

JUCM™

THE JOURNAL OF URGENT CARE MEDICINE®

SEPTEMBER 2015
VOLUME 9, NUMBER 11



Urgent Care
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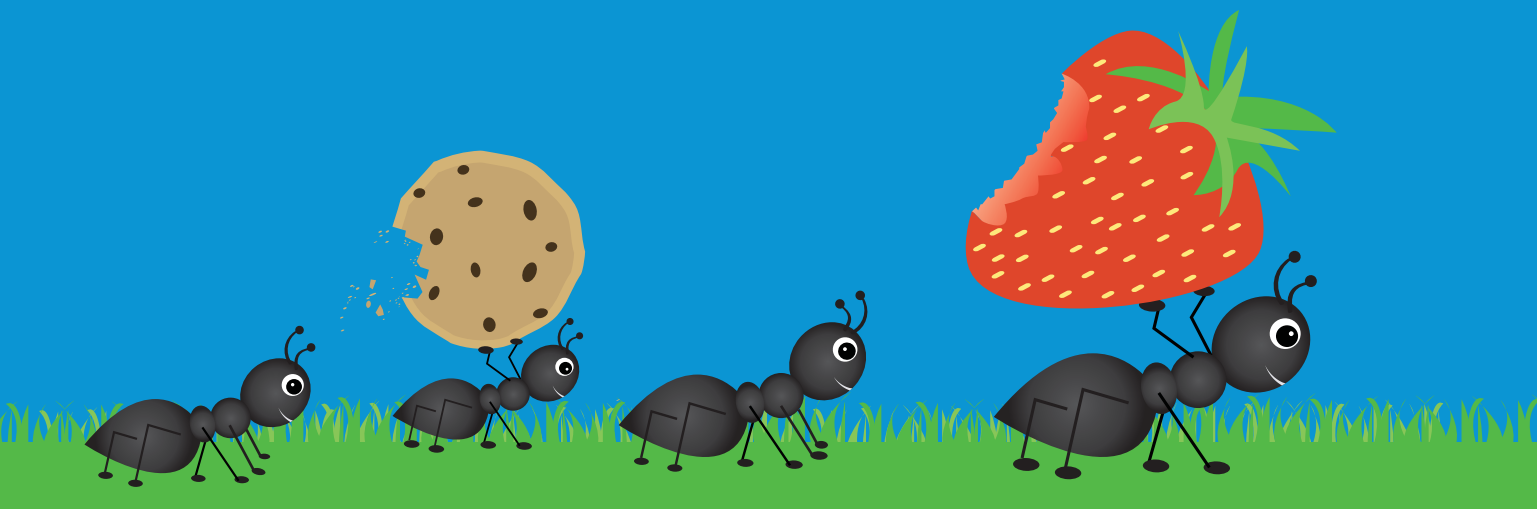
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Urgent Care Management of Animal Bites and Stings

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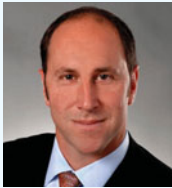
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LETTER FROM THE EDITOR-IN-CHIEF

EHR Interoperability: A Bridge to Nowhere



In the beginning, interoperability and health information exchange (HIE) were key selling points for physicians considering adoption of and investment in electronic health records (EHRs), but today most are left feeling misled, stranded on a

bridge that leads nowhere.

The Healthcare Information and Management Systems Society (HIMSS) defines EHR interoperability as “the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged.”¹ In addition, the organization notes that HIE standards should allow “data to be shared across clinicians, lab, hospital, pharmacy, and patient regardless of the application or application vendor.”² The ultimate goal of interoperability is to ensure that health information systems eliminate all barriers to the flow of information, within and between health-care organizations, and that would limit the ability to provide care for patients seamlessly. The Health Information Technology for Economic and Clinical Health (HITECH) Act, signed into law early in the Obama administration, made EHR interoperability a fundamental priority. In fact, meaningful use designation and compliance mandate interoperability and HIE, yet little has been done to enforce this key component of the law.

Many early adopters now find themselves held hostage by outdated, inefficient systems whose creators have no incentive to innovate and improve. These physicians and hospitals would readily switch their EHR systems, but then they realize the tremendous cost they would incur to get the patient data to a new system. Worse yet, many of these systems’ developers will claim that they are unable to transfer the data at all, let alone preserve its original form and get it into the correct “buckets.” The result is a dramatic restriction of consumer choice and a stagnation of innovation in health-care information technology.

The EHR companies know that by creating barriers to data transfer and information exchange, they make it harder for us to leave. And the harder it is to leave, the less incentive there is to satisfy your customer. No other industry is allowed to restrict consumer freedoms like this. Despite the fact that HIE represents one of the most important directives of health-

care reform as we know it, we have somehow allowed an environment to persist that nearly eliminates the possibility of its stated goal. There is simply no incentive for most of the large EHR companies to change their ways. There is certainly no business case for doing it, and apparently the federal government lacks the will to enforce the mandate for it.

Urgent care has been a success story for innovation in health-care delivery, and EHRs tailored for urgent care centers have always demonstrated a more consumer-focused, responsive, and innovative approach to software development. Unfortunately, as health systems increase their penetration into the urgent care market, they bring their rigid, bloated, and inefficient EHRs with them. Although many would like to adopt an urgent care EHR, their existing systems make this nearly impossible to accomplish. Ideally, and in the spirit of the law, these large health-system EHRs should allow for other systems more capable of providing efficient patient care in different settings to sit side by side as part of the free flow of health information.

Thus despite the opportunity to meet consumer needs and promote more efficient health-care delivery, health systems are stuck trying to shove a square peg into a round hole. Workflow is predictably disrupted, and all of the efficiencies and the consumer focus that make urgent care so valuable are lost. Until government enforces HITECH as it was intended, little can or will be done to achieve interoperability. And the promise of EHRs to streamline care, to improve quality, and to empower patients and their physicians will be lost. ■

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1. Healthcare Information and Management Systems Society. *HIMSS Dictionary of Health-care Information Technology Terms, Acronyms and Organizations*. 2nd edition. Chicago, Illinois: Healthcare Information and Management Systems Society; 2010: 190. Available from: <http://ebooks.himss.org/product/himss-dictionary-healthcare-information-technology-terms-acronyms-organizations26783>
2. American Academy of Family Physicians (AAFP), Center for Health IT, 2013.

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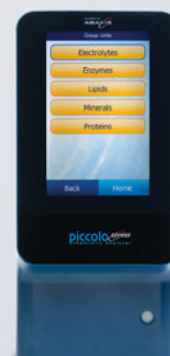
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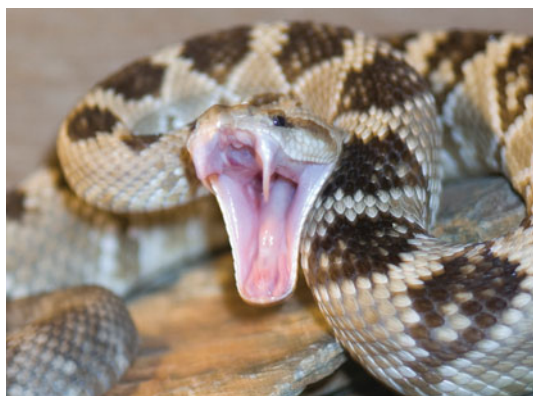
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CLINICAL

9 Urgent Care Management of Animal Bites and Stings

It can be a wild world out there, so urgent care providers must know how to treat wounds from dogs and cats, humans, rodents, snakes, scorpions, jellyfish, and more.

Alexander Nathanson, MD

PRACTICE MANAGEMENT



19 Investment Trends in Urgent Care: A Mergers and Acquisitions Roundtable

What's going on now with mergers and acquisitions in the urgent care arena? We brought together a group of experts to give you the details.

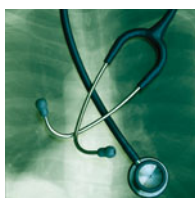
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A small study shows that delayed prescribing of antibiotics can satisfy patients with respiratory tract infections and reduce antibiotic overuse.

Kim Hasbach, DNP, APRN-BC



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Envenomation by stingrays can cause life-threatening infections by penicillin-resistant bacteria. Do you know what to do?

William A. Woolery, DO, PhD, MS, MBA, FACP

IN THE NEXT ISSUE OF JUCM

When is elevated blood pressure a problem? Is there a level that requires emergency transfer or intervention? In our October issue, Jon Juhasz, MD, will explore these and other questions facing the urgent care provider evaluating asymptomatic elevated blood pressures and hypertensive emergencies.

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

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JUCM The Journal of Urgent Care Medicine (www.jucm.com) is published through a partnership between Braveheart Group, LLC (www.braveheart-group.com) and the Urgent Care Association of America (www.ucaoa.org).

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JUCM (ISSN 1938-002X) printed edition is published monthly except for August for \$50.00 by Braveheart Group LLC, 120 N. Central Avenue, Ste 1N, Ramsey NJ 07446. Periodical postage paid at Mahwah, NJ and at additional mailing offices. POSTMASTER: Send address changes to Braveheart Group LLC, 120 N. Central Avenue, Ste 1N, Ramsey, NJ 07446.

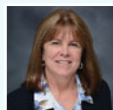


JUCM CONTRIBUTORS

This month, we have two clinical articles for you: a review and a report on original research. In our cover article, Alexander Nathanson, MD, explains that patients can sustain animal bites and stings in a variety of settings. For infections from wounds caused by mammals, nonmammals, and marine animals, he describes the organisms involved, outlines the mechanisms of wounding, breaks down the symptoms and possible complications, and details treatment.



Nathanson is an urgent care physician at CityMD in Brooklyn, New York. He is a graduate of the Urgent Care Association of America Urgent Care Fellowship program at University Hospitals Case Medical Center, Cleveland, Ohio.



Overuse of antibiotics may cause the spread of contagious diseases, can increase the duration and severity of infections, and can cause adverse drug reactions. Accordingly, Kim Hasbach, DNP, APRN-BC, reports in our clinical section on a study she conducted to determine whether delayed prescribing decreases the number of antibiotic prescriptions filled by patients treated for respiratory tract infections in an outpatient setting. She describes what health-care providers in urgent care must do to make delayed prescribing work.

Hasbach is a family nurse practitioner in an acute-care outpatient clinic. She is also an Assistant Professor at the Columbus State University School of Nursing in Columbus, Georgia.

In our *Practice Management* section, Alan A. Ayers, MBA, MAcc, leads a panel discussion among experts on mergers and acquisitions in the urgent care arena: Jeffrey R. Gerlach, Scott Witter, Dexter Braff, and Blayne Rush. They analyze the overall marketplace for urgent care centers from both the buyer's perspective and the seller's perspective. The Patient Protection and Affordable Care Act and other factors will continue to strongly influence urgent care deal-making in coming years.

Ayers is Vice President of Corporate Development for Concentra Urgent Care, a member of the Board of Directors of the Urgent Care Association of America, and Practice Management Editor for *JUCM—The Journal of Urgent Care Medicine*. Gerlach is Senior Vice President of Business Development and Strategic



Growth for NextCare Urgent Care, Witter is the Director of Business Development and Mergers and Acquisitions at U.S. Health-Works, Braff is President of the Braff Group, and Rush is the President of Ambulatory Alliances, LLC and is an investment banker.

In this issue's case report, William A. Woolery, DO, PhD, MS, MBA, FACP, writes that failure to recognize and treat the early development of skin and soft-tissue infection from a stingray envenomation may result in significant tissue necrosis and systemic inflammatory response syndrome. He explains the mechanism of these stings and outlines effective wound treatment.



Woolery is Director of the Hospital Program at Sacred Heart Hospital on the Gulf, Port St. Joe, Florida.

Also in this issue:

In the inaugural column of *Health Law and Compliance*, we expand the scope of a long-standing column to cover both legal and compliance issues affecting urgent care centers. We have recruited a panel of experts to serve as guest columnists. **Alan A. Ayers, MBA, MAcc**, leads off with a discussion of pre-employment background checks and drug screening.

Sean M. McNeeley, MD, and the **Urgent Care College of Physicians** review new abstracts from the literature on risk levels for patients with negative findings on cardiac evaluations, urinalysis in very young infants, deep vein thrombosis and rivaroxaban, simplifying clinical guidelines, oxygen in ST-elevation myocardial infarction, antibiotics and juvenile idiopathic arthritis, treating concussions in children in urgent care, and antibiotics versus appendectomy in appendicitis.

In Coding Q&A, **David Stern, MD, CPC**, discusses gait training and data points for electrocardiograms in the assessment of decision-making complexity.

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

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Have you made plans to join your colleagues in New Orleans September 24–26 for the Fall Urgent Care Conference? Its scope is surpassed only by that of the UCAOA Spring National Urgent Care Convention. You will find no other concentrated gatherings of this many urgent care owners, operators, ancillary staff members, and businesses who serve the industry that offer such a high-quality and comprehensive program specific to urgent care. The clinical and practice management components of the Fall Conference have again been expanded and enhanced on the basis of the direct feedback from participants of past conferences. We'll have new speakers, new exhibitors, expanded hands-on sessions, and even more options and time for networking and for visiting exhibitors. The dedicated, conscientious Conference Planning Committee spends months preparing this unique conference for you.

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safety. Count on UCAOA to represent the industry in helping to increase awareness of urgent care in the media and public eye, as well as to educate legislative and regulatory agencies and leaders and the payer audience about what urgent care is and, more importantly, what it is not. At this year's conference, you'll have the opportunity to do the following:



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- Hear directly from U.S. Senator Bill Cassidy of Louisiana regarding key legislative issues on the national health-care agenda
- Explore the opportunities to become involved and work with other volunteers to create and guide the programs and activities of UCAOA
- Become a state liaison and learn how UCAOA is monitoring state regulatory and legislative issues
- Learn how your center can measure itself against UCAOA accreditation standards
- Attend 12.5 hours of continuing education. Choose the most relevant topics for you and your team from 10 retooled Clinic StartUp sessions, 30 forward-thinking practice management sessions, 5 hands-on clinical courses, and 2 clinical tracks dedicated to urgent care for adults and children
- Seek information from company representatives on the latest in products and services for the urgent care market ■



P. Joanne Ray is chief executive officer of the Urgent Care Association of America. She may be contacted at jray@ucaoa.org.

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Urgent Care Management of Animal Bites and Stings

Urgent message: Because bite and stings can be sustained in a variety of settings from many different animals and can transmit a wide variety of infectious agents, urgent care providers should have specific knowledge about treating wounds from mammals, nonmammals, and marine animals.

ALEXANDER NATHANSON, MD

Introduction

Practitioners at urgent care centers often see patients who have sustained animal bites or stings. In addition to causing structural damage to tissues, bites and stings expose patients to potentially dangerous bacteria from animal oral flora or bacteria from the surface of the skin. In rare cases, bites can result in exposure to the rabies virus, and infection with the virus carries an extremely poor prognosis. Therefore, the need for rabies prophylaxis must be addressed in almost all cases of mammalian bites. Urgent care providers should also have some familiarity with certain bites and stings from nonmammals that can cause harm through envenomation, including snakes, scorpions, and marine wildlife such as stingrays, jellyfish, and siphonophores.

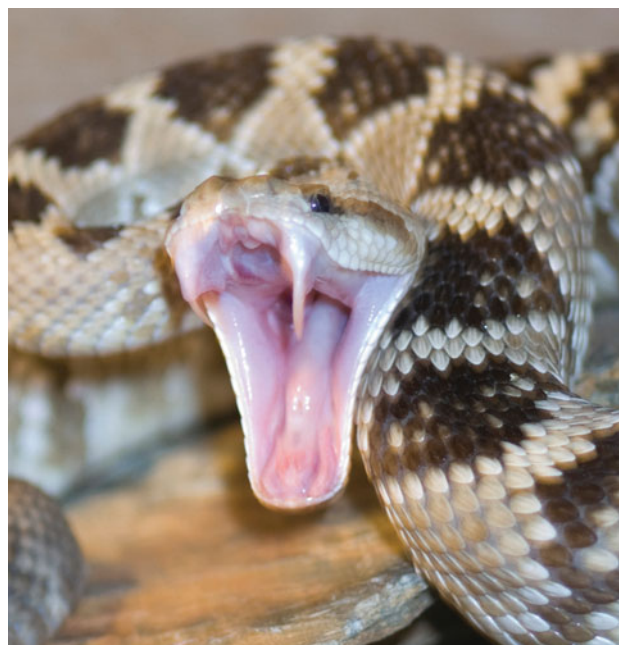
Mammals

Dogs

Overview

Dogs are responsible for about 80% of all animal bites in the United States. The breeds commonly implicated are German shepherds and pit bull terriers. Most dog bites

Alexander Nathanson, MD, is an urgent care physician at CityMD in Brooklyn, New York. He is a graduate of the Urgent Care Association of America Urgent Care Fellowship program at University Hospitals Case Medical Center, Cleveland, Ohio.



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come from dogs known to the individual, and the incidence of biting is higher in dogs that have not been neutered. Dog bites can result in scratches, abrasions, deep lacerations, puncture wounds, tissue avulsions, and crush injuries (**Figure 1**). Children are at a higher risk than adults are for being bitten by dogs.¹ Because chil-

Figure 1.

Dog bite, 3 days after the injury was sustained. (Used with permission under a Creative Commons Attribution-Share Alike 3.0 Unported license [https://creativecommons.org/licenses/by-sa/3.0/deed.en] from Nicor. Original figure available from https://commons.wikimedia.org/wiki/File:Dog_bite.JPG.)

dren are of similar height to many dogs, bites in children are commonly seen on the face, neck, and trunk. In adults, dog bites are most commonly seen on the hands.

Organisms

Infections from bite wounds are often polymicrobial because of a mix of bacteria can be introduced into the wound from the animal's oral flora as well as from the patient's skin. Most bite wound cultures from bites yield a mix of aerobic and anaerobic organisms. *Pasteurella multocida* is cultured in 50% of dog-bite infections.² *Staphylococcus* and *Streptococcus* species are very common, including methicillin-resistant *S. aureus* (MRSA), the source of which can be either the animal or the patient's skin. Additionally, *Capnocytophaga canimorsus*, a gram-negative rod that can occasionally be isolated in a dog's oral flora, can cause fulminant sepsis in some immunocompromised patients, including those with asplenia or cirrhosis.

Management

If a dog-bite wound is actively bleeding, direct pressure should be applied and full a neurovascular assessment should be performed of the areas distal to the wound. The wound should be thoroughly irrigated with normal saline. Anesthesia should be administered if necessary,

and devitalized tissues should be debrided. If the bite occurs over the metacarpophalangeal joints on the hand, the wound should be explored in both the anatomic position and the clenched-fist position.³ If a wound appears to be infected, a Gram stain and aerobic and anaerobic cultures can be obtained prior to initiation of antibiotics. Cultures of uninfected bite wounds are not useful in guiding antimicrobial treatment.⁴

Imaging can be useful in deep wounds or if the bite is located near a joint to evaluate for disruption of the bone or for the presence of foreign bodies such as teeth. Dog-bite wounds can be repaired if conditions are safe to do so. The wound should be clinically uninfected and less than 12 hours old if not on the face, or less than 24 hours if on the face. Avoid repairing crush injuries, puncture wounds, and wounds in immunocompromised hosts. Deep and complex wounds may require surgical consultation. After thorough irrigation, the wound should be repaired with primary closure. Avoid deep sutures, and avoid glue. Dog-bite wounds

will generally need antibiotics if repaired.⁵ Uninfected wounds presenting less than 9 hours after injury do not need antimicrobial therapy if the wound is uncomplicated and properly irrigated. However, in patients presenting with full-thickness wounds more than 9 hours after the injury, prophylactic antibiotics have been shown to help prevent infection.⁶ Tetanus immunization status should be addressed in dog-bite wounds.

Cats

Overview

Cats are responsible for 10% to 20% of all animal bites in the United States, and cat bites tend to occur more frequently in women than in men or children. These bites are usually associated with handling the animal. Bite location is most commonly the face or upper extremities. Injuries often consists of deep puncture wounds with a small opening (**Figure 2**). When this type of wound occurs on the hand, bacteria can be inoculated into the periosteum or the joint space, which can result in tenosynovitis, osteomyelitis, or septic arthritis.

Organisms

Pasteurella multocida is isolated in 75% of cat-related wound infections, including both cat bites and cat

scratches.² *Staphylococcus*, *Streptococcus*, and *Moraxella* species can also be found in infections from exposure to cats.

Another well-known organism that can be traced to a cat exposure is *Bartonella henselae*, which is responsible for cat-scratch disease. It can be transmitted through either a bite or a scratch from a cat, and also through fleas. A papule or pustule is often found at the inoculation site, and tender lymphadenopathy can develop 7 to 60 days after the initial exposure. The majority of the time, there is a solitary enlarged lymph node near the inoculation site; however, enlargement of multiple lymph nodes in the same region or different anatomic regions is a possibility. In some cases there can be visceral organ involvement of the liver and/or spleen, as well as visual disturbances from optic nerve involvement.

Management

Cat bites usually result in puncture wounds. In such cases, avoid high-pressure irrigation of the wound. Instead, wounds can be soaked in antiseptic solution for 15 minutes. Inspect for evidence of deep tissue puncture. Punctures generally require antimicrobial therapy. They should not be repaired, because of the risk of trapping a deep-seated infection. As with other animal bites, injury sites should be assessed for neurovascular compromise, and devitalized tissue should be debrided. Bacterial culture can be obtained if there is evidence of infection.

Although cat-scratch wounds have the potential to be contaminated with the same organisms as bites, they likely do not require the same aggressive approach as bite wounds do. If the wound is thoroughly irrigated and the patient presents less than 9 hours after sustaining it, then it likely will not require antibiotics unless there is clear evidence of infection. Tetanus immunization status should be addressed in cat-bite wounds.

Cat-scratch disease is commonly associated with prolonged fever, and it should

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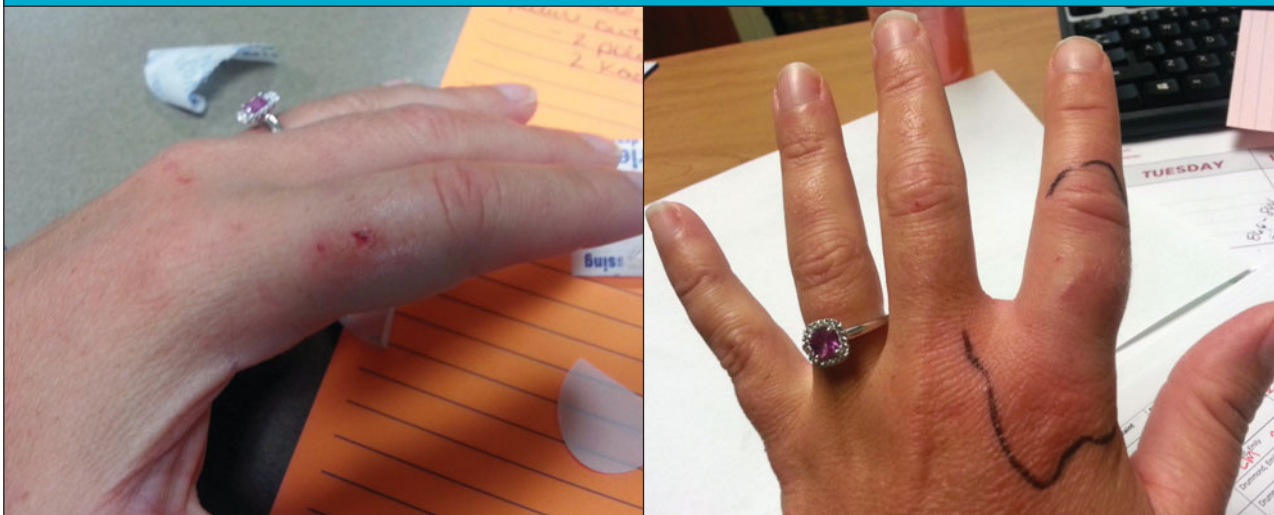
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Figure 2.

Cat bite. (A) Image obtained immediately after injury shows a puncture wound. (B) Image obtained 24 hours after injury shows significant edema and erythema. (Photos courtesy of Kristie Tincher.)

be considered when evaluating for fever of unknown origin, especially in children. This diagnosis can be usually be confirmed with serology. Cat-scratch disease usually responds to azithromycin, but systemic infections may require additional antimicrobial therapy.

Humans

Presentation

Human bites can occur in a variety of situations. Minor bites can occur during sexual activity, and they can occur secondary to psychiatric illness. In children, bites can be seen from play-fighting. However, if the bite has an intercanine distance of more than 3 cm, the bite likely came from an adult, and this should raise concerns about child abuse.⁷ Some of the most dangerous human bites happen when there is an injury to a closed fist, such as in a fistfight when a fist comes into contact with another individual's teeth. These are usually small lacerations over the third and fourth metacarpophalangeal or proximal interphalangeal joints on the dominant hand. These wounds are highly prone to infection, given the proximity of the skin to the joint spaces.

Organisms

Bites from humans tend to have a higher complication rate than bites from dogs or cats, largely because of the greater variety of pathogenic organisms isolated from infected wounds. *Pasteurella* is occasionally seen, as are *Staphylococcus* and *Streptococcus* species. *Eikenella corrodens*

is a gram-negative organism found in the human oral flora that is unique to human-bite infections.⁸

Management

In human bites, risks for transmission of blood-borne pathogens should be considered. Individuals who have not been vaccinated for hepatitis B and those for whom the vaccine is ineffective (i.e., they are HBsAb negative) are at risk and should receive the hepatitis B vaccine series. If the source of the bite is positive for the hepatitis B surface antigen, those who are not immune should receive hepatitis B immunoglobulin in addition to the full vaccine series. Human immunodeficiency virus and hepatitis C are very rarely transmitted through saliva alone, unless there is visible blood in the saliva.^{9,10}

As with other animal bites, human bite injuries should be assessed for neurovascular compromise. Wounds should be thoroughly irrigated. Wounds over the metacarpophalangeal or proximal interphalangeal joints should be explored in both the anatomic position and the clenched-fist position. Because of the higher complication rate associated with human bites in comparison with other animal bites, extra caution should be taken when deciding whether to repair the wound. Avoid repairing bite wounds to the hand and puncture wounds. Head and neck wounds may be considered for repair if clinically uninfected. In general, all full-thickness human-bite wounds should be treated with prophylactic antibiotics. Tetanus immunization status should also be addressed.

Rodents

Organisms and Presentation

Bites from rodents are often seen in individuals who care for these animals or house them as pets. Rodent bites are often too small to be clearly seen. These bites can become infected 10% of the time, commonly by *Streptobacillus moniliformis* and *Spirillum minus*.¹¹ These organisms can cause a rare condition known as rat-bite fever. The incubation period for this illness is usually less than 7 days. Generalized flu-like symptoms, such as fever, headache, and pharyngitis, are first to appear. Afterward, patients may develop a maculopapular rash on the extremities and polyarthritides. Rare complications include meningitis, as well as endocarditis in those with a history of heart valve disease.

Management

The organisms in these bites are difficult to isolate in cultures and should be suspected and treated empirically in patients with a history of rodent exposure. Rat-bite fever usually responds well to penicillin and ceftriaxone. It can remit and relapse in untreated patients.

Antibiotics in the Treatment of Mammalian Bites

Antibiotics should be chosen to cover the specific organisms commonly found in animal bites, such as *Pasteurella* and *Eikenella*, as well as anaerobes. Coverage for MRSA should be considered. Among oral agents, Augmentin (amoxicillin-clavulanate) is the first choice. If MRSA coverage is required, doxycycline or Bactrim (trimethoprim-sulfamethoxazole) can be added. Clindamycin covers anaerobes, but it is not recommended as a solo agent, owing to poor *Pasteurella* coverage.

In cases of more severe infections, the first dose of antibiotics can be given intramuscularly or intravenously. Options include Unasyn (ampicillin-sulbactam), Zosyn (piperacillin-tazobactam), and a third-generation cephalosporin plus Flagyl (metronidazole).

Prophylactic antibiotics can be given for 3 to 5 days. Most abscesses or cellulitis can be treated for 5 to 10 days.¹² Deeper infections such as tenosynovitis or osteomyelitis may require a combination of parenteral and oral antibiotics for a significantly longer duration.

Table 1 gives details on empiric antibiotic therapy for animal bites.

Rabies

Overview

Rabies is a viral illness that can be contracted from the bites of mammals that carry it. It is characterized by motor

weakness, paresthesias, and encephalitis, eventually leading to coma and death. In patients with established rabies, the illness is almost always fatal. Rabies is transmitted through an animal's saliva. It has an incubation period of 1 to 3 months. Around the world, 50,000 people die of rabies every year, whereas in the United States, 2 or 3 people die every year because of it.¹³ Dogs are responsible for 95% of rabies transmissions to humans around the world. However, in the United States, vaccination programs have effectively eliminated domestic dogs as a reservoir, except for certain cases in the Southwest along the border between the United States and Mexico. There are actually more rabid domestic cats than rabid dogs in the United States because there are fewer vaccination laws for the former than for the latter.

In the United States, bats are the most common source of transmission. Raccoons, foxes, coyotes, and skunks are the most commonly infected terrestrial animals. Although there have been reports of rabies in larger rodents such as beavers and woodchucks, rabies is almost never found in smaller rodents such as squirrels, chipmunks, mice, rats, hamster, gerbils, or guinea pigs. There has never been a documented transmission of rabies to humans from one of these animals.

The decision on whether to administer postexposure prophylaxis for rabies depends on a number of factors. Consultation with local public health officials can provide information about the epidemiology of rabies in the immediate geographic area.

Exposure to bats appears to carry the highest risk. Rabies has been found in bats in almost all states in the United States. Bat bites are small and often unseen. If an individual is awake and aware of the bat at all times, then prophylaxis is not necessary. However, if an individual awakes to find a bat in the bedroom, or if a young child, mentally disabled person, or intoxicated person is found to be exposed to a bat, then prophylaxis should be administered unless the bat can be captured and tested. Bites from wild terrestrial animals such as raccoons, coyotes, or skunks should be considered high risk, and prophylaxis should begin immediately, especially if the bite is in a high-risk anatomic area close to the central nervous system, such as the head or neck. If the animal is captured, tested, and found to be free of rabies, then the vaccine series can stop. If the exposure is lower risk, such in the case of a superficial bite or scratch far from the central nervous system, and the animal is captured, then prophylaxis can wait for until the animal is tested.

In the United States, the risk of rabies exposure from a domestic dog or cat bite is very low, and the decision over

Table 1. Empiric Antibiotic Therapy for Animal

Medication	Adult Dose	Pediatric Dose
Preferred agent		
Augmentin	875/125 mg BID	20 mg/kg/dose BID (based on amoxicillin)
or		
<i>Pasteurella/Eikenella</i> coverage		
Bactrim	160/800 mg BID	4–5 mg/kg/dose BID (based on trimethoprim)
Doxycycline	100 mg BID	Not recommended in patients younger than 8 y
Penicillin VK	500 mg QID	12.5 mg/kg/dose 4 times daily
Cefuroxime	500 mg BID	10 mg/kg/dose BID
Moxifloxacin	400 mg daily	Use with caution in patients younger than 18 y
plus		
Anaerobic coverage		
Metronidazole	500 mg TID	10 mg/kg/dose TID
Clindamycin	450 mg TID	10 mg/kg/dose TID
Options for IV/IM antibiotics		
Ampicillin-sulbactam	3 g	50 mg/kg/dose (based on ampicillin)
Piperacillin-tazobactam	4.5 g	125 mg/kg/dose (based on piperacillin)
Ticarcillin-clavulanate	3.1 g	50 mg/kg/dose (based on ticarcillin)
Ceftriaxone plus metronidazole	1 g plus 500 mg	100 mg/kg/dose plus 10 mg/kg/dose
Prophylactic antibiotics can be given for 3–5 days. Most cases of abscess or cellulitis can be treated for 5–10 days. The first dose of antibiotics can be given IV or IM. If the patient cannot tolerate Augmentin, provide coverage for <i>Pasteurella/Eikenella</i> and for anaerobes. BID = 2 times/day; IM = intramuscular; IV = intravenous; QID = 4 times/day; TID = 3 times/day.		

whether postexposure prophylaxis is required depends on factors such as the vaccination status of the animal and whether the attack was provoked or unprovoked.

Risk Factors

A bite to an individual trying to handle or feed an animal should be considered a provoked attack. This type of behavior is not suspicious for rabies infection. However, an unprovoked attack, such as if an animal runs up and bites an individual without any provocation, is more concerning. If possible, this animal should be examined for any bites or wounds that would give clues about rabies exposure. A healthy dog or cat that bites a person should be observed for 10 days, because this is the time period during which an animal will show clear signs of rabies if it is present. However, if the bite occurs on the head or neck, then prophylaxis should begin, because the incubation period for rabies can be signifi-

cantly shorter than those 10 days. Dog bites that occur outside of the United States, especially in the developing world, should be considered high risk, because in most cases of rabies in the United States, the disease is transmitted by dogs from developing countries rather than by domestic dogs.¹³

Management

When administering rabies prophylaxis, begin with thorough cleansing of the wound with soap and water. Consider soaking the wound in a virucidal agent such as iodine. Proper wound cleansing can prevent the likelihood of rabies transmission in up to 90% of cases.¹⁴ Postexposure prophylaxis usually requires a combination of both passive and active immunization. Rabies immunoglobulin provides immediate virus-neutralizing antibodies. The full volume of the immunoglobulin dose should be injected in and around the wound. If

there is no clear wound, then this should be administered into the gluteal muscles. Additionally, a rabies vaccine should be administered at the same time and again on days 3, 7, and 14.¹⁵ The vaccine induces the formation of antibodies that take effect about 1 week after exposure. The vaccine should be administered at a different site from where the immunoglobulin is injected. Certain high-risk groups such as veterinarians and laboratory workers may have received pre-exposure prophylaxis with the vaccine. In such cases, no rabies immunoglobulin is necessary. Vaccines should be administered on days 0 and 3.¹⁵

Snakes

Overview

Venomous snakes can be encountered in wilderness areas throughout the United States. Most snake bites in the United States are caused by members of the *Crotalinae* family, specifically rattlesnakes (**Figure 3**), copperheads, and water moccasins, which are collectively

Figure 3.



Venomous snakes from the *Crotalinae* family, such as this tiger rattlesnake (*Crotalus tigris*), can be identified by their triangular head and elliptical pupils. (Used with permission under a Creative Commons Attribution-Share Alike 3.0 Unported license [<https://creativecommons.org/licenses/by-sa/3.0/deed.en>] from Trisha Shears. Original figure available from https://commons.wikimedia.org/wiki/File:Tiger_Rattlesnake_001.jpg.)

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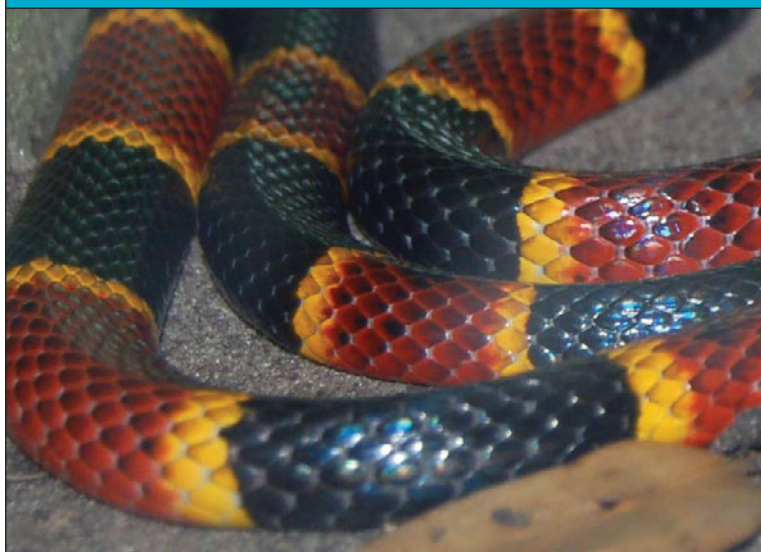
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Figure 4.

The coral snake can be identified by its brightly colored pattern of adjacent yellow and red bands. (Used with permission under a Creative Commons Attribution-Share Alike 2.0 Generic license [<https://creativecommons.org/licenses/by-sa/2.0/deed.en>] from Tricia Banks. Original figure available from https://commons.wikimedia.org/wiki/File:Tiger_Rattlesnake_001.jpg.)

known as pit vipers. Although venomous snakes can live in almost all parts of the United States, most bites occur in the Southwest. Rattlesnakes are the most dangerous of venomous snakes and account for the majority of fatalities attributed to snake bites. Venomous snakes usually have some distinctive characteristics, such as a triangular head, elliptical pupils, and hollow fangs,¹⁶ that allow them to be identified from a distance so as to avoid encountering them up close or capturing them.

Presentation and Management

Bites can present as one or two deep puncture wounds. A bitten individual should be kept calm, and the affected area should be elevated and immobilized before the person is transferred to an emergency department. Physicians should not attempt any aggressive techniques such as tourniquets, suctioning, or pressure immobilization.¹⁷

Crotalinae secrete a hemotoxic venom that can cause affects ranging from local reaction and swelling to compartment syndrome, rhabdomyolysis, and disseminated intravascular coagulation–like (DIC-like) syndrome. Severity depends on the amount of venom injected and the species of snake responsible for the attack. Antivenin is available for moderate to severe envenomations, and

it has been responsible for significantly decreasing the mortality rate for snake bites, which is currently less than 1%.

Unlike *Crotalinae*, coral snakes secrete a neurotoxic venom. They are found in the U.S. South and Southeast and can be identified by their brightly colored pattern of adjacent yellow and red bands (**Figure 4**). Coral snakes are nonaggressive and will bite only if provoked. However, their bites are small and can be easy to miss. Symptoms include local numbness, cranial nerve palsies, and, in severe cases, respiratory depression and airway compromise. Patients with bites should be monitored for any signs of respiratory depression over a period of time. Antivenin can be used when it is available.

Scorpions

Overview

Encounters with scorpions occur in the U.S. Southwest, and such encounters are a significant problem over the border in Mexico, where deaths from scorpion stings outnumber deaths from snake bites 10 to 1. In the

United States, there has not been a confirmed death from a scorpion sting since 1968. Although several species of scorpion can produce clinically significant symptoms, most stings in the United States are attributed to *Centruroides exilicauda*, commonly known as the bark scorpion, which likes to reside under trees and rocks and has the highest potential of all scorpion species for inducing systemic symptoms. Scorpions are not typically aggressive and will usually sting only if stepped on or cornered.

Presentation

A low-grade reaction to scorpion venom may present as only local pain and paresthesia. The tap test has been recommended for differentiating the sting of a bark scorpion from other ailments, including stings from other scorpion species. To perform the test, have the patient look away while you gently tap the wound. A sting from a bark scorpion will produce significantly exacerbated pain. Moderate to severe envenomations can cause cranial nerve palsies and/or neuromuscular dysfunction. Cranial nerve palsies can present as blurred vision, abnormal eye movements, tongue fasciculations, and hypersalivation. Airway maintenance can be a concern in patients with scorpion stings. Neuromuscular symp-

toms can include restlessness, fasciculations, and shaking and jerking of the extremities, which can mimic a seizure, except that the patient will likely be awake and alert. Scorpion sting envenomation can be more severe in children than in adults because of their smaller size.¹⁸

Management

Supportive care is the mainstay of managing scorpion bites. Local or generalized analgesia should be given as needed. Benzodiazepines can be given for motor neuron hyperactivity, and atropine can be given to combat excessive cholinergic activity. For severe envenomations, scorpion antivenin can be obtained.

Marine Animals

Populations including fishers, swimmers, snorkelers, and aquarium workers may be at risk for stings from certain types of venomous marine wildlife. Catfish spines can cause injury to fishers who are removing them from a fishing line. Scorpionfish and lionfish are often found in commercial and home aquariums and can cause injury during their routine care and feeding. Other marine animals, including sea urchins, coral, and stonefish, cause injury during accidental contact, such as when they are stepped on. In the case of sea urchins, multiple spines can break off and become embedded deep in tissues.

Stingrays

Overview

Stingrays can be somewhat more dangerous. They often attack in the late summer to early fall when they burrow in the shallow surf, where they can be accidentally stepped on. Stingrays possess whiplike tails with venom-containing spines at the end. When the animal is stimulated or frightened, it flings its tail upward, embedding the spines in the victim. Advise patients that when they are walking in the surf, they can prevent stingray attacks by shuffling their feet. This prevents their stepping down hard onto a stinger, and the movement alerts stingrays to their presence.

Management

Stingray envenomations cause immediate localized pain. Any systemic symptoms are usually from severe pain rather than from the envenomation. For pain control, wounds should be immersed in hot water at 40° to 45°C for up to 90 minutes.¹⁹ Additional analgesia with nonsteroidal anti-inflammatory drugs or opiates may be needed. The wound should be copiously irrigated,

“Although most of the bite wounds that patients present with are from mammals, providers should have some familiarity with nonmammalian bites and stings, specifically from snakes, scorpions, and marine animals.”

and any foreign bodies should be removed. Retained spines from sea urchin encounters are usually visible on radiographs. Stingray attacks may require more extensive imaging to rule out penetrating trauma. [Editor's note: See also “Stingray Envenomation and Subsequent Skin and Soft-Tissue Infection Due to *Vibrio parahaemolyticus* and *Aeromonas hydrophila*” in this issue.]

Jellyfish and Similar Marine Animals

Overview

Another common cause of marine envenomation comes from jellyfish. Jellyfish live in coastal waters all over the world, and swimmers can be stung if they make contact with their tentacles. As with other marine envenomations, patients will experience immediate pain. Several minutes later they may develop a linear red or urticarial rash. However, this rash is not always immediate and can present several hours later. Jellyfish venom can have local and systemic effects. Outside the United States, the Australian box jellyfish has been associated with no fewer than 70 deaths. In the United States, jellyfish stings are usually mild. The severity of the sting depends on the type of jellyfish and the amount of skin contact with the tentacles.

On the East Coast of the United States, there have been encounters with the Portuguese man-of-war (*Physalia physalis*), which is often mistaken for a jellyfish but is instead a siphonophore, a colony of organisms that work together as one animal (**Figure 5**). It produces a very painful sting. Rare deaths have been reported because of these animals, either through cardiac arrest, respiratory arrest, or drowning due to limb paralysis.

Management

In patients stung by a jellyfish or siphonophore, remove any tentacle contents from the skin promptly but not aggressively. Studies of encounters with the Portuguese

Figure 5.



Portuguese man-of-war. (From the U.S. Department of Commerce, National Oceanic and Atmospheric Administration. Original figure available from [https://commons.wikimedia.org/wiki/File:Portuguese_Man-O-War_\(Physalia_physalis\).jpg](https://commons.wikimedia.org/wiki/File:Portuguese_Man-O-War_(Physalia_physalis).jpg).)

man-of-war and the Hawaiian box jellyfish have demonstrated the benefit of immersion in hot water of the affected area. This appears to provide better pain control than other previously suggested remedies such as acetic acid or meat tenderizer.²⁰

Conclusion

To successfully manage animal bites and stings, providers should have knowledge of the risks associated with the specific types of bites and stings that can occur. All bite and sting wounds should be carefully cleaned, and the structural integrity of the affected body part should be

evaluated. Tetanus status should always be addressed. Providers should be vigilant about the risks of performing primary closure of bite wounds and should be aware of the contraindications to such repairs. When providing antimicrobial therapy, clinicians should be careful to choose antibiotic agents that provide coverage for *Pasteurella*, *Eikenella*, and anaerobes. Providers should also be able to assess the risk for rabies and know when to provide rabies prophylaxis. Additionally, although most of the bite wounds that patients present with are from mammals, providers should have some familiarity with nonmammalian bites and stings, specifically from snakes, scorpions, and marine animals. ■

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Practice Management

Investment Trends in Urgent Care: A Mergers and Acquisitions Roundtable

Urgent message: Urgent care is a highly fragmented industry considered ripe for consolidation. A handful of high-profile deals have made 2015 the biggest year for mergers and acquisitions yet, but high valuations, oversaturated markets, changing buyer and seller expectations, and structural changes attributable to the Patient Protection and Affordable Care Act will influence urgent care deal-making in coming years.

Introduction

Mergers and acquisitions (M&A) in the U.S. urgent care industry have historically consisted of regional and national aggregators acquiring one-off and local networks of centers to attain operating scale; private equity (PE) groups seeking platforms for aggregation; and health systems acquiring urgent care centers to expand their geographic coverage, increase their brand visibility, and drive downstream revenues into their hospitals and affiliated provider networks.

Many urgent care start-ups have embarked on their entrepreneurial journeys with the idea of one day selling. Large, well-publicized deals such as the \$1.1 billion acquisition of Concentra by Select Medical/Welsh, Carson, Anderson & Stowe,¹ UnitedHealthcare/Optum's acquisition of 141 MedExpress centers in 11 states,² and ABRYS Partners' acquisition of FastMed's 87 centers in North Carolina and Arizona³ have raised the expectations of some owners seeking an exit strategy.

The urgent care industry is rapidly changing in response to the Patient Protection and Affordable Care Act, passed in 2010, which is changing how patients pay for medical services and spurring the desire for hospitals to expand accountable care organizations (ACOs). Also



driving change is the exponential growth of start-up urgent care centers in response to patient demand, lack of entry barriers, and availability of investment capital.

In this article, a panel of M&A experts on the urgent

Moderator

Alan A. Ayers, MBA, MAcc, is Vice President of Corporate Development for Concentra Urgent Care, a member of the Board of Directors of the Urgent Care Association of America, and Practice Management Editor for *JUCM—The Journal of Urgent Care Medicine*.

Panelist Profiles

Jeffrey R. Gerlach is Senior Vice President of Business Development and Strategic Growth for NextCare Urgent Care, which operates 123 walk-in medical centers in 13 states.



Scott Witter is the Director of Business Development and Mergers and Acquisitions at U.S. HealthWorks, a subsidiary of Dignity Health that operates 221 occupational health-care and urgent care centers in 19 states.



Dexter Braff is President of the Braff Group, a health-care mergers and acquisition advisory firm with more than 18 years of experience.



Blayne Rush is the President of Ambulatory Alliances, LLC and is an investment banker with over 15 years of health-care experience focused on business transactions, complex negotiations, and financial analysis for over 250 health-care organizations ranging from physician groups to corporate partners and hospital health systems.

care industry provides an update on the overall marketplace for urgent care centers—from a buyer's perspective and a seller's perspective.

The Big Trends

Alan Ayers: What are the biggest trends you're seeing in urgent care investment and deal-making for 2015? How do you see these trends changing over the next 2 to 3 years?

Scott Witter: 2015 will be marked as the year of the largest transactions we may experience for some time, with MedExpress, Concentra, FastMed, and likely one or two more large operators changing ownership. Relatively high valuations driven by cheap debt and high demand from a variety of acquirers, coupled with a

number of large operators who were PE-backed, meant that the end of the investment life cycle came together in a number of large acquisitions. Going forward for the next couple years, we'll likely not see such sizable deals, but we will continue to experience significant M&A, because the larger operators will continue to expand geographically. It's still a fragmented industry with many long-term positive growth drivers that will propel ongoing consolidation.

Dexter Braff: If I had to narrow this down to one significant development, it would be that deal-making is beginning to move downstream in terms of size. When private equity first entered the scene, the focus was on buying urgent care operations with 10, 20, 30, or more centers to establish platforms in targeted regions. As markets become more fully developed, and hence more difficult settings for planting new start-ups, and as PE sponsors move toward the back end of their investment cycles where start-ups become less practical, acquisition activity will shift toward 1- to 3-center operators that can fill gaps in geographic coverage or add incremental revenues and profits. This will make for a far more inclusive urgent care M&A market.

Jeff Gerlach: The true urgent care deals (episodic illness and injury) are becoming harder to find. Many have incorporated primary care and family care and other ancillary services into their offering. In addition, valuation expectations of true sellers have risen. The industry has been fairly picked over by market aggregators, brokers, investment bankers, and PE, resulting in a more sophisticated seller. Also, certain markets have become incredibly saturated.

Blayne Rush: In 2014, de novo expansion slowed for some of the larger groups, which could be due to the fact that they were preparing for an exit in 2015, but it also has to do with the limited green space in the areas these groups are playing. Some of the platforms that have recently traded are ramping up de novo again, but not to the extent of years past. There is not a true national management company, and for a management company to move into a new geographic area, they want 5 centers clustered. Well, there are a lot of 1- to 3-center owners, but not as many 5-center owners, which makes moving into new markets complicated. Urgent care has been hot for a few years now, and it will continue. I do think we will see a shift at the end of 2016 or early 2017 as recent acquirers try to figure out how they will continue to grow and move into new markets. I believe consolidation will slow a little at that time, but we still have 8 to 10 more good years in the space.

The Marketplace for Buyers

Alan Ayers: What does the current marketplace for urgent care practices look like from a buyer's perspective? What is the current buyer universe, and what are buyers looking for in acquisition targets?

Jeff Gerlach: Buyers are looking for stability and growth potential. It is also important that the seller, if a physician, is looking to remain engaged at least into the foreseeable future. Stability within the provider base is also incredibly important. Other important factors are a premium location, a solid physical plant, and a lack of primary-care services within the trade area. When entering a new market, we look to acquire a business that will give us some market presence, and then look to understand the path to continued growth to achieve significant presence. Typically that's a combination of prioritizing continued acquisitions, and then developing de novo locations.

Scott Witter: From a buyer's perspective there is competitive demand for good opportunities, and the valua-

tions of larger urgent care chains are near historic levels. However, it remains questionable whether expected returns will be delivered to recent buyers at these elevated valuation levels. Buyers will continue to come from the ranks of health systems, payors, large operators, PE, and related industry participants (e.g., Select Medical/Concentra, Fresenius/MedSpring), yet they will all be looking to fulfill their different needs. Large operators may be looking for economies of scale, geographic expansion, and opportunities for operational improvement, whereas health systems may be looking more for management and operational expertise, which they may be lacking.

Dexter Braff: A unique element of urgent care consolidation is the nature of the buyers targeting the sector. In virtually all of the other health-care service sector consolidations—skilled nursing facilities (SNFs), home health and hospice (HHA), pharmacy services, durable medical equipment, and others—the initial waves of consolidation were almost purely same-sector deals. SNFs were



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buying other SNFs, HHAs were buying other HHAs, etc. But not so in urgent care. Yes, you have your same-sector buyers, but you also have outside PE investors, hospitals, insurance companies, and physician groups, each pursuing urgent care for different financial and strategic reasons. This makes for a highly competitive and dynamic market—ideal, if you're a seller.

Blayne Rush: Each buyer has their own sweet spot and list of qualifications. If a well-respected buyer passes, that is a red flag to other buyers even though it could be due to an issue important to just that one buyer. It's much easier to take the time to prepare the business than to try to turn a buyer who says no into one who says yes or to change the market's perceptions. It's the seller's job to prepare the business if they want to maximize their transaction price and cash in their bank or to engage someone who will do it with them.

The Marketplace for Sellers

Alan Ayers: How does the market look from a seller's perspective? What do you see in common among owners who are looking to sell their practices?

Dexter Braff: Clearly, the urgent care M&A market is outstanding if you are a seller. Perhaps the better news, however, is that from all indications, the market has legs—that is, it has a long runway ahead. If you're in start-up mode, the window is somewhat limited, because the land grab is tempered by saturation. But it's that very dynamic which will support an extended run of selling opportunities. Because once the most desirable geography is built up, the only way to break in is via an acquisition. All of this means that absent a sea change in delivery patterns and/or reimbursement, enthusiastic, well-financed providers still have ample time to build and anticipate an attractive exit.

Jeff Gerlach: Sellers are most interested in maximizing valuation. In addition, they are looking for cultural fit and stability for their employees. There continues to be plenty of interest, with several larger platforms being active in the acquisition space. In addition, local health systems have been active, looking to fill their need within the continuum of care as they go at risk for managing populations. PE also continues to be active but typically is looking to invest in larger platforms with sophisticated management teams and infrastructure.

Scott Witter: It's probably not a bad time to contemplate a sale, because the demand is certainly there—especially for larger multilocation practices. We see sellers with a variety of profiles. We often see retiring or near-retirement entrepreneurs who may want to con-

tinue in the business or gradually phase out over a few years. We also see overwhelmed entrepreneurs, who are pulled in too many directions, working too many hours and having a difficult time balancing the demands of the business. They often want to continue practicing and return to a normal work-life balance. We see operators who are looking to expand their business yet need outside capital and operational support, and we often see financial owners who are at the stage where they are looking to realize a return on their investment.

Blayne Rush: If you look at the stage of the life cycle that the urgent care market is in, you will see that we are north of 60% up the rapid-growth-stage curve. This is when the largest number of entrants are in the market, and thus the greatest number of buyers are competing for urgent care businesses. While the market is very good for sellers, there are many challenges facing them. The sale process is what some would call brutal, if you have never been through it before. The due diligence alone is overwhelming to most. Buyers are picky in what they buy and the amount of risk or challenges they are will to take on. While a center might be an A-plus center, if it does not present that way on paper, then the buyers are not going to help you clean up everything and prepare the business in order for you to maximize your price or be attractive. The beauty is in the eye of the beholder, and this is a small world. You get one chance to make the buyers see all the value that your business has to offer.

The Role of Private Equity in Growing Urgent Care

Alan Ayers: What is the role of PE in the development, growth, and financing of urgent care, and how do you see this role changing?

Blayne Rush: Historically health-care players have not been good collaborators, and PE is composed of well-experienced collaborators. PE groups are able to bring many players to the table and help them work together, to add sophistication and capital. As you can see from historical activities in urgent care, the PE groups take a platform and build it up fairly quickly, and many times sell it to a payor or hospital. This will continue. Many PE firms are seeking to capture this opportunity by acquiring a well-positioned group of clinics or centers and then growing their investment through the consolidation of smaller regional or specialized players and by de novo development. So you have a fair number of PE groups who are looking for an initial platform acquisition—an urgent care company that owns and operates multiple centers and has a strong management team in place. They look at businesses with \$1 million

or more in EBITDA [earnings before interest, taxes, depreciation, and amortization], but the million is on the small end and would go to a smaller fund. The larger the EBITDA, the more attention you will get. Financial sponsors will also support consolidation among some of the larger platforms. Additionally, PE supports innovators such as GoHealth and CityMD. This will grow. PE is good for the urgent care market.

Scott Witter: PE will continue to play a crucial role in providing capital and operational guidance to entrepreneurs who are looking to significantly grow their business. Although there remains a tremendous amount of interest in urgent care by PE, I think some PE groups are beginning to understand that the relative difficulty of operating, managing, and growing urgent care chains, coupled with compressed economic returns brought on by high valuations, has made investment in urgent care less attractive. PE's ultimate goal is to maximize the return on investment capital, so some groups are focusing on smaller acquisitions where the valuations are more reasonable or have moved on and are looking at other dynamic but less-expensive health-care sectors.

Dexter Braff: Unquestionably, PE has played an extremely important role in fueling the surge in urgent care M&A. By our count, there have been at least 30 PE investments in urgent care in just since 2011—a number that trumps the rush of PE activity we've seen in the other health-care service sectors we cover. This in turn has stimulated activity from other strategic players who have been drawn into the M&A market to project their turf. Moreover, with greater access to debt, PE can afford to pay more in this increasingly competitive market and still generate outsized returns—boosting valuations across the sector.

Jeff Gerlach: As mentioned before, PE continues to be quite active. They have invested in large platforms with sophisticated infrastructure and management, as well as in the pure de novo space, recruiting a management team with industry experience and building a platform from scratch. As long as the market dynamics remain favorable, I would see this trend continuing.

The Role of Hospitals in Urgent Care

Alan Ayers: What role are hospitals playing in the urgent care space? Do you see the role of hospitals changing with the formation and growth of ACOs?

Jeff Gerlach: Hospitals and health systems continue to be active in urgent care, utilizing both acquisitions and de novo development. We receive calls every month from a hospital or health system somewhere looking to partner in an effort to solidify their urgent care strategy. The two primary drivers for this are (1) preparing for the changes within the system as providers begin to go at risk for managing populations and (2) securing the referral base for their other service offerings.

Scott Witter: Hospitals are increasingly serious participants in the urgent care space and have been much more active in acquisitions. As hospitals take on more risk for their patient populations, they are

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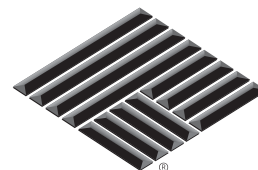


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financially driven to find cheaper care options for treating non-life-threatening acute illnesses or injuries that would otherwise end up in the emergency department. As hospitals evolve into ACOs that manage populations, urgent care gives them a cost-effective way to manage risk as well as a source for referrals. I think we are certainly in the early stages, because hospitals are still figuring out the ideal partnership structure with urgent care, whether through outright ownership, joint ventures, or other options.

Dexter Braff: While fee-for-service continues to survive, hospitals are turning to urgent care as a means to funnel patients into their delivery systems. That said, even as health care inexorably moves from fee-for-service to population management with bundled, global, or capitated payment schemes, hospitals see urgent care as a critical gating mechanism to control costs, directing patients to the most cost-effective treatment settings (and out of the emergency department). Accordingly, it's a rare hospital that doesn't have an urgent care strategy. As for whether they can develop the consumer-oriented customer satisfaction mind-set necessary to successfully compete in urgent care? That's another story entirely.

Blayne Rush: 2014 was a big year for hospitals, and they are not slowing down in 2015. Last year HCA purchased CareNow, which has 24 centers in the Dallas-Fort Worth market and had a \$30 million EBITDA it was said to have traded around 14 times, which is somewhere in the \$420 million range. That was a great strategic transaction. Hospitals are looking to expand their market by putting flags in the ground staking claim to their ever-growing market territory. Some hospitals are open to looking at centers in up to about a 30- to 35-mile radius from their campuses. They are looking for access to patients and the revenue streams. Additionally, as health systems evolve into ACOs, they want to get their members to the most appropriate and lowest-cost setting, and urgent care fits that role. The advanced health systems understand that urgent care is a vital access point into their systems, but many have not been successful in launching platforms on their own. I believe we will see more health systems come to the realization that they are not set up to take on retail medicine and are challenged with evolving with consumerism, and that is why they want to invest in an existing platform or develop an affiliation. Many ACOs, regardless if they are physician led or hospital led, center around the primary-care docs. The challenge is that primary care is booked up with disease management—hypertension, diabetes, emphysema, and wellness. You have a dread-

fully long wait after you show up for your 3-week-out appointment on time in a typically unpleasant waiting room with year-old magazines. If we look at where health care is going and we compare that with where urgent care is headed, we will see almost a pure overlap.

Urgent Care Valuation Trends

Alan Ayers: What trends are we seeing in valuation for urgent care? How are practices valued, and how do owners increase the value of their practices?

Jeff Gerlach: Overall valuation expectations have increased. There are numerous methodologies for valuation that buyers use, the most popular being a discounted cash flow methodology. The purchase price is then expressed as a multiple of EBITDA, because the concept is easy to understand. Large platforms with sophisticated infrastructure and management teams have been trading for double-digit multiples of EBITDA, while smaller operators are trading at considerably more conservative multiples. The overall desirability of the business (strategic value, stability, growth potential, provider engagement, etc.) can have a considerable effect on the value.

Scott Witter: With the larger multistate operations, valuations seem relatively elevated, but for smaller local multilocation practices, the valuations drop considerably. People tend to fixate on multiples of earnings, but from my perspective multiples of earnings are more historical reflections of value rather than a forward driver. Most buyers are going to see value differently and have very different perspectives of what they can accomplish with a particular acquisition. Buyers are paying for what they think they can do with a business going forward; thus valuations can vary considerably. One way for a seller to potentially increase value is to clearly communicate to buyers the variety of opportunities for growth or operational improvement. If clearly presented to a buyer, whether it be new clinic initiatives, better payor or purchasing contracts, operational cost savings or staffing reductions, it could be reflected in an improved valuation.

Dexter Braff: Valuation is typically based on a multiple of earnings before EBITDA. But the multiple is not an arbitrary figure. It is a function of two primary variables—risk and growth. Reduce risk and/or increase opportunities for growth, and your multiple (hence, value) goes up. Add locations, and you reduce specific market risk and increase opportunities for growth. Build predictable revenue streams—contracts, steady referrals, marketing programs, narrow networks—and reduce performance variability. Develop a management team to reduce the perception that if you go away, the business

goes with it. Create new programs. Even better? Develop the infrastructure, procedures, and experience to open new locations. And lest we forget: strive for efficiencies to increase the EBITDA that ultimately gets multiplied.

Blayne Rush: I get about five calls a week that after about 5 minutes the caller is asking what their business is worth, and I tell them it is worth as much as someone is willing to pay for it. We are in an emerging market that is very much growing, and many of the smaller groups have significant inefficiencies. This all bodes well for the valuations. When we speak of valuations or deal pricing, the default is to discuss it in terms of multiples of EBITDA, but EBITDA is backward-looking, or a historical view, and you can influence EBITDA. Some buyers do buy on the basis of a multiple of EBITDA, but the reality is that the more complex transactions will be valued via a discount cash flow method or a Gordon growth model or some hybrid, and then it is communicated as a multiple of EBITDA. There are buyers who feel comfortable with looking at your EBITDA, the EBITDA-to-revenue ratio, which is the percentage of profitability, as well as at some other metrics that they feel are important, such as patient volumes, case mix—the acuity of the patients—payor mix, etc., and then making an offer. Competition, like anything else, plays a part in this. Inefficiencies play a part in this as well. Many of the smaller businesses have 10% to 20% profitability, and when a more experienced operator takes over, they can typically run the center more efficiently. For the small transactions, we are seeing 5 to 7.5 times the larger deals. We are seeing deals go as much as 15 times larger. We are seeing the smaller transactions receiving higher offers than historical, and the larger ones are staying steady and maybe a little down for some, but remember the devil is in the details of the deal.

Transaction Red Flags

Alan Ayers: What red flags do you look for in potential transactions?

Jeff Gerlach: There are numerous red flags that we look for in considering an acquisition. First, we really want to understand if there are any compliance concerns. In addition, we want to ensure that the business can be integrated seamlessly into our platform and that the services being offered are consistent with our core business. Sellers, if physicians, who are looking to sell and exit immediately are a concern, as are influential people within the staff who are disruptive. Overall, we just try to do everything possible to ensure that the earnings we are monetizing will be consistent in the future.

Scott Witter: We look for operational issues where the two organizations may not be a good fit. Some common concerns are differences in the revenue management process that cannot be reconciled or issues with providers or staff where we perceive a difficult transition (contracting problems or credentialing concerns, discipline issues, etc.). Acquisitions are long, complex, difficult, and expensive processes where the parties are trying to build trust and come to a consensus from a variety of differing perspectives. Red flags occur when a seller seems unprepared or uncommitted to the process or is not forthright with potential issues in the business. Most issues can be worked out if put on the table early; however, when left late, they can be very damaging.

Dexter Braff: By far, the red flag that draws the most attention is anything to do with compliance—or more accurately, the lack thereof. This is particularly so as it relates to government reimbursement, which may become more relevant to urgent care providers as newly covered Medicaid beneficiaries (care of health-care reform) that lack primary-care provider relationships access the health-care system. Upping the ante is the fact that compliance is a go/no-go pivot point. If a buyer senses any problems in this area—whether intentional or just innocent error—the response is not to reduce pricing to reflect the added risk. It's to shut down the deal entirely to avoid scrutiny and tarnishing consumer trust.

Blayne Rush: Many red flags that can quickly turn into deal killers, but if the seller had addressed these during the preparing-to-sell stage, they would have been full speed ahead. The point is that in reality we are what we are perceived to be until such time as we convince the parties that we are something else. Negative perceptions create needless hurdles. What some urgent care business owners fail to understand is that this is a sales process. The more attractive your business is, the more someone will be attracted to it, and the more attractive it is, the more valuable it is. You also gain trust when you make the process easier on the buyer. ■

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Delayed Prescribing of Antibiotics for Respiratory Tract Infections

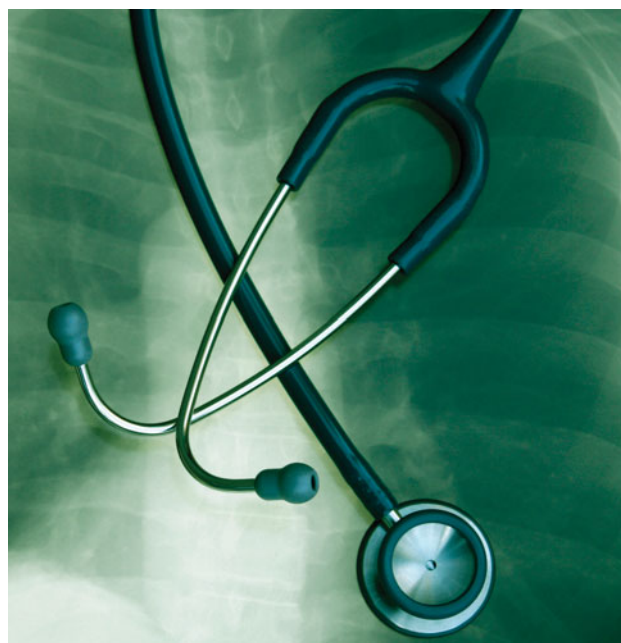
Urgent message: Respiratory tract infections are a common complaint in the urgent care setting. Many patients present with the expectation of receiving antibiotics because they have usually done so. The rise of antibiotic-resistant infections requires that we take a close look at our prescribing habits and the need to reeducate patients on the harm of over-using antibiotics. Delayed prescribing offers a way to both satisfy patients and reduce the use of antibiotics in respiratory tract infections.

KIM HASBACH, DNP, APRN-BC

Abstract

Worldwide, overuse of antibiotics has created a growing problem of antibiotic-resistant bacteria. An estimated 60% of antibiotic prescribing for outpatients is for treatment of respiratory tract infections (RTIs). Most RTIs are viral infections, which do not require an antibiotic for treatment and therefore are a target condition where antibiotic use can be reduced safely. Delayed prescribing is one such strategy used to accomplish this. The study reported here examined current practices and attitudes toward delayed prescribing of 8 health-care providers and 27 of their adult patients with an RTI who received a delayed prescription for antibiotics. Participating patients completed a questionnaire about their treatment. Also, the study investigated the effect of an educational intervention for providers regarding antibiotic prescribing.

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Before and after the intervention, participating providers completed a questionnaire about their knowledge of delayed prescribing. The findings indicated that both patients and providers considered delayed antibiotic prescribing for RTIs a satisfactory treatment choice. In fact, patients expressed a preference for delayed prescribing should they experience similar symptoms in the future. Just over half of the patients did not fill their prescriptions, signifying that delayed prescribing can reduce the use of antibiotics. After the educational intervention, providers reported greater knowledge about the effects of antibiotic prescribing, indicating that the intervention was beneficial.

Introduction

The excessive use of antibiotics has resulted in the development of resistant bacteria. This in turn leads to diseases that are more difficult to manage and prevent. Decreased use of antibiotics is a top priority for quality care¹ and may occur when patients are advised to delay filling a prescription for a respiratory tract infection (RTI), unless their symptoms persist or worsen. Delayed prescribing may impact patient satisfaction, provide a safety net for patients with worsening symptoms, and reduce antibiotic use.² Although delayed antibiotic prescribing is used by many providers, many others are unfamiliar with this strategy.³ By promoting the prudent and efficacious prescribing of antibiotics and thus decreasing unnecessary antibiotic use, providers could have a positive influence in improving health care.

The purpose of the study reported here was to determine whether delayed prescribing decreases the number of antibiotic prescriptions filled and establish whether patient satisfaction is affected for patients aged 19 years or older, treated for RTIs in an outpatient setting. Another objective was to evaluate the influence of an educational intervention on the attitudes and knowledge of health-care providers about delayed prescribing for RTIs. The goals of the study included improving the quality of antibiotic prescribing by increasing awareness and understanding about delayed prescribing, decreasing the unnecessary use of antibiotics, and providing evidence-based prescribing solutions for patients and providers.

Annually, more than 100 million antibiotic prescriptions are written in the United States.⁴ RTIs, including acute otitis media, pharyngitis, the common cold, acute sinusitis, acute cough, and bronchitis, are the most common reasons for patients to seek outpatient medical

care.³ RTIs account for 60% of all outpatient prescribing of antibiotics in ambulatory care.⁵

Antibiotic prescribing may be influenced by many factors, including patients, providers, and health-care systems.⁶ Patient factors include sociodemographic and health issues such as the need to return to work, child care, past experiences, care expectations, symptoms, and illness severity. Provider factors include clinical training, diagnostic uncertainty, judgment, fear of litigation, time pressure, and perceived patient expectations. System factors include the practice setting and health plan features, such as co-payments and pharmacy restrictions.⁷

The unnecessary use of antibiotics may cause the spread of contagious diseases, can increase the duration and severity of infections, may increase the risk of juvenile idiopathic arthritis,⁸ can cause adverse drug reactions,⁹ and can add to the rising cost of health care.¹⁰ More than 40% of hospital-acquired infections occurring between 1992 and 2004 were caused by methicillin-resistant *Staphylococcus aureus* (MRSA), which may affect 94,000 persons and result in 19,000 deaths annually in the United States. MRSA is becoming increasingly more common in the community setting. Other infectious agents and diseases of concern in the community are *Escherichia coli* and drug-resistant tuberculosis. In 1998, the cost of antibacterial resistance to the U.S. health-care system was \$5 billion; it is estimated at 10 times that today.¹¹

Prudent use of antibiotics can decrease bacterial resistance to antibiotics.¹ Guidelines are available for using delayed prescribing for children and adults who have uncomplicated upper RTIs and who do not require antibiotic prescriptions immediately; these guidelines may help decrease unnecessary use of antibiotics and yet may provide satisfactory care for patients whose symptoms worsen.^{3,4,12,13} A recent study found that delayed prescribing decreased the use of antibiotics by 76%, without increased risk to the patient, and that patient satisfaction with care was >70%.³ Furthermore, examination of delayed prescribing for pharyngitis, based on the findings of 20 studies, demonstrated that antibiotic use was decreased by 31% with delayed prescribing and by 13% without any prescribing.

Delayed prescribing also may be effective for patients with sinusitis who are not at risk for complications. In addition, delayed prescribing may decrease the cost of care, in part from savings on the prescriptions that are not filled; a recent study showed that delayed prescribing was the least costly strategy, compared with others in which antibiotics were not prescribed or were immediately prescribed.³

Methods

Patients

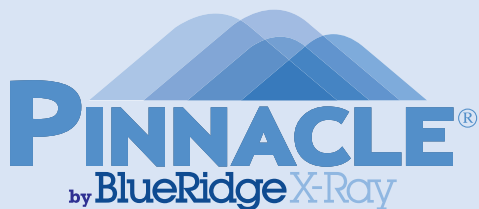
The Troy University Institutional Review Board approved the study reported here. Patients were recruited from an ambulatory acute-care clinic in southwestern Georgia. The walk-in clinic treats patients with sudden illnesses and accidents. The services available include a laboratory, radiography, drug screening, and cardiac monitoring. All patients aged 19 years and older who had a diagnosed RTI and who received a delayed prescription for antibiotics between August and November 2010 were invited to participate in the study. Inclusion criteria followed the guidelines provided by National Institute for Health and Clinical Excellence³ for the use of delayed prescribing. Patients who required immediate prescriptions for RTIs were not included. **Figure 1** outlines guideline criteria.

Of the 79 patients who signed the survey consent form, 27 (34%) completed and returned the survey, using the self-addressed, stamped envelope provided. Most of the 27 patients were women, were between the ages of 41 and 50 years, and had health insurance

(**Table 1**). Eight of the 10 health-care providers participated in the educational intervention and survey, including 4 family practice physicians, 3 physician assistants, and 1 nurse practitioner. Because of schedule conflicts, 2 providers did not participate.

Survey

A survey tool created by Martin et al¹⁴ was used with permission to evaluate antibiotic treatment and satisfaction. The tool consisted of 7 questions about delayed prescribing and 3 demographic questions. One question on the Martin survey was excluded because this survey was given only to patients who received delayed prescribing (**Table 2**). The excluded question asked whether the patient received an antibiotic. Patients treated with delayed antibiotic prescribing were given a survey form and a stamped envelope, addressed to the clinic. No personal identifiers were required. The patients were asked to return the survey within 2 weeks after their clinic visit. The 27 completed surveys were returned according to the study protocol.



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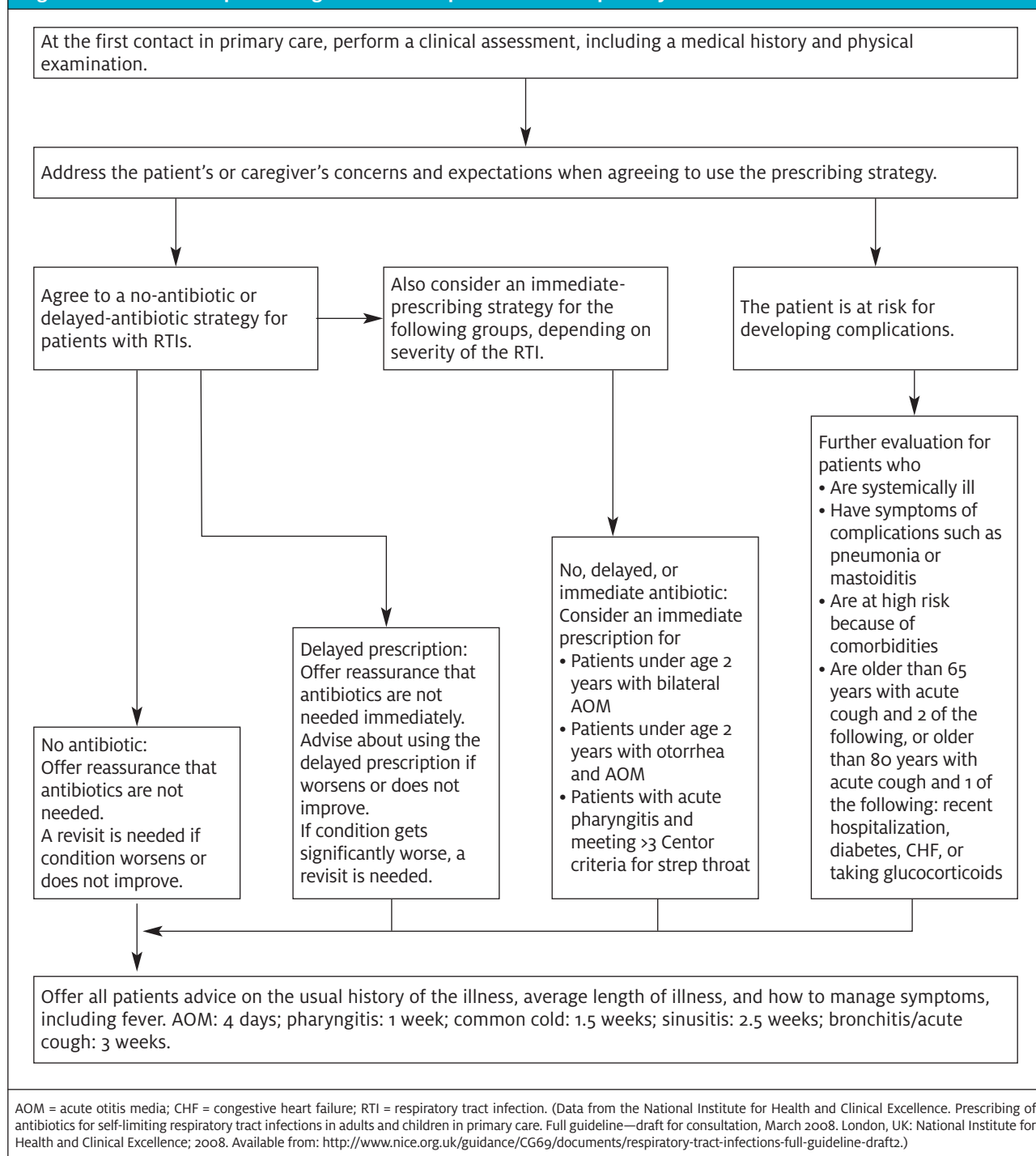


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Figure 1. Flowchart for prescribing antibiotics in patients with respiratory tract infections.



An educational intervention for health-care providers was developed that included the following information: (1) a definition of delayed prescribing, (2) infor-

mation about the risks and benefits of delayed prescribing, (3) the evidence-based clinical guidelines for delayed prescribing, (4) examples of patients eligible for

delayed prescribing, and (5) recommended advice for patients about symptom management and duration. The provider participants were encouraged to ask questions. Educational materials, including some for patients, were developed by the Centers for Disease Control and Prevention.¹²

A 7-question survey was designed for the study reported here to assess provider-delayed prescribing knowledge and attitudes and to evaluate the effectiveness of the educational intervention. Providers completed the survey twice: before the educational intervention and again afterward (**Table 3**). The provider survey was coded to ensure privacy and enable comparison of the before and after surveys.

Data Analysis

Data were analyzed with SPSS statistical software (version 17.0; SPSS Inc., Chicago, IL). Satisfaction scores were entered into a database as numbers on a Likert scale (0 = excellent; 4 = poor). Provider responses to survey questions were entered as numbers on a Likert scale (0 = unable to answer; 50 = partial knowledge; 100 = sufficient knowledge). The level of measurement was nominal. A chi-square test was used to compare responses to patient surveys, and Spearman rank correlation coefficients were determined between responses to patient survey questions. The provider survey scores before and after the educational intervention were compared with a dependent sample *t*-test. The level of significance was defined as $P < .05$.

Results

Most of the 27 patients who returned the survey rated the treatment they received and their satisfaction with delayed prescribing for future use as excellent or good, and none of the patients consulted another health-care provider because of dissatisfaction with treatment (Table 2). Approximately one-half of the patients filled the prescription, and these patients waited at least 1 day before doing so (Table 2).

There was a significant positive correlation between patient assessment of treatment quality and patient satisfaction with delayed prescription ($r [27] = 0.48$; $P = .012$). There was a significant negative correlation between time delay to filling the prescription and patient age ($r [12] = -0.805$; $P = .002$). There was no significant correlation between replies to other questions of the patient survey.

A significantly greater frequency of patients who rated the quality of received treatment as excellent (4 of 4

Table 1. Demographic Characteristics of Patients Who Received Delayed Prescribing

Characteristic	n	%
Sex		
Male	8	29.6
Female	19	70.4
Age (y) ^a		
20–30	2	7.7
31–40	6	23.1
41–50	13	50.0
51–60	5	19.2
>60	0	0.0
Had health insurance		
Yes	23	85.2
No	4	14.8

^aAge of 1 patient was unknown.

patients [100%]) or good (14 of 14 patients [100%]) stated that they preferred delayed treatment in the future, compared with patients who rated the quality of treatment received as average (2 of 9 patients [22%]; $df = 4$; $\chi^2 = 18.9$; $P < .01$). A significantly greater frequency of patients who rated the quality of received treatment as excellent (4 of 4 patients [100%]) or good (14 of 14 patients [100%]) stated that their satisfaction with delayed prescribing in the future was excellent or good, compared with patients who rated the quality of treatment received as average (6 of 9 patients [67%]; $df = 6$; $\chi^2 = 13.8$; $P < .05$). A significantly greater frequency of patients who preferred delayed prescription in the future (20 of 20 patients [100%]) stated that their satisfaction with delayed prescribing in the future was excellent or good, compared with patients who preferred immediate or no prescription (4 of 7 patients [57%]; $df = 6$; $\chi^2 = 17.7$; $P < .01$). A significantly greater frequency of patients with health insurance (20 of 23 patients [87%]) stated that they needed an antibiotic for treatment, compared with patients without health insurance (0 of 4 patients [0%]; $df = 1$; $\chi^2 = 13.4$; $P < .01$).

All of the providers participating in the survey stated that they would use delayed prescribing in their practice. A dependent sample *t*-test was conducted between the total added pretest and posttest scores. Results of the *t*-test were significant ($t_{(7)} = -2.37$; $P = .050$), indicating that the mean score at pretest was significantly lower than

Table 2. Frequencies and Percentages of Patients' Responses to Survey Items		
Survey Item	n	%
1. Did you think you needed an antibiotic for treatment?		
Yes	7	25.9
No	20	74.1
2. How would you rate the treatment you received?		
Excellent	4	14.8
Good	14	51.9
Average	9	33.3
Fair	0	0.0
Poor	0	0.0
3. Did you consult another provider due to dissatisfaction with the treatment?		
Yes	0	0.0
No	27	100.0
4. Your preference in treatment for similar symptoms in the future?		
Immediate antibiotic prescription	5	18.5
No prescription	2	7.4
Delayed prescription	20	74.1
5. What is your satisfaction level with delayed prescribing in future use?		
Excellent	10	37.0
Good	14	51.9
Average	2	7.4
Fair	1	3.7
Poor	0	0.0
6. Did you fill the prescription for the antibiotic?		
Yes	13	48.1
No	14	51.9
7. If you did fill the prescription, how long did you wait before filling it?^a		
<1 day	0	0.0
1-7 days	8	61.5
>7 days	4	30.8
Did not fill	1	7.7
^a Thirteen patients answered this question. Survey modified from Martin et al, ¹⁴ with permission.		

the mean score at posttest, demonstrating that providers gained understanding with the educational intervention.

Discussion

The results indicated that delayed prescribing provided a high level of satisfaction for both patients and providers. Furthermore, an educational intervention improved provider knowledge of delayed prescribing as a strategy to decrease unnecessary use of antibiotics for RTIs. These results support previous findings that delayed prescribing can maintain or improve patients' satisfaction, provide safe treatment for patients with worsening symptoms, and decrease unnecessary use of antibiotics.^{14,15} Also, previous studies have shown that delayed prescribing may decrease reconsultation rates for similar symptoms and increase patient participation in the plan of care.^{2,16}

Patient satisfaction is an important outcome measure in assessing, evaluating, and providing health care. In addition, patient satisfaction can be useful in assessing and improving the process of care. Patients satisfied with the care received are more compliant with the treatment plan and less likely to seek alternative care.^{17,18} Therefore, patient satisfaction may provide an incentive for providers to implement quality care in order to stay competitive in the market. Qualitative studies have demonstrated that patients are influenced by more than medical outcomes and that they want to receive instructions, care-coordinated diagnostic tests with follow-up, and compassionate treatment.¹⁹

The frequency of filling prescriptions when prescribing was delayed (48%; Table 2) was less than that expected from immediate prescribing. This is consistent with the results of 4 randomized controlled studies that showed decreased antibiotic use with delayed prescribing in RTIs.³

Interventions to decrease unnecessary use of antibiotics are most effective when the provider and patient jointly choose the treatment.¹ Patient empowerment is improved with information about treatment options, including delayed prescribing. By using the delayed-prescribing strategy, patients may increase their belief that antibiotics are not necessary in some situations. Successfully performing a task (active attainment) may improve self-efficacy to perform the task or to use the strategy again.²⁰ The study reported here demonstrated that the perceived quality of treatment increased with the use of delayed prescribing and that most of the patients would choose to use this strategy in future treatment, with similar symptoms. Using active attainment with delayed prescribing may enable the patient to

Table 3. Survey for Provider Knowledge and Attitudes About Delayed Prescribing of Antibiotics

- 1. What is delayed prescribing?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 2. What are the benefits of delayed prescribing?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 3. What are the risks of delayed prescribing?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 4. What is the average length of symptoms for respiratory tract infections?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 5. Is antibiotic resistance a problem?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 6. Does inappropriate antibiotic prescribing contribute to antibiotic resistance?**
 - a. I have sufficient knowledge to answer the question.
 - b. I have partial knowledge to answer the question.
 - c. I cannot fully answer this question with my present knowledge.
- 7. Would you use delayed prescribing in your practice?**
 - a. Yes
 - b. No

determine whether the illness will resolve without the use of antibiotics, and this may decrease the need for future consultations for similar symptoms.²¹

Limitations

Although a mailed survey may provide participant anonymity and less selection bias than a telephone survey,¹² the frequency of the patient response resulted in a small sample size that limited the statistical analysis. The study population was drawn from 1 acute-care outpatient center, which limits the general application of the results. Interestingly, the providers in the clinic stated that they had a high level of knowledge before the survey, but 2 mentioned that they did not know that guidelines for delayed prescribing existed, and 1 provider stated that her ego influenced her answers because she did not want to admit insufficient knowledge.

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“Patient empowerment is improved with information about treatment options, including delayed prescribing.”

Future Research

Future research may include improved methods to increase the number of responses for the patient survey, such as conducting a survey by telephone or offering participants an incentive. Evaluation of patients and providers in varied clinical organizations and geographic locations may clarify the effect of other clinical and socioeconomic factors, such as income, education level, and employment, on patient satisfaction. The answers to the provider survey could be worded differently to increase objectivity of the responses. Further evaluation with different populations, clinical settings, and diagnoses may contribute to the understanding of prescribing strategies and more widely decrease the unnecessary use of antibiotics.

General Implications for Practice

Changes in prescribing practices in primary care need to occur to improve patient outcomes and affect the prevalence of antibiotic resistance in the community. Educating providers about the evidence for delayed prescribing at a practice level increases knowledge and therefore increases acceptance of its safe use in practice. The use of delayed prescribing may decrease antibiotic use and maintain patient satisfaction. Evidence-based clinical practice guidelines for delayed prescribing can satisfy patient and provider factors that may influence antibiotic use, and may decrease subsequent repeat consultations for similar symptoms in the future by increasing patient and provider knowledge and self-efficacy.

Implications for Urgent Care

Urgent care practices have a unique challenge in developing trusting relationships with patients, owing to the nature of the setting. Many patients are seen only once in this setting, and others are seen infrequently. The opportunity to establish a trusting partnership is brief and often occurs only once. The study reported here has shown that patients are satisfied with the time spent to educate them about the importance of proper treatment and that overprescribing antibiotics can be harmful. The

discussion educates the patient on the benefit of delayed prescribing to them. In such discussions, it is important to inform patients that even if they do not overuse antibiotics, many in their community do, and that such a practice will still affect them. The very act of using delayed prescription is an act, by a health-care provider, of trust and confidence in the patient. The patient, in turn, will be more receptive to messages about the need to reduce antibiotic use and will be more compliant with the plan of care. ■

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ABSTRACTS IN URGENT CARE

- Adverse Events Unlikely in Patients with Negative Findings on Cardiac Evaluation
- Urinalysis Is Useful Even in Infants Younger Than 3 Months
- Outpatient Treatment of Deep Vein Thrombosis May Be Safe with Rivaroxaban
- Clinical Guidelines Should Be Streamlined
- Rethinking Oxygen in ST-Elevation Myocardial Infarction
- Antibiotic Exposure Is Correlated with Development of Juvenile Idiopathic Arthritis
- More Concussions Found in Children, and More Are Treated in Ambulatory Care
- Appendicitis: Antibiotics Versus Appendectomy

■ SEAN M. MCNEELEY, MD

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

Adverse Events Unlikely in Patients with Negative Findings on Cardiac Evaluation

Key point: Adverse events in patients admitted with negative findings on cardiac evaluation are very infrequent.

Citation: Weinstock MB, Weingart S, Orth F, et al. Risk for clinically relevant adverse cardiac events in patients with chest pain at hospital admission. *JAMA Intern Med* 2015;175:1207–1212.

In this 5-year retrospective study of patients seen in an emergency department for symptoms potentially representing ischemic chest pain, the authors reviewed outcomes for patients admitted to a hospital to assess whether they died or experienced myocardial infarction, life-threatening arrhythmia, or respiratory or cardiac arrest. Of the 45,416 potential patients considered, 11,230 met criteria for symptoms and for negative findings on emergency department evaluation, including electrocardiographic findings and serial biomarkers. Only 20 patients met criteria for a primary endpoint event. Secondary ex-

clusion of abnormal vital signs, abnormal electrocardiographic findings, left bundle branch block, and pacemaker rhythm left only 4 patients for data review. A secondary endpoint of possible myocardial infarction increased the number only to 62, and only 28 of those did not have abnormal vital signs or electrocardiographic findings in the emergency department. For the urgent care provider, the study's findings will not likely change case management, because a second set of cardiac enzymes was reviewed. However, the report does provide prospective information on the likelihood of these endpoints in patients with negative findings on initial evaluation. ■

Urinalysis Is Useful Even in Infants Younger Than 3 Months

Key point: Urinalysis seems to produce reliable findings even in young infants.

Citation: Schroeder AR, Chang PW, Shen MW, et al. Diagnostic accuracy of the urinalysis for urinary tract infection in infants <3 months of age. *Pediatrics* 2015;135:965–971.

The authors of this study note that past study findings have called into question the sensitivity of urinalysis for patients younger than 3 months of age. There has been some uncertainty about whether this lack of sensitivity is due to using urine culture as the gold standard. The concern here is the possibility



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“Little research has been done regarding the care of patients presenting to urgent care centers, so practicing in that environment requires decision-making without having absolute answers. Guidelines are complex, but so are patients. Understanding the reasons behind the guidelines often helps more than the guidelines themselves do.”

of false positive culture results. Therefore, the authors chose to look at patients with positive findings for the same bacteria on both a urine culture and a blood culture because such patients are most likely to have an infection. In evaluating 245 infants, the authors found a sensitivity of 97.6% for leukocyte esterase. The specificity of leukocyte esterase was calculated at 94% among 115 patients with negative results on urine cultures. Although infants younger than 3 months are uncommonly seen in the urgent care setting, these findings are good to keep in mind. ■

Outpatient Treatment of Deep Vein Thrombosis May Be Safe with Rivaroxaban

Key point: *Outpatient treatment of deep vein thrombosis may be safe with new oral medications.*

Citation: Beam DM, Kahler ZP, Kline JA. Immediate discharge and home treatment with rivaroxaban of low-risk venous thromboembolism diagnosed in two U.S. emergency departments: a one-year preplanned analysis. *Acad Emerg Med* 2015;22:788–795.

As medicine advances, more patients are being sent home rather than being admitted to hospitals. In this study, patients with low-risk venous thromboembolism (VTE) were treated with rivaroxaban as outpatients and then reexamined after 2 to 5 weeks and 3 to 6 months. Low risk was determined by modified Hestia criteria (adequate blood pressure, normal risk for anticoagulation, no other medical issue needing admission, no coagulopathy, not pregnant or incarcerated). A total of 71 (51%) patients with deep vein thrombosis and 35 (27%) with pulmonary embolism fit criteria for the intervention. No patients had recurrent VTE while receiving therapy. Also, the percentage in whom there was a significant bleed was zero. For the urgent care provider, these findings indicate the direction in which ther-

apy for VTE is heading. Urgent care centers with the ability to test for VTE may wish to partner with patients' primary care physicians on outpatient therapy in appropriate cases. ■

Clinical Guidelines Should Be Streamlined

Key point: *Should clinical guidelines be simpler?*

Citation: Benhorin J, Bodenheimer M, Brown M, et al; Multi-center Cardiac Research Group. Improving clinical practice guidelines for practicing cardiologists. *Am J Cardiol* 2015; 115:1773–1776.

In addition to reviewing original research, this column looks from time to time at articles about ideas that are important to medicine as a whole. Although this article focused on cardiology guidelines, the authors' suggestions for changes to how policies are produced are applicable to clinical guidelines for many diseases. In general, they suggest that guidelines are too long and complex and should be condensed. They propose removing expert opinion or consensus statements, leaving only results of quality studies to outline a treatment path and to show how harm can occur. They also question the inclusion of studies from other countries because of issues regarding uncertain quality. From an urgent care perspective, this article brings up an important concept: Although we know much, we are still learning. In addition, little research has been done regarding the care of patients presenting to urgent care centers, so practicing in that environment requires decision-making without having absolute answers. Guidelines are complex, but so are patients. Understanding the reasons behind the guidelines often helps more than the guidelines themselves do. More research in the urgent care setting would be quite useful.

Rethinking Oxygen in ST-Elevation Myocardial Infarction

Key point: *Oxygen is not beneficial in ST-elevation myocardial infarction, and it may even be harmful.*

Citation: Stub D, Smith K, Bernard S, et al; AVOID Investigators. Air versus oxygen in ST-segment-elevation myocardial infarction. *Circulation* 2015;131:2143–2150.

In this multicenter randomized controlled study, 441 patients with ST-elevation myocardial infarction (MI) and no hypoxia were provided with 8 L/min of oxygen or room air. The study's primary endpoint was size of MI, based on cardiac biomarkers. Secondary endpoints included recurrence, arrhythmia, and size of MI determined by magnetic resonance imaging at 6 months. The authors note that in previous studies, investigators questioned the benefit of supplemental oxygen and even suggested a possible harmful effect. They also note that 90% of patients with ST-elevation MI are given supplemental oxygen. They found no benefit for high-flow oxygen therapy. They also found

potential harm, as indicated by increased creatine kinase levels and infarct size after 6 months. For the urgent care provider, this study is interesting. However, because of the study's small sample size and the use of high-flow oxygen, it is still unclear whether stopping the use of oxygen, especially at lower doses such as 2 L/min, is warranted. Further studies are needed for clarification. ■

Antibiotic Exposure Is Correlated with Development of Juvenile Idiopathic Arthritis

Key point: *There is yet another reason to avoid antibiotics if possible.*

Citation: Horton DB, Scott FI, Haynes K, et al. Antibiotic exposure and juvenile idiopathic arthritis: a case-control study. *Pediatrics* 2015;136:E333–3343.

Antibiotic resistance is not the only reason to avoid antibiotics when possible. Other issues include the uncertainty of long-term effects and the potential for allergic reaction. The authors in this case-control study looked at patients with juvenile idiopathic arthritis (JIA) and exposure to antibiotics. A total of 152 patients were each matched to 10 study participants without JIA who also had antibiotic exposure information since before the age of 3 months. Antibiotic exposure did appear to correlate with the potential for developing JIA. Proximity of use and amount of antibiotic courses also seemed to increase the likelihood. Although the study's findings are nowhere near strong enough to prove causality, they do provide reason for concern about one more possible adverse outcome of antibiotic use. ■

More Concussions Found in Children, and More Are Treated in Ambulatory Care

Key point: *The number of concussions diagnosed annually is increasing, and the location of concussion care is also changing.*

Citation: Taylor AM, Nigrovic LE, Saillant ML, et al. Trends in ambulatory care for children with concussion and minor head injury from eastern Massachusetts between 2007 and 2013. *J Pediatr* 2015 June 23. doi: 10.1016/j.jpeds.2015.05.036. [Epub ahead of print.]

Because of a significant increase in attention to concussions in children, more children with concussion are presenting for treatment. In this study of insurance submissions to 4 large companies, the authors analyzed the number of claims over a 7-year period, as well as the location and use of computed tomography scanning. In that period, the number of visits for concussions increased more than fourfold. However, the number of visits *per concussion* also increased from 1 to 1.7. Although overall treatment costs increased 34%, the good news is that the cost per individual diagnosed decreased 31%. This is accounted for by the movement of health-care visits to primary care and specialty

“Considering that 3.3% of the pediatric population(those between the ages of 6 and 21 years) experienced a concussion in the 7-year study period, it would be good for urgent care providers to be familiar with concussion treatment.”

care. Considering that 3.3% of the pediatric population (those between the ages of 6 and 21 years) experienced a concussion in the 7-year study period, it would be good for urgent care providers to be familiar with concussion treatment. (See also our online-only article, “Concussion Care Adds Value to an Urgent Care Sports, Camp, and School Physical Program,” at <http://www.jucm.com/concussion-care-adds-value-to-an-urgent-care-sports-camp-and-school-physical-program/>.) ■

Appendicitis: Antibiotics Versus Appendectomy

Key point: *Are antibiotics better than appendectomy for appendicitis?*

Citation: Salminen P, Paajanen H, Rautio T, et al. Antibiotic therapy vs appendectomy for treatment of uncomplicated acute appendicitis: the APPAC randomized clinical trial. *JAMA* 2015;313:2340–2348.

In a randomized controlled 3-year study of 530 patients in Finland, the authors compared outcomes for surgery versus antibiotics to treat appendicitis that had been proven by computed tomography. Patients were randomized to undergo either treatment with intravenous ertapenem for 3 days, followed by 7 days of oral levofloxacin and metronidazole, or treatment with open appendectomy. Study endpoints included successful appendectomy or discharge from the hospital without need for surgery and no recurrence of appendicitis within 1 year. There were 273 patients in the surgical group and 257 in the antibiotic group. In 70 patients, antibiotic therapy failed within 1 year. The authors noted that antibiotics did not meet their criteria for noninferiority. No major complications were noted. From the perspective of an urgent care provider, these findings are mostly informational about potential new treatments. For physicians in general, the question of not removing an appendix when it is reasonably safe to do so does include the risk of later appendicitis recurrence. As one of our urgent care colleagues put it, “Do you want to risk having the appendicitis recur later when surgery is less safe, for example, in older age or on an international vacation?” Only time and further study will help answer that question. ■



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Case Report

Stingray Envenomation and Subsequent Skin and Soft-Tissue Infection Due to *Vibrio parahaemolyticus* and *Aeromonas hydrophila*

Urgent message: Failure to recognize and treat the early development of skin and soft-tissue infection from a stingray envenomation may result in significant tissue necrosis and systemic inflammatory response syndrome.

WILLIAM A. WOOLERY, DO, PhD, MS, MBA, FACOFP

Introduction

Stingray injuries to humans are very common but rarely fatal. Approximately 2000 cases are reported annually in the United States.¹⁻³ At my rural hospital on the west coast of Florida, we see an average of 45 such injuries each year. The majority of these occur between April and October. Most patients with stingray injuries will present to a local urgent care center for treatment. My rural emergency department (ED) functions in this capacity.

I report here the only known case of a stingray envenomation producing a skin and soft-tissue infection (SSTI) with the causative agents being *Vibrio parahaemolyticus* and *Aeromonas hydrophila*. This is a unique finding and alters the routine antibiotic treatment normally used in these patients. It is this finding that is important to

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urgent care clinicians providing treatment. The urgent care clinician must be aware that penicillin and its derivatives may not provide adequate antibiotic coverage in all stingray envenomations.

Case Presentation

A 42-year-old man was stung by a stingray on the dorsal

aspect of his right foot approximately 16 hours before presenting to my ED for evaluation and treatment. He called his primary-care physician and received a prescription for levofloxacin (500 mg). He had taken one dose before presenting to the ED. Although this individual presented to the local ED, many patients with envenomation will seek initial care at an urgent care clinic.

Observations and Findings

Upon initial evaluation the patient was febrile (temperature: 100.0°F), had a resting pulse rate of 112 beats/min, was normotensive, and had a toxic appearance. He reported intermittent nausea and mild abdominal cramping. Physical examination of the right foot revealed a 1.0-cm puncture wound over the midportion of the third metatarsophalangeal joint. There was a 3.0-cm-circumference area of erythema around the puncture wound site. There was nonpitting edema of the dorsal aspect of the right foot, and the wound had a small amount of serosanguineous drainage. Pain was out of proportion to physical findings. Local wound exploration, which is a routine part of the physical examination, and minimal debridement were performed. The patient had no identifiable risk factors for the development of systemic inflammatory response syndrome.

Diagnostic Studies

Initial laboratory values demonstrated a leukocytosis with a white blood cell count of 18,000/ μ L, with a neutrophilic shift (86%). There was no radiographic evidence of a retained foreign body or free air in the soft tissue.

Initial Treatment

The patient was given doxycycline (100 mg intravenously [IV]), cefazolin (1 g IV), and ciprofloxacin (400 mg IV) in the ED. Tetanus, toxoid-reduced diphtheria toxoid, and acellular pertussis vaccine were administered to ensure tetanus immunity.

The patient was admitted to the hospital. Shortly after admission, his temperature began rising to >101.6°F. Blood cultures showed no growth, but wound cultures demonstrated growth of *V. parahaemolyticus* and *A. hydrophila*. The patient continued to receive doxycycline, cefazolin, and ciprofloxacin IV. Metronidazole (500 mg IV every 8 hours) was added to the antibiotic regimen. Symptomatically the patient's febrile episodes resolved within 24 hours. Pain and erythema of the right foot lessened, and serosanguineous drainage from the wound decreased significantly.

Disposition and Discharge Instructions

After 72 hours, the patient was discharged to home after being prescribed cephalexin (500 mg by mouth four times a day), doxycycline (100 mg by mouth twice a day), and levofloxacin (500 mg by mouth daily) for an additional 10 days.

Follow-Up

A follow-up examination at 30 days showed a healed puncture wound on the dorsal aspect of the right foot with no significant sequelae.

Discussion

This case report is unique in several aspects. It is the first reported stingray envenomation with resulting SSTI from the microorganisms *V. parahaemolyticus* and *A. hydrophila*. Also, the patient had systemic toxigenic symptoms without the development of fulminating necrotizing fasciitis or without any underlying risk factors.

Venom Delivery and Structure

Injuries are inflicted by the stingray's spine. This apparatus has a unique histologic and anatomic architecture and venom delivery system. The venom apparatus consists of bilateral retroserrate spines with an integumentary sheath. The vasodentin spine has two ventrolateral grooves that contain the venom glands. The integumentary sheath tears open when traumatically introduced into an unsuspecting victim, unroofing glandular tissue to diffuse venom release. Often barbs, integumentary sheath, and venom-secreting glandular cells are left behind in the wound.² This constellation of animal products increases the risk of SSTI infections secondary to prolonged envenomation and foreign-body reaction.

Stingray venom is composed of enzymatically active proteins that are heat-labile and can be cardiotoxic. The venom contains the neurotransmitter serotonin and two enzymes, 5-nucleotidase and phosphodiesterase. Serotonin is responsible for the intense local pain reaction, and the other enzymes can cause significant tissue necrosis.

Effects of Envenomation

V. parahaemolyticus causes three major syndromes of clinical illness: gastroenteritis (most common), wound infections, and septicemia.^{4,5} Since 1970 there have been only 2 reported deaths from SSTIs due to *V. parahaemolyticus*. Only 10 cases of necrotizing fasciitis have been reported.⁵⁻⁸ Wound infections from *V. parahaemolyticus* are generally minor infections and comprise approximately one-third of all *V. parahaemolyticus*

infections. However, these infections can be life-threatening because of the rapid invasion and destruction of the tissue planes, accompanied by the release of several cytotoxins. Eighty-eight percent of these individuals have underlying risk factors, including cirrhosis, diabetes, hepatitis C, and chronic renal failure. Diabetes and liver disease present the greatest risk.⁵

A. hydrophila infections typically occur on the extremities after a traumatic aquatic injury. They occur more frequently in brackish waters during the summer months.^{7,8} This microorganism produces a cytotoxic enterotoxin and multiple exotoxins that can cause reactions ranging from mild skin infections to necrotizing fasciitis. The quintessential invasive disease is septicemia, with a mortality rate of 33%. Common risk factors include an immunocompromised state, chronic liver disease, diabetes, and chronic renal failure. *Aeromonas* is uniformly resistant to treatment with penicillin and ampicillin.⁵

Toxic systemic effects of envenomation can produce nausea, vomiting, diarrhea, abdominal cramps, seizure, respiratory difficulties, hypotension, and cardiac dysrhythmias. After envenomation, intense localized pain peaks at 30 to 90 minutes and may last up to 48 hours if left untreated.^{1,9} Immediate treatment consists of immersing the injured appendage in water, heated to >115°F, for 30 to 90 minutes. Repeated heat-immersion therapy may be required for up to 4 hours after injury. Generally the wound must be explored for any retained spine products. The patient's tetanus status must be up to date.

Conclusion

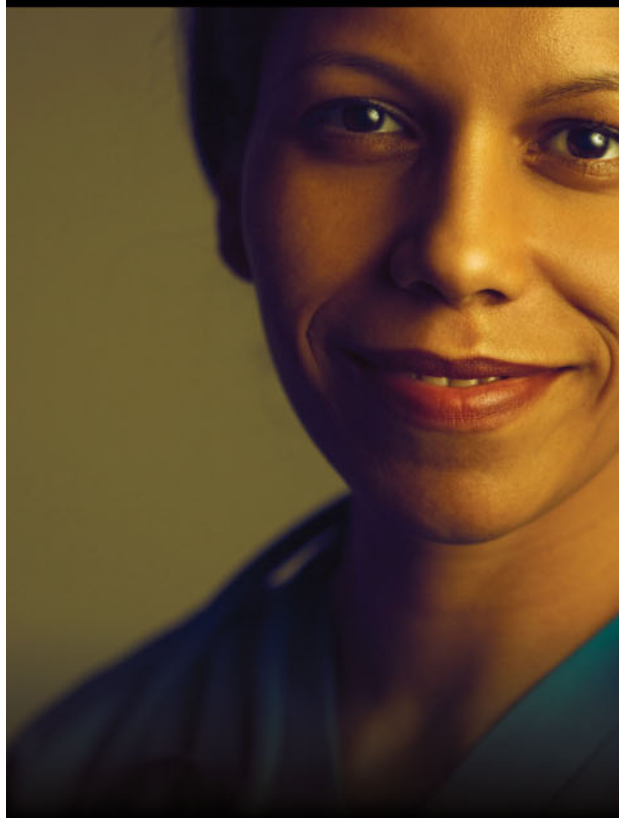
Because of the potential of penicillin-resistant bacteria causing SSTIs from stingray envenomations, the urgent care clinician should prescribe treatment with oral doxycycline and levofloxacin for at least 10 days. Close follow-up within 72 hours of treatment is required. ■

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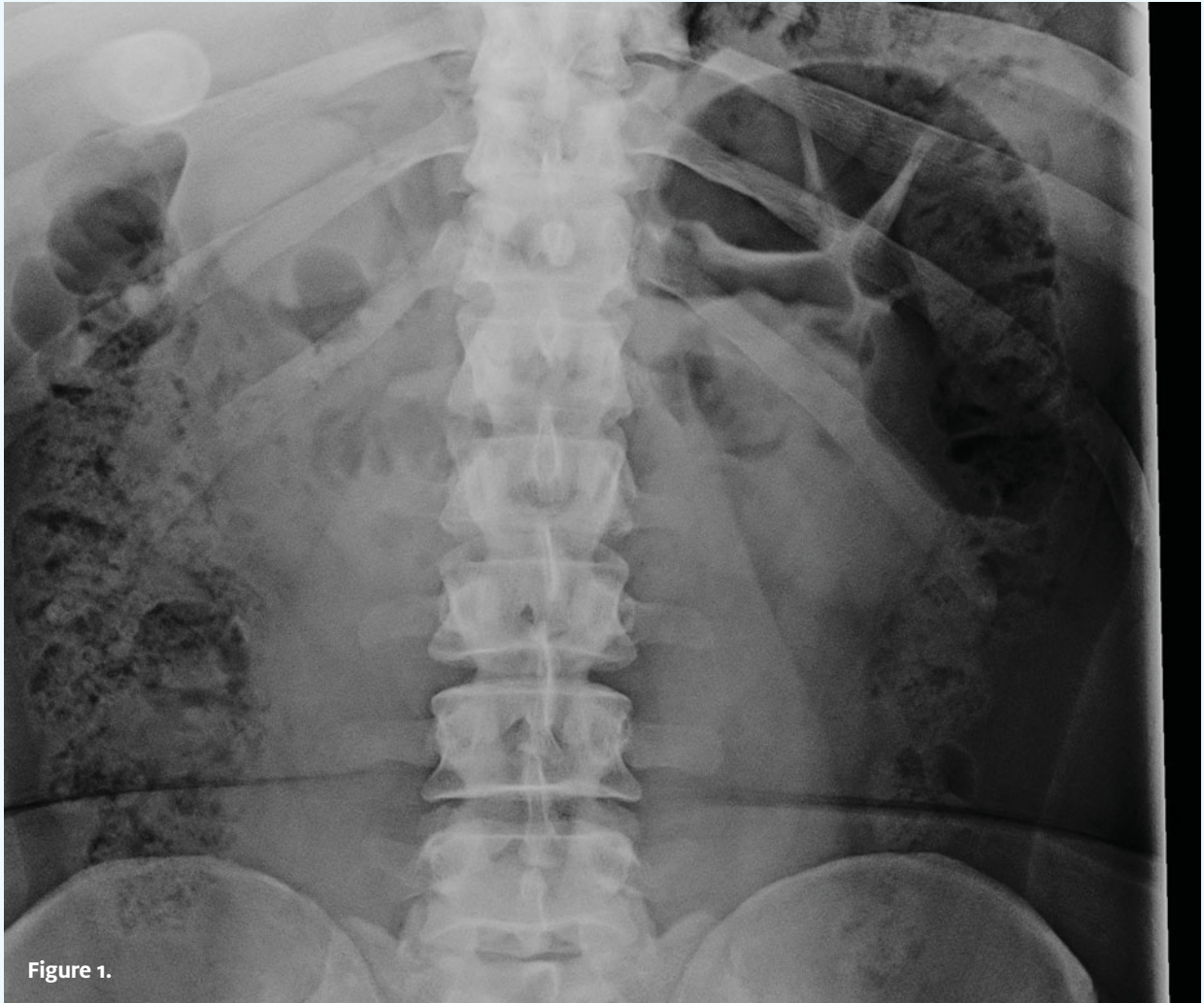
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CLINICAL CHALLENGE: CASE 1

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

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



Man with Left-Flank Pain

Case

A 41-year-old man presents with left-flank pain. His past medical history is unremarkable. An incidental finding is evident on images of the kidney, ureter, and bladder.

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

Resolution of the case is described on the next page.

THE RESOLUTION

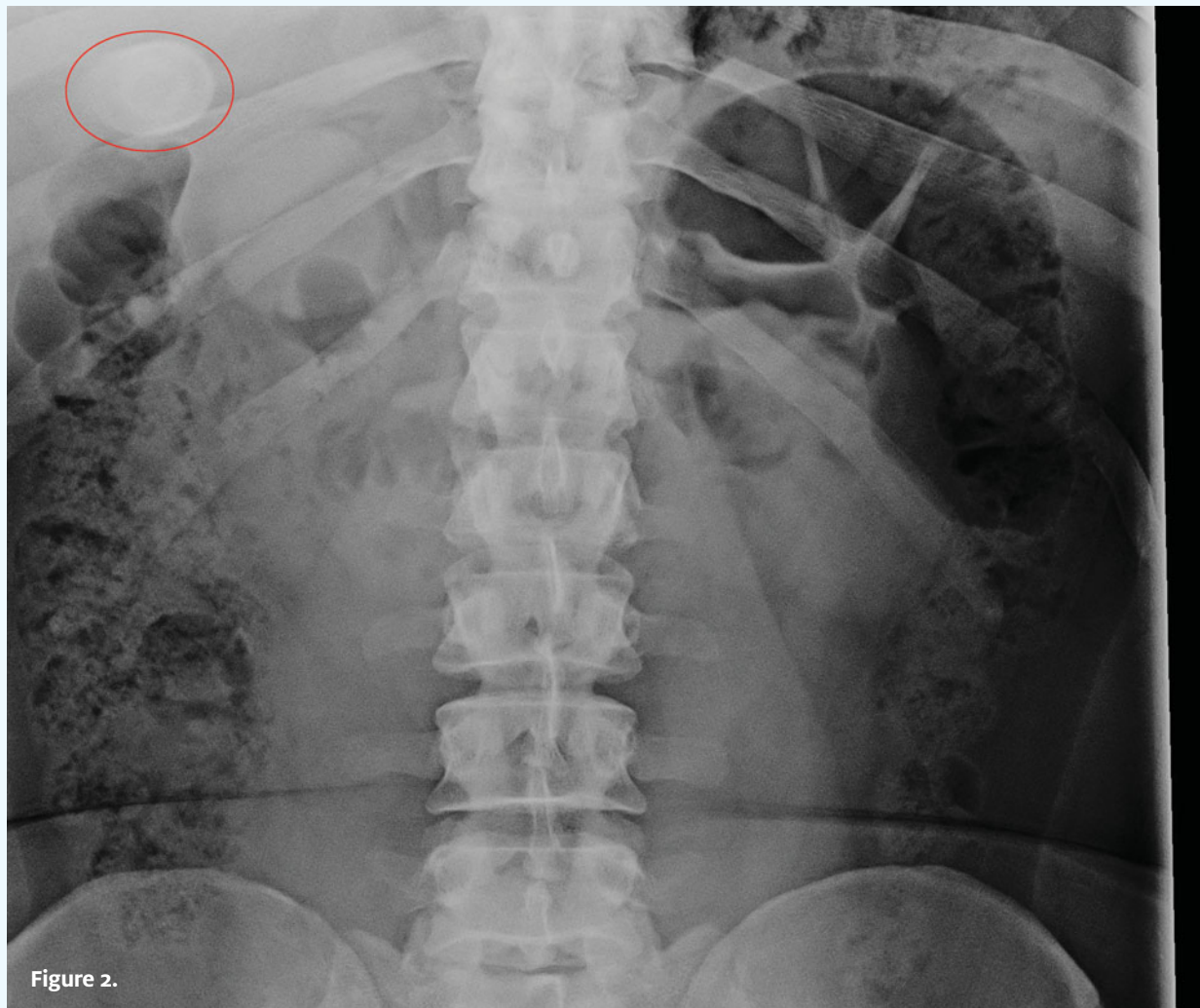


Figure 2.

Diagnosis

The patient has asymptomatic cholelithiasis. Note the 3.6-cm lamellated gallstone in the right upper quadrant (*circle, Figure 2*). A subsequent computed tomography scan confirmed the presence of a 3.3-cm gallstone and revealed bilateral uncomplicated fat-containing inguinal hernias.

Learnings

Gallstones are rarely appreciated on plain film because most do not contain enough calcium for visualization. Prophylactic cholecystectomy is not usually indicated for asymptomatic gallstones, with the following exceptions:

- Gallstones >2 cm in diameter
- Patients at risk for gallbladder carcinoma

- Patients with spinal cord injuries or sensory neuropathies affecting the abdomen
- Patients with comorbidities (sickle cell anemia, cirrhosis, portal hypertension) or who have undergone transplantation
- Children, pregnant women, and patients with diabetes, all of whom require close follow-up

Future complications of gallstones >2 cm in diameter include possible biliary-enteric fistulas, as in gallstone ileus with co-existing Mirizzi syndrome.

Acknowledgment: Case presented by Linda-Michelle Ledesma, DO, Urgent Care Extra, Phoenix, Arizona.



Figure 1.



Patient with Severe Thumb Pain

Case

A patient presents after a fall during a soccer game, reporting severe pain in one thumb and difficulty grasping anything between the thumb and forefinger.

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

Resolution of the case is described on the next page.

THE RESOLUTION

Figure 2.

**Diagnosis**

Bennett fracture (*circles, Figure 2*). Such a fracture occurs in axial loading of a flexed thumb, often from a fall or blow from an object.

Learnings

Closed reduction and thumb spica cast immobilization are effective in the treatment of Bennett fractures if the reduction can be maintained. The closed reduction technique consists of

thumb traction combined with metacarpal extension, pronation, and abduction. Direct downward pressure is applied to the dorsal radial metacarpal base. The strong pull of the abductor pollicis longus muscle frequently leads to displacement, necessitating open reduction and internal fixation or closed reduction with percutaneous pinning. Articular incongruity of >1 mm or persistent subluxation of the carpometacarpal joint after closed reduction indicates the need for surgical treatment.



Protecting Patients and Assets: Pre-employment Background Checks and Drug Screening

■ ALAN A. AYERS, MBA, MAcc

Editor's note: In the coming months, JUCM will be reviving the Health Law column with a fresh look at the legal and compliance issues affecting the urgent care space. In support of covering a broad scope with a diverse voice, we have recruited a panel of experts to serve as guest columnists. It is with great pleasure that we lead off the inaugural column of Health Law and Compliance with insight on new-hire background checks from our very own Practice Management Editor, Alan Ayers.

A number of patients who had been dispensed the narcotic hydrocodone called the urgent care center to complain that their medications “weren’t potent enough,” that they “didn’t work,” or that the pills in the bottle “didn’t match the description on the label.” Although these reports were initially dismissed by the medical director as drug-seeking behavior, the volume and corroboration of complaints soon led to an internal investigation. It turned out that a staff member with access to the center’s drug vault had used a surgical scalpel to carefully remove the bottle’s tamper-prevention film, exchange its contents for generic acetaminophen, and then carefully retape the package to avoid detection.

A dozen dissatisfied patients, incalculable risk to patient safety, and about \$7,500 in detective and legal fees later, the culprit was identified as a radiology technician who had recently been fired by the local hospital for forging narcotics prescriptions—an offense for which criminal charges were pending. She was hired by the urgent care center on the basis of her cre-

dentials, but no thorough background check on her was conducted. Once caught, she submitted her written resignation. The center did not press charges because of lack of proof (other than circumstantial evidence and a confession), so she likely went on to work for yet another practice, where she might have continued her criminal behavior.

Do you think that this could not happen at your urgent care center? The good news is that 76% of employers say that they conduct some form of background check on all new employees and that only 2% say that they do not conduct any background checks at all.¹ But because many urgent care centers are small businesses, background checks require time and money, and operators are hesitant to show distrust of team members, often background checks occur only at hiring and are insufficiently detailed to uncover the true risks of bringing on a candidate. The result can be theft and fraud—costing U.S. businesses more than \$50 billion annually—increased liability, and decreased productivity.² **Sidebar 1** gives the reasons background checks are essential for an urgent care center.

How, What, When and Who: Methods for Conducting Background Checks

Once center managers decide to conduct background checks, a process should be established and performed the same way for every single applicant to which a conditional employment offer is made. **Sidebar 2** describes the common screening criteria used by urgent care operators. Consistency is important to avoid the appearance of singling out applicants for harassment or discrimination. Background checks may be performed by the urgent care operator, by specialized firms, or by using Internet resources. The most appropriate method will depend on the number of employees at the center, their frequency of turnover, and the level at which hiring is being done:



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Sidebar 1. Five Reasons Background Checks Are Essential for an Urgent Care Center

Negligent hiring: If an employee commits a crime on the job or injures a patient because of negligence on the job, the employer can be found directly responsible if it failed to complete a thorough background investigation. It is therefore no longer sufficient to base a hiring decision on what you *know* about a person. It is what you *should have known* that is critical. An employment application is a legal document, and once the applicant has filled out an application, employers have a responsibility to verify the information provided. Not doing a thorough background check is just as dangerous as not having insurance. With negligent hiring claims estimated at \$150,000 per incident, the cost and time involved in a background check are minuscule in comparison.

False skill or training claims: Although only 8% of job applicants will admit to lying, 50% of hiring managers say that they have caught an applicant lying on a job application³—and those are just the ones who got caught. Fortunately for employers, verifying information on applications is reasonably straightforward and can easily be conducted in-house. Although this can be a time-consuming process for busy managers, the cost of not checking out an applicant's claims is estimated at \$32,000 per incident, resulting from high turnover, loss of business, loss of productivity, and high liability exposure.

Workplace violence: On-the-job violence has become a high-profile problem. On average, 564 work-related homicides occur each year in the United States.⁴ In 2008 alone, 421 workplace shootings took place, and homicide is now the second greatest cause of death in the workplace. Many of these incidents might have been avoided by implementing more stringent background-checking processes. In addition to the tragic human cost of these events, the associated business disruption—workplace trauma, dismissal from employment, rehiring, training, and litigation, for example—means that the cost of these incidents is extreme, at approximately \$1 million per incident.

Employee theft and fraud: The U.S. Chamber of Commerce reports that approximately 30% of all business failures are a direct result of employee theft and fraud,² and it is estimated that repeat offenders commit 70% of these crimes. It only takes a little homework to make sure an offender does not get a chance to repeat fraudulent behavior at your center. The average estimated cost of each theft or fraud incident is \$650—far more than a simple check of criminal, civil, motor vehicle department, and workers' compensation records will cost you.

Lawsuits and false claims: Urgent care operators must be on the lookout for individuals trying to take advantage of the business through nuisance lawsuits or even fraudulent insurance or workers' compensation claims. The financial cost is estimated at \$7,500 per incident—a cost that recurs long after the employee departs, through increased insurance premiums, protracted legal action, and the cost of legal counsel. A few simple, precautionary background checks can protect centers.

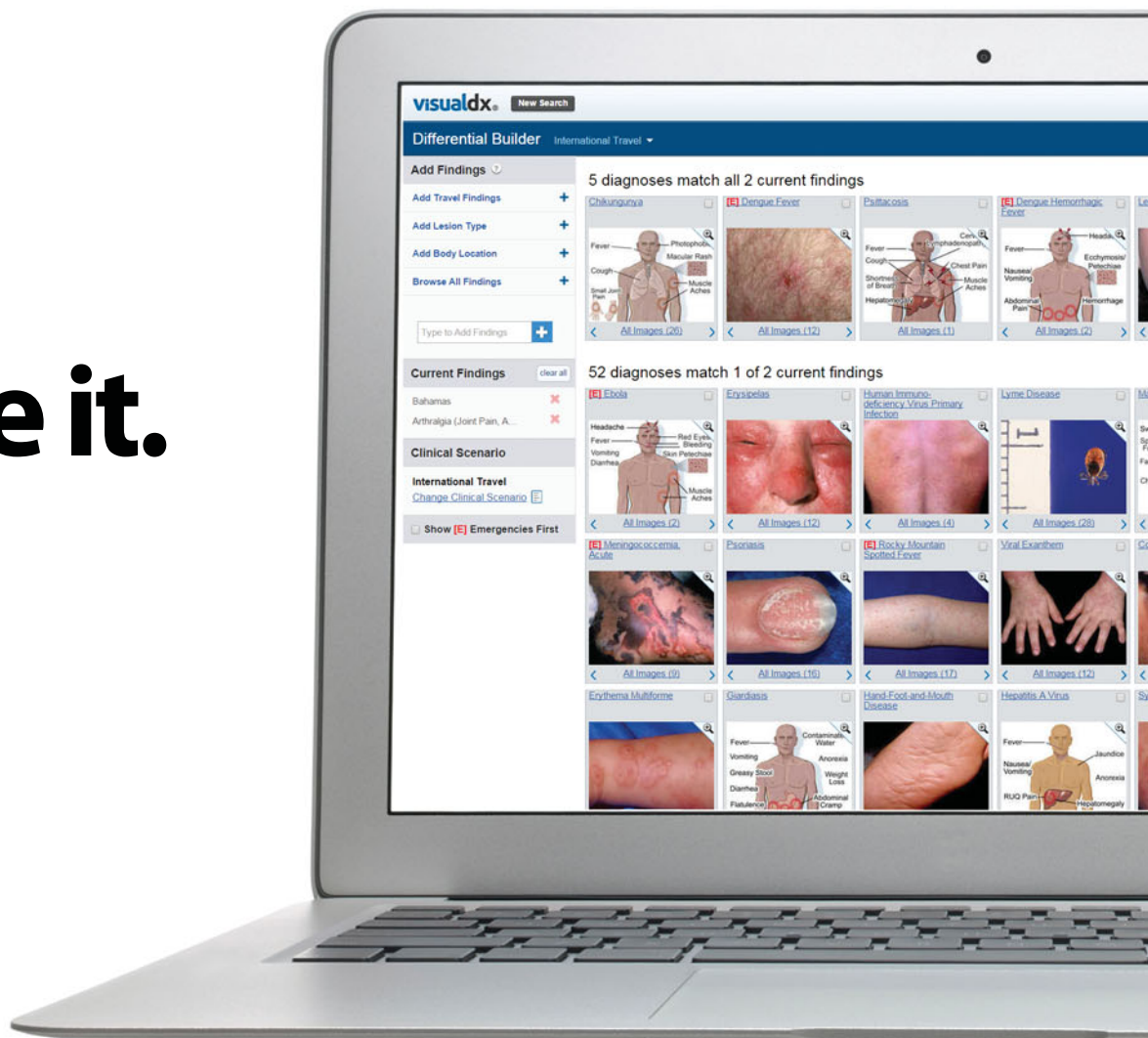
- **In-house:** Large, multiunit operations that frequently hire new employees may find it worthwhile to train a member of the human resources staff to conduct the majority of—if not all—background checks. Eligible employers can register with the U.S. Department of Justice to conduct criminal records checks through the live scan system. Large employers can also install a live scan electronic fingerprinting machine in-house, and train an employee to process fingerprints through the system.
- **Outsourced:** A host of background-checking services and private investigation agencies provide background checks for centers that do not have the capacity—or desire—to perform the task in-house. All or just parts of the process can be outsourced—such as utilizing the local sheriff's office for fingerprinting. It is up to the operator whether the urgent care center will pay for the applicant's background check or if it will instead require the applicant to bear the cost.
- **Internet:** A number of government agencies—such as the Internal Revenue Service and the U.S. Department of Health and Human Services—now allow employers to check records by entering an applicant's name into an

Internet database. This makes checking an applicant's information much simpler and easier than in years past. Other public information—such as court records—may also be freely available on the Internet in some areas.

Although an employer can conduct a reference check of former employers before extending a conditional offer of employment, full background checks are typically conducted *prior to hire, but after a conditional offer of employment has been made*. This is not just because it is cheaper to test only successful applicants. In many cases, U.S. laws—such as the Americans with Disabilities Act (ADA) and the Fair Credit Reporting Act—actively prohibit employers from seeking information like medical details or credit reports until after a conditional offer has been made to the applicant. Some states, such as Hawaii, go a step further and prohibit any criminal record checks until after the conditional offer has been made.⁶ These laws were introduced for two primary reasons:

- **Prevention of discrimination:** Requiring applicants to undergo background screening before the offer stage enables employers to discriminate between applicants and base their hiring decisions on screen results, rather than on which applicant is the most skilled or suitable for the

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Sidebar 2. Common Background Screening Criteria

Criminal record: When you are checking a candidate's criminal record, arrests do not count and cannot be considered. Ask the applicant to disclose and explain any convictions, and then review the report to determine whether the conviction will be disqualifying. Although employers should have a clearly defined policy about what is—and is not—acceptable, to minimize liability you should consider each applicant on a case-by-case basis. A conviction for disturbing the peace when the applicant was in college is a very different prospect from a recent conviction for embezzlement from an employer.

Previous employment: Check dates of employment, duties and responsibilities, and job performance—if you can convince the employer to provide you the necessary information. Most employers want as much information as possible when they are conducting reference checks, but when giving them out they tend to stick to the basics. Ask the applicant to sign a waiver authorizing the former employer to disclose all pertinent records, and provide this up front to encourage greater disclosure on the part of the former employer.

Education: There is no excuse for not checking education records. A simple call to an institution's registrar can usually confirm the applicant's attendance, or you can ask for certified transcripts. Do not just take the applicant's degree certificate as proof; more than one candidate has doctored a certification on a home computer.

Driving record: Be certain there is a nexus to the job if you consider the applicant's driving record. A minor traffic infraction may be relatively meaningless if the applicant will not ever be driving on company business, but it may be a much more significant concern for an employee who is hired as a driver.

Credit report: The U.S. Fair Credit Reporting Act regulates employers' use of credit reports for employment screening purposes. You must provide notice to employee candidates and get their written permission before accessing their credit reports. If you take an adverse action on the basis of a report—if you decide not to hire an applicant, for example—you must provide notice in advance, which will allow the applicant a chance to respond or correct any inaccurate information.

Social Security number: The Internal Revenue Service (IRS) requires employers to obtain the employee's Social Security number for completing IRS form W-2.⁵ You can verify an applicant's Social Security number online or by phone, using free services provided by the IRS. If the applicant's Social Security card states "not valid for employment," you must *not* employ that individual without further verification and a new card that authorizes the person to work in the United States.

Professional references: Professional references are useful, but consider the source. Ask the reference to explain exactly what his or her relationship to the applicant is. You might take a reference less seriously if you find out that he is the applicant's father.

Social media: Employers today have a much greater ability to check up on applicants using social media. These are relatively untested waters, so be wary of privacy considerations and the potential for discrimination allegations. The best use of the Internet may be to confirm what applicants have already told you on their résumés—for example, confirming employment or academic records—rather than making a decision on the basis of their personal Facebook photos.

Specific tools for medical practices: The Office of the Inspector General for the U.S. Department of Health and Human Services maintains specific services that employers can use to verify the suitability of applicants, such as the online searchable database for excluded individuals and entities: <http://exclusions.oig.hhs.gov/>. This free online search allows employers to type in a prospective employee's name to determine if that individual is excluded from any federally funded medical programs. Reasons for exclusion include patient abuse, Medicare fraud, and certain felony convictions. State licensing boards also provide websites for checking the credentials of anyone—a physician, nurse, or technician—who is licensed by the state.

job. By contrast, requiring an employer to decide which candidate is the best fit *before* discovering any information that could be prejudicial helps to ensure that jobs are awarded for nondiscriminatory reasons.⁷

- **Increased transparency:** When an offer has already been made to an applicant and the only thing standing in the way is a clean background check, it is clear to all parties why a candidate has been rejected.⁸ Employers are forced to justify hiring decisions on the basis of job-related reasons, whereas applicants are provided the opportunity to explain how they could still perform job duties with certain accommodations.

Controlled-Substances Distribution

If your urgent care center is engaged in the distribution of controlled substances, the U.S. Drug Enforcement Agency (DEA) suggests checking the following criminal records, at a minimum⁸:

- **Local inquiries:** Inquiries should be made by name, date, place of birth, and other identifying information to local courts and law-enforcement agencies for records of pending charges and convictions. Depending on the agency, such inquiries may have to be made in person rather than by mail, and a copy of an authorization from the employee may also be required.

- **DEA inquiries:** Inquiries supplying identifying information should also be furnished to the DEA field division offices, along with written consent from the concerned individual, for a check of DEA files for records of convictions.

What Background Checks Reveal

Although applicants fail background checks for many reasons, most failures can be summarized into three common themes. Knowing these red flags can help you avoid hiring problematic new employees:

- **Inaccurate or incomplete work history:** Whether it is extending the end date of a job to cover a suspicious gap in employment or omitting a job altogether to hide the fact that the applicant was fired, an applicant can very easily manipulate a résumé to conceal a less-than-stellar work history. The good news is that an employer can find this out simply by calling and verifying the work history with previous employers. Use your judgment to decide whether the inaccuracy was a deliberate omission as opposed to an innocent mistake. For example, an applicant who reports leaving a job on January 12 instead of the January 21 date reported by the employer probably made a simple error. But the applicant who reports leaving in September when the actual end date was in March may be hiding something.
- **Embellishment and misrepresentation:** Over 40% of résumés contain some form of embellishment or misrepresentation. The most common lie is embellishment of job duties and responsibilities, but other more blatant falsehoods—such as degrees from an institution the applicant has never attended—can also be found.⁹ Verification of an applicant's credentials and school attendance and a reference check of former employers should rule out date-fudging, embellishment, and misrepresentation.
- **Omissions and misstatements of fact:** A critical piece of the background check should include an opportunity for the applicant to disclose and explain—prior to the check itself—any problematic issues, such as a criminal record. An applicant's failure to disclose a conviction is evidence of dishonesty, which may be an additional consideration when evaluating a misdemeanor or infraction that might not otherwise be disqualifying. An employer's policy should clearly state that lying or omission on the application form—whether about job history, qualifications, or criminal records—is grounds for termination of employment. If an issue is discovered at a later date, the employer can dismiss the applicant because of dishonesty alone, and the applicant's knowledge of this policy will encourage greater disclosure during the pre-employment stage.

Drug Screening and the Americans with Disabilities Act

Many employers combine a basic medical examination—to determine the applicant's ability to perform the essential functions of the job safely and effectively—with a urine drug screening of prospective employees. But if you were thinking of requiring every job applicant to undergo such examination, think again. The ADA prohibits any type of pre-employment medical examination before a conditional offer of employment has been extended.¹⁰

It is important to note that the ADA does *not* consider testing to establish current illegal drug use a medical examination, meaning that a simple drug screening alone is not covered by the ADA. However, if your screen includes blood alcohol testing—which is protected—it must wait until after a conditional offer of employment has been made.

Make sure that if you conduct pre-employment testing, each prospective employee undergoes the same examination. Otherwise, you could be accused of discrimination. It is essential that you remain consistent. In addition, be aware that drug screening may reveal evidence of prescription drugs to treat specific conditions. This information is considered personal health information and must be safeguarded as such. In fact, these types of records must be kept in a file separate from the employee's personnel file. If a person has been extended a conditional offer of employment, an employer may not refuse to hire them on the basis of the results of a medical examination, unless the reason is *job-related* and justified by *business necessity*.

Medical and Recreational Marijuana: Emerging Case Law

More than 20 U.S. states, including California, Arizona, Nevada, and Delaware, have now passed laws allowing marijuana to be used for medical reasons, and even more states are considering doing so. However, medical use does not affect the federal status of the drug as an illegal substance. Although this is an emerging area of case law, and one that has not yet been fully tested, the legislation itself states that employers are not required to accommodate the use of marijuana in the workplace, nor must they tolerate employees being under the influence of the drug. For example, the Nevada state legislation specifically says that “the provisions of this chapter do not . . . require any employer to accommodate the medical use of marijuana in the workplace.”¹¹ These new laws can be very confusing.

Complicating the issue is the long life of the drug in a person's body. Tetrahydrocannabinol, which is the active ingredient in marijuana, can stay in a person's system for 30 days or more.¹² How long employees test positive has to do with how much and how often they use the drug. Companies may wonder if testing positive for marijuana—even though the employee used it for medicinal reasons and not on the job—is still grounds for dismissal. The current state of case law and precedent seems to support the interpretation that it is. Employers

subject to federal contracts are still required to maintain a drug-free workplace, which entails prohibiting the use of marijuana. The U.S. Department of Transportation has addressed the issue directly as it relates to the Omnibus Act, and explicitly states that “safety sensitive” employees—such as pilots and school bus drivers—are prohibited from using medical marijuana.¹³

Given the requirement for all employees to maintain a safe workplace under the regulations of the Office of Safety and Health Administration, and given the unique safety concerns in a medical environment, employers in the health sector are likely to be able to continue their normal practice of zero tolerance.¹⁴ However, because case law in this area is still developing and specific regulations vary from state to state, employers are encouraged to seek guidance from an experienced attorney if such a situation arises. The legal issue has to do with whether an employee was intoxicated on the job. With the way in which the testing is done, this can be difficult to find out.

In both Washington and Colorado, states that have recently legalized marijuana for recreational purposes, employers have the option to not hire a person who tests positive for marijuana.¹⁵ In the states of Delaware and Arizona, state laws actually ban employers from firing workers for off-duty use of the drug. These are laws that employers will need to stay on top of because they continually evolve.

Ongoing Checks

Background checks are not necessarily limited to the pre-employment process. Although a reference check with former employers is a one-time occurrence, criminal activity and substance-abuse issues can occur at any time during employment, so you may want to conduct ongoing checks and screening. Some employers choose to conduct a second check within the 90-day probationary period, to pick up any recent criminal activity—such as a legal action that may be pending from the most recent employment. Others inform their employees that continued checking may occur at any time. Eligible employers who use the Department of Justice’s live scan service may be entitled to receive ongoing updates of any criminal activity on the part of an employee in a critical position.¹⁶

It is paramount to have clear and comprehensive policies. Your employees should understand that they could be subject to random drug testing at any time, in addition to drug testing on suspicion of impairment. To protect management from liability, your drug and alcohol policy should clearly state the indicators of impairment—such as slurred speech and erratic behavior—and describe the evaluation process. For example, your policy might state that both a manager and supervisor must evaluate the employee and concur that the behavior warrants a drug test. The same principles apply to continued access to credit reports under the Fair Credit Reporting Act. As an em-

ployer, you are permitted to obtain this information—as long as a clear nexus to the job exists—but you must obtain the employee’s written permission and must say “clearly and conspicuously” whether you want the authorization to continue throughout employment.⁵

Although conducting an extensive background check and a drug-screening test may be time-consuming initially, your urgent care center will save time and money over the long term. If nothing else, your reputation for rigorous verification of claims and a stringent screening process will discourage unsuitable candidates from applying. ■

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CODING Q & A

Electrocardiogram Data Points and Evaluation and Management Visit Level; Gait Training

■ DAVID STERN, MD, CPC

Q. When counting data points for the complexity of medical decision-making (CMDM) portion of the evaluation and management (E/M) visit level, what is the correct way to assign data points for an electrocardiogram? For example, the *Current Procedural Terminology* (CPT) code is 71020 for a chest radiograph with interpretation and report. The description itself has the interpretation and analysis included in the code already. Is it considered double-dipping if we count the interpretation as 1 point in the data review section of the CMDM and also bill the CPT code separately?

A. The E/M and the CPT sometimes appear to have overlapping elements and appear to result in double-dipping, meaning billing twice for the same service.

You are correct that (1) the global CPT code for a chest radiograph includes a reading of the film and that (2) the complexity of medical decision-making *appears* to give credit for reading the film. Although the Centers for Medicare & Medicaid Services (CMS) has not issued a specific guideline on this, it has been understood that CMDM credit is not for the reading itself but for the integration of the provider's own reading into the E/M. Although these items appear to be the same work, they each are really different kinds of work. The CMDM work is generally a smaller amount of work and will rarely change the actual resulting E/M code. It is for the work of integration of reading the film into the actual evaluation and management of the problem.

■ Example 1—chest x-ray:

- **CPT professional component:** This gives credit for the work of reading the film. The radiologic reading is "infiltrate in the right middle lobe."
- **CMDM:** On the basis of the medical history and physical examination findings, the provider integrates the

x-ray finding and determines that the infiltrate is caused by pneumonia and orders antibiotics, or determines that the infiltrate is due to sarcoidosis and refers the patient to a pulmonologist, or determines that the infiltrate is actually unchanged from previous film a month ago and orders a computed tomography scan to rule out cancer.

■ Example 2—calcaneus x-ray:

- **CPT professional component:** This gives credit for the work of reading the film. The radiologic reading is "negative fracture calcaneus."
- **CMDM:** On the basis of the medical history and physical examination findings, the provider integrates the x-ray finding and determines that there is no fracture and that no further treatment is needed, or determines that magnetic resonance imaging (MRI) is needed to rule out a fracture, or determines that splinting and advising the patient to avoid weight-bearing is appropriate until a repeat examination and x-ray in 10 days.

These examples illustrate that the work of reading the film and the work for integrating that reading into the CMDM for the E/M code are similar but discrete. Thus, it is appropriate to assign a point to the data review section of CMDM for "reading an image, tracing, or specimen" to the coding algorithm for the E/M code; on the same visit, it is also appropriate to use the global CPT code, which includes the professional component for the actual work of reading the study. ■

Q. Can we bill for gait training when showing a patient how to use crutches after being treated for a fracture?

A. Yes, gait training is a billable procedure as long as there is direct, one-on-one patient contact with a physician or other qualified health-care professional for at least 8 minutes. According to the CMS *Medicare Benefit Policy Manual* (publication 100-02, Chapter 15, Section 20),¹ a qualified health-



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¹<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/bp102c15.pdf>.

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CODING Q & A

"CMS considers time spent under 8 minutes as unreportable. Details are outlined in Chapter 5, section 20.2 of the Medicare Claims Processing Manual (publication 100-04)."

care professional is defined as

... a physical therapist, occupational therapist, speech-language pathologist, physician, nurse practitioner, clinical nurse specialist, or physician's assistant, who is licensed or certified by the state to furnish therapy services, and who also may appropriately furnish therapy services under Medicare policies. Qualified professional may also include a physical therapist assistant (PTA) or an occupational therapy assistant (OTA) when furnishing services under the supervision of a qualified therapist, who is working within the state scope of practice in the state in which the services are furnished. Assistants are limited in the services they may furnish (see section 230.1 and 230.2) and may not supervise other therapy caregivers.

You would bill CPT code 97116, "therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion and flexibility, gait training (includes stair climbing)." You will need to document the findings as well as the time spent, because this is a timed procedure.

Medical necessity is an essential element of therapy services. Medicare carriers may establish unique local carrier determination (LCD) policies for medical necessity that affect reimbursement. Refer to your carrier's website for LCD policy information.

CMS considers time spent under 8 minutes as unreportable. Details are outlined in Chapter 5, section 20.2 of the *Medicare Claims Processing Manual* (publication 100-04).² Contact individual payors for specific requirements for billing therapeutic procedures during contracting. ■

²<http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/clm104co5.pdf>.

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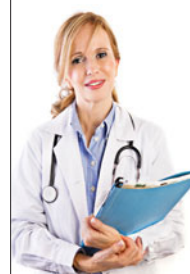
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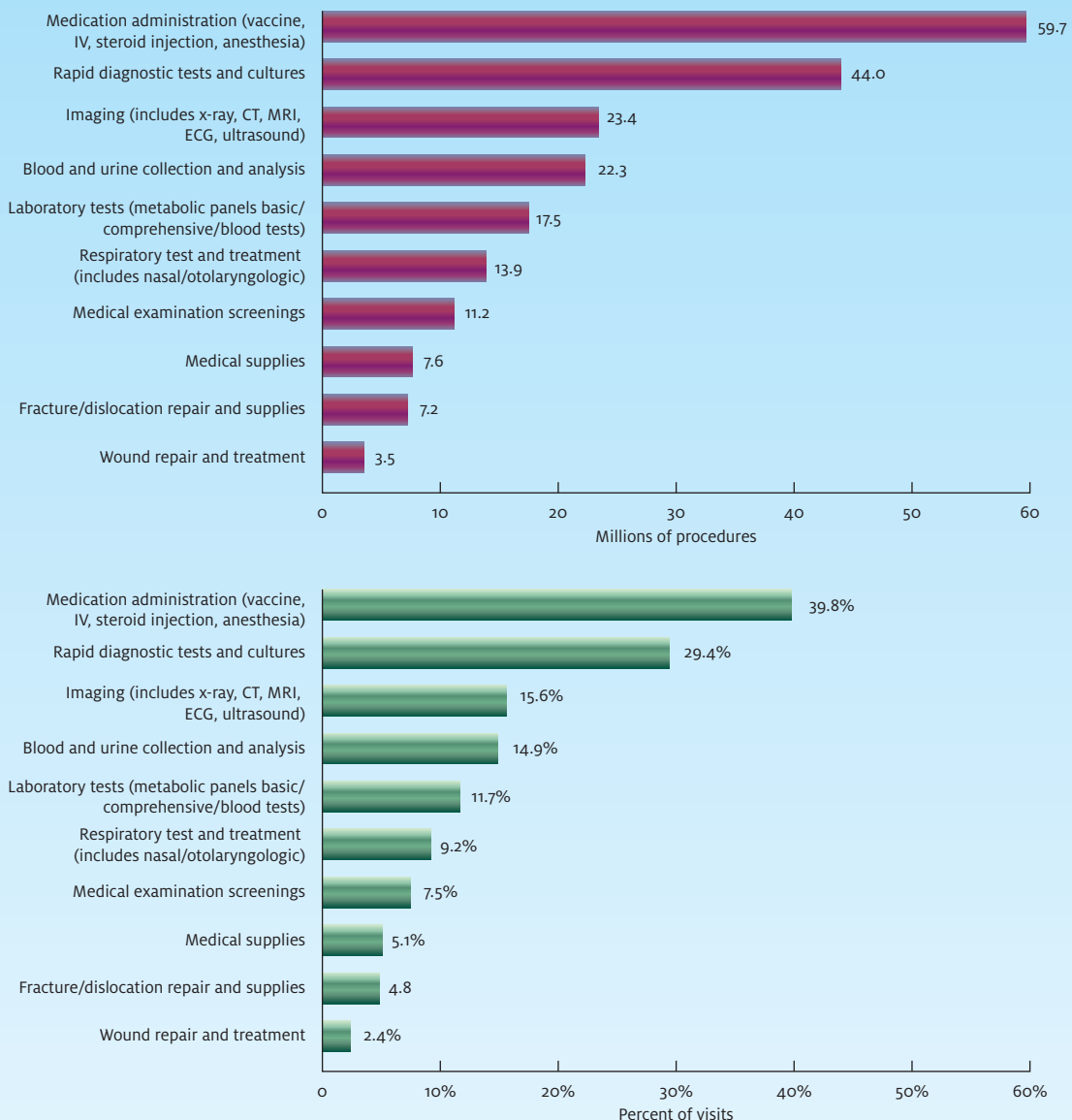


DEVELOPING DATA

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

- Medication administration (vaccine, IV, steroid injection, anesthesia)—59.7 million procedures (39.8% of visits)
- Rapid diagnostic tests and cultures—44 million procedures (29.4% of visits)
- Imaging (including radiographs, computed tomography scans and magnetic resonance images, electrocardiographs, and ultrasound images)—23.4 million procedures (15.6% of visits)

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



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