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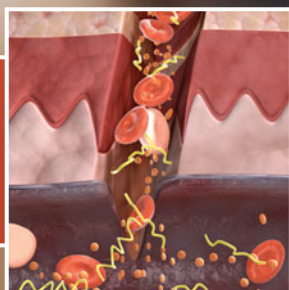
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Clinical
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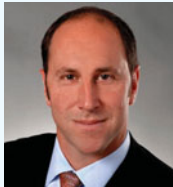


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LETTER FROM THE EDITOR-IN-CHIEF

Urgent Care 2.0: A Paradigm Shift?



In my last column, I presented ways that urgent care medicine can mature as a discipline and a health-care service. I discussed opportunities for expanding our value in a changing system. This month I suggest that one such opportunity, already in the pipeline, could dynamically augment urgent care's role in what many consider to be the number one public health crisis: type 2 diabetes.

The annual incidence of prediabetes and diabetes in U.S. adults is nearly 50%, according to a study reported¹ in *JAMA*. The World Health Organization, the American Diabetes Association, and the Centers for Disease Control and Prevention all declare that early detection and prompt treatment are our most important tools for mitigating the burden of this pervasive disease. In a study reported in *Diabetes Care*, researchers found that over 5 years, the economic burden of prediabetes increased 74% (to \$44 billion), and the cost of undiagnosed diabetes rose a staggering 82% (to \$33 billion).² We are witnessing a massive and accelerating public health and economic crisis. Early detection is the critical first step to reversing course. Might there be a role for urgent care in that process?

According to the latest benchmarking survey performed by the Urgent Care Association of America, 34% of all U.S. urgent care patients do not have a primary-care physician. In 2014, the year for which the most recent data are available, the average urgent care center saw 14,000 patients per year. National sampling data suggest that there are between 7000 and 10,000 U.S. urgent care centers. This means that urgent care centers are collectively seeing over 100 million patients per year. Of these, about 50% are new to the center where they are seeking care. Thus, somewhere between 20 million and 30 million unique patients present each year to an urgent care center *and* have no other connection to primary-care medicine. Realizing this got me talking to myself:

Q: So what?

A: We are seeing a large number of patients each year who otherwise would not be touched by primary health care.

Q: What do you mean?

A: Our patients are mostly healthy 20- to 50-year-olds, and almost 40% of them don't have primary-care physicians. They seek only episodic care for illness and injury.

Q: What's the problem?

"We are witnessing a massive and accelerating public health and economic crisis."

A: We're missing a tremendous opportunity to screen for underlying or occult disease as early as possible.

Q: But the urgent care setting isn't the place to provide screening services, is it?

A: Why not? Most of us already screen our patients for hypertension and tobacco use.

Q: What's the big deal?

A: If the numbers are accurate, urgent care has the opportunity to reach 20 million to 30 million patients per year who do not access primary care through traditional mechanisms. We can potentially identify, with a simple fingerstick test for glycated hemoglobin, 10 million to 15 million new cases of prediabetes and type 2 diabetes each year.

Urgent care is in a position to hugely affect public health in ways that traditional health-care services cannot. Although cost-effective and convenient access to care for episodic illness and injuries is important to consumers and payors, the impact of our services in those arenas is almost certainly negligible in comparison with the impact of early diagnosis of diabetes.

Research is under way on a potential role for urgent care in the early detection of diabetes, quantifying the potential impact of such programs on both disease morbidity and disease economics. Demonstrating value through similar innovative initiatives just may fortify the position of urgent care in the future of health-care delivery. ■

¹Menke A, Casagrande S, Geiss L, Cowie CC. Prevalence of and trends in diabetes among adults in the United States, 1988–2012. *JAMA*. 2015;314:1021–1029.

²Dall TM, Yang W, Halder P, et al. The economic burden of elevated blood glucose levels in 2012: diagnosed and undiagnosed diabetes, gestational diabetes mellitus, and prediabetes. *Diabetes Care*. 2014;37:3172–3179.

Lee A. Resnick, MD, FFAFP

Editor-in-Chief, *JUCM*, *The Journal of Urgent Care Medicine*



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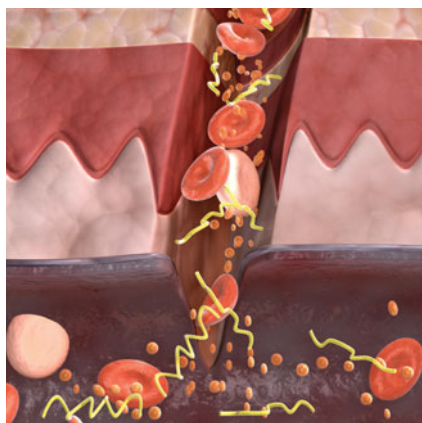
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CLINICAL

8 Nonhealing Wounds, Part 2: Treatment in the Urgent Care Center

Nonhealing wounds are the by-product of prolonged and complex disease processes. Part 2 of this two-part article outlines treatment for specific types of lesions so that urgent care providers can help improve patients' quality of life.

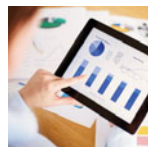
Nathan M. Finnerty, MD, Michael B. Weinstock, MD, and
Colin G. Kaide, MD, FACEP, FAAEM, UHM

PRACTICE MANAGEMENT

19 Using Key Performance Indicators to Measure, Track, and Improve Performance in Urgent Care

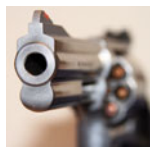
Key performance indicators tell the story of your urgent care center: its financial health, its strengths, and its weaknesses. They also make it easy for you to quickly change tactics if trouble is brewing.

Alan A. Ayers, MBA, MAcc



HEALTH LAW AND COMPLIANCE

25 Guns and Urgent Care: How to Respond to Evolving Open-Carry and Concealed-Carry Laws



Health care is an industry with one of the lowest rates of workplace fatalities in the United States, but statistics show that it accounts for nearly 70% of nonfatal injuries on the job. Have you trained your staff on handling gun-related encounters?

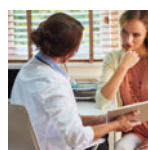
K Royal, CIPP/US, CIPP/E

CASE REPORT

31 Nonspecific Numbness and Tingling

Numbness and tingling can be caused by variety of underlying pathologies, and not all of them are benign. What might imaging show?

Arash Mirzaie, MS-4



IN THE NEXT ISSUE OF JUCM

Undiagnosed type 2 diabetes affects more than 9 million Americans. In the first part of a two-part article, authors Shannon R. Clark, MSN, RN, RNFA, FNP-C, and Marisa L. Wilson, DNSc, MHSc, RN-BC, CPHIMS, present their original research showing the impact that urgent care centers could have by providing routine diabetes screening.

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editor@jucm.com

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komooreklopf@jucm.com

PROOFREADER

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CONTRIBUTING EDITORS

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David Stern, MD, CPC

MANAGER, DIGITAL CONTENT

Brandon Napolitano

bnapolitano@jucm.com

ART DIRECTOR

Tom DePrenda

tdeprenda@jucm.com



185 State Route 17, Mahwah, NJ 07430

PUBLISHER

Stuart Williams

swilliams@jucm.com • (201) 529-4004

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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 health-care 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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Type 2 diabetes is the top public health crisis in the United States, with the annual incidence of prediabetes and type 2 diabetes in adults being nearly 50%. Editor-in-Chief Lee Resnick urges urgent care to play a big role in managing the issue. Our consumers and payors most often focus on the cost-effectiveness and convenient access to treatment that urgent care provides. But imagine how large our impact might be in the arena of diabetes: We can potentially identify, with a simple fingerstick test for glycated hemoglobin, 10 million to 15 million new cases of prediabetes and type 2 diabetes each year.

Nonhealing wounds affect the quality of life of a large and growing number of people in the United States. In part 2 of a two-part article, Nathan M. Finnerty, MD, Michael B. Weinstock, MD, and Colin G. Kaide, MD, FACEP, FAAEM, UHM, use case examples to discuss how to treat several types of these wounds in the urgent care setting.

Finnerty is Senior Resident in the Department of Emergency Medicine at Ohio State University College of Medicine, Columbus, Ohio; a member of the Research and Social Media Committees for the Society for Academic Emergency Medicine; and a manuscript reviewer for *Annals of Emergency Medicine*. Weinstock is Professor of Emergency Medicine; Emergency Department Chairman and Director of Medical Education, Mount Carmel St. Ann's Hospital Department of Emergency Medicine, Immediate Health Associates, Inc., Columbus, Ohio; Associate Clinical Editor for the *Journal of Urgent Care Medicine*; and Editor-in-Chief of *Urgent Care Reviews and Perspectives (UC:RAP)*. Kaide is Associate Professor of Emergency Medicine at Wexner Medical Center at Ohio State University in Columbus, Ohio.



Monitoring key performance indicators can help urgent care centers spot performance weak points in real time so that leaders can make

changes even in day-to-day operations to avert trouble. In our *Practice Management* section this month, Alan A. Ayers, MBA, MAcc, elicits takeaways from experts Andrea Malik Roe, MBA, and Todd Martin, MBA, FACHE, that you can use in tracking your center's key performance indicators.

Ayers is Vice President of Strategic Initiatives for Practice Velocity, LLC and is Practice Management Editor of the *Journal of Urgent Care Medicine*. Roe is Cofounder and Chief Financial

Officer of CRH Healthcare, based in Atlanta, Georgia. Martin is Executive Vice President and Chief Financial Officer of Emergency One Urgent Care and Occupational Health Centers, based in the Hudson River Valley of New York State.

Patients often present to urgent care centers with numbness and tingling, symptoms that can be caused by any of several underlying pathologies. In our case report, author Arash Mirzaie, MS-4, explains that some of these are benign, but others are far more serious.



Mirzaie is a fourth-year medical student at the International University of the Health Sciences School of Medicine, and he practices on weekends as a certified physician assistant in an urgent care center in Bellevue, Washington.

Also in this issue:

In *Health Law and Compliance*, **K Royal, CIPP/US, CIPP/E**, writes that laws on carrying guns are in flux in the United States, which means that urgent care centers must have policies in place to deal with them, for the safety of both patients and staff members. In addition, centers must deal with "stand your ground" laws, "bring your gun to work" laws, and laws on violence against health-care workers.

Royal is a privacy consultant. She regularly blogs on privacy-related issues at <https://theheartofprivacy.com>.

Sean M. McNeeley, MD, and the **Urgent Care College of Physicians** review new reports from the literature on using dexamethasone to treat asthma in adults, the danger that laundry detergent packets pose to children, age-group differences in recovery from concussions sustained during football games, whether to give apple juice to children with mild gastroenteritis, determining the number of inappropriate antibiotic prescriptions written each year, antibiotic choice in treating uncomplicated wound infections, oral challenges of amoxicillin in children, and the effects on infants of immunizing their mothers against influenza during pregnancy.

In *Coding Q&A*, **David Stern, MD, CPC**, discusses coding for removal of plantar warts, for use of a digital nerve block in laceration repair, and for medical decision-making when treating established patients.

Our *Developing Data* column shows that U.S. patients don't visit urgent care centers only late at night and on weekends. They overwhelmingly prefer to use urgent care on weekdays, and they most often prefer to seek care in the morning rather than at night, whether on weekdays or weekends. ■



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FROM THE UCAOA PRESIDENT

Making Urgent Care Part of the Solution to Healthcare Access

■ STEVE P. SELLARS, MBA

It's a great honor to serve as board president of the Urgent Care Association of America. I have some very big shoes to fill. Over the last year, Dr. Rob Kimball has done a stellar job of leading UCAOA as president. Before him were Dr. Nate Newman and several other fantastic leaders.

Thanks to the vision of UCAOA leadership, starting with its founders and on through all of its past presidents, board members, and staff members, UCAOA is better positioned today than at any time in its history to meet the challenges of a healthcare environment that is constantly changing. Now more than ever, I believe urgent care has a vital role to play as we work together to secure its place in this country's new value-based continuum of care, one that strives to ensure that patients with minor medical conditions get the right care in the right place and at the right time.

I look forward to working together, in the coming months, with everyone involved with the preeminent urgent care association to ensure that urgent care is seen as part of the solution to the nation's problems regarding access to health care. We need to strengthen our membership base to make sure that there is a positive return on investment and to build positive relationships with other organizations, including physician groups, health systems, payors, and other healthcare associations—relationships that build on common interests. We should also proactively adapt to new challenges facing the urgent care industry in areas ranging from shrinking reimbursement to the push for new government regulation. In addition, we should explore strategies for constructive engagement with newcomers to retail health, like telemedicine and health systems looking to enter the urgent care space.

I'm proud of what UCAOA has achieved over the years, and I believe that the future is brighter than it has ever been.



Steve P. Sellars, MBA, serves as president of the Urgent Care Association of America through 2017. He is Chief Executive Officer of Premier Health, Baton Rouge, Louisiana.

"UCAOA is better positioned today than at any time in its history to meet the challenges of a healthcare environment that is constantly changing. Now more than ever, I believe urgent care has a vital role to play as we work together to secure its place in this country's new value-based continuum of care, one that strives to ensure that patients with minor medical conditions get the right care in the right place and at the right time."

As president, I pledge to work hard every day to be a good steward, and I promise to stay true to the vision of our founders while delivering on promises of today's UCAOA and the urgent care industry as a whole. I say all of this knowing that none of what I've mentioned here will be possible without your support, active involvement, and commitment to move beyond any past differences.

I will be reaching out to many of you for your thoughts on how UCAOA can live up to the challenges that lie ahead. If you don't hear from me, please feel free to contact me directly at any time. I want to hear what you have to say.

The future is never certain, but I believe this to be true: Together, we can move forward to create an even better UCAOA. Let's get started! ■

Nonhealing Wounds, Part 2: Treatment in the Urgent Care Center

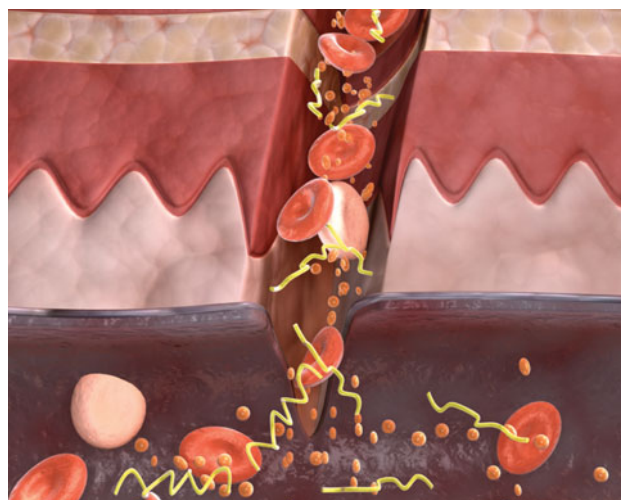
Urgent message: The etiology of nonhealing wounds is often multifactorial, with the likelihood of healing enhanced if all considerations are addressed, including evaluation and management of the blood supply in patients with peripheral arterial disease or diabetes mellitus, as well as local wound care.

NATHAN M. FINNERTY, MD, MICHAEL B. WEINSTOCK, MD, and COLIN G. KAIDE, MD, FACEP, FAAEM, UHM

Introduction

The diagnosis of a nonhealing wound is largely clinical, with diagnostic studies tailored to the suspected cause as well as to the underlying process. Part 1 of this article [see “Nonhealing Wounds, Part 1: Diagnosis in the Urgent Care Center,” at <http://www.jucm.com/nonhealing-wounds-part-1-diagnosis-urgent-care-center/>] discussed making the diagnosis. In this second part, the focus is on wound treatment, with specific case scenarios demonstrating treatment principles.

Nathan M. Finnerty, MD, is Senior Resident, Department of Emergency Medicine, Ohio State University College of Medicine, Columbus, Ohio; a member of the Research and Social Media Committees for the Society for Academic Emergency Medicine; and a manuscript reviewer for *Annals of Emergency Medicine*. **Michael B. Weinstock, MD**, is Adjunct Professor of Emergency Medicine, Ohio State University College of Medicine; Emergency Department Chairman and Director of Medical Education, Mount Carmel St. Ann's Hospital Department of Emergency Medicine, Immediate Health Associates, Inc., Columbus, Ohio; Associate Clinical Editor for the *Journal of Urgent Care Medicine*; and Editor-in-Chief, *Urgent Care Reviews and Perspectives (UC:RAP)*. **Colin G. Kaide, MD, FACEP, FAAEM, UHM**, is Associate Professor of Emergency Medicine at Wexner Medical Center at Ohio State University in Columbus, Ohio.



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Treatment and Disposition

Whereas the diagnosis of a nonhealing wound may not be difficult, addressing the underlying problem may take some effort. Certain principles apply to management of all wounds, no matter the underlying etiology.



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References: **1.** Data on file. Cemptra. **2.** Doern GV, Richter SS, Miller A, et al. Antimicrobial resistance among *Streptococcus pneumoniae* in the United States: Have we begun to turn the corner on resistance to certain antimicrobial classes? *Clin Infect Dis*. 2005;41:139-148. **3.** Dalhoff A. Global fluoroquinolone resistance epidemiology and implications for clinical use. *Interdiscip Perspect Infect Dis*. 2012;2012:1-38. **4.** Brueggemann AB, Coffman SL, Rhomberg P, et al. Fluoroquinolone resistance in *Streptococcus pneumoniae* in United States since 1994-1995. *Antimicrob Agents Chemother*. 2002;46(3): 680-688. **5.** Agency for Healthcare Research and Quality. National and regional estimates on hospital use for all patients from the HCUP National Inpatient Survey (NIS). <http://hcupnet.ahrq.gov/HCUPnet.jsp?Id=2900C5708A505E27&Form=DispTab&JS=Y&Action=Accept>. Accessed April 20, 2016. **6.** Xu J, Murphy SL, Kochanek KD, Bastian BA. Deaths: final data for 2013. *Nat Vital Stat Rep*. 2016;64:1-118.



- Most patients with nonhealing wounds can be discharged and treated on an outpatient basis. Clinical instability, systemic illness, osteomyelitis, and an inability of the patient to provide self-care are indications for transfer to an acute-care setting.
- Actively debriding nonhealing wounds is best left for specialty care.¹
- An exaggerated cutaneous inflammatory response is often confused with cellulitis. Current prescribing guidelines recommend that antibacterial preparations be used only in cases of clinical infection, not for bacterial colonization.²
- Wound cultures should be obtained if topical or systemic antibiotics will be initiated.³
- Topical antibiotics are first-line treatment.
- Cadexomer iodine is the best evidence-supported topical antibiotic preparation.²
- Neosporin ointment (bacitracin-neomycin-polymyxin) has a high tendency to cause a healing-inhibitive inflammatory response, so alternatives should be chosen.⁴
- Topical steroid cream may reduce itching and irritation if there is surrounding eczema or stasis dermatitis.
- Empiric antibiotics have not been shown to improve wound healing and should be initiated only for systemic signs and symptoms or cellulitis.²
- Empiric antibiotics for outpatient treatment of mild foot infections include clindamycin, levofloxacin, trimethoprim-sulfamethoxazole, and amoxicillin-clavulanic acid and should be chosen on the basis of on your local antibiogram.
- Empiric antibiotics for inpatient care include imipenem, piperacillin-tazobactam, and broad-spectrum cephalosporins. Vancomycin should also be considered, to cover resistant gram-positive organisms such as methicillin-resistant *Staphylococcus aureus*.
- Pain control can be attained with topical analgesics, stocking compression, or systemic nonsteroidal anti-inflammatory drugs, gabapentin, or opioids.⁵
- Some evidence suggests that ibuprofen dressings may offer pain relief from painful venous leg ulcers, thus avoiding use of systemic analgesics.⁵
- Bleeding can usually be managed with direct pressure. Patients who have bleeding after debridement may have had graft material of some type placed in the ulcer, and such materials should be left in place.
- Instruct the patient to keep the area warm and protected from injury with thick socks, an extra layer of clothing, or padding over an ulcer.
- Compression increases wound healing rates compared with no compression and is the mainstay of pain management for venous insufficiency wounds.⁶
- Patients occasionally cannot tolerate the thigh-high compression stockings and may roll them down for comfort. They should be informed that doing so may create a tourniquet effect and may be unsafe.⁷
- Patients should be informed that failure to use appropriate footwear, adjuncts, and precautions will not allow for wound healing.
- Working with multidisciplinary wound-care teams significantly improves wound healing.⁸
- Long-term management requires lifestyle modification, optimization of comorbidities, weight loss, tobacco cessation, improved nutrition, and frequent debridement.^{1,9,10}
- Wounds that manifest a chronic hypoxic state may be candidates for hyperbaric oxygen therapy (HBOT). HBOT exposes the patient to 100% oxygen delivered at pressures greater than 1 atmosphere. This allows for a huge amount of oxygen to be dissolved in the tissues. Oxygen dissolved in plasma reaches significantly farther into ischemic tissue than that delivered by hemoglobin. The hyperoxygenated state induces wound healing by stimulating the formation of new capillaries in chronic ischemic wound beds. This in turn enhances long-term oxygen delivery and converts a chronically ischemic wound to a well-oxygenated one. HBOT also enhances the antimicrobial effect of antibiotics and can accelerate healing in chronically infected wounds. HBOT is indicated in some chronic wounds in which local tissue hypoxia has been clearly demonstrated and in which good wound care and optimization of other factors such as glucose control, off-loading, and appropriate debridement have failed to heal the chronic wound.

Specific Wounds

Arterial

Arterial insufficiency, also known as peripheral arterial disease, results from a decrease in blood flow, typically to the lower extremities, and increases the risk of trauma and pressure injury and may result in tissue necrosis.

Risk Factors

Risk factors include older age, diabetes, tobacco use, hypertension, cardiovascular disease, sickle cell disease, vasculitides, renal failure, and previous vascular surgery.

Characteristics

Patients with arterial insufficiency may have the following characteristics:

- Thin and shiny skin, pale skin, an absence of hair growth, and thickened and/or brittle nails
- Dependent rubor, a purplish-red discoloration caused by the retention of deoxygenated blood in dilated skin capillaries; may mimic cellulitis
- Pain in the affected area secondary to ischemia, which can be divided into three categories in order of worsening severity:
 - Intermittent claudication
 - Nocturnal pain
 - Rest pain

Nonhealing Wounds

The following are common characteristics of nonhealing wounds from arterial insufficiency:

- The wounds are often small and have a punched-out appearance.
- The wound bed is typically pale pink with minimal drainage (unless infection is present). In severe cases, the wound may appear brown or black from tissue necrosis.
- The wounds are often painful, though the pain may be from arterial insufficiency to the extremity and not from the wound itself.

Urgent Treatment

Any sign of cellulitis, abscess, gangrene, or deep ulceration in an arterial ulcer indicates a serious condition. Because of limited blood flow, these patients' bodies do not always have the ability to mount a normal inflammatory response, so such wounds can worsen rapidly. Transfer to an acute-care center is indicated for any such finding.

Definitive Management

Definitive management of arterial ulcers consists of the following measures:

- Protecting the wound from further damage and providing pain relief in the absence of infection or rapid deterioration
- Keeping the area warm and protected from injury. Advising the patient to use simple methods such as wearing thick socks may be a good starting point. External heating is not advised, because of the risk of burn injuries.
- Providing padding over the ulcer with nonadherent wound dressings (e.g., extra layers of gauze),

although securing padding with compressive dressings is contraindicated

- Additional off-loading with a wound-healing shoe or wheelchair
- Avoidance of elevation and constriction, because these will worsen symptoms and hasten progression of the wound
- Wound specialty follow-up, which is critical; these patients will often undergo advanced testing and vascular consultation

Venous

Chronic venous insufficiency stems from venous valve dysfunction. These one-way valves become incompetent and allow for bidirectional flow of blood. The resulting increased venous pressure leads to capillary leakage, edema, and ulceration. An estimated 85% of chronic skin ulcers in the lower extremities are due to this process.⁷

Risk Factors

The following are some of the risk factors for chronic venous insufficiency wounds:

- Varicose veins
- Previous surgery or trauma of the lower extremities
- A sedentary lifestyle
- Obesity
- Pregnancy
- Previous deep vein thrombosis
- Weakness or paralysis of the lower extremities

Characteristics

Patients with venous insufficiency may have the following characteristics:

- Edema, typically uniform on both legs
- Varicose veins (dilated, enlarged, palpable, and often bluish in color)
- Hemosiderin staining (reddish-gray or brown discoloration of the skin, most commonly on the anterior portion of the lower leg), caused by the breakdown of red blood cells that have leaked into the interstitial spaces; this may be confused with cellulitis
- Pain in the dependent position that is relieved with elevation or compression
- Hardening of the soft tissue of the lower extremities. In a process called *lipodermatosclerosis*, the skin may take on a woody texture, and the lower legs may resemble an inverted bottle. This is a sign of very advanced disease.

"Most patients with nonhealing wounds can be discharged and treated on an outpatient basis.

Clinical instability, systemic illness, osteomyelitis, and an inability of the patient to provide self-care are indications for transfer to an acute-care setting."

Nonhealing Wounds

The following are common in nonhealing wounds caused by venous insufficiency:

- A shallow, large, and irregular shape
- A red, edematous, warm lesion that precedes the ulcer
- Location in the pretibial and ankle regions
- A wound bed that is red with copious drainage that can be easily confused with the drainage of cellulitis; in venous insufficiency, the drainage will respond to compression

Urgent Treatment

In urgent care, treatment of wounds caused by venous insufficiency should include the following elements:

- Assessment for infection and deep vein thrombosis, as with all nonhealing wounds
- Compression, elevation, ambulation, and absorptive dressings to reduce pain and drainage and improve function. Compression should not be initiated for patients with abnormal ankle-brachial indexes (ABIs).⁷
- Reviewing with patients the proper use of compression stockings; they must be informed that rolling down a thigh-high stocking because of discomfort may create a tourniquet effect⁷

Definitive Management

Definitive management of wounds caused by venous insufficiency includes the following measures:

- Daily use of graduated compression stockings and frequent debridement. These have been shown to improve outcomes, but it is best to refer patients with such ulcers to wound-care specialists.^{1,6,11}
- Ibuprofen dressings, which may offer pain relief to patients with painful venous leg ulcers and may prevent the need for systemic analgesia⁵
- Standard non-adherent dressings or alginate dressings; they perform equally as well¹¹

Pressure

Pressure ulcers, also known as decubitus ulcers, are the end product of sustained pressure that exceeds the pressure at the capillary beds and leads to tissue ischemia. Because of the resulting increased oxygen

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requirements, muscle undergoes greater tissue destruction from prolonged pressure. Therefore, a small area of pressure on the skin often conceals a deeper area of damage beneath.⁷

Risk Factors

Risk factors for pressure ulcers include the following:

- Advanced age
- Poor nutrition
- Altered sensation
- Limited mobility
- Altered mental status
- Bowel or bladder incontinence
- Inadequate nursing care

Characteristics

In examining pressure wounds, keep this information in mind:

- Weight-bearing surfaces and areas of bony protrusion are at highest risk, and ulcers occur over bony prominences and weight-bearing areas:
 - Sacrum
 - Ischial tuberosities
 - Greater trochanter
 - Heel
 - Elbow
 - Knee
 - Ankle
 - Occiput
- Erythema over a bony prominence that blanches is not considered a pressure ulcer, but it may be an early indication of increased risk.
- Wounds range from nonblanching, discolored skin to deep craters extending to the bone and are categorized most commonly into four stages:
 - I: nonblanching erythema of intact skin
 - II: necrosis, superficial or partial-thickness, involving the epidermis and/or dermis
 - III: deep necrosis with crateriform ulceration and full-thickness skin loss extending to, but not through, fascia
 - IV: full-thickness necrosis with involvement of supporting structures such as muscle and bone

Nonhealing Wounds

Wound characteristics vary greatly depending on the depth or stage of the wound. Progression is as follows:

- Nonblanching erythema
- Well-demarcated crateriform ulcer
- Full-thickness necrosis with indeterminate borders

Urgent Treatment

In the urgent care setting, note the following regarding pressure ulcers:

- Because these wounds occur over bony prominences, there is an increased risk for osteomyelitis.
- Fever, increased pain, purulent drainage, progressing erythema, and foul odor all suggest infection, and the presence of any of these is an indication for transfer of the patient to an acute-care setting.
- Stage I and II ulcers without signs of acute infection may be treated with topical antibiotics or moist sterile gauze, pressure reduction, and close follow-up.
- Stage III and IV ulcers typically require surgical debridement and skin grafts, and patients with them should be referred accordingly.

Definitive Management

Definitive management of pressure ulcers includes the following:

- Off-loading or limiting pressure over the area around the ulcer
- Reduction of skin friction and shear forces
- Minimization of skin exposure to excessive moisture from incontinence, perspiration, or wound drainage
- Evaluation of and correction of nutritional status; consider prescribing increased intake of vitamin C and zinc.
- Mobilization of patients as soon as possible
- Keeping wounds clean, well debrided, moisturized, possibly dressed with occlusive dressings, and free of active infection⁷

Diabetic and Neuropathic

In diabetic and neuropathic wounds, atherosclerotic changes of the microvasculature leads to decreased oxygen delivery, nerve damage, and atrophy, resulting in sensory and motor deficits and, ultimately, structural changes in the feet. Autonomic dysfunction decreases secretions, creating dry skin prone to cracking, fissuring, and callusing. Finally, ulceration arises from repetitive pressure, shearing, and friction over the deformities on the dorsal and distal surfaces of the toes and the plantar surface of the feet.³ Trauma is a common precipitant, possibly caused by something as minor as improperly fitted shoes.

Risk Factors

Risk factors for diabetic and neuropathic wounds include the following:

- Chronic diabetes

- Human immunodeficiency virus
- Neurologic or neuromuscular diseases
- Spinal cord injuries
- Arthritis
- Prior foot ulcers
- Amputations
- Peripheral neuropathy
- Foot deformities
- Visual impairment
- Tobacco use

Characteristics

Patients with diabetic and neuropathic wounds exhibit the following characteristics:

- Thin, dry skin with loss of hair on the feet and legs and decreased capillary refill
- Pronounced metatarsal heads with loss of the normal amount of fat, clawing of the toes, flattening of the feet, and callus formation over the prominent regions of the feet
- Numbness and tingling in the feet, with loss of sensation in a stocking distribution
- Repeated fracture of the bones of the midfoot in chronic cases, causing complete collapse, termed *Charcot foot*; a foot with this condition is prone to ulceration

Nonhealing Wounds

The following is usually true of nonhealing diabetic and neuropathic wounds:

- Wounds commonly occur in weight-bearing areas, such as the heel, plantar metatarsal head areas, and the tips of the most prominent toes.
- Wounds are secondary to repetitive stress and may tunnel deep into the tissue.
- Callus formation around the wound is common.

Urgent Treatment

In the urgent care setting, treatment of diabetic or neuropathic ulcers should include the following elements:

- Evaluation for cellulitis, abscess, osteomyelitis, and gangrene
- Consideration of debridement of the callus and wound bed
- Methods to avoid placing pressure on the ulcer (i.e., ensuring that the patient can avoid weight-bearing by using crutches or a walking cast or walking shoe)
- Avoidance of soaking; soaking the wound macerates the tissue but does not debride the necrotic tissue

Definitive Management

Definitive management of diabetic or neuropathic ulcers includes the following methods:

- Use of a specialty off-loading boot or total contact casting
- Maintenance of good glycemic control and optimization of additional comorbidities
- Limitation of weight-bearing on the affected foot
- Regular callus debridement by a wound-care specialist
- HBOT in some patients

Presentation of Cases

Case 1

A 65-year-old man presents with fatigue and fever that he has for the last 2 days. He is accompanied by family members and is unable to provide a full medical history. He has a history of poorly controlled type 2 diabetes with associated lower-extremity neuropathy and hypertension. His temperature is 101.2°F (38.4°C), and his heart rate is 102 beats/min. There is a foul-smelling 3-cm wound on the plantar surface of his right foot.

Case 2

A 36-year-old man with a history of paraplegia from a long-ago car accident presents with a wound on the back of his left heel that he first noticed 2 weeks earlier. He is concerned that the wound is worsening. His vital signs are within normal limits, and his physical examination findings are concerning only for a well-demarcated ulcer on his heel. A moderate amount of drainage is present on the patient's sock.

Case 3

A 58-year-old woman presents with leg pain. She reports that she has had bilateral foot, ankle, and calf pain for the past 3 months. These symptoms are worse throughout the day and seem to decrease when she lies down at night. She has a history of hypertension and morbid obesity. Her physical examination findings are remarkable for symmetric swelling of the distal lower extremities, with associated erythema and tenderness on palpation. There is a 4-cm shallow, irregularly shaped wound in the left pretibial area with marked serous drainage. Pulses are equal in the lower extremities.

Case 4

A 78-year-old man presents with coughing and congestion. He has a history of coronary artery and peripheral vascular disease. Your evaluation findings are consistent

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with those for a viral upper respiratory infection. However, as you are leaving the room, he asks if you would be willing to look at a wound he has on his right leg. It has been there for “some time” and was treated in the past by his primary-care physician, but he is no longer seen by that physician. He says that there has been no change in wound size or color, and no pain or drainage. Examination reveals hairless, shiny, thin lower extremities with a punched-out wound over the right lateral malleolus that is mildly tender to palpation. The dorsalis pedis and posterior tibia pulses are faint but symmetric.

Discussion of Cases

Case 1

The wound described is most consistent with a diabetic foot ulcer with possible surrounding cellulitis. This may or may not be the source of this patient's presenting illness. Because he is both febrile and tachycardic, sepsis should be considered, and emergency transfer to an acute-care setting is indicated.

Case 2

Though the patient is young, paraplegia places him at increased risk for wound development. The location and characteristics of his wound are consistent with those of a pressure ulcer. The wound should be staged and probed because patients with such lesions are at increased risk for the development of osteomyelitis. If there is concern about the possibility of osteomyelitis, transferring the patient to an acute-care setting is indicated. Otherwise, this patient can be treated on an outpatient basis. His description of wound expansion and the drainage noted on his sock raise concern about infection. Because he has no signs of systemic illness or cellulitis, topical antibiotic ointment should be the first-line treatment; wound cultures should be obtained prior to antibiotic application. The patient will require pressure off-loading when he is discharged to home, and arrangements must be made for regular follow-up care to ensure wound healing.

Case 3

This patient's presentation is typical of someone with a venous insufficiency ulcer. Her risk factors include hypertension and obesity. Wound drainage is to be expected. Other clues are the description of worsening pain through the day when her legs are dependent and the relief with elevation as she lies down at night. The erythema described is likely secondary to hemosiderin staining, which can be further evaluated by elevating the legs to assess fading or resolution of the erythema. There are

no indications of infection, so she can be treated conservatively with absorptive dressings, compression, and outpatient follow-up. Even with palpable pulses, ABIs should be determined prior to applying compression.

Case 4

Though the presenting symptoms are not related to a nonhealing wound, the patient has a wound that he would like evaluated. His medical history, risk factors, and examination findings are consistent with those for arterial insufficiency. The patient's condition is otherwise stable, with no signs of local or systemic infection. Faint pulses are to be expected. Measurement of ABIs is indicated because severe arterial obstruction cannot be ruled out by palpation alone, and ABIs could reveal critical obstruction requiring emergency transfer. With non-emergency ABIs, this patient can be discharged with instructions for symptom control and avoidance of wound progression, and, most importantly, with resources for close follow-up with a wound specialist.

Conclusion

Nonhealing wounds are the by-product of prolonged and complex disease processes. Though chronic in nature, they can pose acute threats to life and limb, in addition to lifelong debilitation. By differentiating the signs and symptoms of acute illness from the expected course of nonhealing wounds and understanding indications and best evidence for wound treatment thereof, urgent care providers play a critical role in the treatment of nonhealing wounds and may serve as the stimulus that leads to improved outcomes and quality of life. ■

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Practice Management

Using Key Performance Indicators to Measure, Track, and Improve Performance in Urgent Care

Urgent message: Key performance indicators provide the yardstick by which urgent care strategy and execution are tracked over time, highlighting areas requiring management intervention, facilitating comparison with peers, and enabling a culture of continual improvement.

ALAN A. AYERS, MBA, MAcc

Introduction

Key performance indicators (KPIs) are quantifiable business metrics used by organizations to gauge various aspects of their performance over time. Regular monitoring and evaluation of KPIs help provide insight into an organization's financial health and spotlight organizational strengths and weaknesses. KPIs are also used to set strategic and organizational goals, and to measure a company's performance against industry benchmarks.

For urgent care, the metrics that make up its most important KPIs can be both financial and nonfinancial, as illustrated in **Table 1**. Urgent care is a retail-based health-care business that receives the majority of its revenue from an assortment of payors, so the most critical urgent care KPIs have to do with billing and coding practices and with patient satisfaction and service delivery. In fact, most industry experts cite patient volume as the top KPI. KPIs related to managing operating expenses are critical as well.

Alan A. Ayers, MBA, MAcc, is Vice President of Strategic Initiatives for Practice Velocity, LLC and is Practice Management Editor of the *Journal of Urgent Care Medicine*.



Tracking and Measuring Key Performance Indicators

Since the advent of powerful practice-management (PM) software, there have been few limits to the data that a clinic can track and measure. Most urgent care centers today employ some sort of electronic medical record (EMR) and PM solution to capture both clinical and administrative data, which can then be filtered, ana-

Table 1. Common Urgent Care Key Performance Indicators

- Average revenue per visit (net collections per visit)
- Evaluation and management coding distribution
- Ancillary revenue per visit
- Front-desk collection average
- Days in accounts receivable
- Percentage of accounts receivable over 90 days
- Average days to bill
- Average days to pay
- Visits per clinic per day
- Visits per provider per hour (provider efficiencies)
- Door-to-examination-room time (time in waiting room)
- Door-to-door time (length of stay)
- First-pass resolution rates
- Patient likelihood to recommend (net promoter)

lyzed, and used to generate reports. In fact, many renowned EMRs even have built-in KPI dashboards certified for meaningful use under the Health Information Technology for Economic and Clinical Health Act. These dashboards serve to help clinics easily stay on top of their most important metrics.

Many of these KPIs are calculated by simply taking the total value for a key metric and dividing it by some meaningful denominator. An urgent care center can arrive at the KPI “average revenue per visit,” for example, by calculating as follows:

$(\text{Total Payments} - \text{Total Refunds}) \div \text{Total Visits} = \text{Average Revenue per Visit}$

Of course, there are myriad factors that can affect and influence specific KPI values, so those factors must first be identified and understood before the final values can be put into a useful context.

Interview: Anecdotal Examination of Key Performance Indicator Use in Urgent Care

This section provides an anecdotal perspective via an interview of two prominent urgent care executives on how their centers use KPIs to track, measure, and improve performance. Andrea Malik Roe, MBA, is the cofounder and chief financial officer of CRH Healthcare, based in Atlanta, Georgia. Todd Martin, MBA, FACHE, is executive vice president and chief financial officer of Emergency One Urgent Care and Occupational Health Centers, based in the Hudson River Valley of New York State.

Alan Ayers: What are some of the most meaningful metrics you use in evaluating your operational effectiveness?

Andrea Malik Roe: We monitor controllable expenses and patient complaints/LWBS (leave without being seen) reasons. Because labor management is critical, we plot clinical labor hours per hour open versus PPD (patients per day). We alter staffing targets by center by day of week or month on the basis of estimated volume expectations. We also budget and track medical supply expense per patient. If we have patients who LWBS or complain, it is normally because of long wait times, so we monitor D2D (door-to-door) times and the average number of patients seen per hour. The staffing and volume or D2D times are monitored daily by the operations staff and adjusted in real time to stay ahead of any operational issues.

Todd Martin: Operational effectiveness in my mind means delivering a quality of care and service to the patients in our community in a manner that encourages them not only to come back to us but also to tell all their friends and family to come too. It's the combination of delivering that level of care in this manner that ensures the financial stability of our centers. Among the many meaningful measurements available, we find that patient throughput times (D2D time, which many patients know as “wait time”) and satisfaction are two measures that are critical. Throughput metrics provide us with real-time information on our operational and medical efficiencies, which are objective and have always correlated to our patient satisfaction scores. The satisfaction scores, while subjective, tell us how our patients perceive how effectively we have delivered that care.

We use these metrics to evaluate provider effectiveness, operational efficiencies, and staffing plans. We also look at many financial indicators, but among the most important are average charges per visit, average reimbursement per visit, and percentage reimbursed versus charges. Each can trigger drill-down analysis to identify why trends appear to be occurring and to understand factors that we can leverage to influence those metrics in a positive manner. Such influencers often are quality and completeness of medical documentation, evaluation and management distribution, or supply documentation. The percent reimbursed versus charges provides insight into trends that are both internal and external, such as changes in payor mix in a center or community, or ratios of new patients to established patients. It also assists in predicting future cash flow.

Takeaway: Both CRH Healthcare and Emergency One

“We . . . look at many financial indicators, but among the most important are average charges per visit, average reimbursement per visit, and percentage reimbursed versus charges. Each can trigger drill-down analysis to identify why trends appear to be occurring and to understand factors that we can leverage to influence those metrics in a positive manner.”

place a heavy emphasis on monitoring patient-satisfaction KPIs, reinforcing the prevailing urgent care truism that patient volume (and the factors that influence it) remains a top priority. Controlling expenses, labor management, and billing and coding practices also takes precedence, right in line with typical urgent care industry norms.

Ayers: What systems or processes do you use to gather key performance indicators from within your operation?

Roe: We use Practice Velocity as our EMR, which allows us to monitor wait times in real time, patient-payor mix, payment stats, and so on. We take the information from the system and populate our custom reports to generate the specific KPIs that we want to track. We also have centers complete a daily spreadsheet with staffing, volume, and payment information. This allows us to track several key indicators such as current performance versus performance last year, day-of-week volume fluctuations, and patients per hour. We also have a medical supply expense tracker that generates weekly supply budgets by center and tracks actual spending versus budget.

Martin: We use a variety of systems to gather this info, but they start with our EMR/PM system. Our system has a tracking board that is located in the clinical area that tracks patient wait (D2D) time. The tracking board displays the time spent in the urgent care center and uses a color-coded display (yellow, red) to flag patients who have been in our center longer than expected on the basis of our goals. The system is also linked to our PM system and provides reporting that shows us average time in the center by day, provider, and type of visit (workers' compensation, private pay, employer-paid services), as well as visits per day or hour by provider and/or center. Our PM system offers all of the common financial reports, including revenues, accounts receivable and aging reports, collections, adjustments, and volumes. We export these reports into Microsoft Excel to track ratios and trend the metrics that assist us in evaluating our operational efficiencies, and provide feedback to the providers and staff.

Takeaway: Both urgent care systems rely heavily on EMR/PM solutions yet employ traditional methods like spreadsheets and dashboards as well to capture data for calculating KPIs. This heterogeneous mix is consistent with urgent care industry standard practices.



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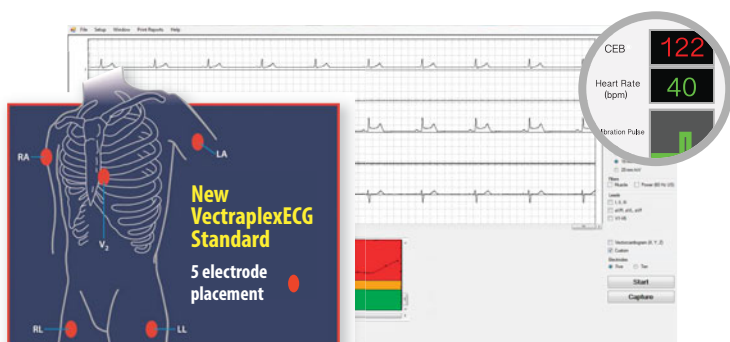
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Ayers: How do you track KPIs over time, across sites, and relative to benchmarks or performance goals?

Roe: We are a data-driven organization and have several spreadsheets to track specific KPIs versus target on a daily, weekly, monthly, and annual basis. The data are typically pulled from our EMR as well as from other specific tracking tools, depending on the metric. Our approach is very granular and builds up by center and by region (and in some cases, patient by patient). Like most organizations, we have our financial statements to track revenue, cash flow, volume, and detailed expense trends by center and region, compared with budget and prior-year results.

Martin: Our systems capture real-time patient visit data that are displayed throughout the day in each of our centers on our tracking boards. Patient-visit data, including visit duration per center, provider, and classification, are aggregated monthly and exported into Microsoft Excel, where we can provide comparative analysis and trending reports to our management, providers, and staff. Visit data, financial metrics and ratios (revenues billed, cash collected, accounts receivable), and patient-satisfaction survey scores and comments are tracked, reviewed, and reported monthly. These reports assist us in establishing performance goals and identifying action plans that drive staffing, operational process, and system adjustments throughout the year. We have found that setting realistic performance goals and benchmarks is very site-specific. It is influenced by the age of the center, the patient demographics, payor mix, and competition in that community. Our benchmarking and goal-setting uses a combination of intracenter data analysis and trending, as well as site-to-site comparative analysis against corporate and national benchmarks.

Takeaway: The integration of EMR and PM software allows urgent care systems to track a wide range of KPIs, which can then be input into a variety of reports, spreadsheets, and dashboards. KPIs of varying types and categories can then be measured over any periodicity the practice chooses, ensuring that urgent care leadership always has its finger on the pulse of every KPI it wants to measure.

Ayers: How do you communicate key performance metrics within your organization?

Roe: We hold monthly performance reviews with the operations and leadership team to review trends and their

“[We] track several key indicators such as current performance versus performance last year, day-of-week volume fluctuations, and patients per hour.”

performance relative to peers. In these meetings, we force-rank the centers using scatterplots to highlight performance versus budget as well as relative performance

for similarly situated centers. These reviews have provided helpful peer pressure to encourage the right behaviors.

Martin: We have several mechanisms to report performance within our centers. Real-time information is provided daily in our mini meetings at the beginning of the shift. These sessions are great opportunities for us to discuss recent events that require minor adjustments, as well as to review staffing levels, work for the day, and any other operational issues that need to be considered. Monthly reports are provided that share patient volumes, satisfaction scores, and comments, along with any specific changes that are being made to accommodate improvement. Annually, we host an all-staff meeting and provide a corporate overview of the performance of the company highlighting the specific achievements within each center and goals for the upcoming year.

Takeaway: The monthly meetings, reports, and performance reviews initiated by both urgent care systems underscore the importance of sharing KPI data with both decision-makers and staff regarding progress toward improvements. Emergency One takes things a step further with its daily sessions, providing staff real-time updates on the KPIs being tracked.

Ayers: How do your key performance metrics relate to employee incentives or evaluations of providers and staff?

Roe: Our staff bonuses are tied to center performance, which includes profitability, cash flow, operational effectiveness, and complaint level. There are financial aspects as well as intangible or discretionary items. For providers, it is more difficult, given the regulatory guidelines, but they typically receive incentives based on non-government payor collections and profitability metrics.

Martin: We are very fortunate to have a group of providers and staff members who really embrace our culture and are committed to our mission, vision, and performance goals within each center. The performance metrics have simply become tools for them to evaluate how they are doing. We have found that they are motivated by the feedback that these report cards provide. This has stimulated great discussion, problem-solving, and teamwork and has resulted in really creative ideas

about how better to deliver care to our patients. We are constantly rewarding our employees and teams for their successes. These rewards may be as simple as an email sharing a comment made by a patient, or an employee spotlight on our Facebook page or in our newsletter. Other rewards might be a small gift card for a specific accomplishment, or a luncheon hosted in one of our centers for a milestone that has been achieved. Employee-specific performance metrics are considered when determining incentive bonuses and salary increases each year where appropriate. However, we find that the most rewarding incentives are in real time.

Takeaway: Leaders in both organizations clearly understand the key principles of employee engagement and are taking the proper steps to engender it. They share KPI results, set clear expectations, provide actionable feedback, ask for staff input on how to solve problems and reach goals, and give recognition through incentives, bonuses, rewards, and acknowledgment. As a result, their staff members embrace their culture and are fully invested in success.

Ayers: Any other suggestions on taking a metrics-driven approach to managing urgent care?

Roe: It's important to be metric driven. I could have listed about 15 to 20 KPIs that we monitor. From our former careers, we know how to create monthly scorecards and communicate the key items in a succinct, actionable manner. That approach is something that many people in urgent care aren't necessarily well versed in. Knowing where you stand on a more frequent periodicity allows flexibility to change any off-course metric in a more effective manner. If you don't know where you stand, how can you make corrections if necessary?

Takeaway: It is better to measure KPIs more frequently than less frequently wherever feasible. This method allows practices to quickly pivot if certain KPIs are trending in the wrong direction, and to tighten workflows as needed.

“Urgent care is a retail-based health-care business that receives the majority of its revenue from an assortment of payors, so the most critical urgent care KPIs have to do with billing and coding practices and with patient satisfaction and service delivery. In fact, most industry experts cite patient volume as the top KPI. KPIs related to managing operating expenses are critical as well.”

Conclusion

As the saying goes, if you can't track it, you can't improve it. For an urgent care center, KPIs must be tracked and measured to gain an accurate picture of the center's overall health. Armed with properly calculated KPIs, an urgent care center operator is empowered to make meaningful business decisions regarding process improvements, staffing, expenditures, and service delivery. The EMR/PM software of today makes KPI tracking easier than ever, with many solutions

designed with built-in dashboards that automatically crunch the relevant numbers for exporting into spreadsheets and reports.

Industry anecdotes suggest that the most important urgent care KPIs fall under three main categories: service delivery and patient satisfaction, billing and coding practices, and labor and expense management. Weak KPIs in any of these areas portend trouble, so operators must remain vigilant to ensure that the numbers are trending in the right direction. Hence, daily and weekly KPI reports are recommended wherever feasible so that an urgent care center can pivot quickly should the data skew unfavorably.

The most up-to-date and precise KPI data are not of much use if urgent care staff members are not aware of or do not understand how their daily work affects the data. Thus, report cards, performance reviews, scorecards, and even daily mini meetings are vital tools to communicate which way the numbers are trending and how they can be improved. When the desired KPI benchmarks are reached or maintained, operators should recognize staff members for their commitment and hard work through the various forms of acknowledgment available. This type of positive feedback not only helps to reinforce the importance of the KPI values but also eventually leads to the feedback becoming its own reward.

KPIs tell the story of any business, urgent care included. By understanding, tracking, and measuring the crucial KPIs on a consistent basis, an urgent care center takes an important step toward overall operation excellence and long-term success. ■

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Maximizing Patient Throughput for Increased Patient Satisfaction and Profits

By: Alan A. Ayers,
MBA, MAcc

The term “urgent care” connotes on-demand service with minimal wait times. Thus, the speed at which patients move through a center not only determines patient satisfaction—which contributes to repeat visits and positive word-of-mouth—but also profitability. Urgent care is a volume-driven business, meaning that once there is sufficient volume to cover fixed costs like rent, marketing, and base staffing levels each additional visit accrues straight to the bottom line. Maximizing patient throughput entails coordination of processes, systems, and people with a cultural emphasis on “speed.”

Processes

Urgent care, like all service businesses, is process-driven. Processes aren’t happenstance, they are either designed, tested and implemented; or they evolve over time as providers and staff establish routines. If you have not taken a deliberate approach to developing your center’s processes, now is a good time to map out every step patients and staff members follow from arrival to departure. Odds are you’ll uncover non-value added activities, duplication of effort, and manual activities that could be automated. Take a “lean” approach to process design, eliminate all steps that don’t directly contribute to treating the patient or getting paid.

Many service businesses are improving their processes through “functional shifting,” which entails having the lowest cost resource (the customer) complete as many administrative tasks as feasible. Examples of functional shifting in other service businesses include airline and hotel reservation websites, self-check-out registers at big box stores, and smartphone apps for your bank. For urgent care, functional shifting can include Internet pre-registration; self-entry of demographics, medical history and medications; or online payment of charges.

Ultimately any process currently completed by people that can be automated should be, in order to free staff time to focus on direct delivery of patient care. Successful urgent care centers are built upon a backbone of strong systems.

Systems

While most electronic medical record and practice management systems can produce a chart and a bill, what differentiates systems designed specifically for urgent care is implementation of “baked-in” best-practice workflows that

facilitate fast and quality care delivery in the unscheduled clinic environment.

Consider every step of the patient journey, from pre-arrival to entry of demographics, vitals, medical history, prescription meds and chief complaint; documentation of physical examination and diagnosis; to coding, charge entry and claims submission. A center running on an “urgent care platform” does not have to re-invent its processes for each patient encounter but rather, let the system drive flow. Moreover, urgent care-specific systems provide data on how well your center is performing relative to key performance indicators, as well as providing the metrics needed to more effectively manage the center’s team.

People

Urgent care is a “people” business, with services performed on people, by people. A cultural emphasis on throughput is thus necessary to ensure all staff members work with a sense of urgency, frequently communicate wait time expectations with patients, and work together as a cohesive team. Cross-training enables staff members to step in and do each other’s jobs whenever bottlenecks occur. And there should be standing orders empowering clinical support staff to anticipate the provider’s needs to help improve efficiency of the center’s labor force. Labor, after all, is the greatest expense item in urgent care, so a center can be more profitable by seeing more patients per hour with existing staff.

Because of the frequency of the most common urgent care presentations, practicing urgent care medicine entails a focus on the chief complaint, development of protocols and templates for treating the most common conditions, and referral of complex needs and follow-up to primary care. The ability to document a patient chart in less than 90 seconds, for instance, enables a provider to spend more “face time” with the patient. This will improve patient satisfaction in addition to raising productivity. Within the urgent care “ecosystem,” processes, systems and people are all interconnected so ultimately, a holistic approach to maximizing throughput should consider the impact of change upon each.

Alan Ayers, MBA, MAcc is Vice President of Strategic Initiatives for Practice Velocity, LLC



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Guns and Urgent Care: How to Respond to Evolving Open-Carry and Concealed-Carry Laws

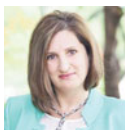
■ K Royal, CIPP/US, CIPP/E

Urgent message: *In the midst of the controversy in the United States surrounding the right to bear arms and concealed-carry laws, the medical field has also been wrestling with the issue. Some patients, facility personnel, and facility visitors will carry weapons. Thus, it is important that urgent care managers be prepared by identifying which issues regarding weapons they should focus on and what they and their personnel may be able to do when an encounter involves a weapon.*

Guns in Health-Care Facilities

In early 2016, a law in Texas went into effect permitting people to openly carry handguns. Even though the new law includes exceptions, there is also a loophole that would permit visitors to state psychiatric facilities to bring in handguns. However, employees and patients at the same locations are prohibited from carrying handguns. The new law bans state agencies from posting a sign prohibiting weapons in facilities, although they can post signs asking visitors to please leave weapons in their vehicles or to carry them concealed. Previously, state law had prohibited handguns from being brought into public and private hospitals. The new law prohibits government entities from banning handguns, which may affect clinics and outpatient centers located on property owned or operated by public hospitals. Yet private businesses still have the option of posting signs banning handguns.

In 2016, a 26-year-old student in Houston, Texas, who was seeking help for a psychiatric condition was shot in the chest by an off-duty police officer who worked as a security guard.



K Royal, CIPP/US, CIPP/E, is a privacy consultant. She regularly blogs on privacy-related issues at <https://theheartofprivacy.com>.

The patient was acting erratically, which led staff members to call security.¹ Similar incidents have recently occurred in Ohio, Virginia, Utah, Pennsylvania, and Indiana, although some were incidents involving Taser electroshock weapons, not handguns.

Federal Gun Laws

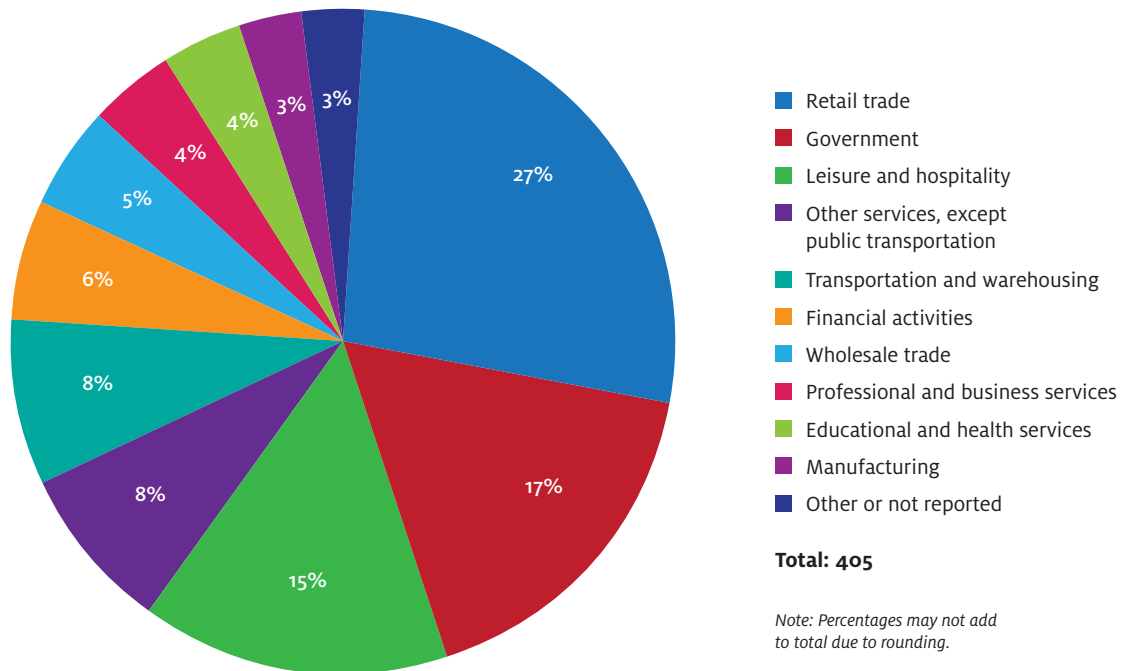
Many U.S. federal laws address guns, such as the National Firearms Act of 1934 and the Omnibus Crime Control and Safe Streets Act of 1968. In general, federal law prohibits guns in school zones, post offices, federal courthouses, federal cemeteries, and aircraft. However, in this article, the focus is on handguns specifically because they present more of an ongoing issue with patients, visitors, and employees in health-care facilities. The federal laws that speak most to the issues related to handguns in health-care facilities do so only in an indirect manner—addressing background checks, interstate commerce, and the like. Additionally, where state laws differ from federal laws, state authorities can elect not to enforce the federal laws; see *Printz v. United States*, 521 U.S. 898 (1997). Thus, we rely most on state laws for direction.

State Gun Laws

As with many issues, the states vary significantly in how they approach handguns. The overwhelming majority of states include a state constitutional provision similar to the federal right to bear arms, and the ones that do not have a constitutional right have codified substantially similar provisions. Gun owners are subject both to the laws of their state of residence and to the state in which they are present. Some states do provide reciprocity, but some do not, so in some states, if an individual is permitted to carry guns openly or carry them concealed in their home state, they may or may not be permitted to do so

¹Rosenthal S. When the hospital fires the bullet. *New York Times*. 2016 February 12. Available from: <http://www.nytimes.com/2016/02/14/us/hospital-guns-mental-health.html>

Figure 1. Workplace deaths caused by shootings in 2010.



(Data from U.S. Bureau of Labor Statistics. "Workplace homicides from shootings." Washington DC: U.S. Department of Labor. Available from: <http://www.bls.gov/iif/oshwc/cfoi/osar0016.htm>. [Accessed 2016 March 24]).

in a state they visit. However, some states have "peaceable journey" allowances, meaning that a person may carry a gun as they travel through the state.

In the majority of states, even if there is a law permitting concealed carry and/or open carry, private businesses are generally permitted to post a sign to prohibit any weapons on the premises. These signs have strict language and formatting requirements. For example, in Minnesota (Minnesota Session Laws 2003, chapter 28), the law requires that signs banning guns on premises be 187 square inches in area (such as an 11×17-inch sign), with a bright background that contrasts with a black Arial typeface at least 1.5 inches in height. The sign must identify the owner or operator, whose name must be followed by the words "Bans Guns in These Premises." Landlords are not permitted to prohibit weapons on behalf of their tenants. Also, regarding laws permitting private businesses to prohibit weapons, there are usually standard exceptions, such as for on-duty law-enforcement officers. Additionally, some states permit local governments to pass gun laws that are more restrictive than the state law.

Other State Laws

Aside from gun laws, there are other state laws that affect the issue of guns in health-care facilities. These include "stand your

ground" laws that permit individuals to use deadly force in specific threatening situations, "bring your gun to work" laws, and laws regarding violence against health-care workers.

- **"Stand your ground" laws:** These laws permit individuals to defend themselves in life-threatening situations. They are also called "no duty to retreat" laws and castle laws, reflecting both an individual's right to fight rather than flee and the right to defend their home. These laws could make a situation in a health-care facility complicated if guns are banned there. However, if a person's life is in danger and they defend themselves with the prohibited gun, things get extraordinarily complicated because such an act provides support for the argument that the person's disregard of the ban was justified.
- **"Bring your gun to work" laws:** Workplace violence is not uncommon and manifests as threats, verbal abuse, bullying, and physical assaults with a variety of objects, including staplers, knives, and guns. The U.S. Bureau of Labor Statistics Census of Fatal Occupational Injuries reported that between 1992 and 2012, there were nearly 15,000 fatalities in the workplace. In 2014, 207 workplace homicides were committed with a gun. Preventing employees from carrying guns into work may prevent spontaneous heat-of-the-moment injuries and deaths, but it

will not stop a premeditated murder unless there are entry-point screenings. However, some states prevent employers from banning employee guns. Twenty-two states have "bring your gun to work" laws that are based on the idea that employees with guns can or will prevent other employees from committing an act of violence and can or will provide defense in the case of a nonemployee who presents a threat. These laws offer challenges to employers regarding the provision of safety lockers and extra security, and there are other challenges for multistate employers.

- **Laws on violence against health-care workers:** Even though **Figure 1** shows health care as an industry with one of the lowest rates of workplace fatalities, the Bureau of Labor Statistics reports that the health-care industry accounts for nearly 70% of nonfatal injuries in the workplace. A 2014 survey² shows that 80% of nurses report having been attacked at work, with nearly 50% of those attacks involving patients or patients' family members who were intoxicated or had taken drugs of abuse. **Figure 2** shows the status of laws providing protection for health-care workers.

"Health-care facilities are ripe environments for unpredictable emotions and unstable situations. . . . Your priority is to maintain a safe, secure environment for your employees, patients, and visitors."

What Should Health-Care Facilities Do?

First, know the laws that apply to you, both state and federal. Determine whether you have employees working in neighboring states for whom you might need to recognize their state laws. Know whether you can post a sign prohibiting weapons, and make sure it complies with the legal requirements. If you are not permitted to post a sign, there is generally nothing that prohibits posting a sign asking individuals to please leave weapons secured in their vehicles.

²Speroni KG, Fitch T, Dawson E, et al. Incidence and cost of nurse workplace violence perpetrated by hospital patients or patient visitors. *J Emerg Nurs.* 2014;40:218–228.



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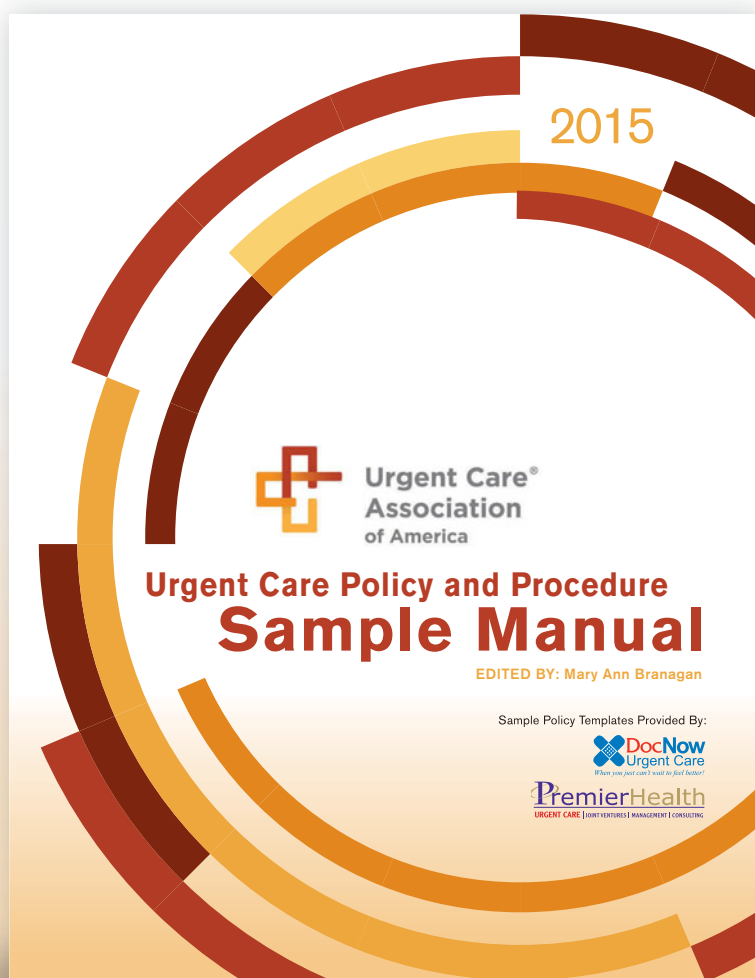
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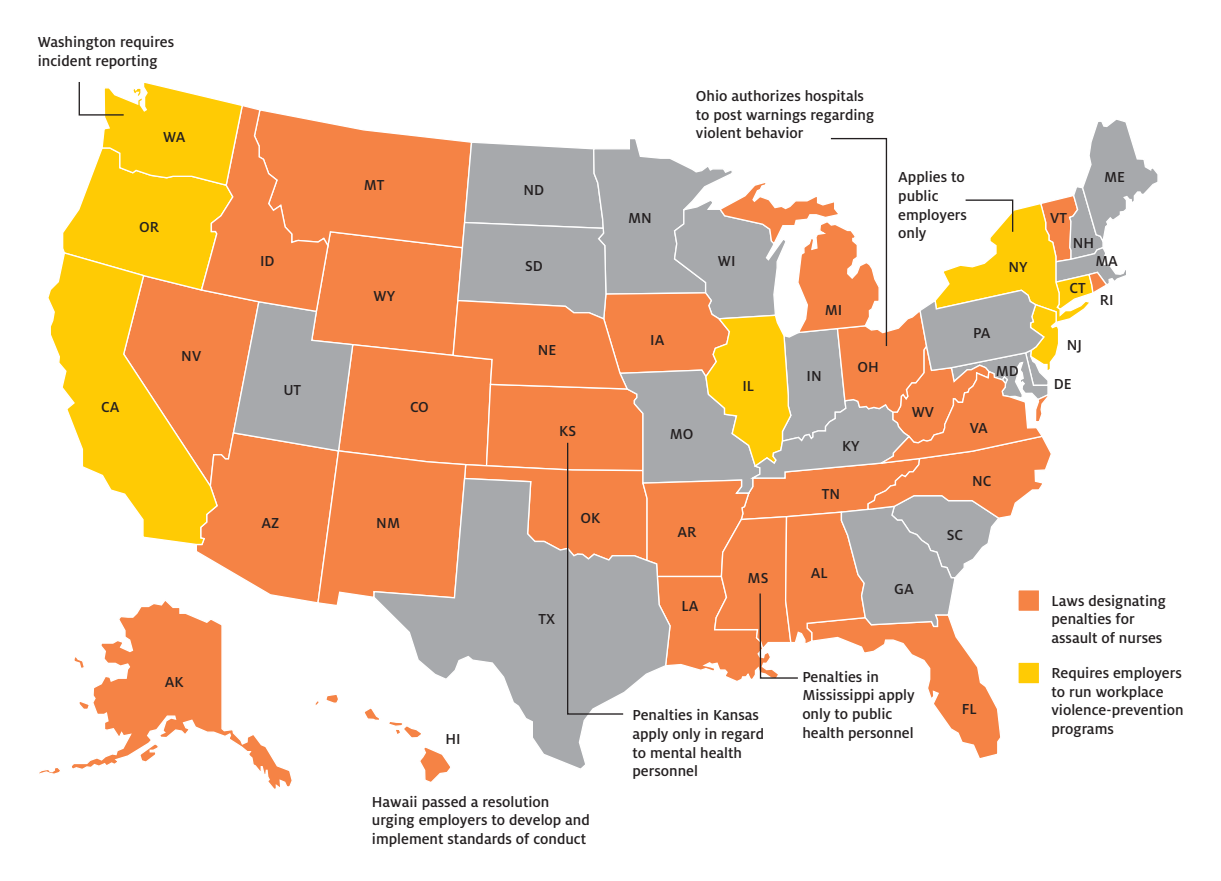
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Figure 2. Status of state laws in the United States providing protection for health-care workers.

(Data from the American Nurses Association.)

Have workplace violence training procedures in place to address an active attack (perpetrator enters with intent to do violence), a heat-of-the-moment attack (patient or visitor gets angry and acts on it), identification of individuals with guns, and how to deal with noncompliant individuals. For example, if your state permits private businesses, such as your facility, to prohibit bringing in concealed weapons, yet you see someone with a concealed weapon, what do you do? Do you ask the person about it privately? The person may be a police officer on duty, even without a uniform. Do you have a location in your facility where someone can secure their weapon? If the person refuses, this is not likely someone with whom you want to have a confrontation. Have an emergency response protocol in place so that everyone knows what to do if they identify an individual who poses a risk. There should be a process for who in the facility is notified, directions on what actions by the person presenting the risk will initiate actions on the part of staff members, and a buddy system that will help ensure safety.

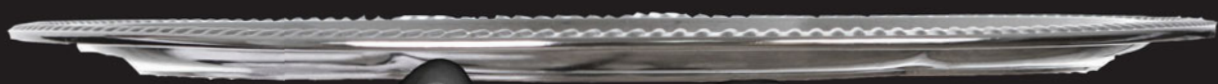
Health-care facilities are ripe environments for unpredictable

emotions and unstable situations. Handguns often make such situations more difficult. Your priority is to maintain a safe, secure environment for your employees, patients, and visitors. Whether or not your employees are permitted to carry their own weapons to work, you must implement procedures and processes that account for all reasonably foreseeable situations, ranging from the least confrontational to the most. Local law enforcement agencies are generally happy to visit and assist you in creating a response plan. Over-response to situations involving weapons can be as dangerous as no response.

Having policies and procedures for dealing with weapons in your urgent care center is part of your total enterprise risk-management program, along with disaster recovery and business continuity. Identify the risks, prepare a plan to mitigate the risks, test your plan, refine your plan, and review it at least twice annually. Take into account both the legal environment in which you operate (which laws apply to you) and the physical environment. Are you in a high-risk crime area? What is your patient population? Identify the worst-possible outcome and take all reasonable steps to prevent it. ■



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Case Report

Nonspecific Numbness and Tingling

Urgent message: Though the cause of nonspecific numbness and tingling will often be benign, serious illnesses should be included in the differential diagnosis.

ARASH MIRZAI, MS-4

Introduction

Many patients at urgent care centers present with numbness and tingling. The symptoms can be caused by variety of underlying benign or potentially malignant pathologies.

The medical history and physical examination play a central role in the determination of the cause of numbness. Numbness that is limited to a part of a limb suggests mononeuropathy, whereas numbness that involves most of an extremity or the trunk or that occurs in a stocking-glove pattern suggests polyneuropathy.^{1,2} Mononeuropathies such as carpal tunnel syndrome and cervical radiculopathy are some of the most common causes of numbness and tingling. In one study, carpal tunnel syndrome was found to have been diagnosed in 3.4% of all participants and to be undiagnosed in an additional 5.8%. Another study revealed that the average incidence of cervical neuropathy between 1976 and 1990 was 83 per 100,000, with higher rates in men between 50 and 54 years of age.^{1,2}

Case Presentation

A 43-year-old woman presented to an urgent care center with intermittent numbness and tingling in her left arm that she had experienced for 6 months. She described the symptoms as having a rapid onset each time they



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occurred. They lasted several days and were relieved by Chinese traditional medicine and neck and arm massage. The patient attributed her symptoms to sleeping in the wrong position and also to long work hours as a software engineer. She said that she sought consultation because she was now experiencing a “cramp in the right side of the head.” She said that she had not had any related issues in the past and that she did not smoke, drink alcohol, or take drugs of abuse. The patient did

Arash Mirzaie, MS-4, is a fourth-year medical student at the International University of the Health Sciences School of Medicine. He also practices on weekends as a certified physician assistant in an urgent care center in Bellevue, Washington.

not take any prescribed medications and did not have any allergies. Findings from her family history were unremarkable: Her parents were still living and were in their seventies. She reported that she had not had headaches, vision changes, loss of balance, speech difficulty, lack of concentration, neck pain, chest pain, shortness of breath, nausea, vomiting, pregnancy, urinary symptoms, stress, or anxiety.

Physical Examination

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

- Blood pressure: 105/70 mm Hg
- Pulse: 72 beats/min
- Respiratory rate: 16 breaths/min
- Temperature: 98.4°F (36.8°C)

The patient was not in acute distress and was sitting comfortably on the examination table, massaging her left arm with her right hand. Findings on neurologic examination were normal, including those for the cranial nerves, as were upper-extremity and lower-extremity reflexes and sensory and motor responses. Extraocular movements were normal, and the pupils were equal and reactive to light. Musculoskeletal examination revealed mild bilateral trapezius tenderness, but findings were otherwise unremarkable. Findings on cardiac and respiratory examinations were within normal limits.

Imaging

A cervical spine x-ray obtained at the urgent care center showed no abnormality. Because of the nature of the patient's symptoms, a routine outpatient computed tomography (CT) scan of the brain was ordered. The patient was discharged home with a recommendation to take nonsteroidal anti-inflammatory drugs while waiting for scan results.

The following day, the CT scan results were as follows:

- No intracranial hemorrhage
- White-matter signal abnormalities in the right periventricular region. The differential diagnosis included demyelinating plaques.

Diagnosis

The patient was contacted and informed of the scan results, which indicated that her symptoms might be due to multiple sclerosis (MS). She was referred to a neurologist, who had her undergo magnetic resonance imaging (MRI) of the brain, which confirmed the diagnosis of MS.

Discussion

Numbness and tingling are nonspecific symptoms that can be caused by a variety of underlying benign or potentially malignant pathologies related to the central or peripheral nervous system, including cardiovascular disease, musculoskeletal illnesses, an electrolyte imbalance, metabolic disorders, infectious disease, and even psychiatric illnesses. There can even be two overlapping pathologies, whether benign or malignant.

Multiple Sclerosis

It is widely accepted that the central nervous system is under constant surveillance by immune cells. The entrance and exit of immune cells from the central nervous system, however, is poorly understood. Recent research at the University of Virginia School of Medicine demonstrated the presence of functional lymphatic vessels lining the dural sinuses, but it has long been assumed that the brain has no connection with the lymphatic system. Although more research is required, scientists believe that these vessels may be the missing links between MS and the immune system.³ An image comparing an old map of the lymphatic system with a map revised to reflect that recent research can be found at <http://neuroscience.news.com/lymphatic-system-brain-neurobiology-2080/>.

Differential Diagnosis

The differential diagnosis for MS includes a variety of inflammatory, infectious, vascular, and demyelinating disorders, including systemic lupus erythematosus, human immunodeficiency virus, neurosyphilis, sarcoidosis, and vitamin B₁₂ deficiency. Brain MRI is a common approach to narrowing down the diagnosis. A frequent error, however, is to interpret multiple hyperintense lesions on MRI as indicating the presence of MS even when clinical manifestations of the disease are absent. A number of central nervous system inflammatory and infectious diseases can produce such lesions on MRI without clinical manifestations of MS, including systemic lupus erythematosus, Sjögren syndrome, polyarteritis nodosa, and neurosyphilis. Another common error is that many practitioners fail to pursue further diagnostic evaluation when a patient has a history of MS. Red flags that should alert physicians to consider the possibility of pathologies other than MS are as follows⁴:

- Positive family history of neurologic diseases other than MS
- Persistent back pain
- Signs and symptoms that point to a specific anatomic site

- Patients younger than 15 or older than 60 years of age
- Symptoms of systemic disease
- Rapidly progressive disease

“[Multiple sclerosis] is the most frequently occurring disabling disease of the central nervous system among young adults.”

of MS; however, this latitude gradient was reduced after 1980 because of an increased incidence of MS in lower latitudes. The female-to-male ratio for MS incidence has increased over time, from an estimated 1.4:1 in 1955 to 2.3:1 in 2000.

Causes

MS is a disease of the central nervous system. It is characterized by inflammation, demyelination, and degeneration of axons.⁵ The exact pathophysiology of MS is unknown, but several theories exist,⁶ including a widely accepted one that MS is an autoimmune disease. This theory suggests that autoreactive lymphocytes cause microglial activation and neuron degeneration.⁷ A deficiency of vitamin D is another theoretical cause. Chromosome 6 consists of a region called the vitamin D response element, which enhances gene expression in the presence of vitamin D, pointing to a link between vitamin D and MS.⁸ Another theory suggests that MS has infectious causes, such as chronic viral infection; however, no virus has been identified.⁹ Other theories point to chronic cerebral venous insufficiency and genetic causes, as opposed to autoimmune causes.¹⁰

Epidemiology

MS is the most frequently occurring disabling disease of the central nervous system among young adults.¹¹ It is more common in women than in men, and its onset is usually between the ages of 28 and 31 years. White populations, particularly those from northern Europe, have the highest risk, though recent studies suggest that ethnic differences may be decreasing. Increased risk may be associated with latitude (greater risk farther from the equator), though some studies suggest that other factors may put this assumption into question.¹²

In recent years, there have been noticeable changes in the demographic epidemiology of MS. There has been an increase in the prevalence of MS, particularly because of increasing survival rates. There also has been an increase in MS incidence in European and North American women. These changes point to the possibility that environmental factors play a role in the disease. Lifestyle factors in Western women, including occupation, cigarette smoking, obesity, use of birth control, and childbearing at later ages, may be a focus of future study.¹³

In a recent study,¹² the overall incidence of MS was 3.6 cases per 100,000 person-years in women and 2.0 in men. Higher latitude was associated with higher incidence

Presentation

MS is categorized into four types according to pattern and course¹⁴:

- **Clinically isolated:** The first manifestation of MS, which may present as vision changes mimicking unilateral optic neuritis or as isolated numbness and tingling, depending on the location of demyelination
- **Relapse-remitting:** A relapse of symptoms with full recovery. This category accounts for 85% to 90% of cases at onset.
- **Secondary progressive:** A relapse attack with progressive worsening, without recovery
- **Primary progressive:** Categorized by progressive disease from the onset of symptoms

Patients with MS can present with a wide range of signs and symptoms at various stages of the disease. Clues can include progressive or intermittent numbness and tingling in limbs that lasts several days and Lhermitte sign, which is electric shocks that travel down a limb or down the spine upon cervical flexion.¹⁵ A majority of patients with MS present with vision issues such as diplopia, which points to demyelination involving the medial longitudinal fasciculus tracts. Optic neuritis can be another presentation of MS; it is the presenting feature in 15% to 20% of patients with MS and occurs in 50% at some time during the course of the illness.¹⁶

Diagnosis

The diagnosis of MS is clinical, with MRI being the best supporting imaging modality. It is much more sensitive than other imaging modalities and can detect many more demyelinating lesions than CT can. It can detect plaques in the brainstem and cerebellum, which rarely appear as abnormal on CT.¹⁷

The prognosis of MS depends on various factors¹⁸:

- Older age at onset of MS has been determined to be a strong predictor of worse prognosis.
- A progressive initial course is considered the strongest clinical predictor of a poor prognosis.

- Symptoms arising from dysfunction of the spinal cord or long tracts indicate a poor prognosis.
- Male sex, incomplete recovery, a shorter time to a second episode, and a higher frequency and higher number of relapses indicate a poor prognosis.

Take-Home Points

Although numbness and tingling constitute one of the most common initial presentations of MS, they can be caused by a variety of pathologic conditions, some benign and some malignant, and can present as an overlapping symptom of more than one such condition. A thorough medical history and a detailed physical examination, and in most circumstances, a diagnostic study such as brain MRI, are needed to confirm the diagnosis of MS. ■

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If you would like to submit a case for consideration, please email the relevant materials and presenting information to editor@jucm.com.

Foot Injury in a Weekend Warrior

Figure 1.



Case

A 46-year-old weekend warrior presents to an urgent care center 3 hours after injuring his right ankle and foot while playing basketball. He reports moderate to severe pain over the lateral side of the ankle and foot, which started after he jumped for a rebound and came down on the foot while it was in plantar flexion and inverted. However, he can walk. He reports no paresthesia or pain at the midfoot or proximal fibula, and there are no breaks in the skin of his right foot. He says that he did not experience any injury to his head or neck. He reports that he took over-the-counter ibuprofen but has not had adequate pain relief.

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.

**Differential Diagnosis**

- Jones fracture
- Pathologic fracture
- Fracture of the proximal diaphysis of the fifth metatarsal bone
- Osteomyelitis
- Lisfranc dislocation

Physical Examination

On physical examination, the patient has a temperature of 98.4°F (37°C), a pulse rate of 92 beats/min, a respiration rate of 20 breaths/min, a blood pressure of 128/78 mm Hg, and an oxygen saturation of 97% on room air. He is

alert and oriented, is not in acute distress, and is breathing comfortably. He has a regular heart rate and rhythm without murmur, rub, or gallop. His abdomen has a normal appearance and is soft and nontender without rigidity, rebound, or guarding. His lungs are clear to auscultation.

The patient's right ankle does have swelling over the lateral malleolus, and there is pain with palpation of this site. There is pain with palpation over the proximal fifth metatarsal bone but no swelling in this area. There is no pain with palpation of the medial malleolus or over the midfoot. The ankle has a good range of motion with minimal pain in the anteroposterior distribution, but inversion is restricted because of pain. His dorsal pedal pulse is 2+. Sensation is grossly intact over the foot and toes.

Diagnosis

An x-ray is obtained (**Figure 2**) that shows a fracture of the proximal fifth metatarsal bone at the tuberosity (*arrow*). Note that the fracture line extends through the tuberosity but does *not* involve the metaphysis or proximal diaphysis.

Learnings

The fifth metatarsal bone approximates proximally with the cuboid bone and medially with the fourth metatarsal bone, bound in place by ligaments. These are the five aspects of the fifth metatarsal, from proximal to distal:

- Tuberosity (sometimes called the styloid)
- Metaphysis (a widened area of bone that articulates with the cuboid bone proximally and with the proximal fourth metatarsal bone medially)

- Proximal diaphysis (the long, narrow aspect of the bone ending in the distal fifth metatarsal)
- Neck
- Head

What to Look For

Patients may present with ankle pain from a strain but in fact may have a fracture of the proximal fifth metatarsal bone. This injury may be missed if it is not specifically evaluated. Classification of the fracture in the urgent care center is important because this may change treatment. A Jones fracture involves a specific location with fracture through the metaphysis; it is not an avulsion fracture of the tuberosity.

During the physical examination, do the following:

- Inspect for erythema, ecchymosis, and tenting of the skin.
- Palpate for the site of greatest pain, moving proximally, including the ankle, and distally.
- Gently check the range of motion.
- Use the Ottawa ankle rules, which have been validated. Their use can decrease orders for x-rays by 30% to 40% in both adults and children. The rules consist of these points:
 - The ability to walk four steps (to bear weight on the affected ankle twice)
 - A lack of tenderness at the posterior edge of either malleolus

Typically, the x-rays ordered are the anteroposterior, oblique, and lateral views. If findings are negative on foot x-rays but the findings from the medical history and physical examination are very suggestive of a fracture, consider obtaining an ankle x-ray. The primary differentiation in urgent care is between a fracture of the tuberosity (an avulsion fracture), which is treated symptomatically, and a Jones fracture or fracture of the proximal diaphysis, which may require orthopedic expertise and possibly surgery.

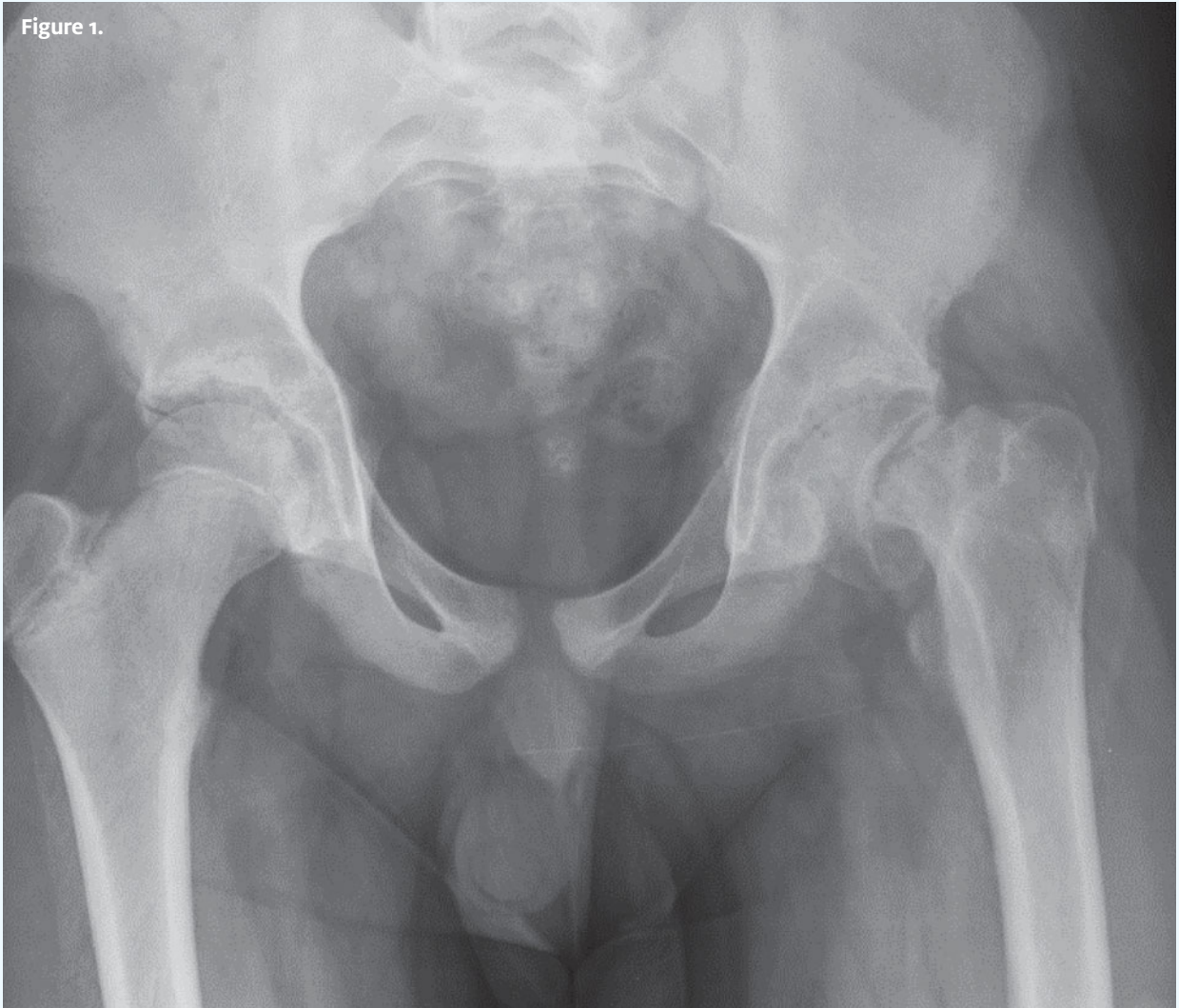
Transfer the patient to an emergency department in the presence of the following:

- Associated major trauma
- The possibility of neurovascular compromise
- Compartment syndrome (the "5 P's")
 - Pain
 - Paresthesia
 - Pallor
 - Pulselessness
 - Paralysis
- Uncontrolled pain
- Lisfranc or other dislocation in need of emergency reduction ■



Knee Pain in an 8-Year-Old Boy

Figure 1.



Case

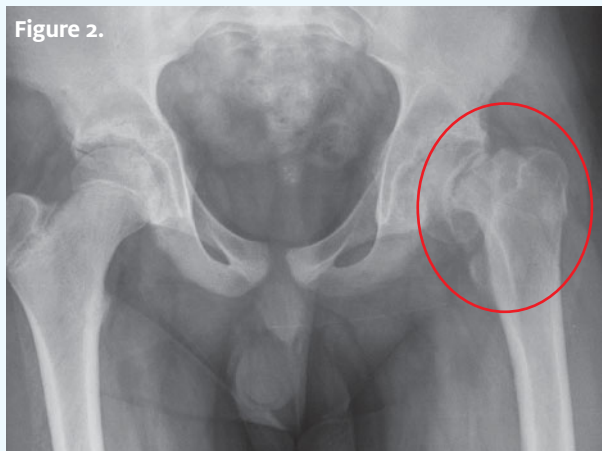
An 8-year-old boy presents to an urgent care center with left knee pain that he has had for 3 days. The pain is worse with walking, and his mother says that he has been limping and will not put full weight on the leg. He reports no trauma, fever, vomiting, or numbness. His mother reports that she has given him ibuprofen but that this has not relieved his pain.

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.

**Differential Diagnosis**

- Hip dislocation
- Hip fracture—subcapital
- Hip fracture—intertrochanteric
- Osteolytic lesion of the hip
- Pelvic fracture

Physical Examination

On physical examination, the patient has a temperature of 98.4°F (37°C), a pulse rate of 100 beats/min, a respiration rate of 20 breaths/min, a blood pressure of 108/72 mm Hg, and an oxygen saturation of 99% on room air. He is alert and oriented, not in acute distress, and is breathing comfortably. The boy's pelvis is stable upon palpation. He has pain upon palpation of the left knee and upon passive movement of the left hip through the range of motion. He has no leg-length discrepancy. He has no history of fractures, and he takes no prescribed medications.

Diagnosis

An x-ray is obtained (**Figure 2**) that shows a left-sided slipped subcapital femoral epiphysis (SCFE).

Learnings

SCFE is the most common hip condition in children between the ages of 9 and 16 years, with a prevalence of 10.8 cases per 100,000 children. It most commonly occurs in males, blacks, and Hispanics. SCFE usually occurs during the adolescent growth spurt and is often associated with obesity, but it can have an endocrinologic etiology. SCFE is defined as a slippage (usually posterior and inferior) of the femoral head (femoral epiphysis) relative to the femoral neck (metaphysis) that occurs through the epiphyseal plate (the growth plate). SCFE occurs bilaterally in 18% to 50% of cases.

SCFE can be either stable or unstable. In the stable type,

which occurs in 90% of cases, the patient can ambulate, even with a limp. In the unstable type, the patient cannot ambulate or bear any weight at all on the affected leg. Unstable SCFE has a worse prognosis and a higher risk of complications than stable SCFE does, resulting in osteonecrosis in 20% to 50% of cases and in avascular necrosis in 60%.

What to Look For

Inquire about the mechanism of injury; the symptoms typically begin gradually and rarely occur because of trauma. Patients typically have pain localized to the hip but may report pain only at the groin, medial thigh, or knee. In patients younger than 10 years, check for the presence of these risk factors:

- Endocrine or metabolic abnormalities, including
 - Hypothyroidism
 - Panhypopituitarism
 - Renal rickets
 - Hypogonadism
 - Growth hormone abnormalities
- Obesity
- Specific demographic characteristics: male, black, Pacific Islander
- History of previous SCFE; there is a significant risk for a second occurrence

On physical examination, do the following:

- Document the patient's general appearance, position, and ability to ambulate.
- Inspect and palpate for skin changes such as erythema, ecchymosis, abrasions, lacerations, fluctuance, necrosis, and crepitus.
- Determine the location of pain.
- Determine exacerbators of pain, such as movement through the range of motion.
- Look for shortening of the affected leg.
- Check for swelling over the hip.
- Watch to see whether the patient involuntarily rotates the hip *externally* when you flex the hip.
- Watch for limited internal rotation of the hip.

Obtain the following x-rays: anteroposterior views of the hip and pelvis (to look for bilateral SCFE and to compare hips) and frog-leg views. Most patients with SCFE will be transferred to an emergency department because of the following indications:

- The possibility of a hip fracture or SCFE that is not evident on x-rays
- An inability to exclude septic arthritis
- The presence of intractable pain
- The presence of unstable SCFE ■



ABSTRACTS IN URGENT CARE

- Dexamethasone May Be Worthwhile in Treating Adult Asthma
- Laundry Detergent Packets Cause More Serious Injuries Than Other Detergent Forms in Children
- High Schoolers Have More Symptoms from Football-Related Concussions Than Do Other Age Groups
- Should Children with Mild Gastroenteritis Be Allowed to Have Apple Juice?
- Just How High Is the Number of Inappropriate Antibiotic Prescriptions?
- Trimethoprim-Sulfamethoxazole Is as Good as Clindamycin for Uncomplicated Wounds
- Using Amoxicillin Challenges May Confirm Allergic Reactions to the Antibiotic
- Immunizing Mothers Against Influenza May Protect Their Babies

■ 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 M. McNeeley, MD, leads this effort.

Dexamethasone May Be Worthwhile in Treating Adult Asthma

Key point: *Dexamethasone is almost as good as prednisone in treating asthma in adults.*

Citation: Rehrer MW, Liu B, Rodriguez M, et al. A randomized controlled noninferiority trial of single dose of oral dexamethasone versus 5 days of oral prednisone in acute adult asthma. *Ann Emerg Med.* 2016 April 22. doi: 10.1016/j.annemergmed.2016.03.017. [Epub ahead of print.]

In a randomized placebo-controlled trial in an urban emergency department in Oakland, California, a single 12-mg dose of dexamethasone followed by four placebo pills was compared with 5 days of 60 mg of prednisone per day. A total of 376 patients between the ages of 18 and 55 years were randomized to one of two groups: prednisone and placebo, or dexamethasone alone. The main outcome was relapse within 14 days. Relapse occurred in 12.1% of the dexamethasone group and in 9.8% of

the prednisone group. The researchers concluded that the difference was slightly significant and therefore they could not consider treatment with dexamethasone not inferior. Rates for hospitalizations and adverse effects were similar between groups. In the acute-care setting, the likely increased compliance when dexamethasone is prescribed may be worth the smaller difference in efficacy. ■

Laundry Detergent Packets Cause More Serious Injuries Than Other Detergent Forms in Children

Key point: *Laundry detergent packets may be the worst type of detergent exposure for children.*

Citation: Davis MG, Casavant M, Spiller HA, et al. Pediatric exposures to laundry and dishwasher detergents in the United States: 2013–2014. *Pediatrics.* 2016;137:e20154529.

The study discussed here investigated pediatric exposures to laundry and dishwasher detergents, in both packet and non-packet forms. Information was obtained from the National Poison Data System in the United States for exposure from 2013 to 2014 in 62,254 children younger than 6 years. All types of exposures increased, but exposure to laundry detergent packets increased the most: 17% more than other types. Unfortunately, cases of exposure to laundry detergent packets also included



Sean M. McNeeley, MD, is an urgent care practitioner and Network Medical Director at University Hospitals of Cleveland, home of the first fellowship in urgent care medicine. Dr. McNeeley is a board member of UCAOA and UCCOP. He also sits on the *JUCM* editorial board.

the majority of serious injuries, including two deaths. Although the number of serious injuries was comparatively low, they still occurred particularly in connection with laundry packets. This is good information to pass along to parents and to keep in mind if children with potential exposure arrive at the urgent care center. ■

High Schoolers Have More Symptoms from Football-Related Concussions Than Do Other Age Groups

Key point: Recovery from concussions varies by age.

Citation: Kerr ZY, Zuckerman SL, Wasserman EB, et al. Concussion symptoms and return to play time in youth, high school, and college American football athletes. *JAMA Pediatr.* 2016 May 2. doi: 10.1001/jamapediatrics.2016.0073. [Epub ahead of print.]

Data about concussion severity and return to play were collected from youth, high school, and college football teams in the United States. A total of 1429 concussions were reported. The greatest number symptoms per concussion were reported by high school athletes, followed by college athletes and then youth-team athletes. College students had more cognitive symptoms than the other groups of athletes. The rate of extended time off before return to play was 19.5% in high school students, 16.3% in youth-team athletes, and 7% in college athletes. Acute-care providers should note that high school athletes have the most symptoms and most frequently need an extended period off before return to play. These findings will be helpful in conversations at the time of initial diagnosis about potential duration of symptoms and duration of time off before return to play. Further study is obviously needed to clarify these findings. ■

Should Children with Mild Gastroenteritis Be Allowed to Have Apple Juice?

Key point: Is apple juice okay in mild gastroenteritis?

Citation: Freedman SB, Willan AR, Boutis K, Schuh S. Effect of dilute apple juice and preferred fluids vs electrolyte maintenance solution on treatment failure among children with mild gastroenteritis: a randomized clinical trial. *JAMA.* 2016;315:1966–1974.

Although electrolyte solution is the rehydration liquid of choice in significant dehydration with more than mild gastroenteritis, the study in this report considered the options when dehydration and symptoms are mild. Researchers compared half-strength apple juice and standard rehydration fluid in a randomized, single-blind noninferiority study in a tertiary-care pediatric emergency department in Canada involving 647 patients. The end point was treatment failure, consisting of a

“Acute-care providers should note that high school athletes have the most symptoms and most frequently need an extended period off before return to play. These findings will be helpful in conversations at the time of initial diagnosis about potential duration of symptoms and time before return to play.”

need for intravenous fluids, hospitalization, an unscheduled visit to a physician’s office, or significant dehydration at a follow-up office visit. Ondansetron was given to those who vomited. There were fewer treatment failures among children receiving diluted apple juice. For the urgent care provider, this report provides some evidence that mild dehydration can be treated with diluted juice. Further studies would be helpful to confirm these results. ■

Just How High Is the Number of Inappropriate Antibiotic Prescriptions?

Key point: There is still work to do to decrease the number of inappropriate antibiotic prescriptions.

Citation: Fleming-Dutra KE, Hersh AL, Shapiro DJ, et al. Prevalence of inappropriate antibiotic prescriptions among US ambulatory care visits, 2010–2011. *JAMA.* 2016;315:1864–1873.

The authors of this report note that the U.S. action plan for combating antibiotic resistance has set a goal of reducing inappropriate antibiotic prescription by 50% by 2020. However, the actual number of inappropriate antibiotic prescriptions is unknown, so the researchers attempted to determine it. Antibiotic prescription rates were estimated on the basis of data samples from approximately 185,000 patients. Although age and geographic regions were all calculated, the mean antibiotic prescription rate was 506 per 1000 patient-years. The top three diagnoses, as expected, were sinusitis, otitis media, and pharyngitis. The researchers applied generalized guidelines and other study-based prescription rates to these patients’ rates of antibiotic prescriptions. Appropriate rates for sinusitis were based on the lowest regional rate. For the urgent care provider, this study is a reminder that appropriate guidelines should be

followed when prescribing antibiotics. The reported estimate of the number of potentially inappropriate antibiotic prescriptions is quite high. However, the researchers used multiple assumptions to develop their estimate. A much better study would have involved reviewing the charts of a cross-section of patients and applying guidelines to determine rates of inappropriate antibiotic prescription. ■

Trimethoprim-Sulfamethoxazole Is as Good as Clindamycin for Uncomplicated Wounds

Key point: *Clindamycin and trimethoprim-sulfamethoxazole performed equally well for treating uncomplicated wound infections.*

Citation: Talan DA, Lovecchio F, Abrahamian FM, et al. A randomized trial of clindamycin versus trimethoprim-sulfamethoxazole for uncomplicated wound infection. *Clin Infect Dis.* 2016;62:1501–1513.

In a randomized double-blind trial at four U.S. emergency departments, researchers compared the effectiveness of clindamycin and trimethoprim-sulfamethoxazole in treating uncomplicated wound infections. They compared results of empiric treatment of 500 patients older than 12 years at several intervals for 14 days and 6 weeks. Cure rates for the two drugs were very similar, at 92.1% for clindamycin and 91.9% for trimethoprim-sulfamethoxazole. There was a slight difference in recurrence rates, favoring clindamycin. Adverse events were similar for the two drugs. Urgent care providers may want to consider trimethoprim-sulfamethoxazole because it has a less-frequent dosing schedule that may result in better patient compliance and because the drug's efficacy appears to be equivalent to that of clindamycin. Infection recurrence is a concern, however, and should be taken into consideration by prescribers. ■

Using Amoxicillin Challenges May Confirm Allergic Reactions to the Antibiotic

Key point: *An amoxicillin challenge helps differentiate allergic reactions to amoxicillin from other rashes.*

Citation: Mill C, Primeau MN, Medoff E, et al. Assessing the diagnostic properties of a graded oral provocation challenge for the diagnosis of immediate and nonimmediate reactions to amoxicillin in children. *JAMA Pediatr.* 2016;170:e160033.

Children treated with amoxicillin frequently develop rashes. Because pediatric rashes of other kinds are also common, differentiating allergic reaction from other rashes is difficult. Researchers at an allergy clinic in Canada attempted to see how helpful oral challenges with amoxicillin were in differentiating amoxicillin allergy from other rashes. A total of 880 patients participated in the study, taking oral amoxicillin in amounts at 10% and 90% of therapeutic dose. Positive allergy results were

“In a randomized double-blind trial at four U.S. emergency departments, researchers compared the effectiveness of clindamycin and trimethoprim-sulfamethoxazole in treating uncomplicated wound infections. . . . Cure rates for the two drugs were very similar, at 92.1% for clindamycin and 91.9% for trimethoprim-sulfamethoxazole. There was a slight difference in recurrence rates, favoring clindamycin.”

followed at 3 to 4 months with skin testing. An oral challenge was a better predictor of reaction than skin testing was; the oral challenge had a specificity of 100% and a negative predictive value of 89%. It is too early for urgent care providers to apply this information to clinical care, but these findings point to a first step in follow-up for children with a possible amoxicillin allergic rash. ■

Immunizing Mothers Against Influenza May Protect Their Babies

Key point: *Influenza immunization in mothers may protect their infants after birth.*

Citation: Shakib JH, Korgenski K, Presson AP, et al. Influenza in infants born to women vaccinated during pregnancy. *Pediatrics.* 2016;137:e20152360.

Researchers compared infants born to mothers immunized against influenza and infants born to nonimmunized mothers regarding their risk for influenza and hospitalization. Overall, a very small percentage of pregnant women received the influenza immunization (10%, up from 2.2% before the H1N1 virus epidemic). Infants born to immunized women were 60% less likely to have influenza-like illness, 70% less likely to have positive test findings for influenza, and 81% less likely to be admitted to a hospital because of influenza. For the urgent care provider, this information is helpful particularly when discussing with pregnant women the risks and benefits of influenza immunization. ■



Plantar Warts, Digital Nerve Block in Lacerations, and Established Patients

■ DAVID E. STERN, MD, CPC

Q. We had a patient present with 12 plantar warts. The provider used liquid nitrogen to freeze all 12 of the warts. What code should I bill for this procedure?

A. In this case, you would bill *Current Procedural Terminology* (CPT) code **17110**, “Destruction (e.g., laser surgery, electrosurgery, cryosurgery, chemosurgery, surgical curettement) of benign lesions other than skin tags or cutaneous vascular proliferative lesions; up to 14 lesions.” Use only code **17110** once because the code represents 1 to 14 lesions.

In a case in which more than 14 lesions are removed, you would bill CPT codes **17110** and **17111**, “Destruction (e.g., laser surgery, electrosurgery, cryosurgery, chemosurgery, surgical curettement) of benign lesions other than skin tags or cutaneous vascular proliferative lesions; 15 or more lesions.” CPT code **17110** would be billed for the first 14 lesions, and CPT code **17111** would be billed to include any additional wart ablations.

Q. We used a digital block instead of a topical anesthetic when we performed a laceration repair. Can this nerve block be billed separately, or is it part of the repair? Also, because this was a simple repair and there is no global period, can we bill for the removal of sutures when the patient needs them removed?

A. A digital block is part of the laceration repair, as part of the surgical package. CPT guidelines define standards for preoperative and postoperative services that are included in the surgical package as follows:

- Evaluation and management (E/M) service(s) subsequent

to the decision for surgery on the day before and/or the day of surgery (including the medical history and physical examination)

- Local infiltration, metacarpal/metatarsal/digital block, or topical anesthesia
- Immediate postoperative care, including dictating surgery notes and talking with the family and other physicians or other qualified health-care professionals
- Writing orders
- Evaluating the patient in the postanesthesia recovery area
- Typical postoperative follow-up care for the full length of the applicable global period

The guidelines of the Centers for Medicare & Medicaid Services (CMS) go a bit further than CPT guidelines to include the following postoperative services in their surgical package:

- All additional medical or surgical services required of the practitioner to deal with complications that do not require more trips to the operating room
- Follow-up visits that are related to recovery from the surgery
- Postoperative pain management
- Supplies, except for those identified as exclusions
- Miscellaneous services, such as dressing changes; local incision care; removal of a surgery pack; removal of cutaneous sutures and staples, lines, wires, tubes, drains, casts, and splints; insertion, irrigation, and removal of urinary catheters, routine peripheral intravenous lines, and nasogastric and rectal tubes; and changes and removal of tracheostomy tubes

You can find more information about the CMS surgical package guidelines at <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/GlobalSurgery-ICN907166.pdf>.



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), NMN Consultants (www.urgentcareconsultants.com), and PV Billing (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.

“There are often good reasons to ask extensive medical history questions and perform a comprehensive physical examination.”

CMS did remove the 10-day global period for simple wound repair codes (CPT codes **12001** through **12018**) in 2011. However, note that the CMS surgical package described here specifically states that the removal of cutaneous sutures and staples is included in the surgical package. For those payors following CPT guidelines for the surgical package, suture removal may be considered part of typical postoperative follow-up care. Check with your payor contracts for specific rules. ■

Q. I understand that when calculating the E/M level for an established patient, you need to meet only the highest level of two out of the three components (medical history, physical examination, and medical decision-making [MDM]) to determine the level to bill. Should I always count MDM as one of the components?

A. No specific written criterion states that you must use the MDM as one of the components. However, CMS guidelines state that the medical necessity of a service is the overarching criterion for payment in addition to the individual requirements of a CPT code. Some interpret that to mean that the MDM must be included when calculating the level of E/M.

In reality, there are often good reasons to ask extensive medical history questions and perform a comprehensive physical examination. For example, an established patient presents with a runny nose, cough, and low-grade fever that she has had for 3 days. She has taken acetaminophen but has not had relief. She is an elementary-school teacher exposed to many children each day. Careful questioning indicates that one of these children recently had meningitis. A detailed history is obtained and a comprehensive examination is performed, and both are documented. The assessment is that the patient has a cold, and she is advised to drink plenty of liquids and to take acetaminophen for any aches. The cold will run its course and should be gone within 3 to 4 days. She is further instructed to stay home from work if she develops a fever. Currently, she is not considered to be contagious. In this example, the MDM is low, but it may still be appropriate to bill a level 4 E/M because a comprehensive history and examination were medically necessary in order to determine the correct diagnosis and treatment options. ■

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Open 8 am to 10 pm, 365 days a year, Patient First is the leading urgent care and primary care provider in the mid-Atlantic with over 60 locations throughout Virginia, Maryland, Pennsylvania, and New Jersey. Patient First was founded by a physician and we understand the flexibility and freedom you want in both your career and personal life. If you are ready for a career with Patient First, please contact us.

To learn more about career opportunities at Patient First, contact Recruitment Coordinator Eleanor Dowdy at (804) 822-4478 or eleanor.dowdy@patientfirst.com or visit prcareers.patientfirst.com.

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Urgent Care Physician Opportunities Elkhart, Granger and South Bend, Indiana

Beacon Medical Group - MedPoint Urgent Care Centers, are seeking BC/BE family medicine, emergency medicine or med/peds physicians for urgent care opportunities in Elkhart, Granger and South Bend, Indiana.

The Medpoint Urgent Care Centers are open 7 days per week offering patient care from 8am to 8pm, with our MedPoint 24 location offering patient care 24 hours a day, 7 days per week. All of our urgent care practices are Beacon owned and operated facilities. Beacon has been providing urgent care services in the community for over 30 years.

Beacon Medical Group, a division of Beacon Health System, is the largest, most integrated medical group in north central Indiana, employing more than 235 physicians and 80 advanced practice clinicians, representing over 35 different specialties.

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Let us tell you more! Please forward your CV to:

Lori Tompkins, Beacon Medical Group, Physician Recruitment
ltompkins@beaconhealthsystem.org or call 574-647-1836

For more details on Beacon Health System, please visit:
www.beaconhealthsystem.org



MED7 has been providing urgent care services in the Greater Sacramento area since 1987.

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For more information about MED7 and our clinics please visit our website:
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We offer an attractive compensation package.
Contact Merl O'Brien, MD, at:
(916) 791-1300, ext. 111;
or email CV to: sherry@med7atwork.com

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Additional Salary Information: Competitive base salary/benefit package plus quality & production incentive bonus, CME dollar & relocation allowance provided.

Contact: Michael Hale, Physician Recruiter - 920.445.7225 or
Craig Hintz, Advanced Practice - 920.445.7213
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New Urgent Care Center located in Hudson Massachusetts is seeking Physicians

Emerson Hospital is seeking full and part time physicians to join a new Urgent Care Center in Hudson Massachusetts. These positions feature flexible shifts, and a competitive benefit package.

The ideal candidate will be BC/BE in Family Medicine, Internal Medicine/Peds or Emergency Medicine, with excellent communication skills and a dedication to compassionate high quality care. Emerson Hospital is an independent hospital, dedicated to serving the community, with affiliations with Massachusetts General Hospital, Tufts Medical Center and Brigham and Women's Hospital.

Great New England location makes this an ideal choice for physicians looking for suburb living with close proximity to the city, some of the best public and private schools in the state, many area colleges and close to many recreational activities.

For more information please contact:

Diane M. Forte, Director of Physician Recruitment and Relations
978-287-3002, dforte@emersonhosp.org



emersonhospital.org

Urgent Care

Minneapolis, MN - Park Nicollet Clinic is seeking FT, PT & casual BC/BE EM or FM MD's to join our expanding Urgent Care Dept. We offer full EMR, digital imaging with radiology support, lab/CT resources, ACLS/PALS trained nursing staff, triage and UC fast track, flexible scheduling, and a very competitive income potential. PNC Urgent Care clinics are located in Maple Grove, Brookdale, Champlin, Minnetonka, Chanhassen, St. Louis Park, and Burnsville. Our integrated health care system, including Park Nicollet Clinic and Methodist Hospital, is recognized locally and nationally for great care and leadership. Share your expertise in an environment that supports new treatments and innovations while embracing a strong work-life balance. For immediate consideration, email CV to Missy Fisher, Park Nicollet Health Services at melissa.fisher@parknicollet.com. For more information call Missy at 952-993-6025. We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law

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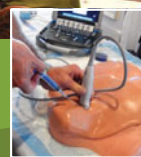
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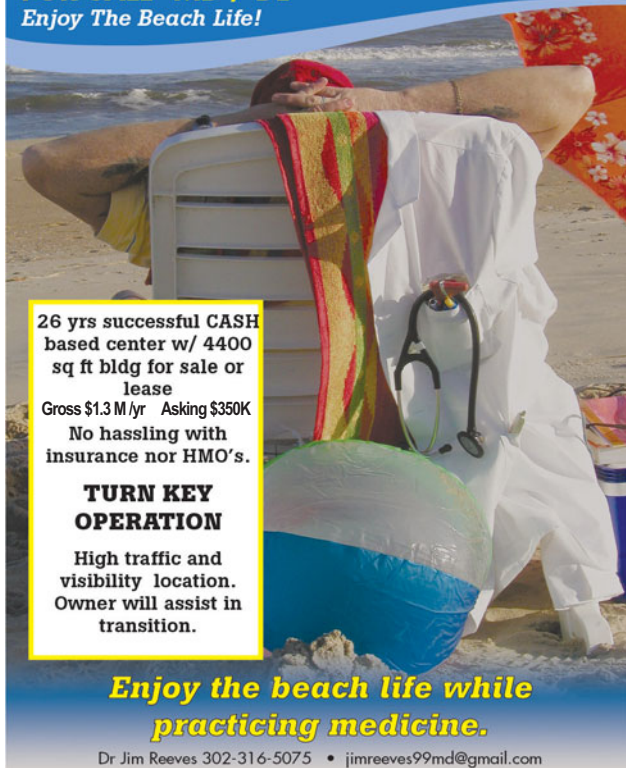
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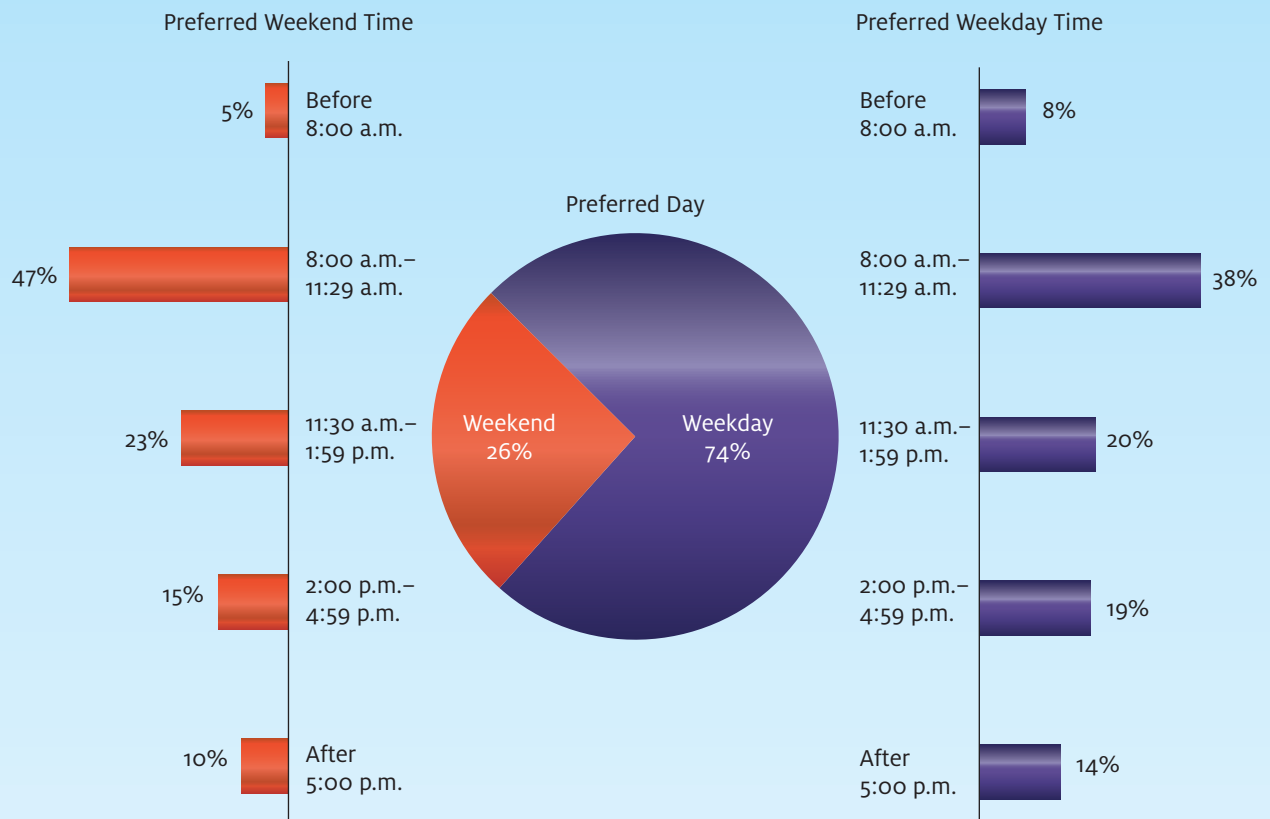
DEVELOPING DATA

In 2015, Merchant Medicine (Shoreview, Minnesota) released data from a detailed national study conducted in 2014 of U.S. patients' preferences regarding retail clinics versus urgent care clinics versus primary-care physicians' offices. The survey involved more than 2,000 adults between the ages of 18 and 54 years and was conducted by Sparks Research and Merchant Medicine on behalf of DXM Marketing Group.

Urgent care is still sometimes viewed as being only for nights and weekends, but the survey data show a different usage pattern. Survey participants were asked, "If you have a choice, what day and time do you prefer to visit a retail or urgent care clinic?"

- Weekdays were preferred over weekends by 74%.
- The period between 8:00 and 11:29 a.m. was most often preferred (38%) on weekdays.
- The period between 8:00 and 11:29 a.m. was also most often preferred (47%) on weekends.

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