**SIVEXTRO® (tedizolid phosphate) for injection, for intravenous use**

**SIVEXTRO® (tedizolid phosphate) tablet, for oral use**

## BRIEF SUMMARY OF PRESCRIBING INFORMATION

Please see package insert for Full Prescribing Information.

## INDICATIONS AND USAGE

**Acute Bacterial Skin and Skin Structure Infections** SIVEXTRO® is an oxazolidinone-class antibacterial indicated for the treatment of acute bacterial skin and skin structure infections (ABSSSI) in adults caused by susceptible isolates of the following Gram-positive microorganisms: *Staphylococcus aureus* (including methicillin-resistant [MRSA] and methicillin-susceptible [MSSA] isolates), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* Group (including *Streptococcus anginosus*, *Streptococcus intermedius*, and *Streptococcus constellatus*), and *Enterococcus faecalis*.

**Usage** To reduce the development of drug-resistant bacteria and maintain the effectiveness of SIVEXTRO and other antibacterial drugs, SIVEXTRO should be used only to treat ABSSSI that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

**CONTRAINDICATIONS** None.

## WARNINGS AND PRECAUTIONS

**Patients with Neutropenia** The safety and efficacy of SIVEXTRO in patients with neutropenia (neutrophil counts <1000 cells/mm<sup>3</sup>) have not been adequately evaluated. In an animal model of infection, the antibacterial activity of SIVEXTRO was reduced in the absence of granulocytes. Alternative therapies should be considered when treating patients with neutropenia and acute bacterial skin and skin structure infection.

**Clostridium difficile-Associated Diarrhea** *Clostridium difficile*-associated diarrhea (CDAD) has been reported for nearly all systemic antibacterial agents including SIVEXTRO, with severity ranging from mild diarrhea to fatal colitis. Treatment with antibacterial agents can alter the normal flora of the colon and may permit overgrowth of *C. difficile*. *C. difficile* produces toxins A and B which contribute to the development of CDAD. Hypertoxin producing strains of *C. difficile* cause increased morbidity and mortality, as these infections can be refractory to antibacterial therapy and may require colectomy. CDAD must be considered in all patients who present with diarrhea following antibiotic use. Careful medical history is necessary because CDAD has been reported to occur more than two months after the administration of antibacterial agents. If CDAD is suspected or confirmed, antibacterial use not directed against *C. difficile* should be discontinued, if possible. Appropriate measures such as fluid and electrolyte management, protein supplementation, antibacterial treatment of *C. difficile*, and surgical evaluation should be instituted as clinically indicated.

**Development of Drug-Resistant Bacteria** Prescribing SIVEXTRO in the absence of a proven or strongly suspected bacterial infection or prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

## ADVERSE REACTIONS

**Adverse Reactions in Clinical Trials** Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in clinical trials of a drug cannot be compared directly to rates from clinical trials of another drug and may not reflect rates observed in practice. Adverse reactions were evaluated for 1050 patients treated with SIVEXTRO and 662 patients treated with the comparator antibacterial drug in two Phase 2 and two Phase 3 clinical trials. The median age of patients treated with SIVEXTRO in the Phase 2 and Phase 3 trials was 42 years, ranging between 17 and 86 years old. Patients treated with SIVEXTRO were predominantly male (65%) and White (82%).

**Serious Adverse Reactions and Adverse Reactions Leading to Discontinuation** Serious adverse reactions occurred in 12/662 (1.8%) of patients treated with SIVEXTRO and in 13/662 (2.0%) of patients treated with the comparator. SIVEXTRO was discontinued due to an adverse reaction in 3/662 (0.5%) of patients and the comparator was discontinued due to an adverse reaction in 6/662 (0.9%) of patients.

**Most Common Adverse Reactions** The most common adverse reactions in patients treated with SIVEXTRO were nausea (8%), headache (6%), diarrhea (4%), vomiting (3%), and dizziness (2%). The median time of onset of adverse reactions was 5 days for both SIVEXTRO and linezolid with 12% occurring on the second day of treatment in both treatment groups. The following table lists selected adverse reactions occurring in at least 2% of patients treated with SIVEXTRO in clinical trials.

## Selected Adverse Reactions Occurring in ≥2% of Patients Receiving SIVEXTRO in the Pooled Phase 3 ABSSSI Clinical Trials

Adverse Reactions	Pooled Phase 3 ABSSSI Clinical Trials	
	SIVEXTRO (200 mg oral/intravenous once daily for 6 days) (N=662)	Linezolid (600 mg oral/intravenous twice daily for 10 days) (N=662)
<b>Gastrointestinal Disorders</b>		
Nausea	8%	12%
Diarrhea	4%	5%
Vomiting	3%	6%
<b>Nervous System Disorder</b>		
Headache	6%	6%
Dizziness	2%	2%

The following selected adverse reactions were reported in SIVEXTRO-treated patients at a rate of less than 2% in these clinical trials: *Blood and Lymphatic System Disorders*: anemia; *Cardiovascular*: palpitations, tachycardia; *Eye Disorders*: asthenopia, vision blurred, visual impairment, vitreous floaters; *General Disorders and Administration Site Conditions*: infusion-related reactions; *Immune System Disorders*: drug hypersensitivity; *Infections and Infestations*: *Clostridium difficile* colitis, oral candidiasis, vulvovaginal mycotic infection; *Investigations*: hepatic transaminases increased, white blood cell count decreased; *Nervous System Disorders*: hypoesthesia, paresthesia, VII<sup>th</sup> nerve paralysis; *Psychiatric Disorders*: insomnia; *Skin and Subcutaneous Tissue Disorders*: pruritus, urticaria, dermatitis; *Vascular Disorders*: flushing, hypertension.

**Laboratory Parameters** Hematology laboratory abnormalities that were determined to be potentially clinically significant in the pooled Phase 3 ABSSSI clinical trials are provided in the table below.

## Potentially Clinically Significant Lowest Laboratory Values in the Pooled Phase 3 ABSSSI Clinical Trials

Laboratory Assay	Potentially Clinically Significant Values <sup>†</sup>	
	SIVEXTRO (200 mg oral/intravenous once daily for 6 days) (N=618) <sup>‡</sup>	Linezolid (600 mg oral/intravenous twice daily for 10 days) (N=617)
Hemoglobin (<10.1 g/dL [M]) (<9 g/dL [F])	3.1%	3.7%
Platelet count (<112 × 10 <sup>3</sup> /mm <sup>3</sup> )	2.3%	4.9%
Absolute neutrophil count (<0.8 × 10 <sup>3</sup> /mm <sup>3</sup> )	0.5%	0.6%

M = male; F = female

<sup>\*</sup> <75% (<50% for absolute neutrophil count) of lower limit of normal (LLN) for values normal at baseline

<sup>†</sup> Represents lowest abnormal post-baseline value through the last dose of active drug

<sup>‡</sup> Number of patients with non-missing laboratory values

**Myelosuppression** Phase 1 studies conducted in healthy adults exposed to SIVEXTRO for 21 days showed a possible dose and duration effect on hematologic parameters beyond 6 days of treatment. In the Phase 3 trials, clinically significant changes in these parameters were generally similar for both treatment arms (see the table above).

**Peripheral and Optic Neuropathy** Peripheral and optic neuropathy have been described in patients treated with another member of the oxazolidinone class for longer than 28 days. In Phase 3 trials, reported adverse reactions for peripheral neuropathy and optic nerve disorders were similar between both treatment arms (peripheral neuropathy 1.2% vs. 0.6% for tedizolid phosphate and linezolid, respectively; optic nerve disorders 0.3% vs. 0.2%, respectively). No data are available for patients exposed to SIVEXTRO for longer than 6 days.

#### USE IN SPECIFIC POPULATIONS

**Pregnancy. Pregnancy Category C** There are no adequate and well-controlled studies of SIVEXTRO in pregnant women. SIVEXTRO should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. In embryo-fetal studies, tedizolid phosphate was shown to produce fetal developmental toxicities in mice, rats, and rabbits. Fetal developmental effects occurring in mice in the absence of maternal toxicity included reduced fetal weights and an increased incidence of costal cartilage anomalies at the high dose of 25 mg/kg/day (4-fold the estimated human exposure level based on AUCs). In rats, decreased fetal weights and increased skeletal variations including reduced ossification of the sternbrae, vertebrae, and skull were observed at the high dose of 15 mg/kg/day (6-fold the estimated human exposure based on AUCs) and were associated with maternal toxicity (reduced maternal body weights). In rabbits, reduced fetal weights but no malformations or variations were observed at doses associated with maternal toxicity. The no observed adverse effect levels (NOAELs) for fetal toxicity in mice (5 mg/kg/day), maternal and fetal toxicity in rats (2.5 mg/kg/day), and rabbits (1 mg/kg/day) were associated with tedizolid plasma area under the curve (AUC) values approximately equivalent to (mice and rats) or 0.04-fold (rabbit) the tedizolid AUC value associated with the oral human therapeutic dose. In a pre-postnatal study, there were no adverse maternal or offspring effects when female rats were treated during pregnancy and lactation with tedizolid phosphate at the highest tested dose of 3.75 mg/kg/day, with plasma tedizolid exposure (AUC) approximately equivalent to the human plasma AUC exposure at the clinical dose of 200 mg/day.

**Nursing Mothers** Tedizolid is excreted in the breast milk of rats. It is not known whether tedizolid is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SIVEXTRO is administered to a nursing woman.

**Pediatric Use** Safety and effectiveness in pediatric patients below the age of 18 have not been established.

**Geriatric Use** Clinical studies of SIVEXTRO did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. No overall differences in pharmacokinetics were observed between elderly subjects and younger subjects.

#### OVERDOSAGE

In the event of overdosage, SIVEXTRO should be discontinued and general supportive treatment given. Hemodialysis does not result in meaningful removal of tedizolid from systemic circulation.

#### CLINICAL PHARMACOLOGY

##### Drug Interaction Studies

**Drug Metabolizing Enzymes** Transformation via Phase 1 hepatic oxidative metabolism is not a significant pathway for elimination of SIVEXTRO. Neither SIVEXTRO nor tedizolid detectably inhibited or induced the metabolism of selected CYP enzyme substrates. No potential drug interactions with tedizolid were identified in *in vitro* CYP inhibition or induction studies. These results suggest that drug-drug interactions based on oxidative metabolism are unlikely.

**Membrane Transporters** The potential for tedizolid or tedizolid phosphate to inhibit transport of probe substrates of important drug uptake (OAT1, OAT3, OATP1B1, OATP1B3, OCT1, and OCT2) and efflux transporters (P-gp and ABCG2 [also known as BCRP]) was tested *in vitro*. No clinically significant inhibition of any transporter was observed at tedizolid circulating plasma concentrations up to the  $C_{max}$ .

**Monoamine Oxidase Inhibition** Tedizolid is a reversible inhibitor of monoamine oxidase (MAO) *in vitro*. The interaction with MAO inhibitors could not be evaluated in Phase 2 and 3 trials, as subjects taking such medications were excluded from the trials.

**Adrenergic Agents** Two placebo-controlled crossover studies were conducted to assess the potential of 200 mg oral SIVEXTRO at steady state to enhance pressor responses to pseudoephedrine and tyramine in healthy individuals. No meaningful changes in blood pressure or heart rate were seen with pseudoephedrine. The median tyramine dose required to cause an increase in systolic blood pressure of  $\geq 30$  mmHg from pre-dose baseline was 325 mg with SIVEXTRO compared to 425 mg with placebo. Palpitations were reported in 21/29 (72.4%) subjects exposed to SIVEXTRO compared to 13/28 (46.4%) exposed to placebo in the tyramine challenge study.

**Serotonergic Agents** Serotonergic effects at doses of tedizolid phosphate up to 30-fold above the human equivalent dose did not differ from vehicle control in a mouse model that predicts serotonergic activity. In Phase 3 trials, subjects taking serotonergic agents including antidepressants such as selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants, and serotonin 5-hydroxytryptamine (5-HT<sub>1</sub>) receptor agonists (triptans), meperidine, or buspirone were excluded.

#### NONCLINICAL TOXICOLOGY

**Carcinogenesis, Mutagenesis, Impairment of Fertility** Long-term carcinogenicity studies have not been conducted with tedizolid phosphate. Tedizolid phosphate was negative for genotoxicity in all *in vitro* assays (bacterial reverse mutation (Ames), Chinese hamster lung (CHL) cell chromosomal aberration) and in all *in vivo* tests (mouse bone marrow micronucleus, rat liver unscheduled DNA synthesis). Tedizolid, generated from tedizolid phosphate after metabolic activation (*in vitro* and *in vivo*), was also tested for genotoxicity. Tedizolid was positive in an *in vitro* CHL cell chromosomal aberration assay, but negative for genotoxicity in other *in vitro* assays (Ames, mouse lymphoma mutagenicity) and *in vivo* in a mouse bone marrow micronucleus assay. In a fertility study, oral tedizolid phosphate had no adverse effects on the fertility or reproductive performance, including spermatogenesis, of male rats at the maximum tested dose (50 mg/kg/day) with a plasma tedizolid AUC approximately 5-fold greater than the plasma AUC value in humans at the oral therapeutic dose. Tedizolid phosphate also had no adverse effects on the fertility or reproductive performance of adult female rats at doses up to the maximum tested (15 mg/kg/day). Plasma tedizolid exposure (AUC) at this NOAEL in female rats was approximately 4-fold higher than that in humans at the oral therapeutic dose.

**Animal Toxicity and/or Pharmacology** Repeated-oral and intravenous dosing of tedizolid phosphate in rats in 1-month and 3-month toxicology studies produced dose- and time-dependent bone marrow hypocellularity (myeloid, erythroid, and megakaryocyte), with associated reduction in circulating RBCs, WBCs, and platelets. These effects showed evidence of reversibility and occurred at plasma tedizolid exposure levels (AUC)  $\geq 6$ -fold greater than the plasma exposure associated with the human therapeutic dose. In a 1-month immunotoxicology study in rats, repeated oral dosing of tedizolid phosphate was shown to significantly reduce splenic B cells and T cells and reduce plasma IgG titers. These effects occurred at plasma tedizolid exposure levels (AUC)  $\geq 3$ -fold greater than the expected human plasma exposure associated with the therapeutic dose.

**For more detailed information, please read the Prescribing Information.**

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BP Reduction in Acute Cerebral Haemorrhage Trial (INTERACT 1 released in 2010, and INTERACT 2 released in 2015) and the Antihypertensive Treatment of Acute Cerebral Hemorrhage (ATACH) study.<sup>8–10</sup> Essentially the evidence suggests that in intracerebral hemorrhage, the BP should be aggressively managed, being decreased to a SBP of <140 mm Hg within 6 hours, instead of <180 mm Hg under the old guidelines. More aggressive BP management has been shown to be correlated with decreased expansion of intracerebral bleeding and improved 30- and 90-day outcomes.

- **Thrombolysis for brain ischemia:** The goal BP for thrombolysis is <185/110 mm Hg. If the patient does not meet criteria for thrombolysis but cardiac ischemia is ongoing, the goal BP is a systolic of <220 mm Hg and a diastolic of <120 mm Hg.

### **Medications for Hypertensive Emergencies**

No single antihypertensive has been proven to be superior in efficacy or lowest in morbidity and mortality. According to Studying of Treatment of Acute hyperTension (STAT), the most commonly used bolus medication in the ED is labetalol and the most common infusion is nitroglycerin.<sup>11</sup> Both nicardipine and labetalol are generally good choices in the setting of brain end-organ damage. Nitroglycerin is commonly used for acute heart failure because it is very effective in decreasing preload and reducing effects of acute pulmonary edema. Continuous positive airway pressure (CPAP) has also been proven to be effective in treating acute pulmonary edema from congestive heart failure. Fenoldopam is often used when AKI is suspected, given that it improves corticomedullary perfusion of the kidneys and it is not renally cleared.

In cases of eclampsia or preeclampsia, the threshold for treatment is lower (treat when the SBP is >160 mm Hg), given that adverse outcomes occur at relatively lower BPs. Delivery of the infant is the ultimate treatment. Magnesium sulfate is the first-line treatment, and adjunctive treatments includes hydralazine, labetalol, and/or nicardipine. Benzodiazepines are often administered to patients with cocaine or other stimulant-induced HTN.

### **Disposition and Case Scenario Outcomes**

All patients with evidence of end-organ damage should be transferred to an ED for management of their hypertensive crisis. They are often admitted to an intensive care unit (ICU) for frequent monitoring.

The patient in case 1 (“painkiller for a headache”) was

treated for hypertensive encephalopathy. He met criteria for the diagnosis because his symptoms (altered mental status, disorientation, agitation, slowed speech, headache) occurred and resolved with spikes in BP. He was given a 10-mg IV bolus of labetalol; his symptoms decreased, and his BP dropped from 269/146 to 213/116 mm Hg. His findings on head CT, ECG, chest radiographs, CBC, basic metabolic profile, and urinalysis were all unremarkable. The clinician did find evidence of slight retinal hemorrhages on limited funduscopy. The patient was admitted to an ICU, and his BP was gently brought down over several days. Magnetic resonance images showed evidence of small-vessel ischemia changes but otherwise, the findings were nonacute. His daughter later discovered that he had not been taking his antihypertensives as frequently as he stated.

In case 2 (“just a prescription refill”), the urgent care provider did not succumb to the patient’s agenda. Instead, he astutely did a work-up for acute heart failure and pulmonary edema. An IV line was started, but no fluids were given. The patient was given 0.4 mg of sublingual nitroglycerin and oxygen. Her ECG showed no acute findings, but her chest radiographs showed evidence of bilateral increased fluffy interstitial markings, consistent with pulmonary edema. She was transferred to the local ED and admitted to the ICU, where she received CPAP and a nitroglycerin drip. She was given 80 g of Lasix intravenously for diuresis. After 12 L of diuresis over several days, she was eventually able to return home with her prescription for Lasix.

In case 3 (“worn out”), the patient’s serum creatinine level was 2.1 mg/dL (0.8 mg/dL at baseline 7 years earlier). His blood urea nitrogen level was also markedly elevated at 45 mg/dL (baseline level, 18 mg/dL). He was unable to provide a urine sample even after he was given 2 L of fluids intravenously. His urinary output was collected via Foley catheter, and it showed 21 to 40 red blood cells/HPF and tubular casts. He was given a small IV dose of nicardipine in the ED and later a dose of fenoldopam. He produced only 0.3 mL/kg per hour of urine in the first 24 hours. His feelings of general malaise decreased with IV hydration and a decrease in BP. His renal ultrasound findings were negative for renal artery stenosis. His creatinine clearance peaked at 3.2 mL/min. He slowly regained kidney function over the next several days and did well. He now sees his primary-care provider frequently.

### **Conclusion**

Managing elevated BP in the ED and urgent care settings is a common occurrence; it is required in 40% of U.S.

patients each year. If the patient has no signs or symptoms of end-organ damage, then is the patient is deemed to have asymptomatic HTN and can be discharged home. The patient should be advised to seek treatment by their primary-care provider and should be given appropriate antihypertensive medication in accordance with JNC 8 standards.

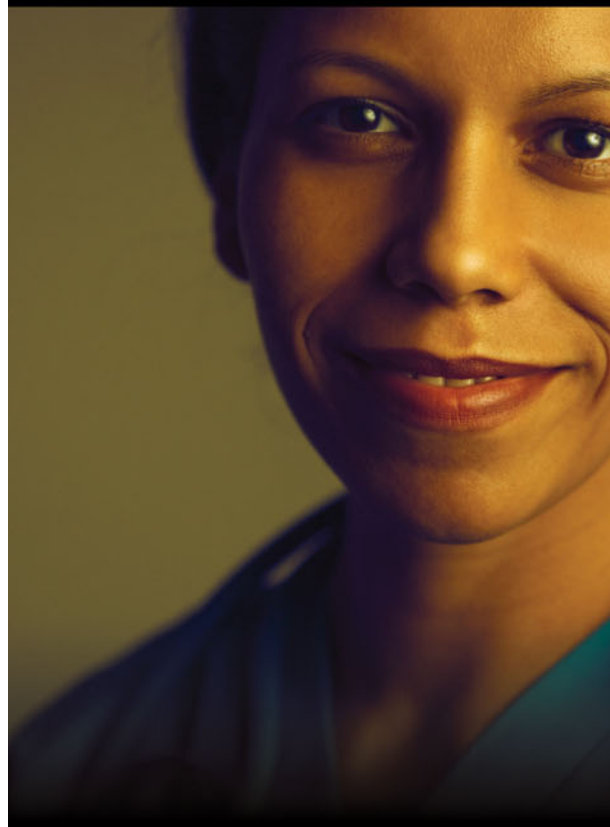
Patients with evidence of end-organ damage require an approach based on the organ system that is affected, most commonly the brain, heart, and kidneys. The urgent care provider must focus on decreasing the patient's BP, recognizing that overshooting can actually lead to decreased organ perfusion because of autoregulatory effects. With some exceptions (aortic dissection, intracranial hemorrhage, plan for thrombolysis in acute stroke), the BP should *not* be aggressively treated. Rather, a gentle decrease of 10% to 20% in the first hour and 25% to 30% in the first 24 hours is an appropriate goal. Nicardipine or labetalol is commonly used for HTN-related brain damage. Nitroglycerin is often given for hypertensive emergencies affecting the heart, including heart failure and pulmonary edema. Fenoldopam is beneficial for hypertensive emergencies involving the kidneys. Most patients with hypertensive emergencies are admitted to an ICU for further treatment. ■

#### References

1. Pitts SR, Nisk RW, Xu J, Burt CW. National Hospital Ambulatory Medical Care Survey: 2006 emergency department summary. *Natl Health Stat Report*. 2008;7:1–38.
2. Martin JF, Higashimura E, Garcia E, et al. Hypertensive crisis profile. Prevalence and clinical presentation. *Arg Bras Cardiol*. 2004;83:131–136.
3. Katz JN, Gore JM, Amin A, et al; STAT Investigators. Practice patterns, outcomes, and end-organ dysfunction for patients with acute severe HTN: The Studying the Treatment of Acute HTN (STAT) registry. *Am Heart J*. 2009;158:599–606.e1.
4. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*. 2014;311:507–520.
5. Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO clinical practice guideline for acute kidney injury. *Kidney Inter*. 2012;2(suppl):1–138. Available from: [http://www.kdigo.org/clinical\\_practice\\_guidelines/pdf/KDIGO%20AKI%20Guideline.pdf](http://www.kdigo.org/clinical_practice_guidelines/pdf/KDIGO%20AKI%20Guideline.pdf)
6. Levy P, et al. Prevalence and predictors of preclinical cardiac dysfunction in asymptomatic hypertensive patients in an urban emergency department. *Acad Emerg Med*. 2009;16:5117.
7. Elliot WJ. Clinical features in the management of selected hypertensive emergencies. *Prog Cardiovasc Dis*. 2006;48:316–325.
8. Anderson CS, Huang Y, Arima H, et al; INTERACT Investigators. Effects of early intensive BP-lowering treatment on the growth of hematoma and perihematomal edema in acute intracerebral hemorrhage: the Intensive BP Reduction in Acute Cerebral Hemorrhage Trial (INTERACT). *Stroke*. 2010; 41:307–312.
9. Anderson CS, et al. Magnitude of BP reduction and clinical outcomes in acute intracerebral hemorrhage: Intensive BP Reduction in Acute Cerebral Hemorrhage Trial (INTERACT 2) study. *HTN*. 2015;65:1026–1032.
10. Qureshi AI, Palesch YY, Martin R, Novitzke J, et al; Antihypertensive Treatment of Acute Cerebral Hemorrhage Study Investigators. Effect of systolic blood pressure reduction on hematoma expansion, perihematomal edema, and 3-month outcome among patients with intracerebral hemorrhage: results from the Antihypertensive Treatment of Acute Cerebral Hemorrhage study. *Arch Neurol*. 2010;67:570–576.
11. Devlin JW, Dasta JF, Kleinschmidt K, et al; Studying the Treatment of Acute Hypertension (STAT) Investigators. Patterns of antihypertensive treatment in patients with acute severe hypertension from a nonneurologic cause: Studying the Treatment of Acute Hypertension (STAT) registry. *Pharmacotherapy*. 2010;30:1087–1096.



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# Practice Management

## Improving the Patient Experience by Thinking Differently About Waiting

**Urgent message:** Attracting and retaining urgent care patients entails more than reducing the total duration of patient waits. It also requires understanding and managing patient expectations and perceptions of waiting.

MICHAEL BURKE, MBA, and GARRETT BOMBA, MD

### Introduction

People often respond irrationally in waiting situations. How else can we explain the fact that people are routinely more satisfied with a clearly explained 30-minute wait than with an uncertain 20-minute wait? It is not rational, but it is how we are wired as human beings to respond. Reaction to the experience of waiting—while on hold trying to schedule an appointment, in line at the grocery store, or sitting in the waiting room—is defined *less* by the overall length of the wait and *more* by the psychology of waiting. To create the sort of experience that attracts and retains patients, urgent care operators must look at the source of patient expectations and perceptions about waiting rather than focusing solely on reducing its duration.

There has been quite a bit of important research on this topic:

- In 1985, operations expert David Maister, formerly of Harvard Business School, articulated a simple formula to explain satisfaction with the wait experience,  $S = P - E$  (satisfaction = perception minus



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expectation), and proposed a model for the psychology of waiting<sup>1</sup> that would be later validated by the research of others.

- In 2002, Daniel Kahneman was awarded the Nobel Prize in Economics for his groundbreaking work in behavioral economics, a science that shows the limits of the assumption of rational behavior. Kahneman and Amos Tversky uncovered cognitive biases that explain quite a bit about perceptions and behavior in waiting situations.<sup>2</sup>

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**Michael Burke, MBA**, is founder and Chief Executive Officer of Clockwise.MD, based in Atlanta, Georgia. **Garrett Bomba, MD**, is Medical Director of Pentucket Medical ExpressCare, in Lawrence, Massachusetts, and is board-certified in emergency medicine.



“Our patients at Wake Forest Baptist Health Urgent Care have been thrilled with the option to wait at home rather than in our waiting room to be seen by a provider. The ability for them to make online reservations through our website program has been a real satisfier, and we have seen that objectively through our patient satisfaction scores.”

— James Guerrini, MD, Medical Director at Wake Forest Baptist Health Urgent Care

- Richard Larson from Massachusetts Institute of Technology noted that “the real problem isn’t just the duration of a delay. It’s how you experience that duration.”<sup>3,4</sup>
- In health care, researchers have established a clear link among perceived wait times, level of service, and satisfaction.<sup>5</sup> This link affects more than just satisfaction with the wait; it colors the patient’s entire experience with the urgent care center.<sup>6</sup>

### What Does the Research Tell Us?

We now know quite a bit about what sets people off when it comes to waiting, and how to transform the experience of waiting into a competitive advantage. First,

here are a few items from Maister’s work that illustrate what urgent care patients really hate about waiting:

- **Waits of an uncertain duration:** The perceived opportunity cost of an open-ended wait triggers loss aversion. Human beings respond about twice as strongly to the possibility of loss as they do to the possibility of gain. That is why an uncertain wait artificially magnifies the stress of waiting more than it should, and more than we would otherwise expect. It is also why Disney always lets you know how long you will wait in line.
- **Waits perceived as unfair:** Waits with no visible order, such as waiting for a subway train, can create tremendous anxiety. However, that is nothing compared with the reaction when there is a visible order but that order appears to have been violated. Think about your own reaction when someone cuts in line. Even if they cut in line behind you, it is still upsetting.
- **Unexplained waits:** If an emergency requires the reordering and delay of patients’ visits, explaining this to patients fundamentally changes the context of the situation. When patients hear “emergency,” their context and their expectations immediately shift—usually to a much more tolerant and understanding perspective.

Figure 1. Patients hold their place in line from home, via the Pentucket ExpressCare website.

The screenshot displays the Pentucket Medical ExpressCare website interface. At the top, there's a navigation bar with links: FIND A CLINICIAN, FIND A LOCATION, SERVICES & SPECIALTIES, EDUCATION & TEST PREP, FOR PATIENTS, and ABOUT US. A prominent red banner at the top right contains the phone number (888) 227-3762 and a 'Log into Patient Portal' button. Below the navigation bar, a large image of a Pentucket Medical building is shown. To the left of the building, the address 'Georgetown, 66 East Main St., Georgetown' is listed, along with a 'Learn More About Us' button. On the right side of the building image, there's a 'Skip the Wait' section showing current ExpressCare wait times: Riverwalk (5 mins) and Andover (0 mins), with a 'Reserve My Spot' button. Below the building image, there are three main sections: 'Video Library' with a video player showing a doctor, 'Find a Clinician' with a search form for last name and specialty, and 'About Pentucket Medical' with a brief history. At the bottom, there's a 'Connect with us' section featuring social media links and a 'Like Us' button. The footer includes the date '23 / JUL 2015' and a link to 'How to Treat Nosebleeds'.

- **Unoccupied time:** The classic example is the Houston airport that received complaints about the wait at baggage claim.<sup>7</sup> The airport decreased the wait time, but complaints persisted. Finally, they decided to increase the distance between the arrival gates and baggage claim. When passengers arrived at baggage claim after the long walk, their luggage was ready, and complaints vanished. By the way, a television in the lobby showing *Judge Judy* reruns *does not* qualify as occupied time. Letting patients wait at home or go get a cup of coffee nearby *does*.

Larson expands on the dangers of unoccupied time. He points to Disney as experts in occupying the time of guests waiting for rides. However, it is much more difficult to make your waiting room an engaging environment than it is to simply let your patients wait somewhere else.

Larson also notes that people generally overestimate the time they spend waiting. To address this, give customers easily accessible, realistic estimates of wait time. This greatly improves the accuracy of the customers' own guesses at how long they actually waited, and it subsequently has a positive affect on satisfaction levels.

Kahneman and Tversky note that many cognitive biases are rooted in an overall bias for negativity. That is, humans are wired by evolution to respond more strongly to a threat than to a positive experience. A negativity bias is useful if you are trying to avoid a saber-toothed tiger, but in modern life it often creates unnecessary discomfort. That is why the amount of frustration we experience when the line moves slower than expected is much greater than the amount of pleasure we feel if we are lucky to choose the fast line.

Kahneman and Tversky also noticed that the final moments of a waiting situation make the most meaningful impression. If the wait ends positively, as when a health-care provider sees the patient earlier than expected, patient satisfaction goes up. Disney leverages this by overestimating wait times for their attractions so that customers are pleasantly surprised when they wait less than expected. If you do not have a reliable system to keep track of lobby waits, setting accurate expectations can be difficult to do.

People are sensitive to the value of the thing they are waiting on. In environments where patients have options among urgent care centers, perceived value can increase with the popularity of a center.<sup>8</sup> The higher the perceived value, the more the customer will be willing to wait. However, once the part of the visit perceived as valuable—usually the time with the health-care provider—is over, patients may have less tolerance for paperwork, for waiting on a prescription, or for waiting for an extended discharge procedure.

In waiting situations of identical durations, people prefer a shorter but slower-moving line to a longer but quicker-moving one.<sup>9</sup> This is just one more example of irrationality with waiting. In traditional economic theory, we should be neutral to the two options, but in practice we are not. On the surface, this appears to conflict with the idea that busy centers may have higher perceived value, but it does not have

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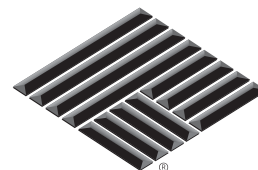


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**Figure 2. Waiting-room television displaying wait times.**

#	Name	Type	Call Back Time
1	Smi, S.	Online	0 - 10 Minutes
2	Bur, T.	Walk-in	6 - 16 Minutes
3	Han, P.	Walk-in	21 - 31 Minutes
4	Jon, S.	Online	Please Check In

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“Allowing patients to wait in the comfort of their home or office and receive automated text messages has improved overall client satisfaction. An added benefit we did not anticipate is how online scheduling has improved employee morale. Instead of patients all walking in at the same time, they make appointments online, which allows us to manage our wait times.”

— Kirsten Saint Clair,  
Director of Business Development  
at Immediate Clinic in Seattle, Washington

to. The busy center just must make sure to offer patients options other than sitting in the waiting room.

### Results

Pentucket Medical is a multispecialty group with more than 50 health-care providers that is part of the Partners HealthCare System. Its two area ExpressCare clinics implemented a wait-management virtual-queuing system to address the following challenges:

- Inability to directly measure wait times
- Incorrect estimation of wait times by front-desk staff

- Patients unable to manage their own wait experience
- Day-to-day fluctuations in wait times
- Inability to balance the load between two area facilities

Features of the system include the following:

- Wait-at-home patients sign in online (**Figure 1**), choose a time to come in, then arrive when notified.
- Walk-in patients can provide a mobile phone number, and then leave and come back when notified.
- Patients are notified in real time about their specific wait times by text message.
- A lobby television screen (**Figure 2**) shows the order of patients who are waiting, the estimated wait time, and online versus walk-in status.
- There is a tracking board in the nurse area.
- A post-visit survey is delivered by texting.
- Patients can view wait-time options across facilities and choose the best option on the basis of proximity and wait.

One measure of satisfaction with wait times that Pentucket monitored was the number of patients who decide





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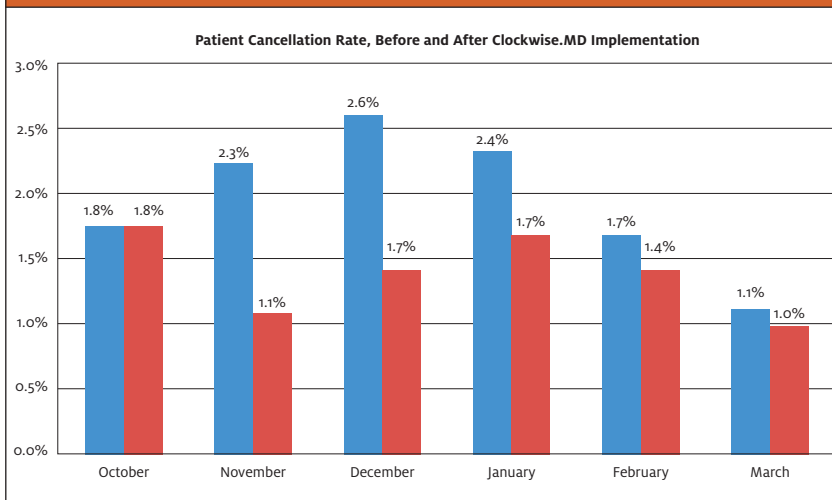
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**Figure 3. Reduction in patient cancellations after introduction of a wait-management system.**

The total number of cancellations went from 268 to 174 patients over a 6-month period. During that span, the use of Clockwise.MD reduced cancellations by 35%. (Clockwise.MD provides wait-management systems for health-care facilities: <https://clockwise.md>.) Reductions in cancellations alone accounted for an additional \$12,690 in revenue for Pentucket ExpressCare. Data are from October 2012 through March 2013 and from October 2013 through March 2014.

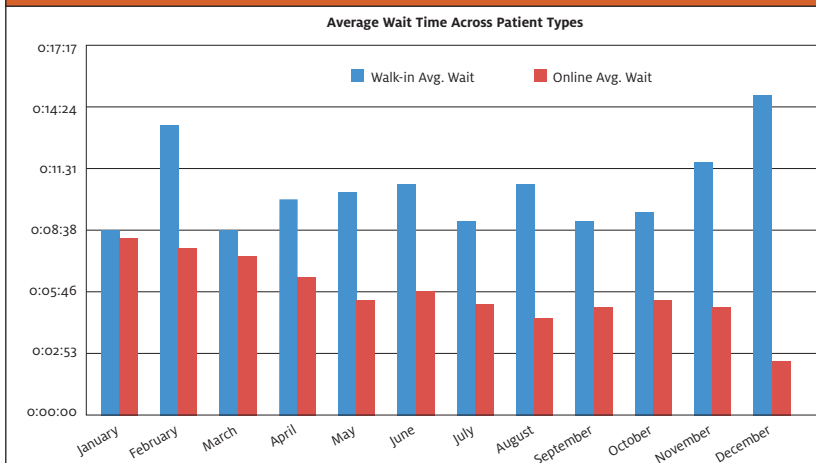
cancellations (patients who decided not to wait). This reduction accounted for more than \$25,000 in additional revenue (Figure 3).

Pentucket managers also noticed that time spent in the lobby was reduced by 48% for patients who made an online reservation (Figure 4).

Post-visit text-delivered patient surveys documented an average satisfaction score of 9.5 out of 10. Ninety percent of patients using online sign-in indicated that the ability to make a reservation influenced their decision to use Pentucket Medical.

Table 1 summarizes recommendations for several aspects of wait management. If you are offering reservations (similar to call-ahead seating at a restaurant), then creating appropriate expectations is critical. Do patients think they are creating an appointment or a flexible reservation, or do they think that they are simply joining a first-in, first-out line? Communication in this context is important. If someone believes that they have an appointment, they will be happy to wait up to the appointment time, but any time spent waiting after the perceived appointment can quickly become intolerable.

Managing perceptions about wait is an important topic that applies not just to busy urgent care centers. For many patients, especially millennials (people born between 1980 and 2000), patient perceptions start forming early in the process, well before they have shown up at your center. It may begin with your website, or a mobile application, or an online review site.<sup>11</sup> If your competitors are skilled at managing waiting psychology, then you must be proactive to ensure the appropriate initial impression, even if your center is new and has low volume. If patients believe

**Figure 4. Lobby wait time at Pentucket ExpressCare was reduced by an average of 48% for patients making online reservations.**

The average wait time for patients who made online reservations was 5 minutes 9 seconds, whereas the average wait time for walk-in patients was 10 minutes 43 seconds. On average, wait time for patients who made a reservation online was 48% less than the wait time for walk-in patients. Data are from January 1, 2014, through December 31, 2014.

to leave before being seen. After introducing the wait-management system, Pentucket saw a 35% decrease in

they have some measure of control over the waiting process, their satisfaction increases.

**Table 1. Recommendations for Wait Management**

- Give your prospective patients an alternative to your waiting room. Consider offering flexible reservations via your website and other web properties.
- Give arriving patients in your lobby an alternative to your waiting room as well. Let them check in, then go get a cup of coffee. Send them a text message when it is time to return.
- Keep patients updated. If you experience a delay, be proactive in your communication.
- Remove the uncertainty by letting patients know how long it will be before they will be seen.
- Remove the perception of unfairness by letting patients know their position in the line. Let them know that patients in front of them in line may be waiting somewhere other than in the waiting room. By doing this, patients will not be surprised when someone with a reservation is taken to an examination room on arrival.
- Validate expected improvements in satisfaction by surveying patients. Because satisfaction with waiting is strongly correlated with overall satisfaction, use a single-question Net Promoter Score survey.<sup>10</sup>
- Use technology to automate these processes.

This is a fact: in an environment of uncertain, unexplained, or unfair waits, satisfaction drops precipitously, especially as waits get longer. In the age of online reviews, this can quickly sink a center's reputation. The good news is that you can dramatically improve overall patient satisfaction with your urgent care center, without the necessity of making the actual wait any shorter. You simply must understand and address the sources of patient expectations and perceptions related to the waiting experience. ■

#### References

1. Maister D. The psychology of waiting lines. In: Czepiel JA, Solomon MR, Surprenant CF, eds. *The Service Encounter: Managing Employee/Customer Interaction In Service Businesses*. Lexington, MA: Lexington Books. 1985.
2. Kahneman D. *Thinking, Fast and Slow*. New York, NY: Farrar, Straus and Giroux, 2011.
3. Larson R. "Dr. Queue" helps you avoid rage in line. [Talk of the Nation]. National Public Radio. November 24, 2009. <http://www.npr.org/templates/story/story.php?storyId=120769732>.
4. Stevenson S. What you hate most about waiting in line. *Slate*. 2012 June 1. Available from: [http://www.slate.com/articles/business/operations/2012/06/queueing\\_theory\\_what\\_people\\_hate\\_most\\_about\\_waiting\\_in\\_line\\_single.html](http://www.slate.com/articles/business/operations/2012/06/queueing_theory_what_people_hate_most_about_waiting_in_line_single.html)
5. Camacho F, Anderson R, Safrin A, et al. The relationship between patient's perceived waiting time and office-based practice satisfaction. *N C Med J*. 2006;67:409-413.
6. Ayers A. Improving your clinic's wait times. Presented at: Annual meeting of the Urgent Care Association of America; March 13, 2009; Chicago, IL. Available from: [http://www.alanayersurgentcare.com/Linked\\_Files/UCAOA\\_Length\\_of\\_Stay\\_2009\\_03\\_13.pdf](http://www.alanayersurgentcare.com/Linked_Files/UCAOA_Length_of_Stay_2009_03_13.pdf)
7. Stone A. Why waiting is torture. *New York Times*. 2012 August 18. Available from: <http://www.nytimes.com/2012/08/19/opinion/sunday/why-waiting-in-line-is-torture.html>
8. Koo M, Fishbach A. A silver lining of standing in line: queuing increases value of products. *J Mark Res*. 2010;47:713-724.
9. Raz O, Ert E. "Size counts": the effect of queue length on choice between similar restaurants. In: Lee AY, Soman D, eds. *NA—Advances in Consumer Research*. Vol 35. Duluth, MN: Association for Consumer Research; 2008:803-804.
10. Satmetrix Systems. The Net Promoter Score and system. Redwood City, CA: Satmetrix Net Promoter Community; © 2015. Available from: <http://www.netpromoter.com/why-net-promoter/know>
10. PNC Healthcare: five ways tech-savvy millennials alter health care landscape. From a survey conducted by Shapiro+Raj in January 2015 and commissioned by PNC Healthcare. Reported in Rappleye E. 5 trends in healthcare inspired by millennials. *Becker's Hospital Review*. 2015 March 23. Available from: <http://www.beckershospitalreview.com/hospital-management-administration/5-trends-in-healthcare-inspired-by-millennials.html>



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## Fever Phobia: Urgent Fears in Urgent Care

**Urgent message:** Fear of fever leads many parents to seek urgent care. Addressing their fears should be part of the care of febrile children.

DEENA R. ZIMMERMAN, MD, MPH, IBCLC; NAHUM KOVALSKI, MD; BARUCH HAIN, BA; and JOSHUA LIPSITZ, PHD

### Abstract

In several studies, researchers have found that a large percentage of parents have fever phobia, or inaccurate beliefs about the harmfulness of an elevated body temperature. Those studies were conducted in primary-care settings, so we performed a study in an urgent care setting to test our hypothesis that parents bringing their febrile children to an urgent care center are more concerned about fever than are parents in the primary-care setting. We administered a 35-item questionnaire to 337 patients who brought febrile children to one of three urgent care centers. We found that 90% of parents believed that fever could have bad health consequences, 50% would give antipyretics to children with temperatures of  $<38^{\circ}\text{C}$ , and that 50% would even wake their children during the night to give them antipyretics. We did not find, however, that parents at urgent care centers were more worried about fever than patients at primary-care centers are. We believe that urgent care health-care providers must consistently teach parents that fever is not dangerous but that instead, the child's overall condition is what merits attention.

### Introduction

*Fever phobia* is a term coined by Barton Shmitt in 1980

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to describe inaccurate beliefs about the harmful nature of elevated body temperature. In his seminal study, he collected responses to a 1-page questionnaire from 81 patients in a hospital-based pediatric clinic. He asked parents to define what they considered a high fever; what, if any, damage they felt high fever could do; how worried they were about fever; and when they would treat a high fever with antipyretics.<sup>1</sup> Of those parents who responded, 92% felt that fever could do serious damage, particularly to the brain, and most parents would wake their child to lower the fever. He showed

**Table 1. Self-Reported of Degree of Worry**

Degree of Worry	Schmitt <sup>1</sup> (n = 81)	Crocetti et al <sup>3</sup> (n = 340)	Current Study (n = 337)
Very worried	63	56	32.6
Worried	36	34	54.5
Not worried	1	10	12.7

that 63% of parents were very worried about fever, 36% were somewhat worried, and only 1% reported themselves to not be worried at all. Two years later, Kramer et al administered a similar interview to 340 parents in two upper-middle-class private practices.<sup>2</sup> In that setting, 56% of parents were found to be very worried, 34% were somewhat worried and 10% were not worried about fever. Contrary to the expectations of the authors, the parents of the highest socioeconomic status within the study sample were the most likely to be worried.

In 2001, Crocetti et al repeated Schmitt's study<sup>3</sup> with 340 parents at two sites. Two decades later, the percentage of parents presenting to pediatric outpatient settings who felt that fever can seriously damage their child continued to be reported 90%. Similar fears have been found around the world in countries as diverse as England,<sup>4</sup> Norway,<sup>5</sup> Canada,<sup>6</sup> and Saudi Arabia.<sup>7</sup>

The original studies were conducted among parents visiting their primary-care health facility. In the study by Schmitt and that by Crocetti et al, some of the parents were accompanying children who were ill. Kramer conducted his study specifically among the parents of febrile children. The study by Karwowska et al was done among parents of two groups of children presenting to an emergency department (ED), one group for febrile illness and the other for injuries, and among parents of healthy children in kindergarten and first grade. The parents in each group expressed similar concerns. However, significantly more parents in the fever group felt that dehydration or brain damage could be caused.

As of the time this article was written, there had been no studies of this phenomenon in an urgent care center. It was believed that perhaps parents who use an urgent care center represent a segment of the population that is more concerned about fever than the general population, because they are seeking care for their child outside the usual location of care and often outside the usual hours of care. For this purpose, we conducted our study in the urgent care setting.

## Materials and Methods

Terem Emergency Medical Centers is a privately owned

medical services company based in Jerusalem, Israel, that establishes and manages freestanding urgent care clinics.

The interviews were conducted in one of three clinics in Jerusalem and Modiin. The instrument used was a structured interview consisting of 35 items addressing demographic information, beliefs regarding fever, and

parental practices in the treatment of fever and in seeking care for fever. These interviews were conducted by trained research assistants, primarily nurses and medical students who work in the center.

The population studied was a convenience sample of 337 parents who presented with a child between the ages of 2 months and 10 years for a chief complaint of fever to one of the three clinics.

## Results

Fever was defined as a value of  $<38^{\circ}\text{C}$  by 36% of the parents. Our findings are as follows:

- Percent of parents who would give antipyretic treatment to children with temperatures of  $<38^{\circ}\text{C}$ : 50%
- Percent of parents who said they believe that something bad could happen from fever: 90%
- Percent of parents who were worried about what fever could do to their child: 54%
- Percent of parents who were very worried about the effects of fever: 36%
- Percent of parents who were not worried at all: 12.5%
- Percent of parents who would wake their children during the night to give them antipyretic treatment: 50%

There was no statistically significant difference in degree of worry between groups based on parental age or education. Almost all (93%) of parents had given antipyretics prior to seeking care, most of whom (84%) believed that there was adequate response to their treatment but sought care anyway.

## Discussion

The overall percentage of parents who think that something bad can happen from fever is fairly consistent between studies. Schmitt<sup>1</sup> reported 94%, Crocetti et al<sup>3</sup> reported 91%, and we found 90%. The degree of worry is shown in **Table 1**. Contrary to our hypothesis, parents studied in the urgent care center setting were less likely to report themselves as very worried, in contrast to the findings of Schmitt and Crocetti et al. Perhaps parents who use urgent

**Table 2. Percentage of Parents Who Listed a Serious Sequela of Fever in Reported Studies**

Sequela	Schmitt <sup>1</sup> (n = 81)	Kramer et al <sup>2</sup> (n = ?)	Crocetti et al <sup>3</sup> (n = 340)	Karwowska et al <sup>6</sup> (fever = 209; injury = 160; school = 141)	Current Study
Seizures	15	48	32	70/64/70	53
Dehydration	4	4	4	80/78/67	24
Brain damage	46	27	21	53/46/49	17
Death	8	11	14	35/34/25	3
Coma	4	Combined with seizures	2	NA	4
Blindness	3		1	NA	0
Really sick	12		2	NA	11
Other	2	10	14	NA	18
NA = not applicable.					

care are not more worried but rather are using urgent care because of the convenience it offers. Further analysis of the data collected may shed light on this issue.

A comparison of beliefs regarding serious sequela is found in **Table 2**.

Over time, the belief that seizures can cause brain



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damage has diminished but has not been eliminated. On the other hand, the fear of seizures due to fever has greatly risen. Our study and that of Karwowska et al,<sup>6</sup> both conducted in non-primary-care settings, show greater fear than the studies of Schmitt<sup>1</sup> and of Crocetti et al.<sup>3</sup> Perhaps parents who are more concerned about seizures are more likely to seek late-hour care. The markedly elevated rate seen in the study by Kramer et al<sup>2</sup>, however, cannot be explained by the differences in the care setting.

Waking a child to give antipyretic treatment is a common practice among parents. The percentage of 58% in our study is similar to that found by Schmitt (48%) and by Kramer et al (53%), but much lower than the findings of Crocetti et al (85%).

Fever phobia is not a benign phenomenon. It leads parents to treat with antipyretics, often at incorrect and dangerous doses.<sup>8</sup> It would thus seem that it behooves us to try to reduce this fear and teach a rational approach to fever and its management. A number of studies have shown some efficacy of education in ameliorating mistaken concepts on a local basis.<sup>9–12</sup>

Education works best when the message is consistent. However, careful study of these educational endeavors shows lack of consistency among them. For example, an approach by Sarrell and Kahan<sup>12</sup> taught parents that children must be seen by medical personnel if they have a temperature  $>39^{\circ}\text{C}$ , even telling parents to go to an ED if the primary-care provider is not available. In contrast, the position taken by Walsh states there is no need for immediate evaluation for fever alone.<sup>13</sup> There is not even complete agreement on the definition of fever. Most of the US studies used  $38^{\circ}\text{C}$  as the cutoff for fever. Yet Sarrell and Kahan<sup>12</sup> taught parents that fever starts at  $38.5^{\circ}\text{C}$ .

Although we continue to tell parents that fever is not a disease in and of itself, we continue to teach multiple methods to lower the body temperature. Here too, we are inconsistent. Some articles push nonpharmacologic measures to reduce temperature, such as sponging, and others state that such measures are useless and only add to the discomfort of the child.<sup>14,15</sup> Furthermore, even though we stress that temperature-lowering is unnecessary and potentially even interferes with the body's ability to fight infection,<sup>16,17</sup> we continue to study ways to

*“Although we continue to tell parents that fever is not a disease in and of itself, we continue to teach multiple methods to lower the body temperature. Here too, we are inconsistent.”*

even better reduce fever.<sup>18</sup>

Part of the problem is that many health-care providers also have fever phobia. In the study by Karwowska et al, a similar percentage of ED physicians, nurses, pediatricians, and family physicians felt that fever can lead to seizures. Almost 20% of pediatricians and 40% of family physicians

believed that fever causes brain damage. One-third of family physicians felt that fever could lead to death (compared with 6% of ED physicians, 5% of ED nurses, and 7.7% of pediatricians). In a questionnaire completed by pediatricians in Massachusetts, 65% believed that fever itself could be dangerous to a child. Of these, respondents believe that the most common complications were as follows: seizures, 58%; dehydration, 21%; brain damage, 10%; and obtundation, 9%. When asked what was the most serious complication, the pediatricians chose as follows: seizure, 30%; brain damage, 21%; dehydration, 17%; obtundation, 5%; and death, 26%.<sup>19</sup>

In many cases, our actions speak louder than words. One of the first actions that parents experience in health-care encounters is measuring the child's temperature. It is not unusual for the next step in the care of the febrile child to be questioning the parent about what temperature-lowering medication has been given and then offering more medication to further lower the fever. Although health-care professionals need information about fever to help arrive at the diagnosis of the child's illness, we should be careful about the manner in which we ask the question. We should take the opportunity to ask parents how they measured the temperature, because meta-analysis shows that tactile temperature has a specificity of approximately 50%.<sup>20</sup> Furthermore, studies have shown that less than half of parents know how to accurately measure temperature.<sup>21</sup>

Because fever alone or its value has not been shown to be correlated with the probability of serious infection, we should use medical encounters to focus questions on how the child is acting. We can use physical examination as an opportunity to review how to look for signs of dehydration or respiratory distress, which are important conditions for parents to recognize.

## Conclusions

Parents bringing their children to urgent care centers have fever phobia, although perhaps to a lesser extent

*"One of the first actions that parents experience in health-care encounters is measuring the child's temperature. It is not unusual for the next step . . . to be questioning the parent about what temperature-lowering medication has been given and then offering more medication to further lower the fever."*

than in those bringing their children to primary-care clinics. All health-care providers in the urgent care setting should work as a team to provide a consistent message that fever is *not* dangerous and that what requires evaluation instead is the overall condition of the child. We should particularly stress that febrile seizures are uncommon and by definition self-limiting and benign.<sup>22</sup> Therefore, there is no need to aggressively treat 95% to 98% of the population for a condition that affects only a very small minority (2%–5%), especially when antipyretic treatment has not been shown to prevent such seizures anyway.<sup>23</sup> ■

#### References

- Schmitt BD. Fever phobia: misconceptions of parent about fever. *AM J Dis Child*. 1980;134:176–181.
- Kramer MS, Naimark L, Leduc DG. Parental fever phobia and its correlates. *Pediatrics*. 1985;75:1110–1113.
- Crocetti M, Moghbeli N, Serwint J. Fever Phobia revisited: have parental misconceptions about fever changed in 20 years? *Pediatrics*. 2001;107:1241–1246.
- Kai J. What worries parents when their preschool children are acutely ill and why: a qualitative study. *BMJ*. 1996;313:983–986.
- Logerlov P, Helseth S, Holager T. Childhood illnesses and the use of paracetamol (acetaminophen): a qualitative study of parents' management of common childhood illnesses. *Fam Pract*. 20;2003:717–723.
- Karwowska A, Nissen-Jordan C, Johnson D, Davies HD. Parental and health care provider understanding of childhood fever: a Canadian perspective. *CJEM*. 2002;4:394–400.
- Betz, MG, Grunfeld AF. 'Fever phobia' in the emergency department: a survey of children's caregivers. *Eur J Emerg Med*. 2006;13:129–33.
- Linder N, Sirota L, Shapira S, et al. Parental knowledge of the treatment of fever in children. *Isr Med Assoc J*. 1999;1:58–60.
- Broome MD, Kokken DL, Broome CD, et al. A study of parent/grandparent education for managing a febrile illness using the CALM approach. *J Pediatr Health Care*. 2003;17:176–183.
- Murphy KA, Leibman M. Fever care: does nursing instruction make a difference? *J Emerg Nurs*. 1995;21:461–463.
- Casey R, McMahon F, McCormick MC, et al. Fever therapy: an educational intervention for parents. *Pediatrics*. 1984;73:600–605.
- Sarrell M, Kahan D. Impact of a single-session education program on parental knowledge of and approach to childhood fever. *Patient Educ Couns*. 2003;51:59–63.
- Walsh AM. Fever management for children. *Australian Journal of Pharmacy*. 2008;89:66–69.
- Sharber J. The efficacy of tepid sponge bathing to reduce fever in young children. *Am J Emerg Med*. 1997;15:188–192.
- Purssell E. Physical treatment of fever. *Arch Dis Child*. 2000;82:238–239.
- Knoebel EE, Narang AS, Ey JL. Fever: to treat or not to treat. *Clin Pediatr (Phila)*. 2002;41:9–16.
- Blatteis CM. Fever: Pathological or physiological, injurious or beneficial. *J Therm Biol*. 2003;28:1–13.
- Sarrell EM, Wielunsky E, Cohen HA. Antipyretic treatment in young children with fever: acetaminophen, ibuprofen, or both alternating in a randomized, double-blind study. *Arch Pediatr Adolesc Med*. 2006;160:197–202.
- May A, Bauchner H. Fever phobia: the pediatrician's contribution. *Pediatrics*. 1992;90:851–854.
- Teng CL, Ng CJ, Nik-Sherina H, et al. The accuracy of mother's touch to detect fever in children: a systematic review. *J Trop Pediatr*. 2008;54:70–73.
- Porter RS, Wegner FB. Diagnosis and treatment of pediatric fever by caretakers. *J Emerg Med*. 2000;19:1–4.
- Wairiuru C, Appleton R. Febrile seizures: an update. *Arch Dis Child*. 2004;89:751–756.
- Strengell T, Uhari M, Tarkka R, et al. Antipyretic agents for preventing recurrences of febrile seizures: randomized controlled trial. *Arch Pediatr Adolesc Med*. 2009;163:799–804.

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# Case Report

## Mixed Martial Arts Injuries

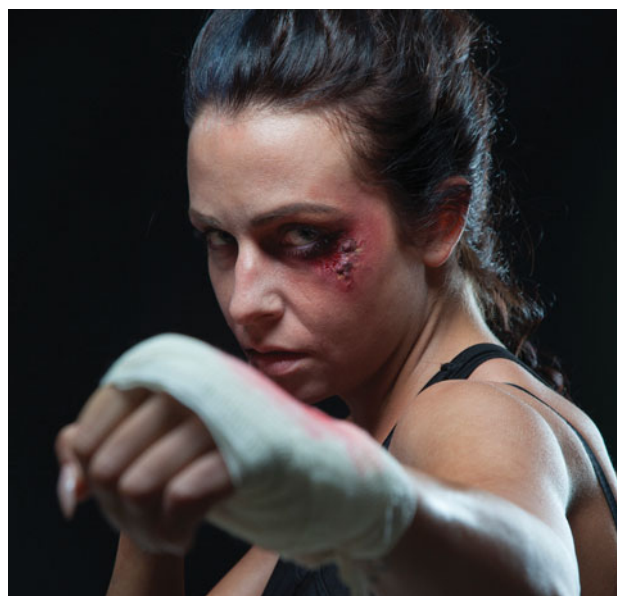
**Urgent message:** Because typical participants in mixed martial arts are young and healthy, many present to urgent care settings with a clear musculoskeletal injury and no other medical problems. Do not be distracted by the most obvious injury. Injuries from atypical mechanisms of injury are common in mixed martial arts and should be considered when evaluating a patient who has sustained injuries while participating in the sport.

SAMANTHA DEBOLD-HAWLEY, MS-3, and JOHN SHUFELDT, MD, JD, MBA, FACEP

### Introduction

Mixed martial arts (MMA) is one of the fastest growing sports in the United States.<sup>1</sup> Because of their age and mind-set, athletes who take part in the sport are less likely to seek treatment for their injuries at an emergency department and are more likely to present to an urgent care center. Most of the participants in this sport are young to middle-aged, with an average age of 31.7 years (standard deviation,  $\pm 3.5$  years).<sup>2</sup> These athletes are conditioned to accept injury as part of their training, and as a result, they often do not present to medical care immediately or for return visits.

As an urgent care provider, you may be faced with a wide range of full-contact injuries sustained during participation in this intense sport that require a different approach to current protocols. In practice as well as in competition, athletes employ both (1) stand-up fighting, composed of kicks, knee strikes, and punches, and (2) ground fighting techniques designed to tap out their opponent with the use of joint manipulation and chokeholds. Often, the participants have little to no training



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prior to engaging in the sport, which contributes to the propensity for injuries. Injuries can range in severity from minor infections and soft-tissue damage to fractures, asphyxiation, and closed head injuries and can include facial lacerations, joint injuries, concussions, hematomas, corneal abrasions, infectious diseases, and tissue deformities. This article discusses the etiology of some of the

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most commonly presenting injuries and their management as made different by the sport of MMA.

### Case Presentation

A 24-year-old athletic woman with no significant medical history presented to an urgent care center with new-onset diffuse pain and swelling of her left ankle. She reported that the pain began 30 minutes earlier during a sparring match at a local MMA facility. She said that she stood up from being placed in an ankle lock and then slipped and hit her head when she attempted to escape her opponent's hold. A bystander, who accompanied her to the urgent care center, reported no significant popping sounds and no loss of consciousness in the patient. The patient's left ankle pain was diffuse, located mainly on the lateral aspect of the joint, and was constant and throbbing. She rated her pain on a visual analog scale as being at 6 of a possible 10 points. There was increasing swelling and ecchymosis over the lateral aspect of the ankle. The patient was able to ambulate, but there was significant alteration in her gait, and movement and walking aggravated the pain. She reported that she had tried nothing to alleviate the pain. The patient had no significant findings on prior medical history, had no past surgical history, and said that she was not taking any medications except for what she described as supplements.

### Physical Examination

At the patient's initial presentation, her vital signs were as follows:

- Oral temperature, 98.6°F
- Blood pressure, 122/76 mm Hg
- Heart rate, 92 beats/min
- Respiratory rate, 18 breaths/min

During a review of systems, the patient reported a mild headache with no change in vision, and no tinnitus, nausea, vomiting, or altered neurologic function. There were no concerning findings for any other systems.

On physical examination, a single 1-cm open laceration was apparent on her left supraorbital prominence; there were no signs of infection. When questioned about the laceration, the patient said that she was hit by her opponent moments before the ankle lock but did not experience significant pain or bleeding. She reported that her MMA coach then covered the laceration in petroleum jelly. She reported no tenderness to palpation over the supraorbital prominence and no significant bleeding. Neither concavities nor crepitus was noted on

palpation of her face. However, there was a small hematoma under the facial laceration. Findings on cardiac and respiratory examinations were within normal limits. Neurologic examination produced no focal findings, and cranial nerves II through XII were grossly intact. On musculoskeletal examination, there was significant swelling and ecchymosis on the lateral aspect of the patient's left ankle. There was no tenderness on palpation of the knee or on compression of the tibia or fibula. She had significant tenderness of the lateral malleolus and decreased range of motion of the ankle joint due to pain. Findings on the Thompson test and the anterior drawer test were negative, and findings on the varus and valgus tests were both within normal limits bilaterally. There was no gross deformity of the joint except for swelling.

### Diagnosis Results

#### Diagnostic Studies

Ankle x-rays were obtained. No other diagnostic studies were indicated.

#### Differential Diagnosis

For the patient's two issues, the differential diagnoses were as follows:

- Injury 1: simple ankle sprain, ankle fracture, tendon strain
- Injury 2: laceration of the left supraorbital prominence, supraorbital fracture

### Diagnosis

The patient had an ankle sprain and a simple facial laceration.

### Course and Treatment

The course and treatment of such injuries depend on radiographic findings. For this patient, findings on ankle radiographs obtained in the mortise, anteroposterior, and lateral views were negative for fracture. They showed minor soft-tissue swelling with no dislocation and no syndesmotic widening. The findings on physical examination suggested that the best treatment would involve immobilizing the ankle in either a brace or a boot for healing and advising the use of crutches for a few days.

The patient was advised to refrain from overuse of the joint and was treated conservatively, with pain and swelling serving as indications for return to the urgent care center. She was instructed to follow up with her primary-care physician in 7 days and to return to the urgent care center for further imaging if the pain did not resolve.

or she became unable to ambulate. She was instructed that if either issue occurred, she might need to undergo repeat radiography to rule out a developing fracture or magnetic resonance imaging to rule out tendon rupture.

The patient's facial laceration was irrigated with copious normal saline and closed with butterfly closures to allow for proper healing by secondary intention. If the wound had been larger, the use of sutures might have been indicated. Given that she did not have tenderness over the supra-orbital prominence, bony deformity, or crepitus, it was unlikely that she had a displaced facial fracture. Because x-ray imaging in a patient with no loss of consciousness and no apparent displacement of facial bones would not significantly change treatment of her injuries, x-rays were not obtained.

The patient was not given prophylactic antibiotics because the laceration was on the face, where the blood supply was good, and there were no obvious particulates in the wound. She was instructed to monitor the wound for signs of infection until it had healed, given the non-sterile cause of the wound.

## Discussion

### Lacerations

Lacerations in MMA are typically caused by blunt force of punches and kicks but may also be caused by the cutting forces of knees and elbows. The mechanism of action of the laceration should be taken into account in order to rule out any neurologic issues that must be examined further. Lacerations will most commonly present along the supraorbital ridge and must be sutured or closed with butterfly closures after cleaning with iodized saline. The closure must be done carefully because a wound that reopens easily can be the end of a fighter's career. Wound closure must be done in a way that will enhance the speed of healing of the wound without compromising the integrity of the scar by the speed of healing.<sup>3</sup> Many of these patients attempt to remove stitches themselves, so it is very important to inform them of the time needed for healing before stitches can be removed. The standard protocol is to keep the wound clean and dry for 24 hours after the repair and then to remove facial sutures within 3 to 5 days, scalp sutures with 7 to 10 days, and limb

*"Because of their age and mind-set, athletes who take part in the sport are less likely to seek treatment for their injuries at an emergency department and are more likely to present to an urgent care center. Most of the participants in this sport [have] an average age of 31.7 years."*

sutures with 7 to 10 days.<sup>4</sup> Prophylactic antibiotics are indicated if the wound had significant exposure to gym gloves or mats.

### Infections

One of the most common medical concerns in patients who engage in MMA stems from the conditions of the facilities where they train. Infections are often spread, even without injury, from

unsanitary conditions commonly found in MMA gyms. Because thorough cleaning of these gyms is rare, because athletes train with open wounds, and because a large number of athletes work in the confined space of a gym while perspiring, bleeding, and carrying microorganisms to mats and pads, infection must be considered a paramount target of treatment for all patients who participate in MMA. The list of microorganisms and viruses carried by these athletes is long, but the most common sources of infection are *Staphylococcus aureus* (including methicillin-resistant *S. aureus*), group B *Streptococcus*, *Tinea corporis*, and herpes simplex virus. These microorganisms can present as basic skin infections or as infections in open wounds and fractures. Although studies have demonstrated that prophylactic antibiotics should not be used for simple lacerations because they have not been shown to make a significant difference in infection rates over simple cleaning and that they instead select for resistant organisms,<sup>5</sup> studies do suggest the use of prophylaxis if infection is present or the wound is highly contaminated. The conditions in MMA facilities should increase the physician's suspicion for potential infections during wound healing. Because results of cultures will not be available for 2 days, treat the patient at high risk for infection with broad-spectrum antibiotics, such as penicillin, and a tetanus immunization.

Nonpharmaceutical prophylactic measures to suggest to patients include

- Showering immediately after training
- Using antimicrobial soaps
- Keeping open wounds covered
- Ensuring that mats have been cleaned before they are used in training

It is necessary to remind patients that their infections can be spread to sparring partners and to training mats.



Encourage them to keep their infected wounds covered and clean if they return to training. Because fungal infections are also very common, it is appropriate to recommend keeping azole antifungals at hand for rapid treatment of abrasions.

### ***Musculoskeletal Injuries***

Patients with musculoskeletal injuries from MMA present to urgent care centers because they speedily provide medical care. Boxing fractures—fractures of the metacarpals—and fractures of the distal interphalangeal and proximal interphalangeal joints usually result from poorly wrapped hands or poor technique, including punching with loose fists. These patients present with a swollen dorsal hand after contact with punching bags or with another body in a sparring match. Treatment should include radiographic verification of fractures, stabilization and immobilization of the hand, and restriction from using the injured limb.

Fractures of long bones are less common, but as a result of the frequency of high-impact bone-on-bone techniques involved in MMA, they are not atypical. Blocking and striking techniques have the goal of using long bones to block or injure other long bones. Common long-bone fractures are of the tibia, fibula, femur, radius, and ulna, and these occur when the patient has blocked or landed a strike on an opponent. If the patient presents with a compound fracture, the limb should be immobilized and the patient should be transported to a facility with an operating room to be prepared for surgery. Severe hematomas should also be part of the differential diagnosis when there is a femur or lower limb involved, because of the high incidence of bone-on-bone contact.

Patients usually present to an urgent care center hours to weeks after sustaining joint injuries because of the tendency of fighters to attempt to walk the injuries off. For some, dislocations are so common that they know how to set their own and will do so without medical assistance. Some of these dislocations can cause compound injuries and break through the dermis without the presence of a fracture, in which case the patient must be transported for surgery. Patients present with a hot and swollen joint that may still be displaced from the joint capsule. In the case of an active dislocation, give pain medication and reduce the joint as indicated by the mechanism of injury. Refer to Joint Commission protocols for joint reductions. Dislocations are commonly caused by ground submissions, which include joint locks specifically designed to dislocate and break

joints. This can, in the long term and without proper treatment, cause bursitis, tendonitis, and arthritis. Each of these can be detrimental to the career and life of a fighter and should be treated as work-inhibiting injuries. Patients with these injuries present with joint immobility, swelling, and even clear musculoskeletal deformities. Range of motion of the joint may be poor, especially when limb-guarding (the primary indication for dislocation) and other signs are missed.<sup>6</sup> After joint reduction, instruct patients to wrap, support, ice, and rest the joint. Although restriction of movement is important to healing, fighters often will go back to training too early and will cause themselves permanent injury. Be sure to inform patients that movement restriction for a period of time will allow them to practice their sport longer. Because MMA kicks involve torque on the knee and the hip and complete rotation on a planted foot, the probability of tears of the anterior cruciate ligament, medial collateral ligament, and meniscus is increased. For diagnosis, obtain images of the joint capsule. Determine the appropriate treatment on the basis of clinical presentation and image findings. The patient may require surgery or rehabilitation for the injury and should be referred to the appropriate specialist.

### ***Closed Head Injury***

The goal of most MMA bouts is to submit or knock out the opponent, and thus facial injuries are likely to occur. Fighters take many hits to the nose, jaw, and orbit. Though the participants wear gloves, the gloves often weigh no more than 8 ounces (and MMA gloves can be even lighter), providing little to no protection from impact. Though mouthpieces are worn to protect against dental injuries and nerve-injuring blows, the force of the punch is usually enough to render an opponent unconscious. In a fight, it is very common to cause a broken nose, a fractured jaw, loss of teeth, and even orbital fractures. Be sure to keep these on a differential diagnosis for a fighter presenting with head trauma or facial pain. The injuries may be masked by massive swelling and bruising of the area, but given the mechanism of action and strength of impact of the injuries, do not discount trauma to the facial bones in a differential. Fighters often present with broken noses from direct shots to the face. Some patients may need to have their nose set to prevent permanent septum damage. If there is trauma to the anterior nasal septum, be sure to screen for a septal hematoma that, although rare, can cause a saddle-nose deformity, abscess, or perforation.<sup>7</sup> Because it only takes 3 days for the septum to become infected,

urgent hematoma drainage should be performed. Another complication of a facial impact in MMA is mandibular fracture, for which the first line of treatment is to ensure a patent airway before stabilizing the fracture.<sup>8</sup> Once the patient's condition is stabilized, the patient should be transported for internal fixation.

Concussions are common and are typically the goal of an MMA match. Treat patients who have lost consciousness as being concussed. Patients may have had multiple concussions without having received treatment. No patient, unless new to the sport, should be treated as if this is their first concussion. Imaging to determine the presence of skull fracture or hemorrhage may be indicated. Patients with trauma in MMA are at risk for subarachnoid hemorrhaging. Computed tomography (CT) is typically required to rule out subarachnoid hemorrhaging.<sup>9</sup> Because CT machines are not available in most urgent care centers, patients for whom there is suspicion of hemorrhage or brain damage should be transported to an emergency department for imaging. Indications for transport include a score of <13 on the Glasgow Coma Scale, change in level of consciousness, loss of consciousness, comorbid bleeding disorders, severe headache, neural deficits, post-traumatic seizures, or apparent skull fracture or deformity.<sup>10</sup> For minor hemorrhaging, treatment should include monitoring the patient's level of consciousness and restriction from participation in contact sports until CT can confirm clearing of the hemorrhage. With any serious head injury, treat the injury as urgent and prepare the patient for transport to an emergency department. Loss of consciousness has a severe impact on the life of a fighter. A knockout will result in a medical suspension of a professional fighter for 60 to 180 days, with required physician follow-up, depending on the extent of the injury. Because participating in sanctioned fight is a professional fighter's career, this can be detrimental to the patient's income. Treating loss of consciousness in a fighter must be approached carefully: The patient must clearly understand the requirement to avoid participation in contact sports for a set amount of time. The Ultimate Fighting Championship often suggests 45 days without engaging in contact sports.<sup>11</sup> Obtain a score on the Glasgow Coma Scale to determine the extent of injury. Although symptomatic

*“Patients usually present to an urgent care center hours to weeks after sustaining joint injuries because of the tendency of fighters to attempt to walk the injuries off. For some, dislocations are so common that they know how to set their own and will do so without medical assistance.”*

management is not typically indicated with a good score, be sure to inform the patient of the risks of going back to training early and of sustaining future concussions.<sup>3</sup>

### Conclusion

MMA is an aggressive contact sport that makes injuries of many forms possible, from minor to career-ending. In the patient whose case is discussed here, there was more than one

injury requiring evaluation for proper treatment. With patients who participate in MMA, it is important to keep in mind the mechanism of injuries so as to avoid overlooking less-obvious but more-severe injuries. In our patient, a neurologic deficit could have been overlooked because of the more clearly defined ankle injury. Keep in mind the facilities in which these seemingly healthy patients train, as well as the potential for sustaining underlying neurologic and skeletal complications. Because of the growing popularity of the sport, it has become crucial to understand the injury presentations and complications of those who practice MMA. These patients plan to continue training even after a major injury, so it is imperative that the treating urgent care physician instruct patients to schedule a follow-up examination with a primary-care provider and create clear instructions for patients before discharge about their level of activity and the complications of further injury. ■

### References

1. Rayment T. Mixed Martial Arts: The New Fight Club. *Newsweek*. 2014 November 17. Available from: <http://www.newsweek.com/2014/11/21/mixed-martial-arts-new-fight-club-283921.html>
2. Bloody Elbow. Going deeper into MMA fighter longevity: does age matter? *SB Nation*. 2013 July 18. Available from: <http://www.bloodyelbow.com/2013/7/18/4533754/ufc-going-deeper-into-mma-fighter-longevity-does-age-matter>
3. Resnick LA, Shufeldt J. Neurologic urgencies. *Textbook of Urgent Care Medicine*. Scottsdale, AZ: Urgent Care Textbooks; 2014;1–63.
4. Forsch RT. Essentials of skin laceration repair. *Am Fam Physician*. 2008;78: 945–951.
5. Grossman JI, Adams JP, Kunec J. Prophylactic antibiotics in simple hand lacerations. *JAMA*. 1981;245:1055–1056. doi:10.1001/jama.
6. Schenk TJ, Brems JJ. Multidirectional instability of the shoulder: pathophysiology, diagnosis, and management. *J Am Acad Orthop Surg*. 1998;6:65–72.
7. Savage RR, Valvich C. Hematoma of the nasal septum. *Pediatr Rev*. 2006;27:478–479.
8. Lazov SK. The mandible fracture: a treatment protocol. *J Craniomaxillofac Trauma*. 1996;2:24–30.
9. van Gijn J, Rinkel GJ. Subarachnoid haemorrhage: diagnosis, causes and management. *Brain*. 2001;124(Part 2):249–278.
10. Haydel MJ, Preston CA, Mills TJ, et al. Indications for computed tomography in patients with minor head injury. *N Engl J Med*. 2000;343:100–105.
11. MMA has medical suspensions but what happens when fighters don't listen? *Canadian Press*. 2011 March 23 [updated 2012 August 23]. Available from: <http://www.theglobeandmail.com/sports/more-sports/mma-has-medical-suspensions-but-what-happens-when-fighters-dont-listen/article4266656/>



## ABSTRACTS IN URGENT CARE

- Differentiate Bacterial from Viral to Decrease Unneeded Antibiotic Prescriptions
- Tools for Treating Chronic Sinusitis
- Antibiotic Resistance in Gonorrhea
- Supportive Care Is Best for Bronchiolitis
- Intravenously Administered Dexamethasone Can Ameliorate Low Back Pain
- Pregnant Patients Are Too Often Prescribed Category D and Category X Drugs
- Diphenhydramine Is Unhelpful in Migraines
- Modified Valsalva Maneuver Is Beneficial in Supraventricular Tachycardia

■ SEAN M. MCNEELEY, MD

Each month the Urgent Care College of Physicians (UCCOP) provides a handful of abstracts from or related to urgent care practices or practitioners. Sean McNeeley, MD, leads this effort.

### Differentiate Bacterial from Viral to Decrease Unneeded Antibiotic Prescriptions

**Key point:** *The overprescribing of antibiotics is still an issue.*

**Citation:** Jones BE, Sauer B, Jones MM, et al. Variation in outpatient antibiotic prescribing for acute respiratory infections in the veteran population: a cross-sectional study. *Ann Intern Med.* 2015;163:73–80.

Concerns over the amount of antibiotic prescriptions continues. (See also “Delayed Prescribing of Antibiotics for Respiratory Tract Infections” in our September 2015 issue: <http://www.jucm.com/delayed-prescribing-of-antibiotics-for-respiratory-tract-infections/>.) In this 8-year-long study of patients served by the U.S. Department of Veterans Affairs, the authors attempted to determine the rates of antibiotic prescription for upper respiratory infections and the circumstances that led to the prescriptions. Patients seen at Veterans Affairs facilities, emergency departments, urgent care centers, and primary care offices with

diagnoses of upper respiratory illnesses, such as pharyngitis, sinusitis, tonsillitis, and bronchitis, were identified. In addition, information about antibiotic use within 5 days of a health-care visit, characteristics of the patients’ health-care providers, and patients’ medical conditions were obtained. Noteworthy findings were as follows:

- Antibiotics were prescribed for 68.4% of patients.
- The most common diagnoses for antibiotics included sinusitis (86%) and bronchitis (85%).
- Other common conditions under which antibiotics were frequently prescribed were high fever (78%) and a visit to an urgent care center (75%).
- The top 10% of antibiotic prescribers ordered these drugs in ≥95% patient visits, whereas the bottom 10% of prescribers ordered the drugs in ≤40% of patient visits.
- Macrolides were also prescribed more over time despite recent warnings in the literature.

Although this study did not reveal significant reasons for data differences in prescribing patterns, its findings are concerning, particularly the percentage of prescriptions for bronchitis, assuming that in many of these cases, the disease is acute and thus viral. However, the applicability of the study’s findings are limited because it was descriptive rather than evaluating each prescription to determine whether it met a guideline; the researchers just counted the percentage of pre-



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scriptions. From an urgent care perspective, it is still important to differentiate bacterial from viral to decrease the number of unnecessary antibiotic prescriptions. ■

### Tools for Treating Chronic Sinusitis

**Key point:** *Several tools are available to treat chronic sinusitis.*  
**Citation:** Rudmik L, Soler ZM. Medical therapies for adult chronic sinusitis: a systematic review. *JAMA*. 2015;314:926–939.

Although urgent care providers frequently see patients with acute sinusitis, patients with chronic sinusitis sometimes present, and they might begin to do so more frequently as the primary-care shortage worsens. This article reviews the evidence for treatment of chronic sinusitis in adults, which is defined as sinusitis symptoms that last for more than 3 months. The authors reviewed 29 individual studies, 12 meta-analyses, 13 systematic reviews, and 4 randomized studies. Supported treatments include high-volume saline irrigation, with topical steroid therapy as a first-line treatment. If nasal polyps exist, physicians should consider a short course of systemic steroids, 3 weeks of doxycycline, or a leukotriene antagonist. A prolonged course of macrolides (3 months) might be considered for patients without polyps. Antihistamines and immunotherapy seem to be less helpful. From an urgent care perspective, nasal saline rinses and nasal steroids make sense. Oral steroids and short courses of antibiotics may also be appropriate for some patients. ■

### Antibiotic Resistance in Gonorrhea

**Key point:** *Gonorrhea is becoming more resistant to antibiotics.*  
**Citation:** Unemo M. Current and future antimicrobial treatment of gonorrhoea—the rapidly evolving *Neisseria gonorrhoeae* continues to challenge. *BMC Infectious Diseases*. 2015;15:364

Gonorrhea has been an issue, and unfortunately, antibiotic resistance has grown for this particular bacteria. This article describes the state of resistance and treatment around the world. Currently, doses of 250 to 1000 mg of ceftriaxone are necessary. Additional treatment with 1 to 2 g of azithromycin is the newest addition to treatment. There is some concern that even at the highest doses, this combination may already face some bacteria resistance in Eastern nations. Some researchers have been testing a combination of 240 mg of gentamycin plus azithromycin, which has been very effective. For the urgent care provider, using the dose of 250 mg of ceftriaxone with 2 g of azithromycin that is recommended by the U.S. Centers for Disease Control and Prevention makes the most sense, keeping an eye on potential bacteria resistance and warning patients that the disease is potentially untreatable. ■

### Supportive Care Is Best for Bronchiolitis

**Key point:** *There is still some work to do to understand supportive care as the mainstay of bronchiolitis treatment by all health-care providers.*

**Citation:** Ho S-W, Huang K-Y, Teng Y-H, Ku M-S, Chiou J-Y. Practice variations between emergency physicians and pediatricians in treating acute bronchiolitis in the emergency department: a nationwide study. *J Emerg Med*. 2015;48:536–541.

Bronchiolitis continues to be a frequent cause of visits to emergency departments and of hospitalizations in the very young. Few interventions or tests have been found to alter the disease's course. This cross-sectional study, performed in a Taiwan emergency department, analyzed the treatment patterns of emergency specialists versus pediatricians for this ailment, using registration and claims data from 2008 to 2011. Patients were divided into two groups, according to whether they saw a pediatrician or an emergency medicine specialist. Pediatricians were defined as providers who treated children only in the ED. Actual pediatric emergency physicians were excluded from this study because most of the care was provided by general ED and pediatrics-trained physicians. Both pediatricians and ED physicians ordered tests at a significant rate; however, the pediatricians ordered fewer tests. Examples of test or treatments not considered necessary included chest x-rays (pediatricians, 46%; emergency medicine specialists, 64%), complete blood cell count (22% vs. 33%), and C-reactive protein (23% vs. 35%). There was a greater difference between groups for intravenous fluids (3.5% vs. 21%) and for hospitalizations (19.5% vs. 36%). For the urgent care provider, this study's findings are a good reminder that bronchiolitis is a viral illness that responds mostly to suction and other supportive care. One key flaw of the study was looking at patients by final diagnosis without considering the path taken to get there. For example, a trial of albuterol in a patient with a strong family history of asthma can differentiate between new-onset asthma and bronchiolitis. ■

### Intravenously Administered Dexamethasone Can Ameliorate Low Back Pain

**Key point:** *Steroids seem to decrease acute low back pain.*

**Citation:** Balakrishnamoorthy R, Horgan I, Perez S, Steele MC, Keijzers GB. Does a single dose of intravenous dexamethasone reduce Symptoms in Emergency department patients with low Back pain and RADiculopathy (SEBRA)? A double-blind randomised controlled trial. *Emerg Med J*. 2015 Jul; 32:525.

For those of us with primary-care backgrounds, steroids have been part of our toolbox for some time for treating acute low back pain. This small double-blinded, randomized study of 58 patients attempted to analyze the pain-relief efficacy of intravenous dexamethasone in emergency departments in both rural and ur-

ban settings by giving them either 8 mg of the drug or a placebo. Patients' outcomes were compared at 24 hours using a visual analog scale. Patients in the steroid group had a 1.86-point greater reduction in pain scores than did those in the placebo group. Treated patients had a reduced length of stay in the emergency department, and their ability to perform a straight-leg raise improved. For urgent care providers, this is one more method for providing steroids—if intravenous therapy is available in the particular center. A study comparing dexamethasone injection to a steroid dose pack would also be helpful. ■

## Pregnant Patients Are Too Often Prescribed Category D and Category X Drugs

**Key point:** *Think twice before prescribing medications to pregnant patients.*

**Citation:** Palmsten K, Hernández-Díaz S, Chambers CD, et al. The most commonly dispensed prescription medications among pregnant women enrolled in the U.S. Medicaid program. *Obstet Gynecol.* 2015;126:465–473.

A significant number of pregnant patients receive prescriptions. This study assessed the most common prescriptions and those that are considered category D or X. Using Medicaid data, the authors determined the 20 most commonly prescribed drugs as well as the 10 most concerning prescriptions written for pregnant patients. They report that there is little good-quality evidence about how medications effect pregnancy, and thus they hope that this study may guide future research. Of note, 85% of patients were given at least one prescription. Medications to treat infection topped the list: nitrofurantoin, 21% of prescriptions; metronidazole, 19%; amoxicillin, 18%; and azithromycin, 16.9%. All of those are commonly prescribed in urgent care centers. Cholesterol, hormones, and anxiolytic medications were most of the category X prescriptions. Although this study's findings may not change current prescribing patterns, the sheer number of pregnant patients treated with potentially dangerous medications is concerning. As urgent care providers, we must think twice before prescribing any medication and should discuss with pregnant patients both the known and unknown risks of specific medications. ■

## Diphenhydramine Is Unhelpful in Migraines

**Key point:** *There is no evidence for using diphenhydramine to treat migraine.*

**Citation:** Friedman BW, Cabral L, Adewunmi V, et al. Diphenhydramine as adjuvant therapy for acute migraine: an emergency department–based randomized clinical trial. *Ann Emerg Med.* 2015 August 27. doi: 0.1016/j.annemergmed.2015.07.495. [Epub ahead of print.]

Migraine headaches continue to be a frequent cause of visits

*“The sheer number of pregnant patients treated with potentially dangerous medications is concerning.”*

to urgent care centers and emergency departments. Some believe that migraines have an allergic component and thus use diphenhydramine as an adjunct treatment. In this double-blind placebo-controlled study, 208 adults up to age 65 years were randomized to receive either a combination of diphenhydramine and metoclopramide or a combination of placebo and metoclopramide, to determine whether a combination therapy of 50 mg of diphenhydramine plus 10 mg of metoclopramide, administered intravenously, results in greater relief than metoclopramide alone. The presence or absence of allergic symptoms was also noted. Unfortunately the group receiving diphenhydramine did not experience significant relief of symptoms compared with the control group by 1 hour or by 48 hours. Adverse events were similar between groups. For the urgent care provider, findings from this small study are unlikely to change current practice, but they should not encourage the addition of diphenhydramine to current therapies unless other allergy issues are present. ■

## Modified Valsalva Maneuver Is Beneficial in Supraventricular Tachycardia

**Key point:** *Modification of the Valsalva maneuver is beneficial in supraventricular tachycardia.*

**Citation:** Appelboam A, Reuben A, Mann C, et al; REVERT trial collaborators. Postural modification to the standard Valsalva manoeuvre for emergency treatment of supraventricular tachycardias (REVERT): A randomised controlled trial. *Lancet.* 2015 August 24. doi: 10.1016/S0140-6736(15)61485-4. [Epub ahead of print.]

Supraventricular tachycardia is a common malady that sometimes responds to vagal maneuvers. This study investigated a modified vagal maneuver in 418 patients diagnosed with supraventricular tachycardia in an emergency department to determine whether it could produce better results. Both maneuvers started with the patient in a semi-reclined position. Patients in both groups were asked to apply the same amount of pressure. The intervention group was placed in a supine position and passive leg-raises were performed. The participants were randomized by use of envelopes, but obviously, researchers could not be blinded to the identity of each patient's group. With a second attempt, the modified Valsalva group outperformed the standard Valsalva group by 43% to 17%. No disadvantages were noted for the new method. Although this was a small study, the likely lack of adverse effects and the significantly improved outcomes should provide a good reason to consider the new maneuver. ■



This feature will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

If you would like to submit a case for consideration, please e-mail the relevant materials and presenting information to [editor@juqm.com](mailto:editor@juqm.com).

Figure 1.



### Severe Ankle Pain and Swelling

#### Case

A 12-year-old presents with severe ankle pain and swelling after twisting an ankle while jumping off a tree limb.

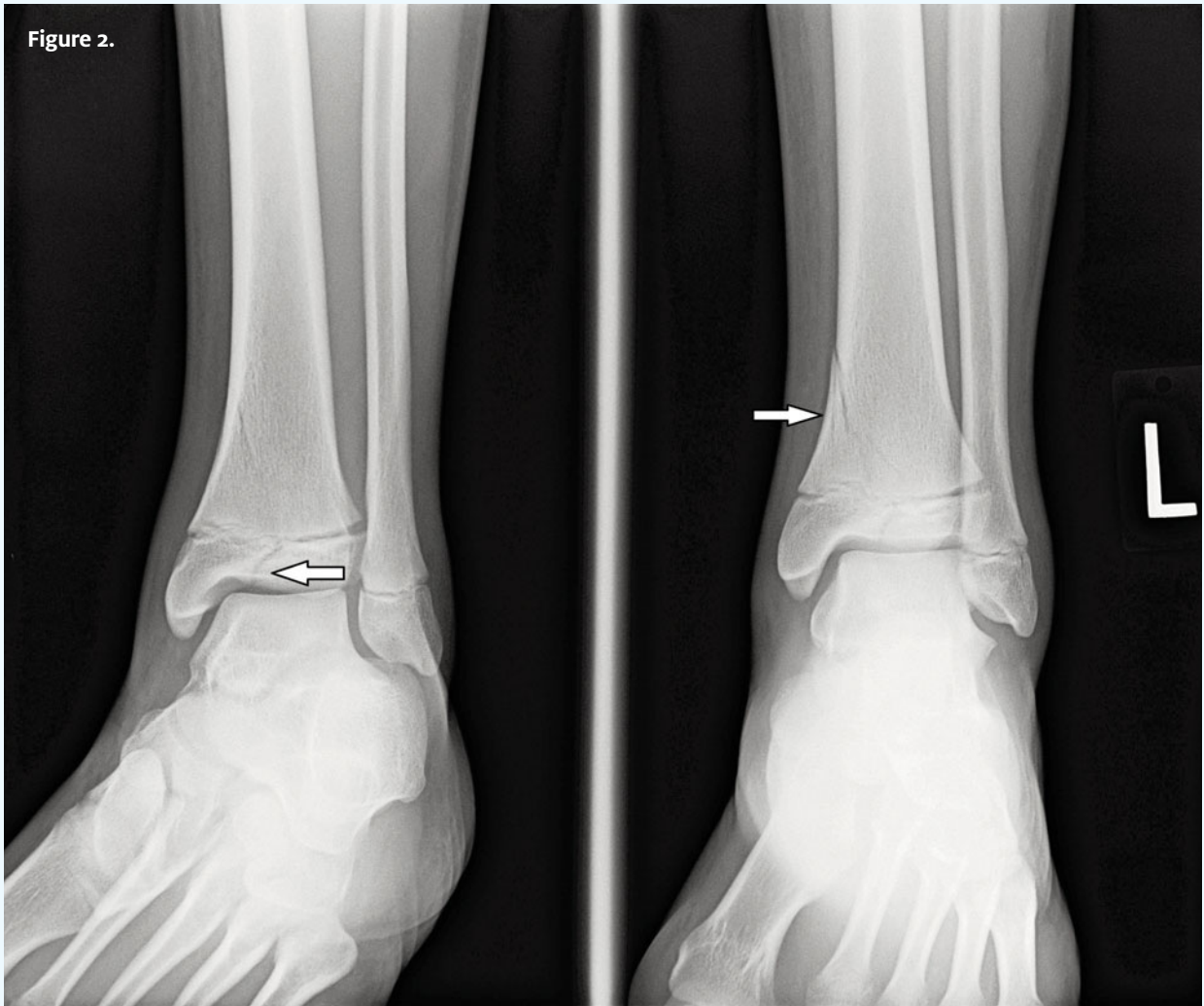
View the image taken (**Figure 1**) and consider what your diagnosis would be.

Resolution of the case is described on the next page.



## THE RESOLUTION

Figure 2.

**Diagnosis**

Salter-Harris IV fracture of the ankle (**Figure 2**).

**Learnings**

Note the fracture lines (*arrows*) through the epiphysis, growth plate, and metaphysis of the distal tibia. Salter-Harris IV fractures involve all three elements of the growing bone. Injuries of this type to the distal tibia are complex injuries and usually result from high-energy forces. Most of these require surgical fixation and require urgent referral to an orthopedic surgeon for treatment.



Figure 1.



### Hard, Painless Masses on the Shin

#### Case

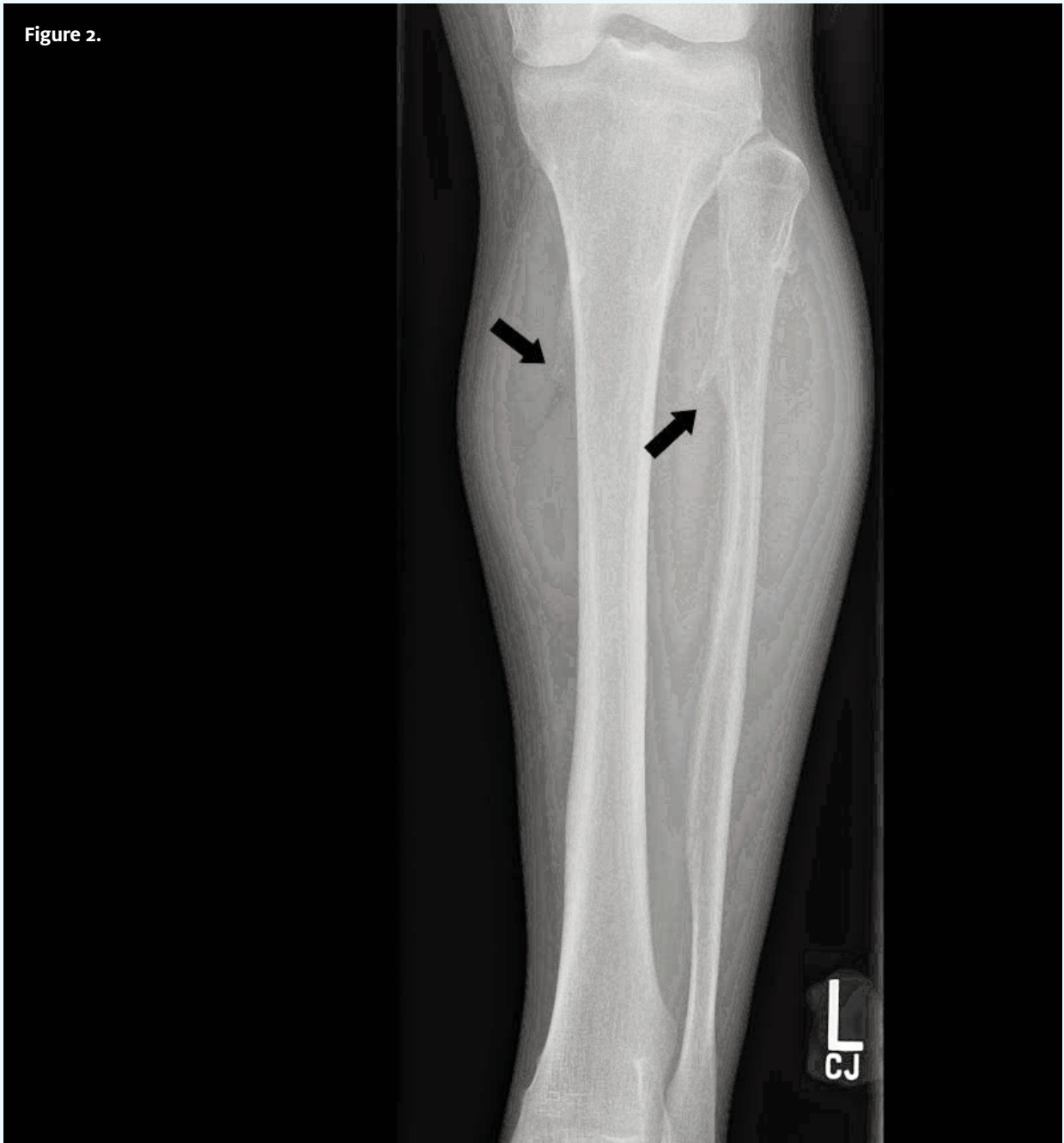
A 17-year-old presents with hard, painless masses on the shin.

View the image taken (**Figure 1**) and consider what your diagnosis would be.

Resolution of the case is described on the next page.

## THE RESOLUTION

Figure 2.

**Diagnosis**

Osteochondromatosis (Figure 2).

**Learnings**

Osteochondromatosis is an inherited disorder in which multiple osteochondromas (*black arrows*), or benign tumors in the form of cartilage-capped bony projections, are seen throughout the skele-

ton. Patients may have anywhere from 2 osteochondromas to hundreds of them. Most are incidentally found in adolescents on x-rays. If osteochondromas are not discovered incidentally, patients present in the first or second decade of life with palpable bony masses and limb shortening. Complications of osteochondromas include fractures, bony deformities, neurologic and vascular injuries, bursa formation, and malignant transformation.





# Open Fracture Treatment Versus Closed Fracture Treatment

■ DAVID STERN, MD, CPC

**Q.** We had a patient come in with an open fracture of the distal interphalangeal joint of the right index and middle fingers, ICD-9 [International Classification of Diseases, 9th Revision, Clinical Modification] code 816.12. The provider set and splinted them both. Can I bill procedure code 26765 ("Open treatment of distal phalangeal fracture, finger or thumb, includes internal fixation, when performed, each") twice?

**A.** A diagnosis of open fracture means that the skin has been broken traumatically, but it does not automatically require open surgical treatment, which is required for *Current Procedural Terminology* (CPT) code 26765. The terms *closed treatment* and *open treatment* in the CPT guidelines have been carefully chosen to accurately reflect the specific orthopedic procedure that is performed.

*Closed treatment* specifically means that the fracture is not surgically opened (exposed to the external environment and directly visualized). It includes repair with manipulation, repair without manipulation, or repair with or without traction.

*Open treatment* means that the surgeon performs an incision to expose the fracture and usually performs internal fixation. Alternatively, the surgeon may insert an intramedullary nail or other orthopedic device for internal fixation of the fracture.

In general, during an open fracture treatment, the provider incises the skin over the fractured bone once the patient has been appropriately prepared and anesthetized. The provider dissects down through the subcutaneous tissue and retracts the muscles to obtain adequate exposure of the phalanx fracture. The provider then adjusts the bone to reduce the fractured fragments or to bring the dislocated bones back to their normal

alignment. The provider may fix the fracture using implants like a plate, screw, nail, or wire before closing the wound by suturing the skin layers together. An x-ray may be obtained to confirm the reduction of the fracture. The surgeon will place a splint or brace on the digit for protection. Generally, these procedures are performed in an operating room of a hospital or ambulatory surgery center. You must look for these types of notes in the procedure description in order to bill CPT code 26765 correctly.

Almost invariably when fracture treatment is performed in an urgent care center, the biller will encounter closed treatment of the fracture. For finger fractures, one of the following codes will apply:

- **CPT code 26750:** "Closed treatment of distal phalangeal fracture, finger or thumb; without manipulation, each"
- **CPT code 26755:** "Closed treatment of distal phalangeal fracture, finger or thumb; with manipulation, each" for guidance.

If you bill the code twice, you should attach modifier -59 to the second code. Also specify the finger with modifiers F1 through FA:

- **F1:** "Left hand, second digit"
- **F2:** "Left hand, third digit"
- **F3:** "Left hand, fourth digit"
- **F4:** "Left hand, fifth digit"
- **F5:** "Right hand, thumb"
- **F6:** "Right hand, second digit"
- **F7:** "Right hand, third digit"
- **F8:** "Right hand, fourth digit"
- **F9:** "Right hand, fifth digit"
- **FA:** "Left hand, thumb"

When billing the codes to insurance, you will use ICD-9 code 816.12, "Open fracture of distal phalanx or phalanges of hand," to represent both fingers, and you should include modifier F6, "Right hand, second digit," on one procedure line and F7, "Right hand, third digit," on the second procedure line.



**David E. Stern, MD, CPC**, is a certified professional coder and is board-certified in internal medicine. He was a director on the founding board of UCAOA and has received the organization's Lifetime Membership Award. He is CEO of Practice Velocity, LLC ([www.practicevelocity.com](http://www.practicevelocity.com)), NMN Consultants ([www.urgentcare-consultant.com](http://www.urgentcare-consultant.com)), and PV Billing ([www.practicevelocity.com/urgent-care-billing/](http://www.practicevelocity.com/urgent-care-billing/)), providers of software, billing, and urgent care consulting services. Dr. Stern welcomes your questions about urgent care in general and about coding issues in particular.

Once you have converted to ICD-10 (*International Classification of Diseases, 10th Revision, Clinical Modification*, required by October 1, 2015), you will be able to identify each fracture with a diagnosis code because of the specificity of the codes. You will be able to include the displacement or nondisplacement, laterality, and visit type (e.g., initial encounter for open fracture, subsequent encounter with routine healing) for each injury:

- **S62.630**, “Displaced fracture of distal phalanx of right index finger,” requires a 7th-digit extension that represents the encounter:
  - **A**: Initial encounter for closed fracture
  - **B**: Initial encounter for open fracture
  - **D**: Subsequent encounter for fracture with routine healing
  - **G**: Subsequent encounter for fracture with delayed healing
  - **K**: Subsequent encounter for fracture with nonunion
  - **P**: Subsequent encounter for fracture with malunion
  - **S**: Sequelae

- **S62.632**, “Displaced fracture of distal phalanx of right middle finger,” also requires a 7th-digit extension from the preceding list.

Make sure that you link the correct modifiers to the codes that are linked to the finger-specific ICD-10 code (e.g., “open fracture left index finger, closed fracture left middle finger”).

If you were billing using ICD-10, your codes for the visit you describe would be S62.630A and S62.632A. You would report the procedures best described by the documentation for each digit, and link the diagnosis to the corresponding procedure. Check with the payors to determine if they will still require the modifiers on the procedures. ■

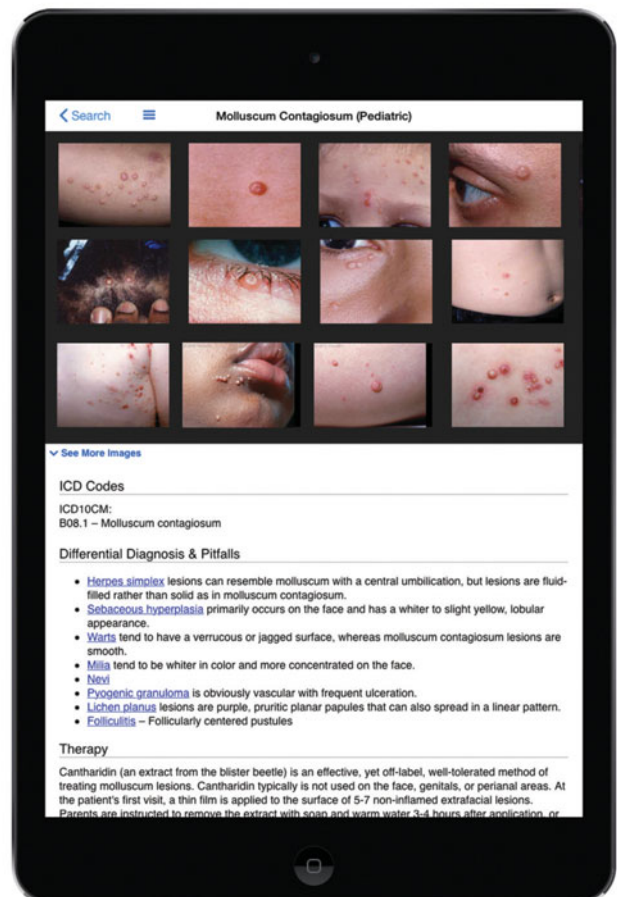
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# Protecting Patient Privacy in the Cloud

■ K Royal, JD, CIPP/E, CIPP/US

**Urgent message:** *The shift in medical practice from written charts to integrated digital platforms has dramatically increased the visibility, size, and magnitude of health-care information breaches. There are specific steps urgent care operators should take with vendors to protect patient information in this new technological environment.*

The news makes it seem that data breaches occur on a fairly regular basis. The Ponemon Institute even named 2014 as the year of megabreaches.<sup>1</sup> An online chart created by David McCandless of Information Is Beautiful shows the world's biggest data breaches; it can be filtered by industry and the method of data leak.<sup>2</sup> Personal data are valuable, and medical data have very rich information indeed.

Some of the more recent breaches lately have affected the health-care field and are not limited to patient data. For example, in February 2015, Anthem Inc. announced a breach of more than 80 million records. More recently, in June 2015, Medical Informatics Engineering (MIE), an electronic health record vendor, announced a cyberattack of more than 4 million individuals. MIE is not the first business associate, as defined under the Health Insurance Portability and Accountability Act (HIPAA), to report a breach.

On the breach report portal<sup>3</sup> for the U.S. Department of Health and Human Services, 159 breaches had been reported in 2015 as of the time this column was written. Information on more than 100 million individuals was compromised at some level, not accounting for individuals affected multiple times. If we are not counting duplicates, that is nearly one-third the population of the United States. The most common breach scenario involves paper and films; almost 177,000 records were com-

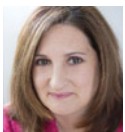
promised. Hacking, on the other hand, compromised over 97 million records—more than all the other routes combined. It is easy to see why hacking is so dangerous even if individual error is more common—such as losing a laptop, sending an email by mistake, or misplacing a flash drive. Please do keep in mind that only breaches of over 500 records are reported to the U.S. government for publication.

In January, the Association of Corporate Counsel released its 2015 survey of chief legal officers (CLOs), amounting to nearly 1300 respondents from 46 countries. More than a quarter of CLOs reported that their company had experienced some form of data breach in the preceding 2 years. One notable commonality among the largest breaches, such as those affecting Target, Lowe's, and Goodwill Industries, is that a vendor's actions were the root cause: compromised credentials, data backed up to an insecure server, and so on. Thus, one obvious lesson from notable breaches is to ensure that your entity has an efficient, effective vendor-management program in place for business associates.

### The Cost of a Data Breach

If you are in the health-care industry and you think that your privacy officer is crying wolf, you are sadly mistaken. The cost of one hacking breach, such as the one at MIE that affected patients seen by more than 50 medical providers, can be incredibly high. Interestingly, Symantec now has an online tool that can approximate your cost of a data breach.<sup>4</sup> Once you select your industry with the tool, the first question is about your privacy program. When you complete this questionnaire about a potential hacking of an "average" urgent care center (United States only, fewer than 500 employees, up to 5000 patients, etc.), the tool tells you that on the basis of your input and Symantec's trend data, your center's risk exposure is as follows:

- Companies in your industry with your risk profile have a likelihood of 9.8% of experiencing a data breach in the next 12 months.



**K Royal, JD, CIPP/E, CIPP/US**, is a former registered nurse turned attorney and compliance professional with 20 years of experience in health-related fields and skilled in privacy laws, breach management, compliance, training, and program development.



- Your average cost per record is \$199.
- Your average cost per breach is \$597,333.

That's a staggering cost per breach of nearly \$600,000, but one with a likelihood of occurrence of less than 10%. When I completed the Symantec questionnaire, I did provide information that the entity had a dedicated chief information security officer and that data could be accessed only by a corporate-owned device that was encrypted. Many health professionals do check email on with their own devices, and most phones are not encrypted. However, changing the parameters by type of breach and device does not change the numbers significantly.

Your organization may be able to survive such a breach by the numbers alone, but can it survive harm in the news media and damage to your reputation? Will you lose the trust of your patients? If you take the right steps, you might keep their trust, especially if you have a long-standing relationship with them. But that is not always the case in the urgent care setting.

The Ponemon Institute found that of all industries, health care has the highest data-breach cost per record, at \$363. According to Larry Ponemon, PhD, chairperson and founder of the Ponemon Institute, three factors have contributed to the rising cost of data breaches: an increasing in the number of cyberattacks, the cost of losing customers after a breach, and post-breach response (forensics, crisis team, etc.).

### Enforcement, Regulatory Oversight, and Civil Suits

Aside from cost, entities also have to worry about the enforcement actions from both state and federal agencies, along with regulatory oversight—and lawsuits from patient class actions.

#### Federal

Certainly the Office for Civil Rights (OCR), of the U.S. Department of Health and Human Services, will be interested in your data breach. In 2009, the Health Information Technology for Economic and Clinical Health (HITECH) Act, part of the American Recovery and Reinvestment Act of 2009, went live with an interim breach notification rule enacted on September 23, 2009. Subsequently, the HIPAA Omnibus Rule implemented the final rules under HITECH in 2013, which included the removal of a subjective determination of whether the breach caused a “significant risk of financial, reputational, or other harm to the individual.” Under the new standard, it is presumed that harm has occurred and the entity must conduct a thorough risk analysis to determine whether risk has occurred. The Omnibus Rule also made HIPAA (and breach notification) applicable to business associates.

Once the OCR has been notified that a breach has occurred, it will contact you for more information about the breach as well about your policies and practices. It is best to cooperate with the OCR, because stonewalling the federal authorities usu-

ally increases your cost without noticeable benefits. You should have a breach response team in place, and this team should also assist in the regulatory review process. However, you should have one specific person authorized to respond and communicate in a general sense to reduce any delays.

#### State

In addition to federal requirements for responding to breaches, there are state requirements. Forty-seven states, plus the District of Columbia, Guam, Puerto Rico, and the Virgin Islands, have data breach notification laws.<sup>5</sup> Some are based on simple acquisition of unauthorized individual data, whereas some states require actual access. Notably, Indiana, New York City, Wyoming, and the District of Columbia do not provide a safe harbor for encryption. Thus, although your breach may not require notification under HIPAA, it may still require notification in these areas.

Note that on a state level, there is often notification of various agencies such as those for consumer protection, state attorneys general, and insurance commissions. In fact, some state requirements may contradict others. For example, Massachusetts specifically prohibits notifying individuals of “the nature of the breach or unauthorized acquisition or use or the number of residents of the commonwealth affected by said breach or unauthorized access or use.”<sup>6</sup> State data breach laws may cover both electronic and paper records and apply to more than health records. This is a concern when the data breach may involve employee data, but not patient data. States also generally provide for a private right of action, and state attorneys general are becoming more active in seeking penalties for data breaches.

The good part about state data breach laws is that there is often an exception for entities that are governed under another data breach requirement, such as HIPAA or the Gramm-Leach-Bliley Act of 1999 (for financial services).

#### Oversight

Oversight in both federal and state actions includes penalties and corrective action plans. At times, the penalties have been quite large:

- **St. Elizabeth's Medical Center in Brighton, Massachusetts:** Employees used an online document-sharing service to distribute patient information. Penalty: \$218,400 and a corrective action plan.<sup>7</sup> Note: the complaint was received in November 2012, and the settlement occurred in July 2015.
- **Parkview Health System in Fort Wayne, Indiana:** Medical records in boxes were delivered to a retired physician but were left in her driveway when she was not at home.<sup>8</sup> Penalty: \$800,000 and a corrective action plan. The complaint was filed in June 2009, and the settlement came in June 2014.

- **Concentra Health Services in Addison, Texas:** An unencrypted laptop was lost. Penalty: \$1,725,220 and a corrective action plan. The laptop was reported to OCR in December 2011, and the settlement occurred in April 2014.

Note the elapsed time between the occurrence or notification and the settlement in all those examples. Years can pass. If the key person at the organization is no longer there or memories fall short, the entity may lose valuable evidence of compliance. Documentation, documentation, documentation.

#### Lawsuits

In general, lawsuits seem terrifying, but they rarely amount to much in court. The laws have not kept pace with technology to recognize a loss of privacy or to recognize that the steps that people take to protect themselves constitute a harm in and of themselves (with some rare exceptions).

However, that does not mean that the lawsuits are not a threat to entities. Once a suit is filed, the entity generally has to involve outside legal counsel and insurance—and there is generally a settlement. Since 2011, lawsuits for breaches have decreased in number but increased in magnitude, and they more often involve name-brand global companies (Target, Neiman Marcus, Home Depot, Adobe) than health-care entities. A 2014 study of data breach lawsuits<sup>9</sup> found, among other things, that

- Of data breach lawsuits, 76% are filed as class actions.
- Of the 230 cases studied, plaintiffs prevailed only twice, receiving a favorable ruling from a judge or jury.
- The settlement rate is about 50%.
- Breach of medical data was most strongly correlated with settlements.

#### Practical Steps

In the face of such statistics, some actions can help lessen the cost when a data breach occurs. Entities can be both prudent and practical.

Preparation is key. You have already had some form of data breach, whether reportable to authorities or not. Your employees might not have even alerted you—perhaps a laboratory report went to the wrong patient or a claim went to the wrong insurer. It happens daily. I know. It is likely that one day, you will have a major data breach that requires notification to authorities and individuals impacted. Prepare for that day as if you have been told that it is scheduled to happen next week. Prevent it if possible. If you have a portable device that is not encrypted, then encrypt it. There are free programs for doing so. Assign a separate password to everything—one that is not easy to remember or written on a sticky note stuck to a laptop. There are easy steps to take, and then there are the harder steps, those that a prudent business would take in the face of significant warning signs:

*“Preparation is key. You have already had some form of data breach, whether reportable to authorities or not. Your employees might not have even alerted you.”*

- Involve the executives and board of directors (if you have the latter).
- Get cyber-liability insurance (with direct and indirect cost coverage, and with required and voluntary notifications).
- Have a business-continuity plan and a disaster-recovery plan, and test them.
- Develop a fast and accurate breach response plan (to contain a breach, investigate, and notify all parties), and test it.
- Appoint a privacy officer who really knows privacy and who has authority to act.
- Appoint an information security officer who knows security and who has authority to act.
- Conduct frequent and meaningful security training for employees.
- Oversee your vendors closely.

These steps cannot guarantee that you will not have a megabreach, but they can reduce the chance and reduce the cost when it happens.

#### References

1. Ponemon Institute. 2014: A year of mega breaches. Traverse City, MI: Ponemon Institute; © 2015 [cited 2015 September 9]. Available from: [http://www.ponemon.org/local/upload/file/2014%20The%20Year%20of%20the%20Mega%20Breach%20FINAL\\_3.pdf](http://www.ponemon.org/local/upload/file/2014%20The%20Year%20of%20the%20Mega%20Breach%20FINAL_3.pdf)
2. Information Is Beautiful. World's biggest data breaches. Selected losses greater than 30,000 records. Information Is Beautiful; © 2013 [updated 2015 August 6; cited 2015 September 9]. Available from: <http://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/>
3. Office for Civil Rights. Breaches affecting 500 or more individuals. Washington DC: U.S. Department of Health and Human Services [updated 2015 September 1; cited 2015 September 9]. Available from: [https://ocrportal.hhs.gov/ocr/breach/breach\\_report.jsf](https://ocrportal.hhs.gov/ocr/breach/breach_report.jsf)
4. Symantec. Data breach calculator. Mountain View, CA: Symantec. Available from: <http://www.databreachcalculator.com/Calculator/>
5. Mintz Levin. State data security breach notification laws. Boston, MA: Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.; © 2009–2015 [updated 2014 January 1; cited 2015 September 9]. Available from: [http://www.mintz.com/newsletter/2007/PrivSec-Data-BreachLaws-02-07/state\\_data\\_breach\\_matrix.pdf](http://www.mintz.com/newsletter/2007/PrivSec-Data-BreachLaws-02-07/state_data_breach_matrix.pdf) (See also National Conference of State Legislators, at <http://www.ncsl.org/research/telecommunications-and-information-technology/security-breach-notification-laws.aspx>, for information on other laws, including other privacy laws.)
6. Massachusetts General Laws §93H-3(b). © 2015 [cited 2015 September 9]. Available from: <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXV/Chapter93H/Section3>
7. Office for Civil Rights. Bulletin—HIPAA settlement highlights importance of safeguards when using Internet applications. Washington DC: U.S. Department of Health and Human Services; 2015 July 10 [cited 2015 September 9]. Available from: <http://www.hhs.gov/ocr/privacy/hipaa/enforcement/examples/SEMC/bulletin.pdf>
8. U.S. Department of Health & Human Services. \$800,000 HIPAA settlement in medical records dumping case [press release]. Washington DC: U.S. Department of Health and Human Services; 2014 June 23 [cited 2015 September 9]. Available from: <http://www.hhs.gov/news/press/2014pres/06/20140623a.html>
9. Romanosky S, Hoffman DA, Acquisti A. Empirical analysis of data breach litigation. *Journal of Empirical Legal Studies*. 2014;74:1–31. Available from: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1986461](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1986461)

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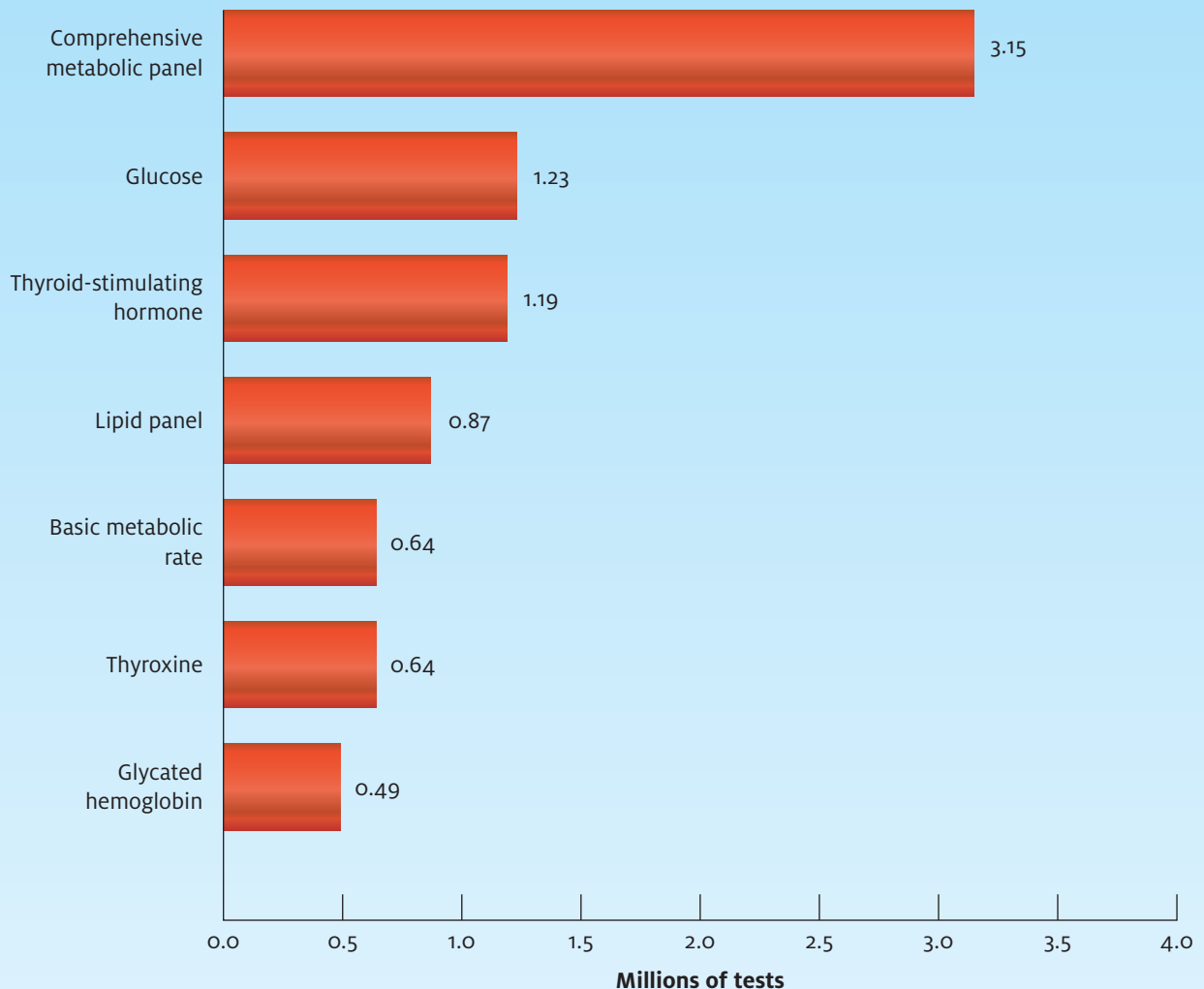


## DEVELOPING DATA

Data from the 2014 Urgent Care Chart Survey of 1,778,075 blinded visits by patients to more than 800 different urgent care clinics, conducted by the *Journal of Urgent Care Medicine*, reveal that the top 3 blood tests performed at U.S. urgent care centers in 2014 were as follows, in descending order:

- Comprehensive metabolic panel—3.15 million tests
- Glucose level—1.23 million tests
- Thyroid-stimulating hormone level—1.19 million tests

The survey's methodology and data abstraction forms were initially designed in 2008 by researcher Robin M. Weinick, PhD, then an assistant professor at Harvard Medical School and a senior scientist at the Institute for Health Policy at Massachusetts General Hospital, and now associate director of RAND Health.



Source: 2014 Urgent Care Chart Survey, *Journal of Urgent Care Medicine*.



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