

# JUCM<sup>®</sup>

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# Yes, You *Can* Remove Corneal Foreign Bodies and Rust Rings in Urgent Care

■ JOHN J. KOEHLER MD, ABPM(OM)

I trained in Emergency Medicine in the 1980s and learned to use a slit lamp as an intern; it's a skill that continues to serve me to this day. We had "opti-spuds" to remove foreign bodies and "opti-burrs" to debride rust rings. This was considered a core skill in my training. This is why, when I started Physicians Immediate Care in 1987, I bought a slit lamp as well as opti-spuds and opti-burrs for our first urgent care center.

Since then, our providers throughout our many clinics have removed *thousands* of corneal foreign bodies and rust rings. Despite performing so many of these procedures, we have never had a single lawsuit or negative outcome. And we follow up on all these eye injuries the next day and continue to see them until released.

Some physicians have opined to me that caring for corneal trauma may no longer be the standard of care for urgent care centers. In response, I have conducted a literature search and have found support for both corneal foreign body removal and rust ring debridement in the outpatient setting, including urgent care and without obligatory ophthalmological referral.<sup>1-5</sup>

Since discomfort with these procedures seems to be increasingly common among UC providers, I wanted to discuss the relevant anatomy and procedures in the hopes of empowering us to reclaim these procedures that we can safely and effectively manage in our centers.

### Basic Anatomy and Pathophysiology

The cornea is comprised of five layers, has no blood vessels, and is the most richly innervated tissue in the body.<sup>6</sup> It also provides approximately 2/3 of the optical power of the eye.

- The *epithelium* serves as the first barrier of defense.



John J. Koehler MD, ABPM(OM) is a founding board member of the Urgent Care Association and Editor-in-Chief, OccDocOne.

- The epithelial cells constantly shed and are rapidly replaced, hence the speed with which corneal injuries will heal.<sup>7</sup>
- *Bowman's layer*, the next layer, is composed of layered collagen fibers.
- Below, the *stroma* comprises 90% of the cornea's thickness and provides shape and strength to the globe.
- *Descemet's* membrane is an additional strong but thin sheet of tissue.
- Finally, the *endothelium* primarily maintains the hydrostatic balance between the cornea and the aqueous humor.

Patients with centrally located abrasions or foreign bodies (FB) often present earlier than patients with more peripheral injury, due to the increased nerve density over the visual axis. This is why such injuries often present prior to rust ring development. This greatly mitigates concern about central corneal staining and vision impairment.

Peripheral FBs (outside the visual axis), conversely, often present in a delayed fashion after a rust ring develops, as the nerve density and pain experienced is far less in this region of the cornea. Commonly, these patients will discover the FB/rust by looking in the mirror or due to minor discomfort from corneal inflammation.<sup>8</sup> Rust can form as quickly as 4 hours after injury.<sup>9</sup>

Any nonvisual axis rust ring can be treated with confidence in our setting. The cornea usually heals in 12-48 hours from abrasions, FB removal, and/or rust ring debridement.<sup>5,9-12</sup> Therefore, a next-day recheck is advisable.<sup>10,13,14</sup>

### Key History Features

- **When did the injury occur?** The longer the time since injury, the more the rust can be generated.
- **What was the mechanism of injury?** "Metal-on-metal" (eg, grinding-related) is specifically concerning. This mechanism can generate a high-speed fragment with the necessary velocity for globe penetration.<sup>9,15,16</sup>

*“If we, as an industry, give up now on injury treatment (eg, lacerations, fractures, eye injuries, etc.), we will lose these patients forever.”*

- **Is vision altered?** Any reported loss of vision or blurriness compared to baseline is concerning for a more complicated injury.

#### Key Exam Features

- Visual acuity in both eyes should be obtained. This is the “vital sign of the eye.” Loss of visual acuity in the affected eye is concerning. If metal-on-metal injury occurred and their vision is reduced, x-rays (AP and lateral) of the globes should be obtained to evaluate for intraocular metallic FB.
- Cornea exam should be performed under magnification with either a head-mounted or slit lamp microscope. This should be done without fluorescein first, then with fluorescein to identify foreign body, rust ring, opacity, and/or leaking of intraocular contents (Seidel sign).<sup>9</sup>
- Inspect the anterior chamber for hyphema.
- Note conjunctival injection, discharge, hematoma, etc.
- Upon fluorescein staining, if you see a “rivulet” (Seidel sign), globe perforation is likely.<sup>9</sup> Globe perforation is always an ocular emergency and requires immediate escalation of care to reduce risk for endophthalmitis and permanent visual loss. These patients should be referred to an emergency department or, if possible, for same-day ophthalmologist evaluation.

#### Studies

- Plain films of the orbits (AP and lateral XR) are an appropriate initial screening test if there is concern for a metallic foreign body. CT is also reasonable, but more costly and not widely available. MRI is contraindicated, as the magnet could cause migration of the FB if the metal is ferromagnetic.

#### Procedure

- Anesthetize the cornea with a topical anesthetic, such as proparacaine.
- Evert the lid(s) and examine for FBs adhered to the inner surface of the lids.
- Under magnification, inspect the cornea and scleral surface for FB. Inspect the anterior chamber for hyphema, which requires emergent referral. Inappropriately managed hyphema can result in acute glaucoma, among other complications.
- If an FB is noted under magnification, use an opti-spud

(**Figure 1**) to scoop the corneal FB off the corneal surface. If the spud is unsuccessful, you can use a splinter forceps or even the opti-burr debridement tool to loosen it from the cornea. Some metal fragments have small burrs on them that can catch onto the cornea. A bent needle (ideally 25 g) can be used if no specialized equipment is available to gently attempt dislodgement.<sup>17</sup>

- After FB removal, if a rust ring is noted, it can be debrided with the opti-spud or opti-burr debridement tool (**Figure 2**). The bit spins when you compress the actuator. Fix your hand on their malar eminence and approach the rust ring tangentially and debride away the brown stain material. There is no need to place any pressure on the cornea. This procedure carries a very low risk of perforation,<sup>18,19</sup> and is the preferred method of treatment for rust rings.<sup>9,20-23</sup> In fact, I couldn’t find a single case in the medical literature documenting perforation has occurred using this tool.
- It is not necessary that you remove all the rust on the first visit. By the next day any residual rust will be easier to remove and closer to the surface.<sup>10</sup>
- If there is residual rust in the visual axis, then debridement should be repeated. If it is still not fully removed, refer the patient to ophthalmology to complete the debridement.
- If there is minimal residual rust outside the visual axis and the patient is asymptomatic, further debridement is not absolutely necessary. A recheck in 48 hours to confirm normal healing is reasonable.
- Tip: Practicing with these tools on a hard-boiled egg, bar of soap, or commercially available rubberized globe is a great way to gain confidence before using them on a patient’s eye.

#### Medications/Aftercare

- Anesthetic eyedrops are controversial, and it is not advisable to send patients home with topical anesthetics.<sup>9,10,24</sup>
- Prophylactic antibiotic eyedrops are not necessary for routine corneal abrasions and FB removal.<sup>25</sup> They are indicated if a rust ring was present and debrided.
- Artificial tears can be dispensed to all eye injury patients.<sup>26</sup>
- Oral NSAIDs and acetaminophen are both reasonable for analgesia.
- Topical NSAIDs may slow healing and should not be prescribed.<sup>26</sup>
- Eye cover/patching is not indicated.

#### Work Status

- Patients often have immediate and significant benefit

**Figure 1. Opti-burr.**

following FB removal and can return to regular home/work activities the same day. Contact lenses should not be applied until the cornea is healed.

#### Recheck

- All eye injuries should be re-evaluated the following day. Visual acuity should be rechecked at every follow-up.
- If the patient is asymptomatic on reassessment and the cornea is clear, they can be released.
- If they are asymptomatic with a small amount of residual rust outside the visual axis, one final recheck in 48–72 hours is advised.

#### Conclusion

It is understandable that providers often feel anxious about treating eye injuries. Many simply were not trained to do these procedures. Medical training of all varieties tends to be more focused on illness than injury. This has consequences for UC because the providers joining the work force generally have limited exposure to the procedures necessary to manage common minor injuries. Many market participants, payers, and employers have noticed that this results in a shift towards triaging patients with such minor injuries instead of simply treating them.

This is a dire problem for UC if allowed to proceed unchecked. The solution requires medical leadership to step up and teach providers the skills necessary for treating the full array of injuries for which patients might present to UC. We owe it to our communities and the employers who we serve in ensuring their work force's occupational health is managed efficiently.

Some leaders have shared with me concerns about the time it would take their providers to treat ocular injuries. The answer, again, is not to stop doing these procedures, but again to train providers to be efficient in performing them. This comes with practice; the more your UC center

**Figure 2. Opti-spud.**

sees, the better your providers will get. The literature clearly supports early removal of a corneal FB.<sup>10,13</sup> Once trained, it only should take the provider a matter of seconds to remove a corneal FB or debride a rust ring. Referring the patient delays treatment, allows more rust to develop, and increases the risk of infection. This is the antithesis of high-quality, patient-centered care.

If we, as an industry, give up now on injury treatment (eg, lacerations, fractures, fingertip avulsions, eye injuries etc.), we will lose these patients forever. Moreover, how will we distinguish ourselves from retail and drugstore clinics? Payers are already offering \$70 injury case rates because “all [we] do is refer.” Can our clinics survive if this becomes the industry standard? How many referrals of routine orthopedic cases where we could easily provide definitive care will it take for families to choose orthopedic “urgent care” centers the next time they get injured?

Furthermore, most UC websites advertise injury treatment, including fractures, yet we move closer and closer to triage instead of treatment. This is simply unfair to the patients, because they end up paying for two visits. Don't we owe it to our communities and occ med employers that we serve to treat routine injuries?

One model to consider, if training and equipment can't meet these needs at all your network's centers, would be referring eye injuries, minor fractures, and fingertip injuries to one of your own clinics. This “hub-and-spoke” model allows for providers who are trained and comfortable with higher acuity to be managing these patients. It also provides better continuity.

To further demonstrate our capability in managing corneal FB and rust ring injuries, the next steps will involve studying this in our centers. Please email me at [jkoehler984@gmail.com](mailto:jkoehler984@gmail.com) if you're interested in conducting a study of these injuries at your UC clinic(s).

From the beginning, our value proposition in UC has been ease of access and treatment for both minor illnesses

and injuries to reduce unnecessary ED and specialist visits. As a long-time insider and stakeholder in UC, my desire is for our success and sustainability long into the future. Caring for corneal injuries is just one example of an injury we can reclaim, and with it take a big step towards securing our continued survival. ■

**References**

1. Bunuel-Jordana L, Fiore DC. Letters to the Editor: Is ophthalmologic follow-up for corneal abrasions needed? *Am Fam Physician*. 2004;70(1):32.
2. Marx JA, Hockberger RS, Walls RM, Adams J, eds. *Rosen's Emergency Medicine: Concepts and Clinical Practice*. 5th ed. St Louis, MO: Mosby; 2002:915-916.
3. Tintinalli JE, Kelen GD, Stapczynski JS, eds. *Emergency Medicine: A Comprehensive Study Guide*. 5th ed. New York, NY: McGraw-Hill, Health Professions Division; 2000:1508-1509.
4. Albert DM, Jakobiec FA, eds. *Principles and Practice of Ophthalmology: Clinical Practice*. Vol 5. Philadelphia, PA: WB Saunders; 1994:3384-5.
5. Sabri K, Pandit JC, Thaller VT, et al. National survey of corneal abrasion treatment. *Eye*. 1998;12:278-281.
6. Yang AY, Chow J, Liu J. Corneal innervation and sensation: the eye and beyond. *Yale J Biol Med*. 2018;91(1):13-21.
7. Mort RL, Douvaras P, Morley SD, et al. Stem cells and corneal epithelial maintenance: Insights from the mouse and other animal models. *Results Probl Cell Differ*. 2012;55:357-394.
8. Ozkurt ZG, Yuksel H, Saka G, et al. Metallic corneal foreign bodies: an occupational health hazard. *Arq Bras Oftalmol*. 2014;77(2):81-83.
9. Wilson SE, Mohan RR, Mohan RR, et al. The corneal wound healing response: cytokine-mediated interaction of the epithelium, stroma, and inflammatory cells. *Prog Retin Eye Res*. 2001;20(5):625-637.
10. Dua HS, Forrester JV. Clinical patterns of corneal epithelial wound healing. *Am J Ophthalmol*. 1987;104(5):481-489.

11. Santen SA, Scott JL. Ophthalmologic procedures. *Emerg Med Clin North Am*. 1995;13(3):681-701.
12. Ahmed F, House RJ, Feldman BH. Corneal abrasions and corneal foreign bodies. *Prim Care Clin Office Pract*. 2015;42:363-375.
13. Guier CP, Stokkermans TJ. Cornea foreign body removal. StatPearls Publishing LLC. September 25, 2022. Bookshelf ID: NBK554478PMID: 32119365.
14. Wilson SA, Last A. Management of corneal abrasions. *Am Fam Physician*. 2004;70(1):123-128.
15. Pieramici DJ, Capone Jr A, Rubsamen PE, Roseman RL. Lens preservation after intraocular foreign body injuries. *Ophthalmology*. 1996;103(10):1563-1567.
16. Woodcock MG, Scott RA, Huntbach J, Kirkby GR. Mass and shape as factors in intraocular foreign body injuries. *Ophthalmology*. 2006;113:2262-2269.
17. Beyer H, Cherkas D. Corneal foreign body removal using a bent needle tip. *Am J Emerg Med*. 2012;30(3):489-490.
18. Duke Elder S, ed. *Textbook of Ophthalmology*. Vol VI. London 1954;6125-6152.
19. Foulds WS. Removal of corneal foreign bodies by disposable needle. *Br Med J*. 1971;3:762.
20. Brown N, Clemett R, Grey R. Corneal rust removal by electric drill. *Br J Ophthalmol*. 1975; 59(10):586-589.
21. Sigurdsson H, Hanna I, Lockwood AJ, Longstaff S. Removal of rust rings, comparing electric drill and hypodermic needle. *Eye (Lond)*. 1987;1(Pt 3):430-432.
22. Sharma S. Ophthaprobem. *Can Fam Physician*. 1997;43:1353-1354.
23. McGuinness R, Knight-Jones D. Iron-containing corneal rust rings treated with desferrioxamine. *Br J Ophthalmol*. 1968;52(10):777-780.
24. Shaughnessy A. Topical NSAIDs of little benefit for corneal abrasion. *Am Fam Physician*. 2003;67(12):2580-2584.
25. Wilson SA, Last A. Management of corneal abrasions. *Am Fam Physician*. 2004;70(1):123-128.
26. Weaver CS, Terrell KM. Evidence-based emergency medicine. Update: do ophthalmic nonsteroidal anti-inflammatory drugs reduce the pain associated with simple corneal abrasion without delaying healing? *Ann Emerg Med January*. 2003;41:134-40.

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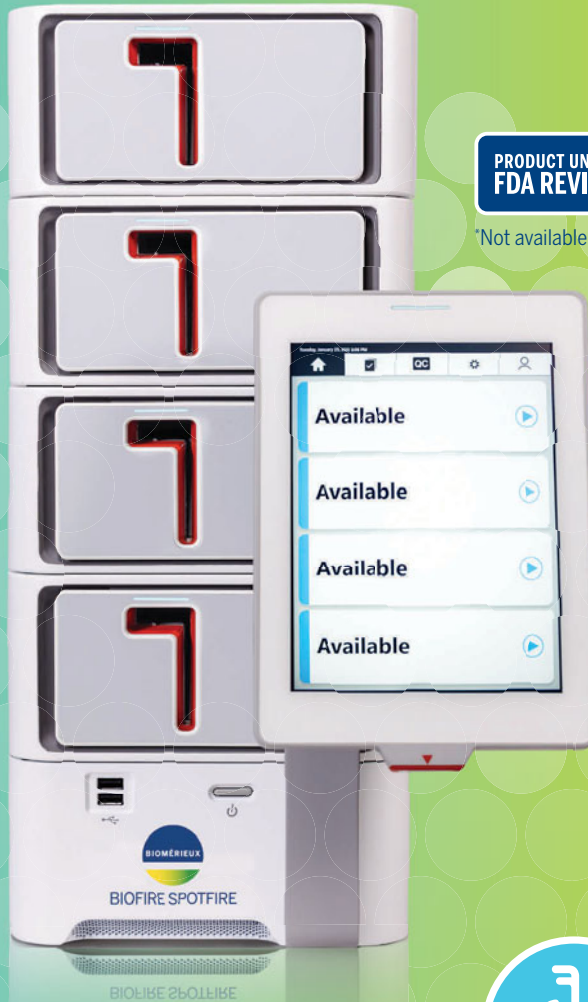
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**CLINICAL**

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## A Common Complaint, an Unlikely Diagnosis: Psoas Abscess in the Urgent Care Center

Back pain can have many relatively benign causes, from the minor “tweak” to musculoskeletal injuries. Discerning those from diagnoses that carry high risk for morbidity and mortality requires close attention to the history and physical examination.

*Fabrizia Faustinella, MD, PhD, FACP and L. Alexandre Frigini, MD*

**PRACTICE MANAGEMENT**

## 23 2023 Trends for Urgent Care



Like every other year, 2023 is likely to bring significant changes in the urgent care industry. Your ability to respond will be greatly enhanced with an understanding of the trends most likely to take shape.

*Alan Ayers, MBA, MAcc*

**ORIGINAL RESEARCH**

## 27 Investigation of Healthcare Disparities in the Treatment of Bacterial Infections: An Assessment of a Single Urgent Care Clinic



Guidelines may be color-blind and created independent of awareness of a patient’s socioeconomic status. Nonetheless, studies have revealed disparities in the treatment and management of several infections.

*Derrick Murcia, BS; Ryan Loh, PhD; Omar Samara, BS; Anthony Monzon, MBA; Sterling Lee, BA; Alex Nguyen, BS; and Lindsey E. Fish, MD*

**CASE REPORT**

## 37 Cost-Effective Management of Deep-Vein Thrombosis



Familiarity with validated scoring systems and clinical decision-making tools can enable the urgent care provider to manage many patients concerning for deep-vein thrombosis in the urgent care center, without undue risk or costly referral to the emergency room.

*Daniel Eisner, DMSc, PA-C*

**CLINICAL**

## 51 Facial Nerve Blocks in the Urgent Care Center



Understanding proper placement and technique for facial nerve blocks when conducting laceration repair can support urgent care providers in treating more such injuries on site.

*Patrick O’Malley, MD*

**IN THE JANUARY ISSUE OF JUCM**

Keeping children at home much more than usual during the social distancing phase of the COVID-19 pandemic was successful in keeping them as safe as possible from SARS-CoV-2 infection. It also minimized the occurrence of injuries incurred playing sports or in playground activities. Somehow, however, there was a corresponding increase in other, widely diverse injuries. The nature of that phenomenon and the lessons pediatric urgent care providers took away from it are addressed in an original research article to be published in the February issue of *JUCM*.

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## JUCM CONTRIBUTORS

**B**ack pain is one of the more common (and often benign) presentations in the urgent care center. Unfortunately, some etiologies that could easily be missed are anything but benign. Without keen attention to detail in the history and subsequent diligence in the exam, patients in need of quick and appropriately prescribed care could be headed for a catastrophic outcome.

This describes the scenario at the center of this issue's cover article, A Common Complaint, an Unlikely Diagnosis: Psoas Abscess in the Urgent Care Center (page 17) by **Fabrizia Faustinella, MD, PhD, FACP** and **L. Alexandre Frigini, MD**.

Dr. Faustinella is a professor in the Department of Family and Community Medicine at Baylor College of Medicine. Dr. Frigini is also a professor at Baylor, as well as chair of the Radiology Peer Review Committee, director of Radiologist Quality Control and Quality Improvement, department lead educational officer (DLEO), Department of Diagnostic and Interventional Radiology.

Another can't-afford-to-miss diagnosis is at the center of a new case report authored by **Daniel Eisner, DMSc, PA-C**, an urgent care and primary care provider with Johns Hopkins Community Physicians in Baltimore. In Cost-Effective Management of Deep-Vein Thrombosis (page 37), he relays how validated scoring systems and clinical decision-making tools can help urgent care providers treat more patients safely in the urgent care center, without referring them for costlier care in the emergency room.

Some urgent care centers may be inclined to send laceration patients and other wounds to the ED, as well. Often, this is unnecessary and a contributor to the degradation of acuity in the urgent care setting. In all fairness, due to restrictions on "normal" activities during the COVID-19 pandemic, it may have been a few years since UC providers were faced with patients in need of wound repair. So, we appreciate **Patrick O'Malley, MD** sharing his expertise in administering appropriate anesthesia before conducting laceration repair. You can read Facial Nerve Blocks in the Urgent Care Center on page 51. Dr. O'Malley is an emergency physician at Newberry County Memorial Hospital, Newberry, SC, and the creator/owner of The Laceration Course lecture series.

Clearly, acuity degradation is a major concern in urgent care. The best way to diminish the risk of this industry being viewed as "triage medicine" is ensuring that UC providers are practicing to the extent of their training. As **John J. Koehler, MD, ABPM(OM)** reminds us in Yes, You *Can* Remove Corneal Foreign Bodies and Rust Rings in Urgent

Care (page 1), this applies to many eye injuries that some may be inclined to refer to the ED or ophthalmologist as a matter of course. Dr. Koehler is a founding board member of the Urgent Care Association and editor-in-chief, *OccDocOne*.

A concern that is not unique to urgent care, but plagues the entire U.S. healthcare system, is inequities in availability and provision of care. While guideline-driven protocols for treating infection could be perceived as safe from bias, current literature suggests that social determinants of health may actually influence treatment.

This pervasive challenge is at the center of Investigation of Healthcare Disparities in the Treatment of Bacterial Infections: An Assessment of a Single Urgent Care Clinic, an original research article that starts on page 27. We appreciate the initiative of the authors in conducting the research and allowing us to share their findings with you. They are: **Derrick Murcia, BS**, University of Colorado School of Medicine, Anschutz Medical Campus; **Ryan Loh, PhD**, Denver Health and Hospital; **Omar Samara, BS**, University of Colorado School of Medicine, Anschutz Medical Campus; **Anthony Monzon, MBA**, University of Colorado School of Medicine, Anschutz Medical Campus; **Sterling Lee, BA**, University of Colorado School of Medicine, Anschutz Medical Campus; **Alex Nguyen, BS**, University of Colorado School of Medicine, Anschutz Medical Campus; and **Lindsey E. Fish, MD**, Denver Health and Hospital, University of Colorado School of Medicine, Anschutz Medical Campus and editor, images for *JUCM*.

Other challenges and opportunities are just emerging as we start a new year, of course. While it's impossible to predict the future, we can get a sense of (and prepare for) things to come in 2023 Trends for Urgent Care, by **Alan Ayers, MBA, MAcc**. Mr. Ayers is president of Experity Networks and is senior editor, practice management of *JUCM*.

Every new year brings updates to coding processes, as well. Fortunately, **Monte Sandler**, chief operating officer for Experity, has shared his expertise in What's New in Coding for 2023? (page 54). Read it to ensure you're being reimbursed appropriately for the care you provide every year.

Finally, we appreciate the efforts of **Ivan Koay MBChB, MRCS, FRNZCUC, MD**, in keeping us up to speed on urgent care-relevant articles published elsewhere in Abstracts in Urgent Care (page 40). Dr. Koay is an urgent care physician and medical lead, Ealing Urgent Care Centre, London, UK and convenor of faculty na hÉireann Royal New Zealand College of Urgent Care. ■



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# This is Our Time

■ LOU ELLEN HORWITZ, MA

Right now it's easy to look around your centers, and your communities, and the nation and say *Here we go again...* The combination of influenza and RSV and COVID is making it feel a lot like 2021 with all of our challenges playing on repeat—except that they feel worse now because of staffing shortages and rising costs and unsympathetic insurance companies still sitting on payment rates despite 2 years of evidence that Urgent Care must be invested in and protected (not to mention the 2 decades prior).

These feelings are completely normal, and they are also completely wrong.

Urgent Care is not where it was in 2019, 2020, 2021, or even 2022. Through all of the adversity of the past 3 years, whether you've noticed it or not, you have evolved. You are still standing, still open, and the only way that's still true is if you and your teams have learned new skills in determination, creativity, perseverance, and resilience.

In the September 2021 issue I wrote this column about the poem *Invictus*. *Invictus* is about what it looks like to be a hero—"My head is bloody, but unbowed." I think you can all relate to that image because you see it every day in the mirror. To quote myself: "Heroes don't just show up. They show up over and over." That kind of showing up leaves a mark on a person, forever. You have been a part of something tremendously hard, but you have gotten up one more time than you have fallen down, and that changes you.

The things that used to trouble us in our centers pre-pandemic can seem so minor now. Remember when 37 patients a day seemed like a really full day? You are stronger than that now. Remember when your supplies arrived a day late because your delivery driver got a flat tire? You are better prepared than that now. It might be a meaningful exercise to discuss this with your teams and discover just how different they are now than a few "short" years ago.

The ending of one year and the beginning of another, though they are artificial endings and beginnings, do lead

*"It seems the world would rather we stay under the radar and do our thing quietly and not make a fuss—but we know better now."*

our minds to contemplating the future. As we do that, what I want all of us to recognize is that this year is different. This year we are stronger. This year we have figured out that we can live through all kinds of things we couldn't have imagined we'd be able to live through. This year we know we can handle things that we thought were too tough before. This year is the beginning of something new.

This is the year that we are truly ready to move from *reactive* to *proactive*. Our organizations are tough enough, our people have expanded their expertise and agility, and we are finally beginning to understand what speaking with one voice can sound like. Because of the past 3 years, Urgent Care has a new reputation that's anything *but* "flying under the radar" and we are ready to take that reputation out for an unabashed spin and see what it can do. I think we are all sick and tired of watching Urgent Care get marginalized.

The theme for The Urgent Care Convention this year (March 31–April 5 in Las Vegas) is "Driving Change." We've all tried really, really hard to play nice and be good and keep believing that change would come our way if we continued to do those things, but that isn't working like it should. It seems the world would rather we stay under the radar and do our thing quietly and not make a fuss—but we know better now. We must move from "hoping to change" to Driving Change, and that's what I hope we all intend to do. We are ready for it now.

I'll end by returning to my constant theme—we are stronger together. I can't seem to get away from this concept because I'm still so excited to see what we can do if our entire industry actually does come together. Go back and read the column headline. It doesn't say, "This is Your Time," it says "This is *Our* Time." Your team is ready to go into a new battle, but wouldn't you rather go in with an entire army? ■



Lou Ellen Horwitz, MA is the chief executive officer of the Urgent Care Association.

# Recognition, Management, and Multidisciplinary Follow-up

**What can you do to reduce the patient's likelihood of repeated urgent care/ER visits?**



Educate the patient. For example, if a patient presents with dehydration, provide tips for optimizing hydration and using oral rehydration solutions. If a patient has required urgent care for PN-/catheter-related complications, talk to them about catheter care and suggest they talk to their care team about the possibility of PN weaning.



Have the patient follow-up with their multidisciplinary care team. But what if the patient does not have access to specialized multidisciplinary SBS care? Consider the patient's complications and refer appropriately. Who can help the patient with PN weaning? Dietary and nutrition support? Catheter care? Maybe there is no established team, but you can refer patients to a variety of clinicians with skills and experience in intestinal failure and PN management.



## **Surgery:**

Initial resection, maximal preservation of small bowel and colon, measurement of the remaining small bowel and colon, additional procedures that may be needed



## **Gastroenterology:**

Preoperative workup and ongoing management



## **Nursing:**

Delivery of care and patient education



## **Dietitians:**

Tailoring of individualized nutritional support



## **Examples of Multidisciplinary Care Team Members in Management of SBS**



## **Psychologists/Social Workers:**

Assist patients/caregivers with anxiety, depression, home care, etc

## **References**

Bielawska B, Allard JP. Parenteral nutrition and intestinal failure. *Nutrients*. 2017;9:466. DiBaise JK, et al. Strategies for parenteral nutrition weaning in adult patients with short bowel syndrome. *J Clin Gastroenterol*. 2006;40:S94-8. Grainger JT, et al. Assessment and management of patients with intestinal failure: A multidisciplinary approach. *Clin Exp Gastroenterol*. 2018;11:233-41. Iyer K, et al. AGA clinical practice update on management of short bowel syndrome: Expert review. *Clin Gastroenterol Hepatol*. 2022 Jun 11:S1542-3565(22)00561-4. doi: 10.1016/j.cgh.2022.05.032. Online ahead of print. Jeejeebhoy KN. Short bowel syndrome: A nutritional and medical approach. *CMAJ*. 2002;166(10):1297-302. Massaroni S, et al. Understanding short bowel syndrome: Current status and future perspectives. *Dig Liver Dis*. 2020;52:253-61. Matarese LE. Nutrition and fluid optimization for patients with short bowel syndrome. *JPEN J Parenter Enteral Nutr*. 2013;37:161-70. Nightingale J, et al. Guideline for management of patients with a short bowel. *Gut*. 2006;55(Suppl IV):iv1-12. Parrish CR, DiBaise JK. Managing the adult patient with short bowel syndrome. *Gastroenterol Hepatol*. 2017;13(10):600-8. Parrish CR, DiBaise JK. Short bowel syndrome in adults - Part 3: Hydrating the adult patient with short bowel syndrome. *Pract Gastroenterol*. 2015;10-8. Pironi L. Definitions of intestinal failure and the short bowel syndrome. *Best Pract Res Clin Gastroenterol*. 2016;30(2):173-85. Pironi L, et al. ESPEN guidelines on chronic intestinal failure in adults. *Clin Nutr*. 2016;35:247-307. Tappenden KA. Pathophysiology of short bowel syndrome: Considerations of resected and residual anatomy. *JPEN J Parenter Enteral Nutr*. 2014;38(Suppl 1):14S-22S. Wilmore DW. Indications for specific therapy in the rehabilitation of patients with the short-bowel syndrome. *Best Pract Res Clin Gastroenterol*. 2003;17(6):895-906.

# Common Complications of Short Bowel Syndrome (SBS):



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**What is SBS and what complications may lead to urgent care or emergency room (ER) visits?**

SBS is characterized by the inability to absorb sufficient nutrients, typically due to surgical resection or congenital defects. Management of SBS, and its complications, often depend on the extent of **functional and anatomic impairment**.



### Type I: End-Jejunostomy

- Fluid and electrolyte abnormalities due to increased fluid losses
- Diarrhea, malabsorption, macro- and micronutrient deficiencies are common
- High risk of dehydration, hypotension, and renal failure



### Type II: Jejunocolonic anastomosis

- Weight loss is common due to diarrhea and severe malnutrition
- Dehydration and long-term sodium/ magnesium depletion are less common than with end-jejunostomy
- Renal stones and gallstones occur in ~25% and ~45% of patients, respectively



### Type III: Jejunoleal anastomosis

- Intestinal transit generally normalizes over time
- Malnutrition and dehydration least likely
- Specialized nutritional therapy rarely needed for extended periods

If a patient who has undergone a significant intestinal resection, or has a known history of SBS/intestinal failure, presents in an urgent care/ER setting, be sure to consider these common complications:



### Complications Related to SBS

- » Diarrhea and dehydration
- » Malnutrition
- » Electrolyte, vitamin, and mineral deficiencies
- » Kidney stones/gallstones
- » Renal dysfunction
- » D-lactic acidosis
- » Bowel obstruction
- » Stomal dysfunction



### Complications Related to Parenteral Nutrition (PN)/Venous Access

- » Intestinal failure-associated liver disease (IFALD)
- » Metabolic bone disease
- » Iron-deficiency anemia
- » Catheter-related blood stream infections (CRBSI)
- » Exit-site infection
- » Catheter tunnel infection
- » Catheter occlusion, displacement and breakage
- » Catheter-related thrombosis



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**Release Date:** January 1, 2023

**Expiration Date:** December 31, 2023

### Target Audience

This continuing medical education (CME) program is intended for urgent care physicians, primary-care physicians, resident physicians, nurse-practitioners, and physician assistants currently practicing, or seeking proficiency in, urgent care medicine.

### Learning Objectives

1. To provide best practice recommendations for the diagnosis and treatment of common conditions seen in urgent care
2. To review clinical guidelines wherever applicable and discuss their relevancy and utility in the urgent care setting
3. To provide unbiased, expert advice regarding the management and operational success of urgent care practices
4. To support content and recommendations with evidence and literature references rather than personal opinion

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### A Common Complaint, an Unlikely Diagnosis: Psoas Abscess in the Urgent Care Center (page 17)

#### 1. Conditions associated with secondary psoas abscess include:

- a. Crohn's disease
- b. Appendicitis
- c. Diverticulitis
- d. All of the above

#### 2. The causative organism in primary psoas abscess is usually:

- a. *Bacteroides*
- b. *Escherichia coli*
- c. *Staphylococcus aureus*
- d. *Streptococcus*

#### 3. Which of the following complaints is/are known to occur in patients with psoas abscess?

- a. Fever
- b. Weight loss
- c. Back pain
- d. All of the above

### 2023 Trends for Urgent Care (page 23)

#### 1. As of the writing of this article, postpandemic visits to urgent care have stabilized at:

- a. A 15%-20% increase 2019
- b. A 12%-18% increase over 2019
- c. A 25% increase over 2019
- d. A 25% increase over 2020

#### 2. The influx of pediatric and adult respiratory visits is believed to be caused by:

- a. A surge in COVID-19 cases due to relaxed preventive measures (eg, masking)
- b. Lower immunization for influenza compared with pre-pandemic norms
- c. Weakened herd immunity attributed to social distancing, school closures, and other hygiene factors during the pandemic
- d. All of the above

#### 3. What proportion of patients who started using urgent care during the pandemic are likely to use urgent care again for general care needs?

- a. 34%
- b. 40%
- c. 52%
- d. 65%

### Cost-Effective Management of Deep-Vein Thrombosis (page 37)

#### 1. Venous thromboembolism can present as:

- a. Deep-vein thrombosis (DVT)
- b. Pulmonary embolism (PE)
- c. Either or both DVT and PE
- d. Neither DVT nor PE

#### 2. Compared with the classic inpatient, heparin-warfarin bridge route, the cost of home-treated DVT can be:

- a. 56% lower
- b. 38% lower
- c. 29% lower
- d. 16% lower

#### 3. Which of the following point totals indicates the patient is at low risk for DVT?

- a. -2-0
- b. 2-4
- c. 4-6
- d. >7

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# A Common Complaint, an Unlikely Diagnosis: Psoas Abscess in the Urgent Care Center

**Urgent message:** Psoas (or iliopsoas) abscess, although rare, is a cause of back pain associated with high morbidity and mortality. Proper diagnosis requires the provider to recognize signs in the history and physical examination that are suggestive of a potentially serious spinal condition prompting further workup.

FABRIZIA FAUSTINELLA, MD, PhD, FACP and L. ALEXANDRE FRIGINI, MD

Citation: Faustinella F, Frigini LA. A common complaint, an unlikely diagnosis: psoas abscess in the urgent care center. *J Urgent Care Med.* 2023;17(4):17-21.

## Introduction

Back pain is a common complaint in ambulatory centers, urgent care, and in the emergency department; up to 84% of adults have back pain at some time in their lives.<sup>1,2</sup>

Back pain has a wide differential diagnosis, but is rarely due to grave medical conditions. Among patients who present with back pain to primary care settings, less than 1% will be diagnosed with a serious etiology such as cauda equina syndrome, metastatic cancer, and spinal infection (spinal epidural abscess, paraspinal abscess, septic discitis, vertebral osteomyelitis).<sup>3</sup>

Psoas abscess, a collection of pus in the iliopsoas muscle compartment, is one of the rare causes of back pain. A delayed diagnosis and inadequate treatment are associated with high risk for mortality due to septicemia.<sup>4-6</sup>

## Case Presentation

A 62-year-old woman presented to our clinic with a complaint of 1 month of mid to low back pain, mainly on the right side of the spine. About 1 week after the pain had already started, she accidentally tripped and

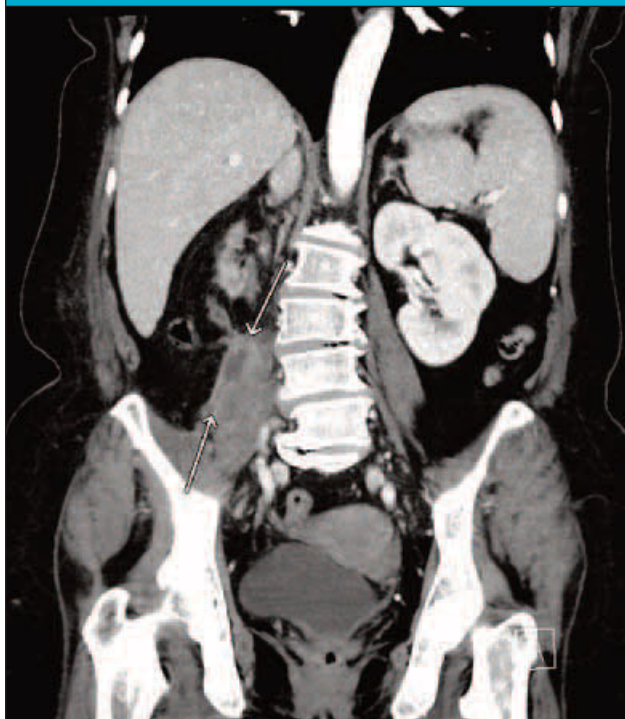


fell while doing housework. The patient denied direct injury to the back but reported worsening of pain after the fall.

At the time of the office visit, the pain which had rated 2 to 4 out of 10 at the onset of symptoms had progressively become 8 to 10 out of 10. The pain was constant and made it difficult for the patient to walk

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**Figure 1. Coronal reconstruction image of CT abdomen and pelvis with IV contrast shows a right psoas muscle abscess.**



**Figure 2. Coronal reconstruction image of CT abdomen and pelvis with IV contrast shows posterior extension of a right psoas abscess into the right lateral paraspinal musculature.**



and rest at night.

There was radiation of pain to the right flank. She reported pain with right hip/leg movements, with no numbness/tingling in the lower extremities.

The patient denied saddle anesthesia, bowel/bladder incontinence/retention.

She also denied dysuria and urinary frequency. She reported fever and chills for the past few days prior to the office visit, and new-onset malaise and weakness.

Patient's medical history was significant for major depression, anxiety disorder, degenerative joint disease, and hypertension.

Patient denied tobacco and alcohol use. No illicit drug use.

Patient's medications at the time of the visit included Paxlovid, buspirone, ibuprofen, and propranolol.

Physical exam revealed a well-developed woman, alert, and cooperative, with:

- BP 109/56, HR 65, temp 97.7°F (36.5 °C), RR 19, SpO<sub>2</sub> 98%
- Head: Normocephalic
- Eyes: Conjunctivae/corneas/sclerae clear. Extraocular movements intact
- Neck: Neck supple, no adenopathy

- Back: On inspection, there was a large mass at the mid-low back on the right side +TTP. Moderate to severe limitation of motion.
- Cardiovascular: RRR, no tubs/gallop/murmurs. No ectopy
- Pulmonary: Normal breath sounds with no wheezing, rales, or rhonchi
- Abdomen: Abdomen soft, nontender
- Ext: No clubbing, cyanosis, or edema
- Neurologic: Mental status intact, antalgic gait

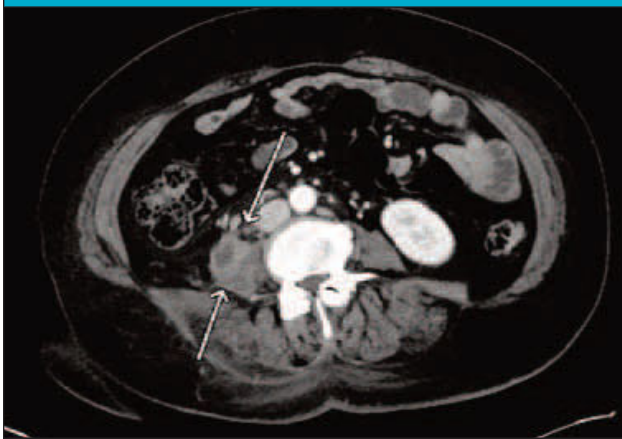
The presence of the back mass, associated with progressively worsening pain and recent onset of fever, chills, malaise and weakness, raised the suspicion for a serious, nonmechanical cause of back pain.

The patient was transferred to the ED for further evaluation. Labs and imaging studies were ordered.

A CT abdomen/pelvis with contrast was ordered and showed the following results:

- Large/elongated right retroperitoneal abscess, centered within psoas muscle, extending posteriorly to the paraspinal soft tissues and inferiorly down to the pelvis and proximal right thigh.
- Atrophic right kidney with surrounding mild

**Figure 3.** Axial image of CT abdomen and pelvis with IV contrast shows a right psoas muscle abscess.



edema and a small collection, extending from the inferior pole, likely connecting to the above-mentioned abscess. Right pyelonephritis cannot be excluded.

**Differential Diagnosis**

In this particular case, what helped most in the decision-making process was the physical exam. Inspection, which refers specifically to what we can observe visually on the surface of the body, is a central aspect of the physical exam as it may lead to more accurate differential diagnoses and treatment.

The size of the mass found on physical exam pointed toward the presence of pathology of deeper organs and tissues.

Wilms tumors of the kidney and perinephric abscesses may present as a mass in the back. Metastatic neoplasm and multiple myeloma of the spine may protrude from beneath the skin. Other neoplasms include large hemangiomas, neurofibromas, and lipomas.

In our patient, the more recent symptom of fever was suggestive of an infectious process. Pott disease of the spine and iliopsoas abscess were considered.

Pott disease, also known as tuberculous spondylitis, although possible, seemed less likely, as the patient denied any known exposure to tuberculosis in her life. In addition to that, the back pain was not chronic but more subacute in nature with a duration of about 4 weeks.

Upon further questioning, our patient also denied recent skin infections, urinary tract infections, gastrointestinal symptoms, or any ailments requiring hospitalization or medical attention prior to the development of the back pain.

**Figure 4.** Sagittal reconstruction image of CT abdomen and pelvis with IV contrast (corresponding to Figure 2) shows posterior extension of a right psoas abscess into the right lateral paraspinous musculature.



Vertebral osteomyelitis and abdominal/urologic disorders seemed also to be alternative diagnoses. The history of fall, although the back pain was present prior to that, made hematoma a possibility. Muscle spasm from back injuries can be significant enough to cause a mass, although the patient’s mass was too large to be attributed to lumbar strain and muscle spasm alone.

All of the above clearly pointed towards the immediate need for further workup with imaging studies such as computerized tomography.

**Course and Treatment**

The patient was admitted to the Surgery Acute Care Unit. She underwent CT-guided aspiration and drainage catheter placement into the right psoas abscess. A 5-cc aspirate was obtained through the drain. The fluid was sent to microbiology for further evaluation. Culture and

*“The management of psoas abscess involves the empiric use of IV anti-staphylococcal antibiotics since nearly 90% are due to *S aureus*, with vancomycin, linezolid or clindamycin being appropriate choices.”*

gram stain showed no organisms and no growth. Additionally, no anaerobes were isolated. This is not uncommon, as a definitive microbiological diagnosis for psoas abscess by infected fluid and blood culture has been reported to be 74.3% and 31.5%, respectively.<sup>7</sup>

The patient was treated with IV vancomycin for 6 days and was discharged on oral amoxicillin/clavulanic acid 875-125 mg BID for 14 days.

## Discussion

The psoas muscle is a muscle of the back. It originates from the lateral borders of the 12th thoracic to the 5th lumbar vertebrae in the retroperitoneal space and inserts at the lesser trochanter of the femur.

The fibers of the psoas muscle combine with those of the iliacus to form the iliopsoas, which functions as the chief flexor of the hip.

A psoas (or iliopsoas) abscess is a collection of pus in the iliopsoas muscle compartment and can be primary or secondary.

Primary psoas abscess is of unknown origin and caused by hematogenous or lymphatic spread from another distant origin. In the United States, up to 61% of psoas abscesses are primary. Primary psoas abscess occurs most commonly in patients with a history of diabetes, injection drug use, alcoholism, AIDS, renal failure, hematologic malignancy, immunosuppression, or malnutrition.<sup>4,6</sup> Our patient had a primary psoas abscess and no history of pertinent comorbid conditions.

Secondary psoas abscess is caused by direct spread of infection from adjacent structures like vertebrae, colon, urinary tract, and vascular system.<sup>7,8</sup>

The causative organism in primary abscess is usually *Staphylococcus aureus*, which accounts for around 88% of the cases, followed by *Escherichia coli* and *Streptococcus*. Secondary psoas abscess are commonly polymicrobial, involving enteric bacteria, typically *E coli* and *Bacteroides*.<sup>9,10</sup>

Although the clinical presentation of a psoas abscess often lacks specificity, the presence of a large back mass in this particular case pointed to the presence of a serious disease process most likely arising from the deeper organs and/or tissues. This finding, associated with recent onset of fever and worsening back pain, prompted the initiation of further workup.

In our particular patient, the fluid cultures and blood cultures did not yield any microorganism.

*Mycobacterium tuberculosis* infection of the spine, known as Pott's disease, is the most frequent cause of secondary psoas abscess in developing countries. Conditions associated with secondary psoas abscess include Crohn's disease, diverticulitis, appendicitis, colorectal cancer, urinary tract infection, vertebral osteomyelitis, mycotic abdominal aortic aneurysm, endocarditis, and history of instrumentation in or around the spine.<sup>4,5,11</sup> Bilateral psoas abscess occurs in 3% of all cases, primary or secondary.<sup>12,13</sup>

The most common complaints are low back pain, flank pain, with or without radiation to the hip and/or the posterior aspect of the thigh, limp, fever, malaise, weight loss, fatigue, inguinal mass.

It is noteworthy that the presence of a back mass is not a typical finding in patients with psoas abscess. Limitation of hip movement is common due to pain triggered by stretching or extending the psoas muscle.

Our patient reported back pain, right flank pain, fever, malaise, and difficulty walking, although she never reported the presence of the back mass.

Laboratory tests are nonspecific and usually associated with high white blood cell count and elevated inflammatory markers.<sup>14</sup>

CT with contrast is the gold standard for the evaluation of patients for psoas abscess. The use of CT has increased the frequency of this diagnosis. Prior to computed tomography, most cases were diagnosed at post-mortem.<sup>4</sup>

All patients with psoas abscess require hospitalization for IV antibiotics and surgical or percutaneous drainage of the abscess.

The management of primary psoas abscess involves the empiric use of IV anti-staphylococcal antibiotics since nearly 90% are due to *S aureus*, with vancomycin, linezolid or clindamycin being appropriate choices.

In secondary psoas abscesses, which frequently have a mixed flora of enteric pathogens, antibiotics need to have coverage for both gram-negative and anaerobic bacteria. Fluroquinolones, anti-pseudomonal penicillins, late-generation cephalosporins, plus or minus metronidazole should be used empirically for maximal coverage.<sup>14,15</sup>

The antibiotic regimen can later be tailored to reflect the results of the culture and sensitivity profile and is usually continued for 2 weeks after abscess drainage.

CT-guided percutaneous drainage (PCD) or surgical drainage are the two definitive treatment modalities. PCD is less invasive and is currently the treatment of

choice, especially in primary psoas abscess. Surgical drainage is indicated when PCD fails, if there is a contraindication to PCD, or if there is abdominal pathology that requires such intervention.<sup>16-18</sup>

Complications associated with psoas abscess include sepsis, involvement of adjacent structures leading to septic arthritis, compression of surrounding structures leading to hydronephrosis, ileus, and deep venous thrombosis.

Mortality rates are higher for secondary psoas abscess than for primary psoas abscess.<sup>5,10</sup>

Death, most often from sepsis, is usually due to delayed or inadequate treatment, with mortality close to 100% in patients who did not undergo drainage.<sup>5,6,10,19</sup>

Since *Staphylococcus aureus* accounts for 88% of the microorganisms isolated from primary psoas abscesses and since our patient responded well to IV vancomycin and oral amoxicillin, we can speculate that the most likely causative bacteria was, in fact, *Staphylococcus aureus*. The reason our patient developed an iliopsoas abscess remains unclear. The source of the primary hematogenous or lymphatic spread was never identified, neither on history nor on physical exam.

## Conclusions

- This case is a reminder of the critical importance of inspection and thorough physical examination in the evaluation of patients with back pain.
- The diagnosis of a psoas abscess should be suspected on clinical grounds and confirmed on imaging studies.
- Iliopsoas abscess should be considered in the differential diagnosis when evaluating a patient with back pain associated with the presence of a back mass, pain on ambulation, and fever. ■

## References

1. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. *Arthritis Rheum*. 2012;64(6):2028-2037.
2. Deyo RA, Mirza SK, Martin BI. Back pain prevalence and visit rates: estimates from U.S. national surveys, 2002. *Spine (Phila Pa 1976)*. 2006;31(23):2724-2727.
3. Refshauge KM, Maher CG. Low back pain investigation and prognosis: a review. *Br J Sports Med*. 2006;40(6):494-498.
4. Mallick IH, Thoufeeq MH, Rajendran TP. Iliopsoas abscesses. *Postgrad Med J*. 2004;80(946):459-462.
5. Sato T, Kudo D, Kushimoto S. Epidemiological features and outcomes of patients with psoas abscess: A retrospective cohort study. *Ann Med Surg (Lond)*. 2021;62:114-118.
6. Thongngarm T, McMurray RW. Primary psoas abscess [letter]. *Ann Rheum Dis*. 2001;60:173-176.
7. Lopez VN, Ramos JJ, Meseguer V, et al. Microbiology and outcome of iliopsoas abscesses in 124 patients. *Medicine (Baltimore)*. 2009;88(2):120-130.
8. Tabrizia P, Nguyen SQ, Greenstain A, et al. Management and treatment of iliopsoas abscesses. *Arch Surg*. 2009;144(10):946-949.
9. Vandenberghe M, Marie S, Kuipers T, et al. Psoas abscess: report of a series and review of the literature. *Neth J Med*. 2005;63:413-416.
10. Lai YC, Lin PC, Wang WS, et al. An update on psoas muscle abscess: an 8-year experience and review of literature. *Int J Gastroenterol*. 2011;5(2):75-79.

*“Complications associated with psoas abscess include sepsis, involvement of adjacent structures leading to septic arthritis, compression of surrounding structures leading to hydronephrosis, ileus, and deep venous thrombosis.”*

11. Riyad MN, Sallam MA, Nur A. Pyogenic psoas abscess: discussion of its epidemiology, etiology, bacteriology, diagnosis, treatment and prognosis-case report. *Kuwait Med J*. 2003;35:44-47.
12. Lee YT, Lee CM, Su SC, et al. Psoas abscess: a 10 year review. *J Microbiol Immunol Infect*. 1999;32:40-46.
13. Bresee JS, Edwards MS. Psoas abscess in children. *Pediatr Infect Dis J*. 1990;9:201-206.
14. Gruenewald I, Abrahamson J, Cohen O. Psoas abscess: case report and review of the literature. *J Urol*. 1992;147:1624-1626.
15. Chern CH, Hu SC, Kao WF, et al. Psoas abscess: making an early diagnosis in the ED. *Am J Emerg Med*. 1997;15:83-88.
16. Dinc H, Onder C, Turhan AL, et al. Percutaneous drainage of tuberculosis and nontuberculous psoas abscesses. *Eur J Radiol*. 1996;23:130-134.
17. Dave BR, Kurupati RB, Shah D, et al. Outcome of percutaneous continuous drainage of psoas abscess: a clinically guided technique. *Indian J Orthop*. 2014;48(1):67-73.
18. Hsieh M-S, Huang S-C, Loh E-W, et al. Features and treatment modality of iliopsoas abscess and its outcome: a 6-year hospital-based study. *BMC Infect Dis*. 2013;13:578.
19. Taiwo B. Psoas abscess: a primer for the internist. *South Med J*. 2001;94:2-5.

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## Take-Home Points

- Conditions associated with secondary psoas abscess include Crohn’s disease, diverticulitis, appendicitis, colorectal cancer, urinary tract infection, vertebral osteomyelitis, mycotic abdominal aortic aneurysm, endocarditis, and history of instrumentation in or around the spine.
- The causative organism in primary abscess is usually *Staphylococcus aureus* (accounting for around 88% of cases), followed by *Escherichia coli* and *Streptococcus*.
- Secondary psoas abscess are commonly polymicrobial, involving enteric bacteria, typically *E coli* and *Bacteroides*.
- Management of primary psoas abscess involves empiric use of IV anti-staphylococcal antibiotics, since 88% are due to *S aureus*; appropriate choices include vancomycin, linezolid, or clindamycin.
- In secondary psoas abscesses, fluoroquinolones, anti-pseudomonal penicillins, late-generation cephalosporins, plus or minus metronidazole should be used empirically for maximal coverage.
- Common complaints in patients with psoas abscesses include low back pain, flank pain, with or without radiation to the hip and/or the posterior aspect of the thigh, limp, fever, malaise, weight loss, and fatigue.

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# 2023 Trends for Urgent Care

**Urgent Message:** Five trends will drive urgent care strategy in 2023, including its continued response to COVID-19, building bridges with the pediatric community, integration of urgent and primary care, integration of specialist services, and increased operational efficiency in response to staffing challenges.

ALAN A. AYERS, MBA, MAcc

As we embark upon 2023, year of the “rabbit” in the Chinese zodiac, we can expect the urgent care industry to continue moving as fast and agile as the hopping Easter mammal. What follows are five trends in urgent care that are certain to impact your operation.

## Urgent Care Response to Endemic COVID

As of early December 2022, we’ve seen postpandemic visits to urgent care stabilize at a 15%-20% increase over 2019, with visits involving a COVID test or diagnosis making up about 25% of visits. While this indicates “core” injury or illness visits may still be short of 2019 levels, given the simultaneous presence of flu, strep, RSV, and influenza—and the use of rapid COVID testing in “symptomatic” respiratory presentations—the thesis that COVID added a “second, year-round flu” to urgent care is supported by visit data.<sup>1</sup>

As of this writing, urgent care nationally is seeing an influx of pediatric and adult respiratory visits, believed to be due to weakened “herd immunity” caused by social distancing, school closures, and other hygiene factors during the pandemic.

With this headwind, we expect volumes in 2023 to get off to a strong start. At the peaks of the pandemic, the average urgent care saw two-to-three times the normal number of “new” patients—meaning millions of Americans were introduced to urgent care for the first time. And according to Bain & Company, patients who started using urgent care during the pandemic are similarly likely (65%) to use urgent care again for a general care need as those introduced to urgent care prepandemic (75%).<sup>2</sup>



Sure, home testing and rescinded travel and work restrictions took away significant asymptomatic testing volume, but during the pandemic, urgent care had little to offer COVID patients beyond “quarantine” and the advice that “if your symptoms get worse go to the ER.”

Today, with the availability of antiviral medications, including Paxlovid (nirmatrelvir tablets; ritonavir tablets), we’ve seen that asymptomatic volume replaced with more value-added testing in conjunction with treatment. For example, when a family member tests positive, they come to urgent care for a confirmatory test, diagnosis, and treatment.

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### QuickMed Partners with Youngstown, Ohio Schools to Place UC Centers on Site

Youngstown City School District has partnered with QuickMed Urgent Care to open four YouCare clinics inside school buildings. These clinics operate as full-service urgent care centers for use by students and staff. Capital and operational funding is from grants by the Ohio Departments of Health and Education. Between 50% and 65% of students are Medicaid recipients, and QuickMed bills both Medicaid and private insurance.

With this investment in physical health services, Youngstown City School District offers the following services: wellness visits, sick child visits, vaccines, employee physicals, athletic physicals for student athletes, testing for viral infections including influenzas, streptococcus, and COVID-19, specialty physician referrals, prescriptions, and other urgent care services.

Clinics are open during school hours so students can be seen and parents do not need to miss work. This convenience ensures that more children have access to medical services. The result is immediate treatment combating the spread of COVID-19 and other contagious illnesses. Having access to same-day medical services on-site reduces the likelihood of delays in care and treatment, which therefore reduces the length of absences and increases student performance.

Source: Ohio Department of Education. Available at: <https://ohiofamiliesengage.osu.edu/wp-content/uploads/2022/03/YouCare-Clinics-Youngstown-City-School-District.pdf>.

In order to remain competitive against chain food, drug, and mass merchandise retailers who also offer point-of-care testing, on-site pharmaceutical dispensing should become a more consistent offering in urgent care. While some state boards of pharmacy do limit the ability to dispense in physician offices, in many states where it's legal urgent care centers simply forego dispensing because of the time and effort required for what they see is little patient interest.

Have you been to a pharmacy recently? Patients frequently encounter long waits, short-staffing, supply chain shortages, and tired, hurried staff. If you were to ask them, it's likely your patients would see greater value in urgent care as a "one-stop shop" for testing, diagnosis, and treatment. With rising operating costs, why wouldn't an urgent care seek to add \$15-\$20 per visit by dispensing meds?

### Building Bridges to the Pediatric Community

In the United States, there are approximately 500 pediatric urgent care centers, according to National UC Realty. Perhaps second only to urgent care in rural and secondary markets, pediatric-focused urgent care is one of the fastest growing segments.

A pediatric urgent care center may be affiliated with a children's hospital or health system, part of a larger pediatric multispecialty group, or privately owned. The largest player—PM Pediatrics—has approximately 80 centers in 17 states. PM Pediatrics has opened locations in markets that some experts might consider to be "saturated," yet they've grown market share by attracting patients from established urgent care operators. How do they do it?

Key to this success is creating a "connection" with the key healthcare decision-maker in family households, which is typically the "mother." Simply put, through marketing, PM Pediatrics establishes itself as having specialized knowledge and a differentiated experience specifically for children. The company then gets this message out using:<sup>3,4</sup>

- "Mom-focused" mass media advertising emphasizing "for children" in its imagery, mascot, and messaging
- Public relations offering the expertise of PM Pediatric providers for local news interviews
- Grassroots face-to-face interactions with moms through school and community event sponsorships; and
- "Tactical digital initiatives targeting prospects at ERs and general urgent care centers"

Other examples of urgent care intersecting with pediatrics involve cobranded "adult" and "pediatric" urgent care (ie, one building with dual signs, entrances, and waiting rooms but shared staff in a common back office) and offering virtual or in-person urgent care services in schools (either augmenting or replacing the school nurse's office).

### Integration of Urgent and Primary Care

Urgent care has always been a consumer-driven phenomenon. Patients have embraced the convenience of extended-hour locations, close to home or work, where they can be seen quickly the two times a year (on average) they have a minor illness or injury. As a result, many patients (adoringly but inaccurately) refer to their

Table 1. Primary Care vs Urgent Care Business Models		
	Primary Care	Urgent Care
<i>Scope of Service</i>	Wellness/preventive including annual physicals and vaccinations.Re-checks on chronic conditions.	Episodic minor illness and injury that require same-day treatment but are not medical emergencies, including nonsurgical ortho and dermatological procedures.
<i>Insurance Billing</i>	Place of Service Code: Copays: \$0 to \$25 Contracts typically reimburse fee-for-service.  Individual provider contracts may require hospital admitting privileges, after-hours (on-call) coverage, and may exclude non-PCP specialties like emergency medicine.	Place of Service Code: Copays: \$35 to \$75  Contracts may reimburse on a case rate (flat fee per visit regardless of services performed) or fee-for-service.  Contracts are often by facility, not provider, with individual provider credentialing.
<i>Scheduling</i>	Appointments scheduled in advance.	Walk-in, queuing, or same-day appointments.
<i>Provider Focus</i>	Patient-reported engagement and clinical outcomes.	Throughput (patients per hour per provider) and patient satisfaction.
<i>Referrals</i>	Gatekeeper for referrals. Preauthorized and payer-coordinated care with specialists and facilities.	Follow-up with specialists related to the medical presentation or with primary care for generalized concerns.
<i>Growth Focus</i>	Value-based care, accountable care, and population health management.	Additional services relevant to common urgent care presentations.

favorite urgent care as their “primary care provider.”

Considering that urgent care has historically focused on working-age (ie, 24- to 54-year-old) singles and families who are generally healthy, have employer-provided health insurance, and are not yet in the years of chronic health conditions, this affinity is logical. But as the target consumer base ages, urgent care shouldn't miss out on the opportunity to become more relevant as a true “PCP.”

While there is duplicity between “urgent” and “primary” care, many of the differences pertain to reimbursement. For example, many “urgent care” contracts will not pay for preventive services like the annual wellness physical required of insurance plans, childhood vaccinations, flu shots, and routine lab testing.

Operationally, there are also differences. Initial primary care visits tend to be longer—45-60 minutes for a physical on a new patient—whereas urgent care strives for throughput of four patients per hour per provider. For a busy urgent care, primary care visits can muck up flow, resulting in greater wait times for all patients.

Where we see urgent care and primary care combined, the result is effectively two businesses under one roof, with protocols differentiating which presentations constitute which service, separate insurance contracts, and dedicated providers for each service as illustrated in **Table 1**.

### Integration of Specialist Services

Similar to integrating primary care services, the idea here is to retain much of the downstream revenue urgent care refers to community providers. If, say, approximately 85% of what urgent care sees is upper respiratory in nature, it's logical during “hay fever season” for an urgent care to bring in a board-certified allergy/immunologist to follow up with the patient on the root cause of their symptoms.

Examples of urgent care platforms that have integrated specialists include:

- **Fast Pace Health:** According to their website, Fast Pace operates over 200 locations in five states from Kentucky to Louisiana, offering behavioral health, dermatology, orthopedics, and physical therapy in addition to primary care and occupational medicine.
- **WellNow Urgent Care:** WellNow operates over 200 locations in seven states from New York to Wisconsin offering occupational medicine, both in their clinics and at employer worksites, as well as allergy services that include same-day allergy testing and treatment plans that include allergy shots. WellNow also operates an integrated clinical research network at 10 sites, having participated in over 370 studies including 60 studies pertaining to COVID-19.

- **ConvenientMD:** ConvenientMD operates 35 centers in Northern New England. According to its website, its centers provide infusion services at a cost of 50%-70% less than hospital infusion centers. Infusion referrals are by local primary care and specialists, and ConvenientMD staffs specially trained infusion nurses who work in fully equipped infusion rooms. Additionally, the company offers orthopedic services staffed by a regional orthopedics group on selected days at selected locations. Such is not only a convenience for urgent care patients, but supports the company's occupational medicine and workers comp business.
- **Valley Immediate Care:** Valley Immediate Care has five locations in Southeast Oregon. According to their website, they offer dermatology, orthopedics, aesthetics, and occupational health. Consistent with urgent care, the goal of these specialist services is to "provide needed services in a more timely fashion."

The business case for offering specialist services is for urgent care centers to expand revenue from existing patients by retaining revenue that otherwise would be referred out into the community. The value to patients is the same as "urgent care," including convenience, access, and speed.

Now...in this vein, we are also seeing the opposite also occurring—specialist groups offering "urgent care" services.

### Increased Efficiency in Response to Staffing Challenges

Ending 2022 and into 2023, the nation's economy is in turmoil.

- Rising interest rates result in more cash going to debt service, meaning less cash is available for investment in the business.
- Too many people have left the workforce, resulting in a mismatch between the number of job openings and job seekers.
- Wages have risen and urgent care centers are struggling to compete with hospital signing bonuses and hourly rates.
- Additional inflation in occupancy, contracted services, energy, and supply costs yet little to no change in reimbursement due to 2–3-year insurance contract terms.

Not only do these macroeconomic issues affect overall urgent care economics, but specific to the urgent care business—the most common complaint of urgent care operators is the recruiting and retention of clinical support staff, including radiology technologists (RTs).

In the November and December 2022 issues of *The Journal of Urgent Care Medicine*, we provided some ideas for coping with the RT shortage, including on-the-job training of basic x-ray machine operators, relaxed state legislation enabling limited scope x-ray (including enabling PAs and NPs to take x-rays), and enablement of "tele-RT" solutions.

Apart from RTs, staffing challenges mean urgent care centers in 2023 will need to further focus on efficiency:

- Are there routine tasks, such as data entry in registration, that can be shifted to patients using self-service technology?
- How can cross-training be utilized to reduce overall headcount, especially between front- and back-office?
- How can errors in data entry be eliminated, reducing the time spent on claims denials and re-work?
- How can clinical workflows, including the use of standing orders and other delegation from providers to staff, lead to faster throughput?
- How can artificial intelligence better support providers and staff including reducing the time spent documenting, diagnosing, and discharging patients?

At the end of the day, urgent care will have to continue to do more with less. Given that provider and staff bandwidth is finite, this will entail a deeper understanding of all processes and the adoption of technology to increase overall efficiency.

### Conclusion

The mantra of urgent care in 2023 could be summarized as Bob Dylan's lament: "The times they are a-changin'!" While the growth prospects of urgent care articulated as *new patients, new payers, new services, new rooftops, and new markets* are extraordinarily bright, savvy operators will have to navigate increasingly competitive waters while preserving and growing revenue from their existing patient base.

The ongoing success of your urgent care will depend on your understanding and response to these strategic trends as well as others we will explore in the coming year. ■

### References

1. Experity. Trailing 7-Day Visits per Center 1/1/2019 to 12/5/2022). Proprietary data.
2. Bain & Company research commissioned for Experity. Proprietary data.
3. Mermelstein R. The value of audience-driven connections. LeagueSide. Available at: <https://leagueside.com/robyn-mermelstein-on-high-growth-businesses-the-value-of-culture-and-building-audience-driven-connections/>. Accessed December 9, 2022.
4. Austin Williams. PM Pediatrics becomes one of the fastest-growing businesses in the nation. Available at: <https://www.austinwilliams.com/case-study/pm-pediatrics/>. Accessed December 9, 2022.

# Investigation of Healthcare Disparities in the Treatment of Bacterial Infections: An Assessment of a Single Urgent Care Clinic

**Urgent message:** While management of infection is often guideline-dependent, studies have revealed disparities in the treatment and management of several infections among clinical sites in the United States. Current literature suggests social determinants of health and other factors may also influence treatment and management of disease states.

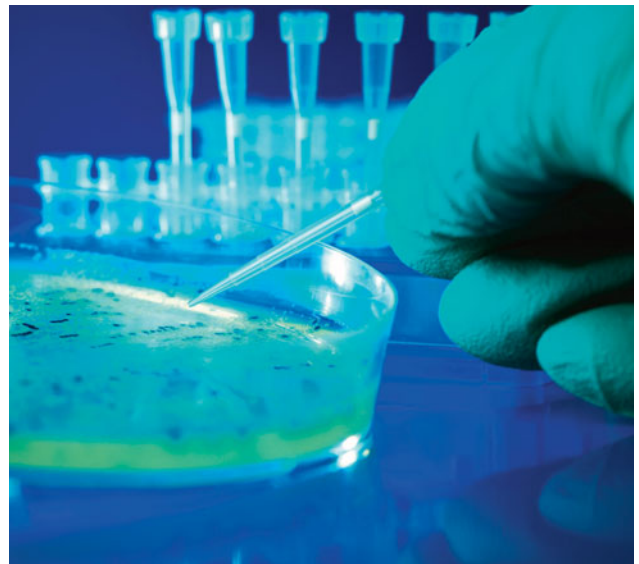
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**Key words:** antibiotics, infection, disparities

## Abstract

**Background:** Treatment for infections can vary among institutions, leading to differences in patient outcomes. Despite several studies in emergency departments and primary care clinics that have identified healthcare disparities in treating infections, research is needed to verify if similar disparities exist in the urgent care setting. This study investigates a single urgent care clinic to assess for antibiotic prescribing differences in seven common bacterial infections.



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Table 1. List of ICD-10 codes with Corresponding Clinical Diagnosis	
ICD-10 Code	Clinical Diagnosis
J01.XX	Acute sinusitis
J02.0	Acute pharyngitis
J44.XX	Chronic obstructive pulmonary disease
L03.XX	Cellulitis
N10.XX	Acute pyelonephritis
N30.XX	Acute cystitis
W50.3XXA	Human bite
W54.0XXA	Dog bite
W55.01XA	Cat bite
Y04.1XXA	Assault by human bite

**Methods:** Medical records from a single urgent care clinic were screened to a set of inclusion and exclusion criteria from January 1, 2017 to December 31, 2020, using the selected ICD-10 codes. The conditions were: acute cystitis, acute pyelonephritis, bacterial sinusitis, chronic obstructive pulmonary disorder exacerbation, group A strep infections, bacterial infection secondary to bites, and cellulitis. The primary outcome was whether patients received guideline-concordant treatment. The secondary outcome was 14-day return rates following the urgent care clinic visit. Multivariable logistic models were employed to make comparisons across several demographical variables and their impact on 14-day return rates.

**Results:** Minimal differences were observed across guideline-concordant and guideline-discordant treatment groups. Significant differences were observed across age for bacterial sinusitis, with older patients less likely to receive guideline-concordant care. Significant differences were observed in patients diagnosed with cellulitis in that Hispanics were less likely to receive guideline-concordant treatment and older patients were more likely to receive guideline-concordant treatment. Lastly, significant differences were observed in patients diagnosed with acute cystitis in that older and non-Medicaid patients were less likely to receive guideline-concordant treatment. Fourteen-day return rates were significant in at least one demographic variable category for all infections except pyelonephritis, which did not converge.

**Discussion:** Research is needed to evaluate whether healthcare disparities exist in urgent care clinics. Our findings demonstrate minimal difference in the treat-

ment of seven bacterial infections when examined for demographic variables at this single urgent care clinic. This suggests that excellent antibiotic stewardship plays a role in mitigating these types of healthcare disparities. Future investigation is needed to identify potential causes of disparities, additional ways to address those disparities, and the impact of 14-day return visits following urgent care clinic visits.

### Introduction

The management of infection is largely dependent on guidelines used by the provider or hospital institution. Despite these systematic pathways, studies have demonstrated disparities in the treatment and management of several infections among clinical sites located in the United States.<sup>1-4</sup>

Current literature suggests other factors, including social determinants of health, as variables that also influence treatment and management of disease states.<sup>5-14</sup> Overall, there are four key findings ascertained from recent studies: 1) In general, prevalence and outcomes for illness are negatively influenced by lower socioeconomic status (SES), lower-quality health insurance, and patients belonging to a minority group; 2) Hispanic and African-American patients are more likely to be seen at for-profit institutions that offer a lower quality of care for common medical conditions; 3) A concerted effort to increase access of medical care to these at-risk populations is an ideal step towards reducing disparities; 4) There is a need to integrate SES into prognostic calculations for management and treatment of illness.<sup>15</sup>

Being able to identify these disparities is the first step toward reducing those differences, with the end goal being total resolution.

While many clinical settings have been examined regarding healthcare disparities that exist within those sites, the urgent care clinic (UCC) has not been thoroughly investigated. With a better sense of which populations are most vulnerable in the urgent care setting, providers can be better equipped to give the best possible care.

The aim of this study was to investigate a single urgent care clinic to assess for antibiotic prescribing differences in seven common bacterial infections.

The data for this study came from patients treated at a single urgent care clinic associated with a large safety net urban hospital in Denver, CO. The urgent care clinic resides at the intersection of four Denver neighborhoods which have a high concentration of medically underserved populations including: 20% non-English speaking adults, 70% identifying as Latinx, 51% low-

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**Table 2. Demographic Data**

	Total	Total %	Pyelo	Pyelo %	Sinus	Sinus %	Cellu	Cellu %	Bites	Bites %	Strep	Strep %	COPD	COPD %	Cyst	Cyst %
N	6698		37		929		1431		195		2012		212		1882	
Age (mean +/- SD)	39.63 (16.20)		39.59 (16.44)		39.99 (15.36)		42.77 (16.06)		42.33 (15.74)		33.01 (12.45)		60.61 (9.85)		41.50 (17.50)	
18-25	1576 23.53%		10 27.03%		212 22.82%		224 15.65%		35 17.95%		668 33.20%		0 0.00%		427 22.69%	
26-40	2298 34.31%		13 35.14%		302 32.51%		473 33.05%		57 29.23%		852 42.35%		7 3.30%		594 31.56%	
41-64	2249 33.58%		11 29.73%		353 38.00%		578 40.39%		83 42.56%		454 22.56%		145 68.40%		625 33.21%	
65+	575 8.58%		3 8.11%		62 6.67%		156 10.90%		20 10.26%		38 1.89%		60 28.30%		236 12.54%	
Sex																
Female	4852 72.44%		33 89.19%		672 72.34%		764 53.39%		111 56.92%		1361 67.64%		125 58.96%		1786 94.90%	
Male	1842 27.50%		4 10.81%		256 27.56%		666 46.54%		84 43.08%		649 32.26%		87 41.04%		96 5.10%	
Other/Unknown	4 0.06%		0 0.00%		1 0.11%		1 0.07%		0 0.00%		2 0.10%		0 0.00%		0 0.00%	
Ethnicity																
Hispanic	4672 69.75%		27 72.97%		594 63.94%		981 68.55%		114 58.46%		1447 71.92%		87 41.04%		1422 75.56%	
Not Hispanic	2004 29.92%		10 27.03%		329 35.41%		447 31.24%		80 41.03%		555 27.58%		125 58.96%		458 24.34%	
Other/Unknown	22 0.33%		0 0.00%		6 0.65%		3 0.21%		1 0.51%		10 0.50%		0 0.00%		2 0.11%	
Race																
American Indian/Alaska Native	121 1.81%		0 0.00%		15 1.61%		26 1.82%		1 0.51%		39 1.94%		5 2.36%		35 1.86%	
Asian	183 2.73%		1 2.70%		22 2.37%		32 2.24%		7 3.59%		58 2.88%		10 4.72%		53 2.82%	
Black or AA	256 3.82%		2 5.41%		36 3.88%		40 2.80%		5 2.56%		92 4.57%		15 7.08%		66 3.51%	
Other Pac Islander	1 0.01%		0 0.00%		1 0.11%		0 0.00%		0 0.00%		0 0.00%		0 0.00%		0 0.00%	
Native Hawaiian	3 0.04%		0 0.00%		1 0.11%		0 0.00%		0 0.00%		1 0.05%		0 0.00%		1 0.05%	
White	5656 84.44%		34 91.89%		789 84.93%		1245 87.00%		171 87.69%		1672 83.10%		172 81.13%		1573 83.58%	
Other/Unknown	478 7.14%		0 0.00%		65 7.00%		88 6.15%		11 5.64%		150 7.46%		10 4.72%		154 8.18%	
Insurance Status																
Medicaid	3342 49.90%		18 48.65%		483 51.99%		699 48.85%		84 43.08%		1057 52.53%		79 37.26%		922 48.99%	
Medicare	898 13.41%		4 10.81%		113 12.16%		256 17.89%		29 14.87%		92 4.57%		112 52.83%		292 15.52%	
Private	866 12.93%		6 16.22%		151 16.25%		147 10.27%		33 16.92%		325 16.15%		11 5.19%		193 10.26%	
Uninsured/Other	1592 23.77%		9 24.32%		182 19.59%		329 22.99%		49 25.13%		538 26.74%		10 4.72%		475 25.24%	
Had correct abx prescription	3894 58.14%		36 97.30%		554 59.63%		915 63.94%		150 76.92%		645 32.06%		118 55.66%		1476 78.43%	
Had any visit within X days	1911 28.53%		9 24.32%		236 25.40%		484 33.82%		47 24.10%		448 22.27%		70 33.02%		617 32.78%	

income-households, and a 20% poverty-stricken population.<sup>16</sup> The clinic also draws patients from across the Denver metro area, therefore serving a racially, ethnically, and economically diverse population. Integration within a federally qualified health center community health clinic allows this urgent care clinic to provide treatment to patients regardless of age, language, insurance status, or ability to pay.

On average, the urgent care clinic sees approximately 25,000 visits annually. The hospital shares many resources with the urgent care clinic, an important one being a comprehensive antibiogram, which provides guidance as to the common pathogenic bacterial infections in the community and its associated recommended susceptible antibiotics.

An example of an algorithm in the treatment of infections commonly used at institutions providing medical care is the antibiogram. These institution-specific tables depict the preferred first-line antibiotic treatment for bacterial infections based on several factors, including susceptibility, efficacy, and cost.<sup>17-19</sup> Antibiograms are important in mitigating unnecessary expenses while also establishing systematic treatments for infections.

With the development of the affiliated safety net hospital smartphone antibiogram in 2014, the application has seen increased usage over the years, including in the urgent care clinic studied. This indicates a concerted effort towards adherence to guideline-concordant treatments (ie, prescribed first-line antibiotic for infection as stated on the affiliated hospital's antibiogram).<sup>17</sup>

Despite several studies investigating healthcare disparities, the question of whether these healthcare dis-

parities persist in UCCs has not been investigated. We previously published a pilot study examining healthcare disparities for antibiotic prescribing for the treatment of bacterial pneumonia, which demonstrated no statistically significant differences exist.<sup>20</sup> Therefore, to expand upon this, we performed a retrospective cohort study investigating whether demographic differences exist between guideline-concordant treatment (ie, prescribed first-line antibiotic for infection as stated on the affiliated hospital's antibiogram) and guideline-discordant treatment (ie, prescribed any other antibiotic) with respect to several other bacterial infections.

The infections considered here are: acute cystitis, acute pyelonephritis, bacterial sinusitis, chronic obstructive pulmonary disease exacerbation, group A strep (GAS) pharyngitis, bacterial infection secondary to bites, and cellulitis (purulent and nonpurulent). Furthermore, we used 14-day return rates to assess the impact of guideline-discordant therapies on patient outcomes.

**Methods**

**Study Characteristics**

This is a retrospective cohort study that examines provider adherence to antibiotic guidelines for patients diagnosed with bacterial infections, including acute cystitis, acute pyelonephritis, bacterial sinusitis, COPD exacerbations, GAS pharyngitis, bites complicated by bacterial infection, and cellulitis at an urgent care clinic based on diagnostic ICD-10 codes (Table 1).

Data were collected from the electronic health record for encounters at a single urgent care clinic in Denver, CO with encounters spanning the dates January 1,

**Table 3. Multivariable Analysis Comparing Guideline-Concordant and Guideline-Discordant Antibiotic Treatment**

Infection	Grouping	Category	P-value	OR	CI Lower Limit	CI Upper Limit	Alpha < 0.05
Bites	Combined	Ethnicity	0.9929	>999.999	<0.001	>999.999	
	Separated	Ethnicity	0.9928	>999.999	<0.001	>999.999	
		Age	0.6997	1.004	0.982	1.027	
		Sex	0.2968	0.691	0.345	1.384	
		Insurance Status	0.4366	1.313	0.661	2.606	
		Race	0.7364	1.199	0.417	3.444	
Cellulitis	Combined	Ethnicity	0.0019	0.685	0.539	0.87	*
	Separated	Ethnicity	0.0174	0.741	0.579	0.949	*
		Age	0.0012	1.012	1.005	1.019	*
		Sex	0.2264	0.873	0.7	1.088	
		Insurance Status	0.0502	0.794	0.63	1	
		Race	0.8466	0.968	0.697	1.345	
COPD	Combined	Ethnicity	0.4958	0.826	0.476	1.432	
	Separated	Ethnicity	0.5878	0.855	0.485	1.507	
		Age	0.8004	0.996	0.965	1.028	
		Sex	0.3776	1.284	0.737	2.236	
		Insurance Status	0.43	0.769	0.4	1.478	
		Race	0.9637	0.983	0.475	2.036	
Acute cystitis	Combined	Ethnicity	0.9795	1.003	0.777	1.296	
	Separated	Ethnicity	0.4755	0.899	0.671	1.205	
		Age	0.0007	0.988	0.981	0.995	*
		Sex	<.0001	31.125	16.323	59.351	*
		Insurance Status	0.0143	0.726	0.562	0.938	*
		Race	0.8846	0.975	0.696	1.366	
Acute pyelonephritis	Combined	Ethnicity	0.9572	<0.001	<0.001	>999.999	
	Separated	Ethnicity	0.9561	<0.001	<0.001	>999.999	
		Age	0.4381	1.142	0.816	1.598	
		Sex	0.9478	<0.001	<0.001	>999.999	
		Insurance Status	0.9185	>999.999	<0.001	>999.999	
		Race	0.9976	0.471	<0.001	>999.999	
Acute Sinusitis	Combined	Ethnicity	0.252	1.173	0.893	1.541	
	Separated	Ethnicity	0.3854	1.132	0.856	1.497	
		Age	<.0001	0.977	0.968	0.986	*
		Sex	0.7661	1.046	0.776	1.41	
		Insurance Status	0.8401	0.973	0.742	1.275	
		Race	0.7088	0.931	0.64	1.354	
Acute pharyngitis	Combined	Ethnicity	0.6764	1.046	0.847	1.291	
	Separated	Ethnicity	0.7055	1.042	0.841	1.292	
		Age	0.7568	0.999	0.7568	0.7568	
		Sex	0.1237	1.174	0.957	1.441	
		Insurance Status	0.8917	1.014	0.835	1.23	
		Race	0.8944	1.017	0.788	1.314	

Results are reported first with combined data and then subdivided based on other demographic variables by each infection type. Statistical significance is indicated in the column located on the right with a “\*”. OR = odds ratio. CI = confidence interval, 95%.

2017, to December 31, 2020.

Inclusion criteria consisted of the following: adults 18 years of age or older and with one of the noted diagnoses and an associated antibiotic prescription.

Exclusion criteria consisted of the following: patients

less than 18 years old, pregnant patients, patients with an allergy to guideline-concordant antibiotic, medical records not indicating race/ethnicity, and patients not prescribed an antibiotic associated with the noted diagnoses.

Medical records were stratified into two cohorts

**Table 4. Multivariable Analysis Comparing Guideline-Concordant and Guideline-Discordant Treatment Groups 14-Day Return Rates**

Infection	Grouping	Category	P-value	OR	CI Lower Limit	CI Upper Limit	Alpha < 0.05
Bites	Combined	Guideline Treatment	0.4644	0.737	0.325	1.67	
		Guideline Treatment	0.3536	0.666	0.282	1.573	
	Separated	Age	0.0008	1.041	1.017	1.066	*
		Sex	0.0333	2.233	1.066	4.679	*
		Insurance Status	0.2254	0.639	0.31	1.318	
		Ethnicity	0.9934	<0.001	<0.001	>999.999	
Race	0.9784	0.986	0.351	2.77			
Cellulitis	Combined	Guideline Treatment	0.0912	0.82	0.651	1.032	
		Guideline Treatment	0.2757	0.877	0.692	1.111	
	Separated	Age	<.0001	1.027	1.019	1.034	*
		Sex	0.0464	1.259	1.004	1.579	*
		Insurance Status	0.3364	0.889	0.7	1.13	
		Ethnicity	0.8138	0.971	0.758	1.243	
Race	0.0148	0.643	0.451	0.917	*		
COPD	Combined	Guideline Treatment	0.2449	1.407	0.791	2.501	
		Guideline Treatment	0.2186	1.451	0.802	2.625	
	Separated	Age	0.6852	1.007	0.973	1.043	
		Sex	0.8603	0.947	0.519	1.729	
		Insurance Status	0.1625	0.609	0.304	1.221	
		Ethnicity	0.086	1.712	0.927	3.161	
Race	0.0327	2.256	1.069	4.76	*		
Acute cystitis	Combined	Guideline Treatment	0.003	1.412	1.124	1.773	
		Guideline Treatment	0.1437	1.208	0.938	1.557	
	Separated	Age	<.0001	1.022	1.016	1.028	*
		Sex	0.7728	0.934	0.588	1.483	
		Insurance Status	0.6137	1.055	0.856	1.302	
		Ethnicity	0.2074	1.166	0.918	1.481	
Race	0.6527	0.938	0.711	1.239			
Acute pyelonephritis	Combined	Guideline Treatment	0.9833	>999.999	<0.001	>999.999	
		Guideline Treatment	0.9827	>999.999	<0.001	>999.999	
	Separated	Age	0.9112	1.003	0.952	1.057	
		Sex	0.964	>999.999	<0.001	>999.999	
		Insurance Status	0.2721	2.959	0.427	20.507	
		Ethnicity	0.9553	>999.999	<0.001	>999.999	
Race	0.9482	>999.999	<0.001	>999.999			
Acute Sinusitis	Combined	Guideline Treatment	0.7281	0.948	0.701	1.282	
		Guideline Treatment	0.2543	0.833	0.609	1.14	
	Separated	Age	<.0001	1.028	1.017	1.038	*
		Sex	0.0094	1.616	1.125	2.321	*
		Insurance Status	0.006	0.645	0.472	0.882	*
		Ethnicity	0.2858	1.192	0.864	1.645	
Race	0.8835	1.033	0.672	1.587			
Acute pharyngitis	Combined	Guideline Treatment	0.0096	1.362	1.078	1.72	*
		Guideline Treatment	0.0068	1.384	1.094	1.752	*
	Separated	Age	<.0001	1.018	1.01	1.027	*
		Sex	0.0001	1.603	1.258	2.043	*
		Insurance Status	0.2745	0.885	0.71	1.102	
		Ethnicity	0.814	1.03	0.807	1.313	
Race	0.6752	0.939	0.7	1.26			

Results are reported first with combined data and then subdivided based on other demographic variables. Statistical significance is indicated in the column located on the right with a “\*”. OR = Odds ratio. CI = Confidence interval, 95%.

(guideline-concordant and guideline-discordant) and compared against different demographic variables including gender, age, race, ethnicity, and payer source (Table 2). Patients were excluded if they received a first-line antibiotic plus an additional antibiotic or no antibiotic prescription.

Absolute counts of return visits to any clinical site within the hospital and clinic system (<14 days) were also identified.

#### Statistical Analysis

Each data point represents one visit encounter in which someone was given a selected diagnosis. No corrections were made to account for the same individuals having multiple encounters.

Data were analyzed by diagnosis (acute cystitis, acute pyelonephritis, etc.).

Data were modeled independently by diagnosis as a multivariable logistic model using a logit link.

Data with multiple levels (ie, race, ethnicity, payer) were converted to binary data points to reduce degrees of freedom loss and increase interpretability of odds ratios (OR) except for age which remained linear.

Data analysis was performed using SAS Enterprise Guide V. 7.1 (Cary, NC). A p-value < 0.05 was considered statistically significant. Confidence intervals were reported with 95% confidence.

## Results

Disparities in treatment between guideline-concordant and guideline-discordant cohorts were evaluated across seven infections and compared across demographic variables. Results are reported with the primary outcome (difference between antibiotic prescribing among both treatment groups) and are then subdivided based on other possible confounding demographic variables (Table 3).

Additionally, 14-day follow-up rates were compared between guideline-concordant and guideline-discordant treatment groups across seven infections, including possible confounding demographic variables (Table 4).

#### Acute Cystitis

A total of 1,882 patient visits with a primary diagnosis of acute cystitis were identified.

There was not a significant difference between non-Hispanic and Hispanic patients in regard to who received guideline-concordant treatment (p = 0.9795, OR = 1.003, CI = 0.777, 1.296).

When considering potential confounding factors, older (p = 0.0007, OR = 0.988, CI = 0.981, 0.995) and

non-Medicaid-insured (p = 0.0143, OR = 0.726, CI = 0.562, 0.938) patients were less likely to receive guideline-concordant treatment.

Female patients were more likely to receive guideline-concordant treatment (p = <.0001, OR = 31.125, CI = 16.323, 59.351).

No significant differences were found when comparisons were made among race (p = 0.8846, OR = 0.975, CI = 0.696, 1.366) and ethnicity (p = 0.4755, OR = 0.899, CI = 0.671, 1.205) variables.

Fourteen-day return visits were significant (p = 0.003, OR = 1.412, CI = 1.124, 1.773) with higher rates of return for guideline-discordant treatment.

When considering potential confounding factors, older (p <0.0001, OR = 1.022, CI 1.016, 1.028) patients were more likely to have return visit within 14 days.

#### Acute Pyelonephritis

A total of 37 patient visits with a primary diagnosis of acute pyelonephritis were identified.

There was not a significant difference between non-Hispanic and Hispanic patients in terms of who received guideline-concordant treatment (p = 0.9572, OR = <0.001, CI = <0.001, >999.999). When considering potential confounding factors, no significant differences were found between guideline-concordant vs discordant treatment in the following groups: ethnicity (p = 0.9561, OR = <0.001, CI = <0.001, >999.999), age (p = 0.4381, OR = 1.142, CI = 0.816, 1.598), sex (p = 0.9478, OR = <0.001, CI = <0.001, >999.999), insurance status (p = 0.9185, OR = >999.999, CI = <0.001, >999.999), and race (p = 0.9976, OR = 0.471, CI = <0.001, >999.999). There were no significant differences among 14-day follow-up visits for any groups.

Of note, the logistic model for acute pyelonephritis did not converge for either outcome, as the total N was too low.

#### Bacterial Sinusitis

A total of 929 patient visits with a primary diagnosis of bacterial sinusitis were identified.

There was not a significant difference between non-Hispanic and Hispanic patients in terms of who received guideline-concordant treatment (p = 0.252; OR = 1.173, CI = 0.893, 1.541).

When considering potential confounding factors, older (p = <0.0001, OR = 0.977, CI = 0.968, 0.986) patients were less likely to receive guideline-concordant treatment.

No significant differences were found when comparisons were made among the following groups: ethnicity

( $p = 0.3854$ ,  $OR = 1.132$ ,  $CI = 0.856, 1.497$ ), sex ( $p = 0.7661$ ,  $OR = 1.046$ ,  $CI = 0.776, 1.41$ ), insurance status ( $p = 0.8401$ ,  $OR = 0.973$ ,  $CI = 0.742, 1.275$ ), and race ( $p = 0.7088$ ,  $OR = 0.931$ ,  $CI = 0.64, 1.354$ ).

Fourteen-day return visits demonstrated no significant difference when guideline-concordant and guideline-discordant groups were compared ( $p = 0.7281$ ,  $OR = 0.948$ ,  $CI = 0.701, 1.282$ ). However, older ( $p = <0.0001$ ,  $OR = 1.028$ ,  $CI = 1.017, 1.038$ ), female ( $p = 0.0094$ ,  $OR = 1.616$ ,  $CI = 1.125, 2.321$ ), and Medicaid-insured ( $p = 0.006$ ,  $OR = 0.645$ ,  $CI = 0.472, 0.882$ ) patients were more likely to have a return visit within 14 days.

#### Chronic Obstructive Pulmonary Disease Exacerbation

A total of 212 patient visits with a primary diagnosis of COPD exacerbation were identified.

There was not a significant difference among non-Hispanic and Hispanic patients in terms of who received guideline-concordant treatment ( $p = 0.4958$ ;  $OR = 0.826$ ,  $CI = 0.476, 1.432$ ).

When considering potential confounding factors, no significant differences were found between guideline-concordant and guideline-discordant treatment in the following groups: ethnicity ( $p = 0.5878$ ,  $OR = 0.855$ ,  $CI = 0.485, 1.507$ ), age ( $p = 0.8004$ ,  $OR = 0.996$ ,  $CI = 0.965, 1.028$ ), sex ( $p = 0.3776$ ,  $OR = 1.284$ ,  $CI = 0.737, 2.236$ ), insurance status ( $p = 0.43$ ,  $OR = 0.769$ ,  $CI = 0.4, 1.478$ ), and race ( $p = 0.9637$ ,  $OR = 0.983$ ,  $CI = 0.475, 2.036$ ).

Fourteen-day return visits demonstrated no significant difference when guideline-concordant and guideline-discordant treatment groups were compared ( $p = 0.2449$ ,  $OR = 1.407$ ,  $CI = 0.791, 2.501$ ). However, non-white ( $p = 0.0327$ ,  $OR = 2.256$ ,  $CI = 1.069, 4.76$ ) patients were more likely to have a return visit within 14 days.

#### Group A Strep Pharyngitis

A total of 2,012 patient visits with a primary diagnosis of GAS pharyngitis were identified.

There was not a significant difference among non-Hispanic and Hispanic patients in terms of who received guideline-concordant treatment ( $p = 0.6764$ ;  $OR = 1.046$ ,  $CI = 0.847, 1.291$ ).

When considering potential confounding factors, no significant differences were found between guideline-concordant vs discordant treatment in the following groups: ethnicity ( $p = 0.7055$ ,  $OR = 1.042$ ,  $CI = 0.841, 1.292$ ), age ( $p = 0.7568$ ,  $OR = 0.999$ ,  $CI = 0.991, 1.006$ ), sex ( $p = 0.1237$ ,  $OR = 1.174$ ,  $CI = 0.957, 1.441$ ), insurance status ( $p = 0.8917$ ,  $OR = 1.014$ ,  $CI = 0.835, 1.23$ ), and race ( $p = 0.8944$ ,  $OR = 1.017$ ,  $CI = 0.788, 1.314$ ).

Fourteen-day return visits demonstrated a significant

difference in that those who received guideline-discordant treatment ( $p = 0.0096$ ,  $OR = 1.362$ ,  $CI = 1.078, 1.72$ ) were more likely to have a return visit within 14 days. However, older ( $p = <0.0001$ ,  $OR = 1.018$ ,  $CI = 1.01, 1.027$ ), guideline-discordant treatment ( $p = 0.0068$ ,  $OR = 1.384$ ,  $CI = 1.094, 1.752$ ), and female ( $p = 0.0001$ ,  $OR = 1.603$ ,  $CI = 1.258, 2.043$ ) patients were more likely to have a return visit within 14 days.

#### Bacterial Infections Secondary to Bites

A total of 195 patient visits with a primary diagnosis of a bite complicated by bacterial infection were identified.

There was not a significant difference among non-Hispanic and Hispanic patients in terms of who received guideline-concordant treatment ( $p = 0.9929$ ,  $OR = >999.999$ ,  $CI = <0.001, >999.999$ ).

When considering potential confounding factors, no significant differences were found between guideline-concordant and guideline-discordant treatment in the following groups: ethnicity ( $p = 0.9928$ ,  $OR = >999.999$ ,  $CI = <0.001, >999.999$ ), age ( $p = 0.6997$ ,  $OR = 1.004$ ,  $CI = 0.982, 1.027$ ), sex ( $p = 0.2968$ ,  $OR = 0.691$ ,  $CI = 0.345, 1.384$ ), insurance status ( $p = 0.4366$ ,  $OR = 1.313$ ,  $CI = 0.661, 2.606$ ), and race ( $p = 0.7364$ ,  $OR = 1.199$ ,  $CI = 0.417, 3.444$ ).

Fourteen-day return visits demonstrated no significant difference when guideline-concordant and guideline-discordant groups were compared ( $p = 0.4644$ ,  $OR = 0.737$ ,  $CI = 0.325, 1.67$ ). However, older ( $p = 0.0008$ ,  $OR = 1.041$ ,  $CI = 1.017, 1.066$ ) and female ( $p = 0.0333$ ,  $OR = 2.233$ ,  $CI = 1.066, 4.679$ ) patients were more likely to have a return visit within 14 days.

#### Cellulitis

A total of 1,431 patient visits with a primary diagnosis of cellulitis were identified.

When analyzing the combined data, Hispanic ( $p = 0.0019$ ,  $OR = 0.685$ ,  $CI = 0.539, 0.87$ ) patients were less likely to receive the guideline-concordant treatment.

When considering potential confounding potential factors, Hispanic ( $p = 0.0174$ ,  $OR = 0.741$ ,  $CI = 0.579, 0.949$ ) and younger ( $p = 0.0012$ ,  $OR = 1.012$ ,  $CI = 1.005, 1.019$ ) patients were less likely to receive guideline-concordant treatment.

No significant differences were found when comparisons were made among the following groups: insurance status ( $p = 0.0502$ ,  $OR = 0.794$ ,  $CI = 0.63, 1$ ), sex ( $p = 0.2264$ ,  $OR = 0.873$ ,  $CI = 0.7, 1.088$ ) and race ( $p = 0.8466$ ,  $OR = 0.968$ ,  $CI = 0.697, 1.345$ ).

Fourteen-day return visits demonstrated no signifi-

*“These results support implementing an institution-specific antibiogram at UCCs across the United States as a means of promoting equity and minimizing disparities.”*

cant difference when guideline-concordant and guideline-discordant groups were compared ( $p = 0.0912$ ,  $OR = 0.82$ ,  $CI = 0.651, 1.032$ ). However, older ( $p = <0.0001$ ,  $OR = 1.027$ ,  $CI = 1.019, 1.034$ ), female ( $p = 0.0464$ ,  $OR = 1.259$ ,  $CI = 1.004, 1.579$ ) and white ( $p = 0.0148$ ,  $OR = 0.643$ ,  $CI = 0.451, 0.917$ ) patients were more likely to have a return visit within 14 days.

### Discussion

UCCs in the United States have demonstrated an increased growth, especially in areas that are comprised of a high population density of minority residents.<sup>21</sup> However, other than our pilot study on antibiotic prescribing for bacterial pneumonia, no studies have investigated whether healthcare disparities in antibiotic prescribing are present in UCCs.<sup>20</sup> Here, we implemented a rapid, systematic method to check for disparities in antibiotic prescribing across seven bacterial infections at a single urgent care clinic.

These infections were selected for two reasons: disparities in their treatment either exist in other clinical settings or have not been studied well. These seven infections are commonly seen in UCCs and are considered routine visits with which urgent care clinicians should be familiar with management and treatment options.

Overall, this retrospective study demonstrates minimal significant differences in prescribing of guideline-concordant antibiotics for seven common infections when demographic factors are identified in this single urgent care clinic. We attribute this to heavy clinical emphasis on utilization of the institution-specific antibiogram, which is easily available as a cellphone application. There were no identified differences in the treatment of acute pyelonephritis, COPD exacerbation, bacterial infection secondary to bites, and GAS pharyngitis.

Further examination of the results demonstrates the most areas of difference were in the treatment of acute cystitis and cellulitis. The difference in sex for acute cystitis was expected.

According to the antibiogram, the first-line agent for a male with cystitis is cefdinir, as this clinically qualifies

as a complicated UTI. However, first-line agents for a female with cystitis are nitrofurantoin or fosfomycin, depending on age and kidney function. Therefore, we validated our methodology by using this demographic variable as a positive control.

Additional differences were seen for ethnicity in cellulitis, age in acute cystitis, bacterial sinusitis, and cellulitis, and payor source in acute cystitis. Specifically, Hispanic patients were less likely to receive guideline-concordant treatment for cellulitis; older patients were less likely to receive guideline-concordant treatment for acute cystitis and bacterial sinusitis; younger patients were less likely to receive guideline-concordant treatment for cellulitis; and non-Medicaid-insured patients were less likely to receive guideline-concordant treatment for acute cystitis. No clear pattern was identified; therefore, it is unknown why specifically these differences exist. However, this indicates that there are still areas of disparity that can be improved upon within this single urgent care clinic as providers are choosing guideline-discordant therapy at higher rates within some infections with the above identified demographic groups.

A difference in 14-day follow-up visits by at least one demographic variable was observed in all infections except for pyelonephritis, in which the data did not converge.

Older patients were more likely to have a 14-day return visit when they were seen in urgent care for bacterial infection secondary to bites, cellulitis, acute cystitis, bacterial sinusitis, and GAS pharyngitis. Some possible causes for this difference include that older patients may be more likely to have severe infections requiring follow-up, and/or older patients may access medical care more frequently due to higher medical complexity.

Female patients were more likely to have a 14-day return visit when they were seen in urgent care for bacterial infections secondary to bites, cellulitis, bacterial sinusitis, and GAS pharyngitis. Some possible causes for this difference include that female patients may have more severe infections requiring follow-up and/or female patients may be more likely to access the healthcare system.

Additionally, receiving guideline-discordant treatment was more likely to result in follow-up for patients diagnosed with GAS pharyngitis. Medicaid patients were more likely to have a follow-up visit compared with non-Medicaid patient after a visit for bacterial sinusitis. Non-white patients were more likely to have a follow-up visit compared with white patients after a visit for



COPD exacerbation.

It is unclear why such differences in follow-up visits exist. Future investigation into the data is needed to determine the impact of guideline-concordant treatment as well as demographic variables or other yet-to-be-identified variables on patient follow-up and potential costs to the patient and healthcare system.

Previous studies have demonstrated that the implementation of an antimicrobial stewardship program is useful for providing systematic high-quality care while minimizing incorrect medication administration and unnecessary expenses.<sup>17–19</sup> Given that the results demonstrate minimal differences among the guideline-concordant and guideline-discordant treatment groups, our findings suggest that the antibiogram is effective in mitigating unconscious bias when prescribing medications. In fact, these results support implementing an institution-specific antibiogram at UCCs across the United States as a means of promoting equity and minimizing disparities.

### Limitations

This study contains several limitations.

The first is that the data are from a single urgent care clinic site which is unique in its operational structure and patient population.

The second limitation is that some conditions contain a small sample size, limiting the study's power to identify healthcare disparities.

A third limitation is that our evaluation of an urgent care is restricted to conditions that endorse clear treatment guidelines with a specific first-line recommendation. This limits our investigation towards complex conditions that could be seen at urgent care clinics or other clinical sites.

A fourth limitation is that follow-up data were limited to the associated healthcare system, so follow-up to other healthcare systems is not included.

Lastly, our study excluded special populations such as pediatric or pregnant patients, which limits our study's generalizability towards these populations.

### Conclusions

UCCs have recently experienced a massive growth within the United States, but few studies have analyzed data from these healthcare sites, specifically data looking at healthcare disparities. Here, we used a retrospective cohort study focused on bacterial infections to investigate for healthcare disparities. In this study, no consistent disparities were found in the treatment of bacterial infections, which we attribute to excellent antibiotic

*“In this study, no consistent disparities were found in the treatment of bacterial infections, which we attribute to excellent antibiotic stewardship and clear guidelines.”*

stewardship and clear guidelines. ■

### References

1. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Rep.* 2014;129(1\_suppl2):19-31.
2. Dickman SL, Himmelstein DU, Woolhandler S. Inequality and the health-care system in the USA. *Lancet.* 2017;389(10077):1431-1441.
3. Fiscella K, Sanders MR. Racial and ethnic disparities in the quality of health care. *Annu Rev Public Health.* 2016;37(1):375-394.
4. Kerdelmidis M, Lennon DR, Arroll B, et al. The primary prevention of rheumatic fever. *J Paediatr Child Health.* 2010;46(9):534-548.
5. Bergmark RW, Ishman SL, Scangas GA, et al. Socioeconomic determinants of overnight and weekend emergency department use for acute rhinosinusitis. *Laryngoscope.* 2015;125(11):2441-2446.
6. Bergmark RW, Hoehle LP, Chyou D, et al. Association of Socioeconomic Status, Race and insurance status with chronic rhinosinusitis patient-reported outcome measures. *Otolaryngol Neck Surg.* 2018;158(3):571-579.
7. Bergmark RW, Sedaghat AR. Presentation to emergency departments for acute rhinosinusitis: disparities in symptoms by race and insurance status. *Otolaryngol Neck Surg.* 2016;155(5):790-796.
8. Soler ZM, Mace JC, Litvack JR, Smith TL. Chronic rhinosinusitis, race, and ethnicity. *Am J Rhinol Allergy.* 2012;26(2):110-116.
9. Itamura K, Hur K, Ference E, et al. Characterization of chronic sinonasal disease symptoms in an urban homeless population. *Am J Rhinol Allergy.* 2020;34(4):494-501.
10. Jha AK, Orav EJ, Li Z, Epstein AM. Concentration and quality of hospitals that care for elderly black patients. *JAMA Intern Med.* 2007;167(11):1177-1182.
11. Jha AK, Orav EJ, Zheng J, Epstein AM. The characteristics and performance of hospitals that care for elderly hispanic Americans. *Health Aff.* 2008;27(2):528-537.
12. Lewis SD, Peter GS, Gómez-Marín O, Bisno AL. Risk factors for recurrent lower extremity cellulitis in a U.S. veterans medical center population. *Am J Med Sci.* 2006;332(6):304-307.
13. Yu JY, McKenna VA, Dumyati GK, et al. Antibiotic prescribing in New York State Medicare part b beneficiaries diagnosed with cystitis between 2016 and 2017. *Open Forum Infect Dis.* 2020;7(1):ofz544.
14. Ren Z, Silverberg JL. Burden, risk factors, and infectious complications of cellulitis and erysipelas in US adults and children in the emergency department setting. *J Am Acad Dermatol.* 2021;84(5):1496-1503.
15. Sahni S, Talwar A, Khanijo S, Talwar A. Socioeconomic status and its relationship to chronic respiratory disease. *Adv Respir Med.* 2017;85(2):97-108.
16. Denver Metro Data: Neighborhood Summaries. Available at: <https://denvermetrodata.org/neighborhoods>. Accessed May 25, 2020.
17. Jenkins TC, Haukoos JS, Young HL, et al. Patterns of use and perceptions of an institution-specific antibiotic stewardship application among emergency department and urgent care clinicians. *Infect Control Hosp Epidemiol.* 2019;41(2):212-215.
18. Young HL, Shihadeh KC, Skinner AA, et al. Implementation of an institution-specific antimicrobial stewardship smartphone application. *Proc Int Astron Union.* 2018;39(8):986-988.
19. Feiring E, Walter AB. Antimicrobial stewardship: A qualitative study of the development of national guidelines for antibiotic use in hospitals. *BMC Health Serv Res.* 2017;17(1):1-11.
20. Murcia D, Fish L. Use of a quality improvement tool for the evaluation of healthcare disparities in urgent care: a case example for bacterial pneumonia. *J Urgent Care Med.* 2022;16(4):23-27.
21. Le ST, Hsia RY. BMJ open community characteristics associated with where urgent care centers are located: a cross-sectional analysis. *BMJ Open.* 2016;6(4):1-6.

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# Cost-Effective Management of Deep-Vein Thrombosis

**Urgent message:** Validated scoring systems and clinical decision-making tools can enable the urgent care provider to manage many patients presenting with symptoms of DVT in the urgent care center, reducing costly referrals to the emergency room.

DANIEL EISNER, DMSc, PA-C

## Abstract

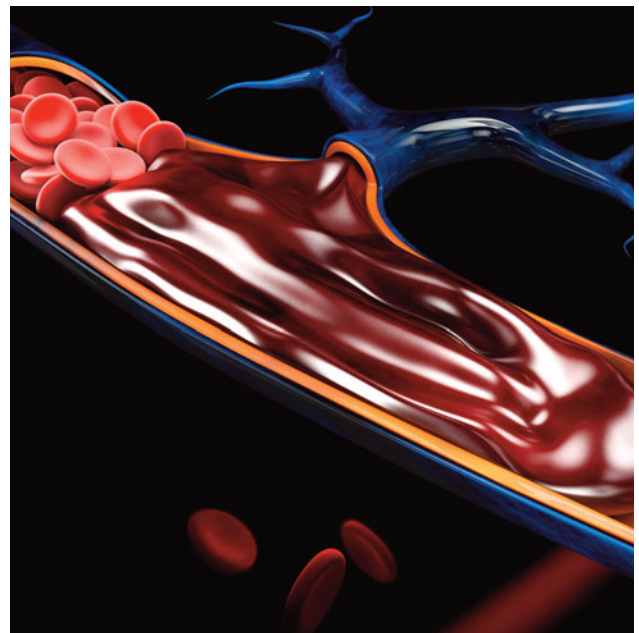
Management of venous thromboembolism accounts for \$10 billion in medical spending annually, with much of the cost attributable to emergency room visits. Conversely, managing VTE patients in the urgent care center is safe, less costly, and helps prevent acuity degradation in the urgent care setting.

## Case Presentation

A 35-year-old female presented with 5 days of left calf pain that started soon after she arrived on a flight from Mexico to Pennsylvania. She described the discomfort as cramping, persistent, and not responding to ibuprofen. The day prior she noticed her left calf was larger than the right and she had started limping. She could not recall any trauma to the area and she denied chest pain, shortness of breath or history of previous venous thromboembolism (VTE). She had no significant past medical or surgical history and her only medication was oral birth control pills. Her mother had type 2 diabetes but her family history was otherwise unremarkable, with no history of bleeding disorders or VTE. She smoked socially and rarely consumed alcohol.

## Physical Exam

On exam, she was afebrile and able to speak in full sentences. Her pulse was 78, blood pressure 136/84, respirations 18, pulse oximetry 99%, and BMI 31. The lung and heart exam was normal. A 4 cm difference was noted in the left calf compared with the right calf. It



was painful with light palpation at the posterior aspect only and warm to the touch. Slight erythema was noted throughout the posterior calf, with no lesions. Nonpitting edema was noted at the ankle and dorsal foot. Pedal pulses were 3+ bilaterally

The Wells Criteria for DVT score (Table 1) was 2, placing her in the moderate risk group category.

## Lab Testing

A qualitative point-of-care D-dimer test was positive.

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Table 1. Wells Criteria for DVT	
Clinical Features	Points
Active cancer	1
Immobility >3 days OR major surgery ≤4 weeks	1
Calf swelling >3 cm compared with other calf	1
Collateral (nonvaricose) superficial veins present	1
Entire leg swollen	1
Localized tenderness along deep venous system	1
Pitting edema, greater in symptomatic leg	1
Paralysis, paresis, or recent plaster immobilization of the lower extremity	1
Previously documented DVT	1
Alternative diagnosis to DVT as likely or more likely	-2
<b>-2–0 Low risk for DVT</b>	
<b>1–2 Moderate risk for DVT</b>	
<b>≥3 High risk for DVT</b>	
Adapted from: Modi S, et al. <i>World J Emerg Surg.</i> 2016;11:24.	

Table 2. Wells Criteria for PE	
Clinical Features	Points
Clinical signs and symptoms of DVT	3
PE is #1 diagnosis OR equally likely	3
Heart rate >100	1.5
Immobilization at least 3 days OR surgery in the previous 4 weeks	1.5
Previous, objectively diagnosed PE or DVT	1.5
Hemoptysis	1
Malignancy w/treatment within 6 months or palliative	1
<b>0–1 Low risk for PE</b>	
<b>2–6 Moderate risk for PE</b>	
<b>≥7 High risk for PE</b>	
Adapted from: Lucassen WA. <i>J Thromb Haemost.</i> 2015;13(6):1004-1009.	

Urine pregnancy test was negative. Since she had just returned from international travel and would eventually be getting outpatient diagnostic testing, a COVID-19 PCR test was ordered and came back 2 days later as negative.

**Management**

ED referral was declined by the patient (her concern being the wait time during the COVID-19 pandemic) and she preferred anticoagulation over monitoring with serial imaging.

Using Well’s Criteria for Pulmonary Embolism (Table 2) and HEMORR<sub>2</sub>HAGES (Table 3) for bleeding risk, her scores totaled 3 (moderate risk group) and 0 (low risk group), respectively.

After discussing the risks and benefits of outpatient management of DVT, rivaroxaban was initiated, starting with a starter kit. This would be continued for 3 months, pending both the results of the ultrasound and a vascular specialist consult. Rubicon eConsult, an online platform that allows same-day access to specialists, was also consulted and the treatment plan proposed was deemed acceptable.

Two days later, compression ultrasound confirmed a thrombus in the gastrocnemius vein. The remainder of the leg was clear of any thrombi, both distal and prox-

imal. The next day she had an appointment with a vascular specialist who took over the case for the remainder of the time she was on rivaroxaban. A chest CT was thought to be unnecessary, as she continued to score low on the Well’s Criteria for PE. She discontinued her birth control and no longer smokes.

**Discussion**

VTE can present as a DVT, PE, or both. Approximately 80% of patients with a PE will have a DVT and 50% of those with a proximal DVT will have a PE.<sup>1</sup> The Centers for Disease Control and Prevention estimates there are up to 900,000 cases of DVT annually in the United States, with 10% to 30% of patients dying within the first month.<sup>2</sup> The costs of VTE management is estimated at up to \$10 billion a year.<sup>3</sup>

When considering the management of DVT in an outpatient setting, an extrinsic factor to cause a provoked VTE must be isolated.<sup>4</sup> There should be no previous history of VTE and risk factors for bleeding and/or severe PE should be low to nonexistent (low-risk PE can also be safely treated as outpatient in certain candidates<sup>5</sup>). A pretest probability scoring system, such as the Wells Criteria for DVT,<sup>6</sup> along with a review of recent labs, past medical history, and family history should be utilized to determine if D-dimer POCT is appropriate.<sup>6</sup>

Since management will be outpatient and diagnostic testing may be delayed, it is acceptable to initiate parenteral or direct oral anticoagulants (DOAC) until diagnostic testing can be completed.<sup>7</sup> DOACs with a reversal agent are preferred (for rivaroxaban, it is Andexxa<sup>8</sup>). To assess bleeding risk, HEMORR<sub>2</sub>HAGES is validated for

**Table 3. HEMORR<sub>2</sub>HAGES Score for Major Bleeding Risk**

Clinical characteristics	Points
Hepatic or renal disease	1
Ethanol abuse	1
Malignancy	1
Older age	1
Reduced platelet count or function	1
Rebleeding risk	2
Hypertension	1
Anemia	1
Genetic factors	1
Excessive fall risk	1
Stroke	1
<b>0–1 Low risk for hemorrhage</b>	
<b>2–3 Moderate risk for hemorrhage</b>	
<b>≥4 High Risk for hemorrhage</b>	

Adapted from: Sen B, et al. *J Clin Pathol.* 2014;67(5):437-440.

use in elderly patients with atrial fibrillation but should be sufficient for patients when we are considering anticoagulation. For the low-to-moderate risk patient, anticoagulation treatment should be continued for a minimum of 3 months.<sup>7</sup> If a provoking factor cannot be isolated or the patient is considered high risk, outpatient management may not be appropriate.

Despite multiple studies and expert recommendations encouraging outpatient treatment of low-risk candidates with VTE, a high rate of hospital admission persists.<sup>9,10</sup> Inpatient costs can be more than double that of outpatient,<sup>11</sup> with differences in socioeconomic, gender, race, and age adding more.<sup>10,12</sup> Besides increased costs and unnecessary testing, overcrowding in the hospital, especially during the pandemic, can lead to errors and suboptimal care.<sup>13</sup>

It is important to avoid overtreatment or undertreatment while balancing the cost of therapy.<sup>1</sup> Considering home-treated DVT can be 56% lower than the classic inpatient, heparin-warfarin bridge route,<sup>9</sup> VTE management with DOACs is recommended.<sup>14</sup> Utilizing outpatient diagnostic centers can help alleviate the strain on overburdened health systems. Multiple POCT kits are available for outpatient settings and have proven to be cost effective and timesaving,<sup>15</sup> with the quality of the results comparable to lab-based D-dimer tests.<sup>16</sup> While a laboratory quantitative test is superior, qualitative testing and scoring systems in combination have

shown to be just as useful,<sup>17</sup> with qualitative methods yielding quicker results.<sup>18</sup>

**Conclusion**

By distinguishing low-risk from high-risk patients with DVT, the clinician has the opportunity to help alleviate overcrowding in the hospitals while lowering the risk of medical errors and suboptimal care. Utilizing pretest probability scores, point-of-care testing, DOACs and outpatient diagnostic studies leads to significant cost-containment. ■

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**References**

- Rugvedita S Parakh, Daniel E Sabath. Venous thromboembolism: role of the clinical laboratory in diagnosis and management. *J Applied Lab Med.* 2019;3(5): 870–882.
- Centers for Disease Control and Prevention. Data and statistics on venous thromboembolism. Available at: <https://www.cdc.gov/ncbddd/dvt/data.html>. Accessed January 22, 2021.
- Grosse SD, Nelson RE, Nyarko KA, et al. The economic burden of incident venous thromboembolism in the United States: a review of estimated attributable healthcare costs. *Thromb Res.* 2016;137:3-10.
- Kearon C, Ageno W, Cannegieter SC, et al. Subcommittees on Control of Anticoagulation, and Predictive and Diagnostic Variables in Thrombotic Disease. Categorization of patients as having provoked or unprovoked venous thromboembolism: Guidance from the SSC of ISTH. *J Thromb Haemost.* 2016;14(7):1480-1483.
- Roy PM, Moumneh T, Penaloza A, Sanchez O. Outpatient management of pulmonary embolism. *Thromb Res.* 2017;155:92-100.
- Schulman S, Ageno W, Konstantinides SV. Venous thromboembolism: past, present and future. *Thrombosis and Haemost.* 2017;117(7):1219-1229.
- Streiff MB, Agnelli G, Connors JM, et al. Guidance for the treatment of deep vein thrombosis and pulmonary embolism. *J Thromb Thrombolysis.* 2016;41(1):32-67.
- Andexa—an antidote for apixaban and rivaroxaban. *JAMA.* 2018;320(4):399-400.
- Singer AJ, Thode HC Jr, Peacock WF 4th. Admission rates for emergency department patients with venous thromboembolism and estimation of the proportion of low risk pulmonary embolism patients: a US perspective. *Clinic Exp Emerg Med.* 2016;3(3):126-131.
- Vinson DR, Ballard DW, Huang J, et al. Outpatient management of emergency department patients with acute pulmonary embolism: variation, patient characteristics, and outcomes. *Ann Emerg Med.* 2018;72(1):62-72.e3.
- LaMori JC, Shoheiber O, Mody SH, Bookhart BK. Inpatient resource use and cost burden of deep vein thrombosis and pulmonary embolism in the United States. *Clin Ther.* 2015;37(1):62-70.
- Douce D, McClure LA, Lutsey P, et al. Outpatient treatment of deep vein thrombosis in the United States: the reasons for geographic and racial differences in stroke study. *J Hosp Med.* 2017;12(10):826-830.
- Morley C, Unwin M, Peterson GM, et al. Emergency department crowding: a systematic review of causes, consequences and solutions. *PLOS ONE.* 2018; 13(8): e0203316.
- Deitelzweig S, Laliberté F, Crivera C, et al. Hospitalizations and other health care resource utilization among patients with deep vein thrombosis treated with rivaroxaban versus low-molecular-weight heparin and warfarin in the outpatient setting. *Clin Ther.* 2016;38(8):1803-1816.e3.
- Price CP, Fay M, Hopstaken RM. Point-of-care testing for d-dimer in the diagnosis of venous thromboembolism in primary care: a narrative review. *Cardiol Ther.* 2021;10(1):27-40.
- Hendriksen JMT, Geersing G-J, van Voorthuizen SC, et al. The cost-effectiveness of point-of-care d-dimer tests compared with a laboratory test to rule out deep venous thrombosis in primary care. *Expert Rev Mol Diagn.* 2015;15(1):125-136.
- Lucassen WA, Erkens PM, Geersing GJ, et al. Qualitative point-of-care d-dimer testing compared with quantitative d-dimer testing in excluding pulmonary embolism in primary care. *J Thromb Haemost.* 2015;13(6):1004-1009.
- Sen B, Kesteven P, Avery P. Comparison of D-dimer point of care test (POCT) against current laboratory test in patients with suspected venous thromboembolism (VTE) presenting to the emergency department (ED). *J Clin Pathol.* 2014;67(5):437-440.



## ABSTRACTS IN URGENT CARE

- Taping Plus Standard Care for Upper Body Injuries
- Yoga and Migraine
- The Challenge of the Limping Child
- Relieving the Pain of Renal Colic
- Exercise to Alleviate Lower Back Pain
- Does Familiarity Breed Higher Quality Care?

■ IVAN KOAY, MBChB, FRNZCUC, MD

### Kinesiology Taping for Shoulder and Chest Wall Injuries

**Take-home point:** Kinesiology taping (KT) combined with standard care appears to be more effective for acute pain reduction in patients with uncomplicated traumatic injury of the shoulder or chest wall.

**Citation:** Bakker M, Bon V, Hubrechts B, et al. Kinesiotaping for acute pain due to uncomplicated traumatic injury of the shoulder or chest wall. *Am J Emerg Med.* 2022;58:197-202.

**Relevance:** KT offers a nonpharmacologic adjunct to reduce pain from a variety of musculoskeletal injuries.

**Study summary:** This prospective randomized controlled trial was conducted in a single emergency room in the Netherlands. Patients diagnosed with traumatic injury of the shoulder and chest wall were included. Specific injuries included rib fractures, rib contusions, disruption of the AC joint, and fractures of the clavicle or proximal humerus. The control group received the standard treatment with oral analgesics, with sling added for shoulder injuries. The intervention group received the same treatment as the control group with the addition of KT. Oral analgesics used were acetaminophen 1000 mg and naproxen 500 mg by protocol.

The authors enrolled 83 patients into the study, 40 of whom were randomized into the intervention group and 43 of whom were randomized into the control group. Pain relief in the KT (intervention) group was superior to that in the control group ( $p=0.018$ ). The authors noted a decrease in the pain score values of 2.44 on a visual analog scale

(mean pain level=2.86 in the intervention group vs 4.74 in the control group). Cohen's effect size was  $d=0.9$ .

**Editor's comments:** There were four subgroups of injuries treated and the results may not be generalizable, as each subgroup had different pain intensity and overall prognosis. This was a small sample size with a heterogeneous group of injuries, so broad conclusions are difficult to draw. However, it does appear that KT is a reasonable adjunct to other forms of analgesia with little risk. ■

### Treating Migraines with Yoga

**Take-home point:** Yoga therapy was associated with substantial decrease in pain intensity, headache frequency, and headache duration in patients with migraine.

**Citation:** Wu Q, Liu P, Liao C, Tan I. Effectiveness of yoga therapy for migraine: a meta-analysis of randomized controlled studies. *J Clin Neurosci.* 2022; 99:147-151.

**Relevance:** Migraine is, for many, a chronic and debilitating problem. Nonpharmacological adjuncts may be beneficial in avoiding dependence and minimizing adverse effects of medications in migraine patients.

**Study summary:** This was a meta-analysis of six RCTs; five studies were conducted in Asia, while one study was conducted in the United States. The databases searched included PubMed, EMBASE, Web of Science, EBSCO, and Cochrane Library. Six studies reported pain intensity, five reported headache frequency, two studies reported headache duration, four studies reported Headache Impact Test-6 (HIT-6) score, and two studies reported Migraine Disability Assessment (MIDAS) score. Headache frequency suggested the number of migraine attack per month. HIT-6 scale defined the impact of headaches on the daily life of a respondents.

The authors found yoga therapy could significantly de-



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crease pain intensity (SMD= -1.21; 95% CI=-2.17 – -0.25; p= 0.01). There was significant heterogeneity among the studies. Yoga therapy also significantly decreased headache frequency (SMD=-1.43; 95% CI= -2.23 – -0.64; p=0.0004), headache duration (SMD= -1.03; 95% CI=-1.85 – -0.21; p= 0.01), HIT-6 score (SMD=-2.28; 95% CI=-3.81– -0.75; p= 0.003) and MIDAS score (SMD=-0.52; 95% CI=-0.77– -0.27; p< 0.0001). (SMD=standard mean difference)

**Editor's comments:** Despite the meta-analysis methods, there were relatively few patients (<100 collectively). There was also significant heterogeneity. However, yoga is a generally safe complementary therapy and there's little downside to recommending that patients who suffer from migraine try it. ■

### Transient Synovitis in Pediatric Hip Pain Presentations

**Take-home point:** The risk of missed septic arthritis and other bacterial infections in children diagnosed with transient synovitis (TS) is small, but occurs more commonly in younger children.

**Citation:** Lipshaw M, Walsh P. Transient synovitis of the hip: current practice and risk of misdiagnosis. *Am J Emerg Med.* 2022;61:1-6.

**Relevance:** The nontraumatic limping child can be a diagnostic challenge for urgent care providers. Understanding presentations at higher risk for septic joints is essential.

**Study summary:** This was a retrospective cohort study of children diagnosed with TS who were evaluated in emergency rooms from more than 50 tertiary care pediatric hospitals in the U.S. The primary outcome was diagnosis of septic arthritis or other bacterial MSK infection within 14 days following the index visit.

The authors examined the records of 6,419 children and found 62 (1%) who were ultimately diagnosed with a bacterial musculoskeletal infection within 14 days of ED discharge. Thirty-five had septic arthritis (56%), 33 had osteomyelitis (53%), and 21 had pyomyositis (34%). Children with a return visit with a bacterial musculoskeletal infection diagnosed were younger than those without (median age 2.6 vs 4.6 years, p <0.01). The rate of missed bacterial musculoskeletal infection was 2.4% (n=37) in children <3 years of age and 0.5% (n=25) in children >3 years of age (p<0.01). Serum laboratory testing (67% vs 79%, p<0.01), ultrasound (46% vs 54%, p<0.01), and hip arthrocentesis (3.4% vs 5.3%, p= <0.01) were performed less frequently in children <3 years old.

**Editor's comments:** The study enrolled only patients who were diagnosed with TS and therefore cannot be generalized to all children presenting with hip pain and/or limp. Retrospective collection of data introduces potential bias to the study. This was an ED-based study and may not represent the same population seen in urgent care. Additionally, lab testing and ultrasound which were commonly used in diagnosing TS are not routinely available in UC centers. Regardless, missed serious bacterial infections of the musculoskeletal system seem to be uncommon in children. It is worth noting that the diagnosis of a bacterial etiology of pain was more elusive in children <3 years of age. ■

### Does Adding Dexamethasone to Ketorolac Improve Pain Relief in Renal Colic?

**Take-home point:** The addition of dexamethasone to ketorolac provided improved pain control, decreased opioid requirements, and decreased antiemetic requirements for patients with renal colic.

**Citation:** Razi A, Farrokhi E, Lotfabadi P, et al. Dexamethasone and ketorolac compare with ketorolac alone in acute renal colic: a randomized clinical trial. *Am J Emerg Med.* 2022 Aug; 58:245-250.

**Relevance:** Dexamethasone has been used as an adjunct by anesthesiologists to reduce the need for opioids. Many UC centers carry both ketorolac and dexamethasone and it would be of value to understand if there is potential for synergy in treating renal colic.

**Study summary:** This was a double-blind, randomized clinical trial designed to evaluate the efficacy of dexamethasone in the relief of renal colic among patients presenting to an emergency room in Iran. Eligible patients were randomly assigned in a 1:1 fashion into the intervention and comparison groups by block randomization. The intervention group received ketorolac (30 mg IV) with placebo (sterile water for injection IV), while patients in the comparison group received ketorolac (30 mg IV) plus dexamethasone (8 mg IV). The pain was assessed on a 10-point visual analog scale at 30 and 60 minutes posttherapy intervals.

The authors enrolled 120 patients, with 60 randomized into each arm. They found significantly decreased VAS scores after 30 minutes, but at 60 minutes there was no difference between groups in pain scores. Fifty-eight percent of patients in the standard group and 35% in the intervention group required opioids as rescue pain relief (p=0.01), and 28% in the standard group and 12% in the intervention needed an antiemetic (p=0.022).

**Editor's comments:** This was a small, single-center study of ED patients based in Iran, which limits generalizability. There was no standardized definition of what constituted "need" for opioid rescue analgesia. Medications were administered intravenously, which is an infrequent occurrence in U.S. urgent care centers. Despite limitations, the data suggest that addition of dexamethasone may be reasonable in select patients with renal colic and low risk for adverse reactions to corticosteroids. ■

### Including Exercise in the Management of Lower Back Pain

**Take-home point:** Exercise should be considered as part of multimodal management of nonspecific lower back pain (NSLBP).

**Citation:** Osborne H, Burt P. Including exercise prescription in the management of non-specific low back pain. *Emerg Med Australas.* 2022;34(5):833–836.

**Relevance:** Back pain is a recurrent or chronic issue for many patients. Most conventional pharmacotherapies and adjunctive therapies have limited benefit in the treatment of low back pain. It is worthwhile to be familiar with strategies that empower patients to mitigate their back pain symptoms.

**Study summary:** This was a perspective editorial based on the experiences of two Australian sports and exercise physicians. The American College of Sports Medicine has previously recommended 150 minutes of walking per week (equivalent to 30 minutes for 5 days a week) for patients with back pain.

The authors suggest that NSLBP is a diagnosis given to patients who do not fit into specific categories of inflammatory disease, cancer, or infection. NSLBP is over-investigated and overmedicalized and represents 99% of lower back pain presentations to family medicine physicians and 74% of ED presentations. NSLBP can be treated similarly to other sources of musculoskeletal pain; rest recommendations are largely considered outdated and loading activities can begin on day 2.

Core strengthening has been shown to be ineffective for NSLBP. Pilates and similar activities have proven no better than other exercise programs. These authors recommend home base strengthening, such as simple unweighted squats. They encourage clinicians to avoid language which pathologizes NSLBP. Imaging is not recommended in the absence of red flags, as radiologic findings generally reflect associations, not causes of pain. Manual therapy (by osteopaths, physiotherapists, or chi-

ropractors), massage, cupping, and needling only have short-term effects, but no long-term benefit. Recovery is most likely with a multimodal, holistic approach that includes physical exercise.

**Editor's comments:** This article reflects the authors' perspectives based on their experience of treating NSLBP and review of relevant research. ■

### Interpersonal Familiarity and Team Performance

**Take-home point:** Increased familiarity between nurses and clinicians promoted more rapid improvement of relationships within the team and better performance on complex cognitive tasks.

**Citation:** Iyasere C, Wing J, Martel N, et al. Effect of increased interprofessional familiarity on team performance, communication, and psychological safety on inpatient medical teams: a randomized clinical trial. *JAMA Intern Med.* 2022;182(11):1190-1198.

**Relevance:** There is an increasing reliance of interprofessional teams in healthcare. Understanding the factors that contribute to team performance can help improve teamwork and patient care.

**Study summary:** This randomized clinical trial was conducted on the medicine teaching service at Massachusetts General Hospital. Fifteen PGY-1 residents (ie, interns) were randomized to the intervention group and spent all 16 weeks of their rotation on the same inpatient floor. Eighteen PGY-1 control residents spent their rotation rotating across five different medical floors. The authors provided surveys to the nurses and the residents with emphasis on team performance, interprofessional communication, psychological safety, and patient-related outcomes.

In simulations of the care of patients with anaphylaxis, the authors found that residents on the teams in the intervention group were more likely to ask the patient appropriate questions (60% vs 20%;  $p=0.03$ ) and anticipate problems (73% vs 27%;  $p=0.01$ ). In the second simulation regarding insulin management, the intervention team performed better in composite teamwork score for leadership and management (mean 2.47 vs 2.17;  $p=0.045$ ).

**Editor's comments:** This was a single-center study with a small number of participants, which limits its generalizability. Despite these limitations, the study results emphasized the importance of collegial relationships. These factors should be taken into consideration when staffing urgent care centers. ■





In each issue, *JUCM* 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](mailto:editor@jucm.com).

## A 35-Year-Old Male with a Soft Tissue Mass on His Finger



The patient is a 35-year-old male with a soft tissue mass in the mid index finger of his right hand. He reports that he noticed it only recently, and denies any other symptoms.

View the x-ray taken and consider what your diagnosis and next steps would be.



### Differential Diagnosis

- Liposarcoma
- Nodular fasciitis
- Peripheral nerve sheath tumor
- Soft tissue mass with chronic bony erosive changes

### Diagnosis

The image reveals a focal soft tissue prominence and increased soft tissue density on the radial aspect of the second digit, with a lucency of the adjacent middle phalanx and a well-defined sclerotic margin.

The correct diagnosis is soft tissue mass with chronic bony erosive changes without aggressive features.

### Learnings/What to Look for

- Masses associated with bony erosion include glomus tumor, tendon sheath giant cell tumor, lipoma, and synovial sarcoma
- Gout can also produce adjacent erosions
- Glomus tumor tends to be painful

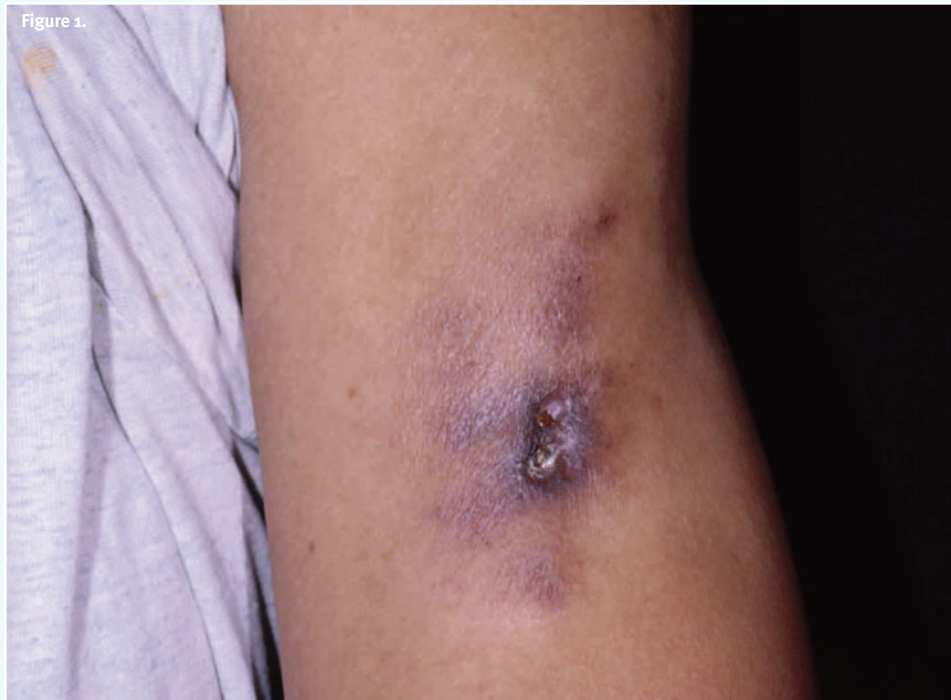
### Pearls for Urgent Care Management

- Soft tissue tumors involving the hand are common and most often benign
- MRI is useful for further evaluation

*Acknowledgment: Image and case presented by Experity Teleradiology ([www.experity.com/teleradiology](http://www.experity.com/teleradiology)).*



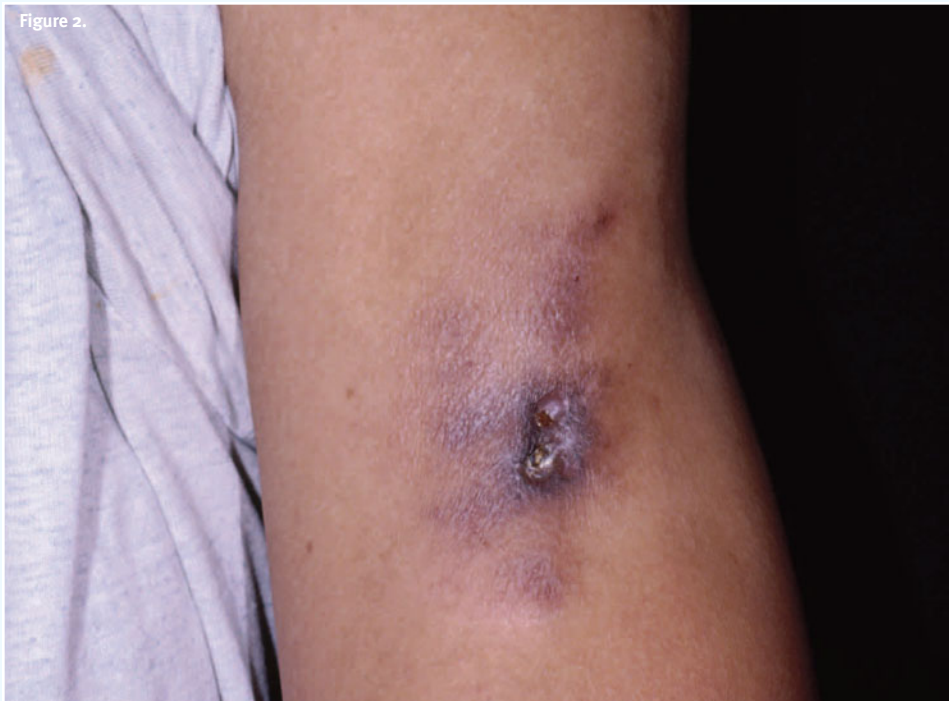
## A 41-Year-Old Woman with a History of SLE and Sudden-Onset Sores on Her Limbs



A 41-year-old woman with a history of systemic lupus erythematosus presents for evaluation of painful areas that have developed on her upper, outer arms and lateral thighs over the past month. She reports that while the affected areas were initially smooth, some had begun to ul-

cerate. Her medications are non-contributory. On examination, there are tender violaceous plaques and nodules with central crusted ulcers.

View the photo taken and consider what your diagnosis and next steps would be.



### Differential Diagnosis

- Lupus panniculitis
- Tumid lupus erythematosus
- Subcutaneous panniculitis-like T-cell lymphoma
- Morphea

### Diagnosis

A skin biopsy reveals a lobular panniculitis with a lymphoplasmacytic infiltrate, hyalinizing fat necrosis, and lymphoid follicles. Laboratory examination revealed a positive antinuclear antibody (ANA) and an elevated erythrocyte sedimentation rate (ESR).

The correct diagnosis is lupus panniculitis, a rare subtype of chronic cutaneous lupus erythematosus with tender indurated subcutaneous nodules or plaques located most frequently on the face, proximal extremities, breasts, and buttocks, with or without overlying cutaneous changes.

### Learnings/What to Look for

- Lupus panniculitis is sometimes termed *lupus profundus*
- It is likely caused by an autoimmune reaction in the deep dermis and adipose tissue. The first stage is active inflammation with painful nodules, followed by the second stage of subcutaneous atrophy, which can be cosmetically disfiguring
- Like SLE, lupus panniculitis occurs more commonly in women
- It develops in approximately 5% of patients with SLE but can occur as an isolated disease
- Cutaneous manifestations can develop years before or after the diagnosis of SLE
- It can be associated with overlying discoid lupus erythematosus (DLE) in approximately one-third of patients

### Pearls for Urgent Care Management

- Treatment is aimed at reducing inflammation, including the use of anti-inflammatory drugs
- Corticosteroids may speed recovery
- Compression stockings may help relieve symptoms in the legs

Acknowledgment: Image and case presented by VisualDx ([www.VisualDx.com/jucm](http://www.VisualDx.com/jucm)).



# A 70-Year-Old Male Who Presents in a Confused State

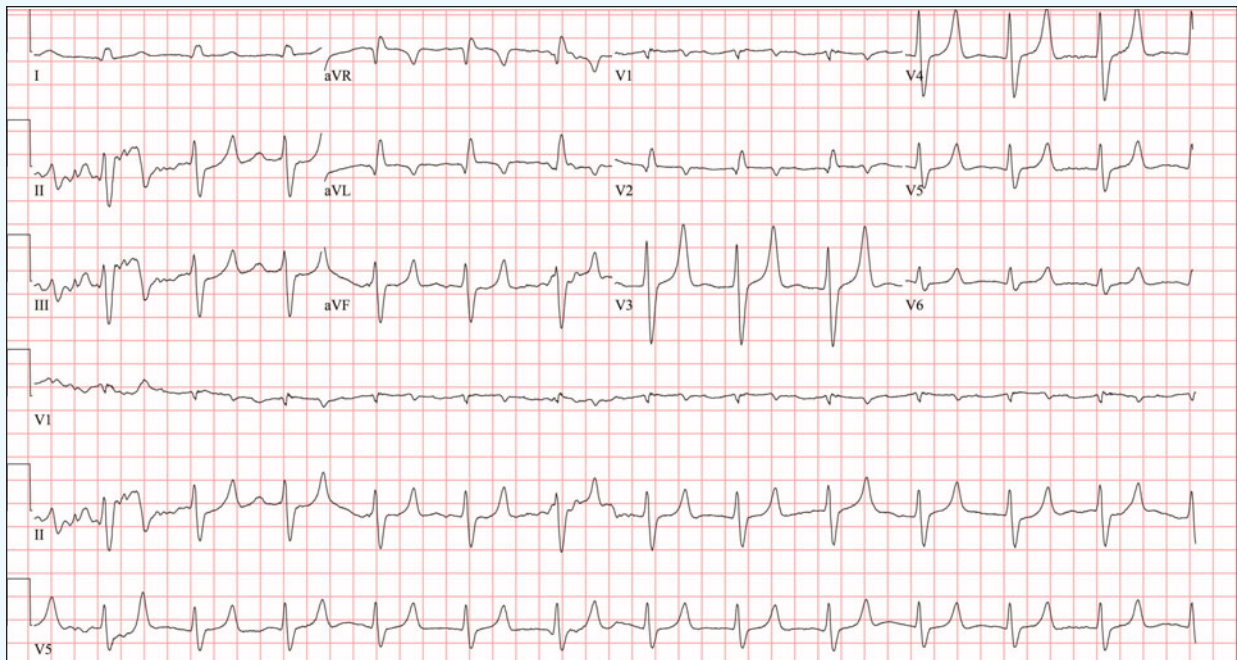


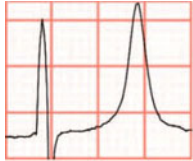
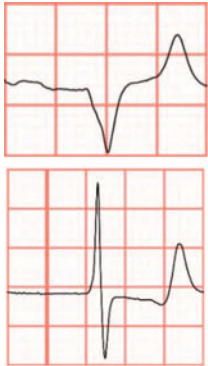
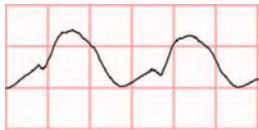
Figure 1. Initial ECG

A 70-year-old male presents to urgent care with confusion. On exam, the patient is tachypneic and is, indeed, confused but is able to follow commands.

View the initial ECG taken and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

*(Case presented by Benjamin Cooper, MD, MEd, FACEP, Department of Emergency Medicine, McGovern Medical School at UTHealth Houston.)*

**Table 1. Expected Electrocardiographic Changes with Given Serum Potassium Levels**

Serum potassium <sup>1</sup>	Potential ECG changes	Morphology
5.5–6.5 mEq/L	<ul style="list-style-type: none"> <li>• Tall, peaked T waves with narrow base</li> <li>• QT interval shortening</li> <li>• ST-segment depression</li> </ul>	Peaked T wave 
6.5–8.0 mEq/L	<ul style="list-style-type: none"> <li>• Peaked T waves</li> <li>• PR-interval prolongation</li> <li>• P wave decreased amplitude or disappearance</li> <li>• QRS widening</li> <li>• R-wave amplification</li> </ul>	Blunted P wave Prolonged PR Wide QRS  Absent P wave 
>8.0 mEq/L	<ul style="list-style-type: none"> <li>• P-wave absence</li> <li>• QRS widening</li> <li>• Intraventricular/fascicular/bundle branch blocks</li> <li>• Sine wave</li> </ul>	Sine wave 

**Differential Diagnosis**

- Hyperkalemia
- Myocardial infarction with hyperacute T waves
- Myocarditis
- Hypocalcemia
- Brugada syndrome

**Diagnosis**

This patient was diagnosed with hyperkalemia due to acute renal failure.

**ECG Analysis**

This ECG shows a regular ventricular rate of 72 bpm without discernable P waves. The T waves are narrow-based with a pointed peak and the QRS is slightly widened. These findings are consistent with hyperkalemia.

Electrocardiographic findings of hyperkalemia tend to follow a progression as toxicity progresses (Table 1). Often, the earliest finding is narrow-based, peaked T waves, and at the extreme end of the hyperkalemia spectrum, a sine wave morphology is a harbinger of pending ventricular fibrillation.

The ECG can be used to predict short-term hyperkalemic adverse events. According to one retrospective study of

188 patients with severe hyperkalemia, the following three findings predicted adverse outcomes within 6 hours:

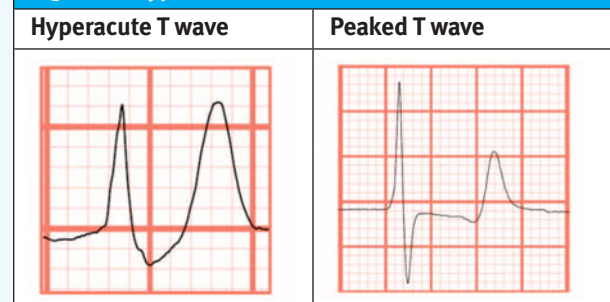
1. Bradycardia <50 bpm
2. QRS >110 ms
3. Junctional rhythm

Notice that peaked T waves were not found to predict acute adverse outcomes.<sup>2</sup>

While other differential considerations exist, it is most important to differentiate hyperacute T waves from the peaked T waves of hyperkalemia.

Peaked T waves of hyperkalemia tend to be narrow-

**Figure 2. Hyperacute vs Peaked T Waves**



based with a pointed peak, as opposed to the broad base and rounded peak of hyperacute T waves (**Figure 2**).

Myocarditis can cause hyperacute T waves, but does not tend to cause peaked T waves.

Hypocalcemia can cause a prolonged QT interval by way of prolongation of the ST-segment.

Brugada syndrome is a sodium channelopathy with a characteristic ECG pattern (pseudo-right bundle branch block pattern with down-sloping ST segment elevation in V<sub>1</sub> and/or V<sub>2</sub>) and an increased risk of sudden cardiac death, in the absence of gross structural heart disease.

Acute treatment of hyperkalemia includes membrane stabilizers like calcium and hypertonic saline, and intracellular potassium shifters like insulin, beta-agonists, and sodium bicarbonate.<sup>1</sup> Patients with electrocardiographic features concerning for hyperkalemia should have all available treatments initiated and be transferred immediately to a dialysis-capable facility.

The potassium level in this case was 9.1 mEq/L, and the patient was immediately transferred to an emergency center for emergent dialysis.

#### Learnings/What to Look for

- Electrocardiographic features of hyperkalemia include peaked T waves, P wave blunting, and QRS widening
- ECG findings that predict short-term adverse outcomes include bradycardia less than 50 bpm, QRS width greater than 110 msec, and a junctional rhythm

#### Pearls for Urgent Care Management

- Any ECG features suggesting hyperkalemia should prompt initiation of available treatments and transfer to a dialysis-capable facility
- Nebulized albuterol is a simple and easily administered therapy in the urgent care setting that can be given while awaiting emergency transportation to shift potassium intracellularly

#### References

1. Long B, Warix JR, Koyfman A. Controversies in management of hyperkalemia. *J Emerg Med.* 2018;55(2):192-205.
2. Durfey N, Lehnhof B, Bergeson A, et al. Severe hyperkalemia: can the electrocardiogram risk stratify for short-term adverse events? *Western J Emerg Med.* 2017;18(5):963-971.

Case courtesy of ECG Stampede ([www.ecgstampede.com](http://www.ecgstampede.com)).

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# Facial Nerve Blocks in the Urgent Care Center

**Urgent message:** Often, patients that could safely be treated for lacerations in the urgent care center are referred to the emergency room due to the quest for expediency, or even providers being out of practice with treating such wounds on site during the COVID-19 pandemic. However, doing so contributes to the degradation of acuity in urgent care while delaying care and raising costs.

PATRICK O'MALLEY, MD

Anesthesia for wound repair can be achieved in many ways, typically with injection of local anesthetics or application of topical agents directly to the wound. Direct injection into the wound has the downside of causing tissue distortion, which may affect the ability to properly align tissues. It is also painful, more so with larger lacerations. Topical anesthetics may not provide adequate or timely anesthesia.

Another method of anesthesia that may be less familiar to urgent care clinicians, nerve blocks, is effective in providing anesthesia over a large distribution with a single needle stick. It also helps limit the amount of anesthetic agent provided to avoid any toxicity concerns, especially in children and low-weight (small) patients. A high degree of familiarity with the anatomy is necessary for appropriate use, however. **Figure 1** highlights the common nerves utilized. Among those with which urgent care providers should familiarize themselves:

**1. Supraorbital and supratrochlear nerves** innervate the forehead down to the upper eyelid, to the midline. If the desired field crossed the midline, also block on the contralateral side. The supraorbital foramen can be palpated just medial to midline of the pupil, along the superior orbital rim.

After cleansing the area with alcohol, inject from a lateral approach, inserting the needle just under the lower margin of the eyebrow. It may be necessary to extend the needle medially. Aspirate to ensure you



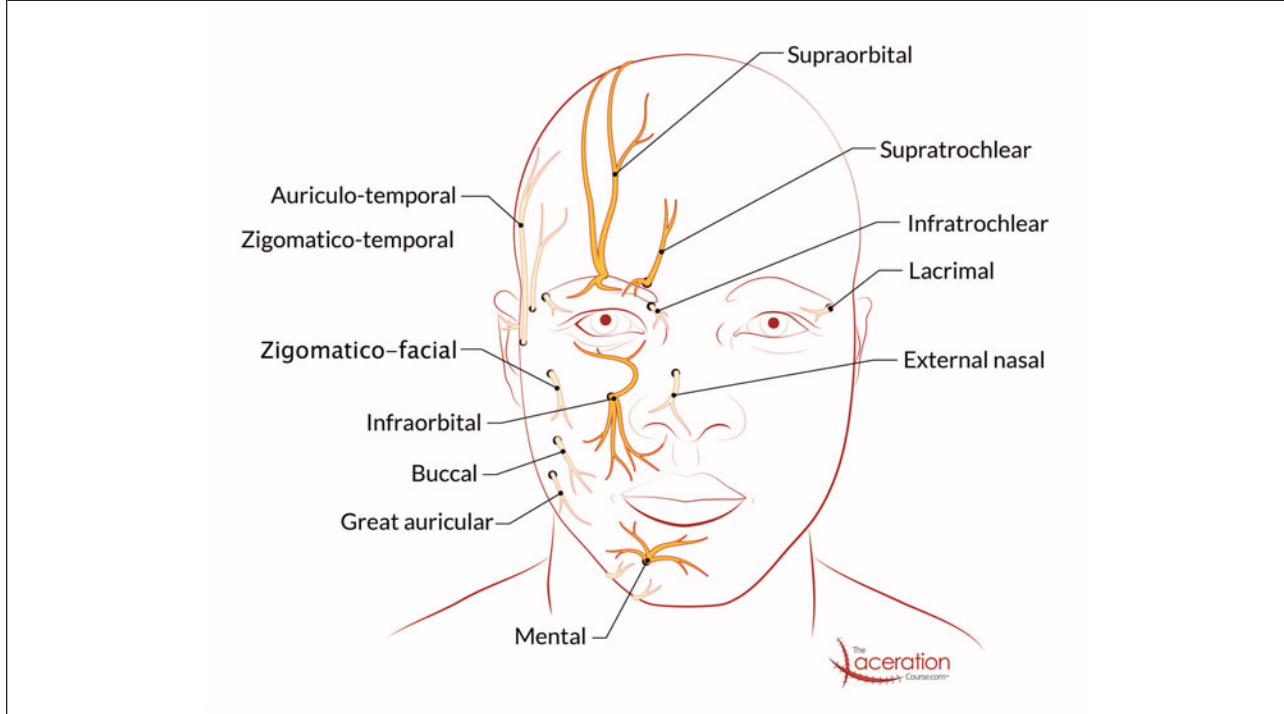
are not in a vascular space, and deposit 2 to 4 mL of anesthetic, either lidocaine or lidocaine with epinephrine, as you withdraw the needle. Make sure you are not in the foramen, as this deposit of volume can cause injury to the nerve if injected directly into the foramen.

**2. The infraorbital nerve** innervates the area overlying the midface, extending from the lower lid to the upper lip. The landmark is the infraorbital foramen,

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**Author affiliations:** Patrick O'Malley, MD is an emergency physician at Newberry County Memorial Hospital, Newberry, SC, and the creator/owner of The Laceration Course lecture series.

**Figure 1. Nerves commonly utilized with nerve blocks.**



palpable externally just medial to the midline of the pupil along the inferior orbital rim.

*External approach:* After cleansing the area with alcohol, a single injection with the same technique as described above is used to deposit 2 to 4 mL of anesthetic, again being careful to inject into the infraorbital foramen. Pressure may be applied after administration to help diffuse into the nerve.

*Intraoral approach:* This may also be delivered intraorally. In fact, this is felt by many to be better tolerated than injection into the facial skin. For the intraoral approach, the landmark is the apex of the first premolar.

Insert the needle into the buccal tissue near the base or root of the first premolar; angle towards the vicinity of the infraorbital foramen. Use the other hand externally to help identify and palpate the foramen. Again, deposit 2 to 4 mL of anesthetic and withdraw the needle.

**3. The mental nerve** exits the skull from the mental foramen, lying in line with the root of the first premolar of the mandibular teeth. This may be palpated externally in this location. The mental nerve provides sensory innervation to the lower lip down to the chin. This also lies slightly medial to the midline of

the pupil. The external approach is the same as the other blocks described above. Wipe the area with an alcohol pad, insert the needle and deposit 2 to 4 mL, taking care to avoid delivery into the mental foramen. The intraoral approach involves inserting the needle in the inferior buccal mucosa, aiming the needle towards the apex or root of the first premolar towards the vicinity of the mental foramen and depositing 2 to 4 mL in this area.

Application of facial nerve blocks is an important skill to be aware of, and to implement into practice. An understanding of the anatomy is key. Familiarity with the diagram above may be helpful in locating these landmarks on yourself and patients while doing a physical exam. Be mindful of pitfalls and risks—such as not injecting directly into the foramen, which may cause damage to the nerve. ■

**Resources**

1. Moskovitz J, Sabatino F. Regional nerve blocks of the face. *Emerg Med Clin North Am.* 2013;31(2):517-527.
2. Salam G. Regional anesthesia for office procedures: part I. Head and neck surgeries. *Am Fam Physician.* 2004;69(3):585-590.

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# What's New in Coding for 2023?

■ MONTE SANDLER

Did the E/M guidelines change again? Yes. However, the changes that the American Medical Association (AMA) made to their E/M Guidelines for 2023 have minimal impact in the office/urgent care setting.

The purpose of these changes is to roll out the new guidelines implemented in 2021 for all categories of E/M.

With these changes, the 1995/1997 guidelines will be completely retired. To view the published changes for 2023, visit [www.ama-assn.org/system/files/2023-e-m-descriptors-guidelines.pdf](http://www.ama-assn.org/system/files/2023-e-m-descriptors-guidelines.pdf).

### Problem Addressed

Two new options were added to the *Low* category of *Problem Addressed*:

#### ■ 1 stable, acute illness

*“Stable, acute illness: A problem that is new or recent for which treatment has been initiated. The patient is improved and, while resolution may not be complete, is stable with respect to the condition.”*

This could be a patient that is coming in for a follow-up visit on an existing condition.

#### ■ 1 acute uncomplicated illness or injury requiring hospital inpatient or observation level of care

*“Acute, uncomplicated illness or injury requiring hospital inpatient or observation level care: A recent or new short-term problem with low risk of morbidity for which treatment is required. There is little to no risk of mortality with treatment, and full recovery without functional impairment is expected. The treatment required is delivered in a hospital inpatient or observation level setting.”*

This second option is for the hospital setting only.

In addition to these new definitions, condition examples were removed from all definitions for *Problem Addressed*.



Monte Sandler is Chief Operating Officer of Experity.

*“A shared or split visit is defined as a visit in which a physician and other qualified healthcare professional(s) both provide the face-to-face and non-face-to-face work related to the visit.”*

### Documentation

#### History and/or Examination

*“E/M codes that have levels of services include a medically appropriate history and/or physical examination, when performed. The nature and extent of the history and/or physical examination are determined by the treating physician or other qualified health care professional reporting the service.”*

The words “when performed” are included in the guidelines for all categories of codes. This indicates that if a history or examination is not necessary, it does not need to be documented.

Keep in mind this history/exam information may be necessary to support the level of *Problem Addressed* or the medical necessity of tests counted towards *Data Reviewed*.

#### Time

When leveling based on time, the total time needs to appear in the actual medical record. The Centers for Medicare and Medicaid Services has suggested that the record also state that the level was selected based on time.

#### Independent Historian

The AMA clarified that a translator should not be counted as an independent historian. As the translator does not have a history or is involved in management of the patient, use of a translator does not count in the *Data Reviewed* section. However, the need for a translator could be a *Social Determinant of Health (SDoH)* in some instances. This could be a *Moderate* level of *Risk of Management*.

#### Shared/Split Visits

The AMA has the following definition for shared visits.

“A shared or split visit is defined as a visit in which a physician and other qualified healthcare professional(s) both provide the face-to-face and non-face-to-face work related to the visit. When time is being used to select the appropriate level of services for which time-based reporting of shared or split visits is allowed, the time personally spent by the physician and other qualified healthcare professional(s) assessing and managing the patient and/or counseling, educating, communicating results to the patient/family/caregiver on the date of the encounter is summed to define total time.

Only distinct time should be summed for shared or split visits (ie, when two or more individuals jointly meet with or discuss the patient, only the time of one individual should be counted).”

This definition does not align with the guidelines from the CMS on shared/split visits. Medicare policy is that shared visits are for the hospital setting only.

**Changes By Category Of Codes Consultations**

The lowest level, 99241, was deleted in 2023.

Code	MDM	Time (Met or Exceeded)
99242	Straightforward	20 minutes
99243	Low	30 minutes
99244	Moderate	40 minutes
99245	High	55 minutes

Consultations are rarely performed in the urgent care setting. Most payers follow Medicare guidelines and do not reimburse for consultations.

**Home Visits**

The categories for domiciliary, rest home, and custodial care were deleted in 2023. Included in this deletion were codes 99324-99328, 99334-99337, 99339, and 99340. Services in these settings should be reported with the home visit codes. The Place of Service (POS) will identify the type of facility that the patient was located in.

Code 99343 will be deleted in 2023.

Code	Patient Type	MDM	Time (Met or Exceeded)
99341	New	Straightforward	15 minutes
99342	New	Low	30 minutes
99344	New	Moderate	60 minutes
99345	New	High	75 minutes
99347	Established	Straightforward	20 minutes
99348	Established	Low	30 minutes
99349	Established	Moderate	40 minutes
99350	Established	High	60 minutes

“Two add-on codes, meant to capture additional practice expense related to suture or staple removal not inherent to the E/M, were added for reporting suture removal not requiring anesthesia or sedation in the office or other outpatient site outside of the global period.”

**Nursing Facility Services**

These codes are used by both the admitting physician and specialists. HCPCS modifier “AI” is required on the admitting physician claim to identify their role in the care of the patient.

Code 99318 will be deleted in 2023.

Code	Visit Type	MDM	Time (Met or Exceeded)
99304	Initial	Straightforward or Low	25 minutes
99305	Initial	Moderate	35 minutes
99306	Initial	High	45 minutes
99307	Subsequent	Straightforward	10 minutes
99308	Subsequent	Low	15 minutes
99309	Subsequent	Moderate	30 minutes
99310	Subsequent	High	45 minutes
99315	Discharge	N/A	30 minutes or less
99316	Discharge	N/A	More than 30 minutes

These codes are also used for skilled nursing facilities. The POS is used to report the type of facility where the service was performed. Nursing facility is POS 32; skilled nursing facility is POS 31.

The following definition was added for Problem Addressed; it is unique to nursing facilities:

“Multiple morbidities requiring intensive management: A set of conditions, syndromes, or functional impairments that are likely to require frequent medication changes or other treatment changes and/or re-evaluations. The patient is at significant risk of worsening medical (including behavioral) status and risk for (re)admission to a hospital.”

This definition was added to identify a high-level Problem Addressed category that is specific to initial nursing facility care by the principal provider.

**Prolonged Services**

Existing face-to-face prolonged services codes 99354-

99357 were deleted for 2023.

Two options remain for reporting prolonged services in the office or home setting:

- 99417 – each 15-minute increment of time beyond the *minimum* time for 99205, 99215, 99345, or 99350
- G2212 (Medicare only) – each 15-minute increment of time beyond the *maximum* time for 99205, 99215, 99345, or 99350

A new prolonged services code, CPT 99418, was added for the inpatient, observation, or nursing facility setting.

Other prolonged services codes:

- 99358, +99359 – non-face-to-face service on a date other than the date of the E/M
- 99415, +99416 – prolonged clinical staff time under direct supervision of the physician or non-physician practitioner (NPP)

### Suture Removal

Two add-on codes were added for reporting suture removal not requiring anesthesia or sedation in the office or other outpatient site outside of the global period.

These codes are meant to capture the additional practice

expense related to suture or staple removal not inherent to the E/M code.

- +15853 Removal of sutures *or* staples not requiring anesthesia (List separately in addition to E/M code)
- +15854 Removal of sutures *and* staples not requiring anesthesia (List separately in addition to E/M code)

In 2022, when the only reason for the visit is a straightforward suture removal, the service is reported with a lower-level E/M (eg, 99212). If the visit includes evaluation beyond what is required for the suture removal, this would be reported with a higher-level E/M. Nothing would be reported additionally for the suture removal.

In 2023, practices should continue to report a lower-level E/M as you do today. However, if the patient is seen for another reason or the office visit is extensive (eg, the patient has an infection), add-on codes 15853 or 15854 should be reported in addition to the E/M.

These two new codes are always reported with an E/M. Codes 15853 or 15854 should not be reported by themselves.

Here's to a successful 2023. ■



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# Evolution of the Urgent Care Staffing Model During the COVID-19 Pandemic

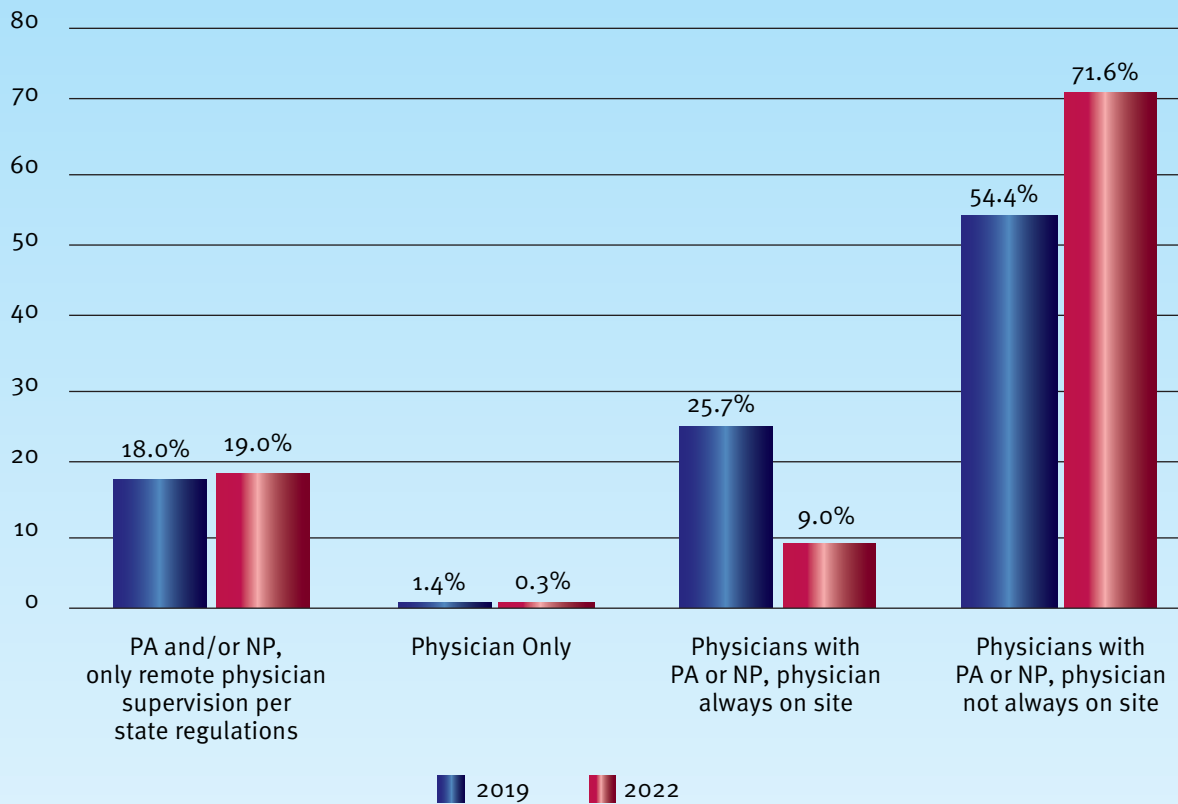
The scourge of the COVID-19 pandemic has affected urgent care practices deeply, beyond what you already know firsthand. In addition to fluctuations in patient visits, efforts to keep staff safe, and reorganizing locations to meet whatever need was greatest at a given moment, the “typical” urgent care staffing model evolved at an accelerated pace between 2019 and today.

The proportion of centers in which physician assistants and nurse practitioners treat patients with only remote

physician supervision hasn’t changed much. Nor has the percentage of centers with only physicians on the clinical staff. The centers in which PAs and NPs work without a physician on site at all times has increased dramatically, however, with a corresponding reduction in the percentage of UCCs in which a physician is always on site to supervise PAs and NPs.

Check out the graph below to see what we mean

## URGENT CARE PROVIDER MODEL (N=1,387)



Data Source: The Urgent Care Association. UCA 2022 Benchmarking Report/Compensation. Available at: <https://urgentcareassociation.org/product/2022-benchmarking-report-compensation/>. Accessed December 14, 2022.



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