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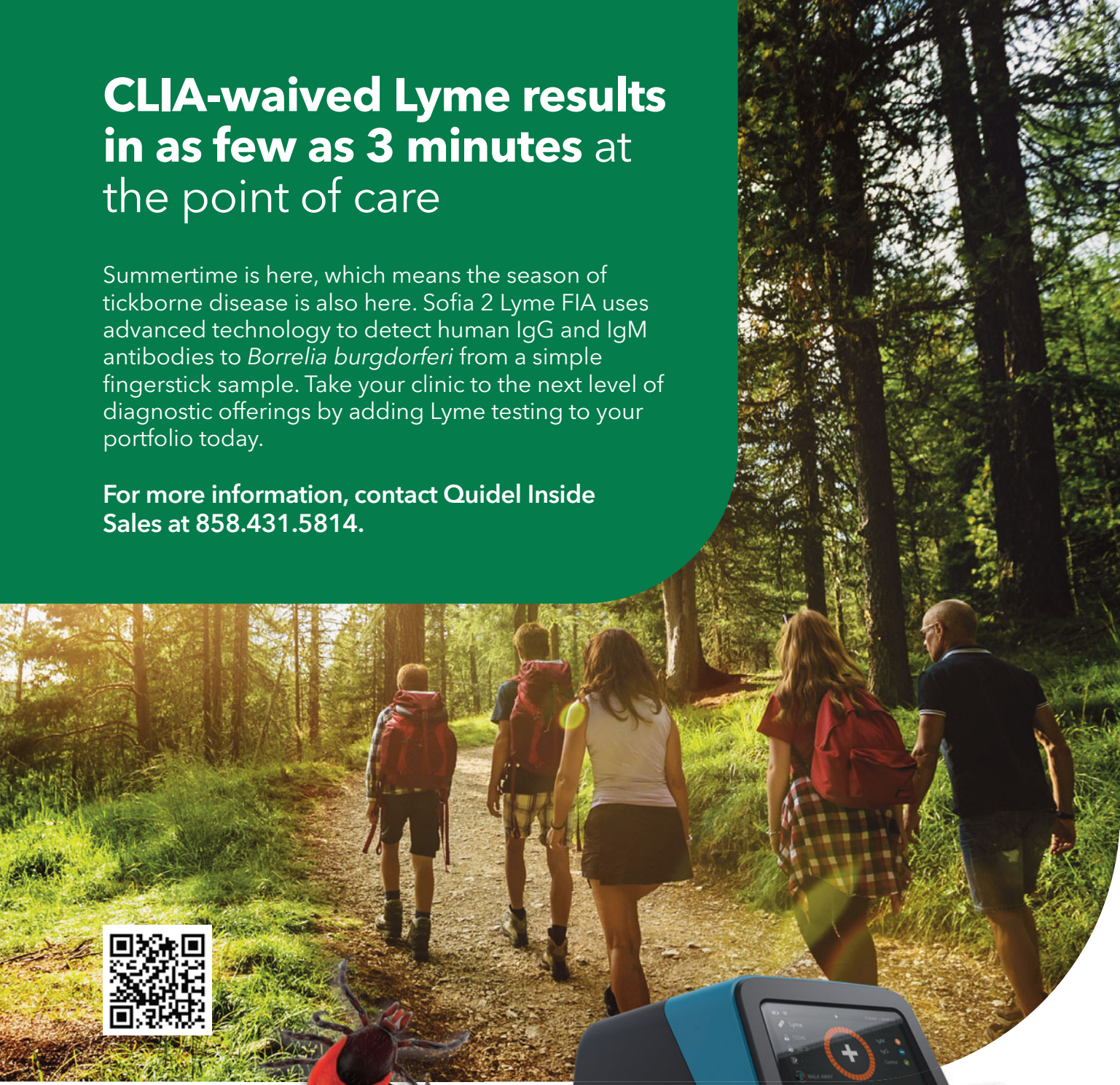

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LETTER FROM THE EDITOR-IN-CHIEF

Playing in the Band

I got my first guitar when I was 14. It was an Alvarez acoustic with an electric pick-up, and I played it every day—at least for a while. I thought it would make me cool and make the girls take notice. But after about a year, when neither of those things had happened, I just about gave up the guitar for good. There simply wasn't much joy in always playing alone. What revived and has sustained my interest was joining some of my high school friends and forming a band.

This awkwardly revealing story about my adolescence illustrates an important aspect of our biology. We are built to connect and collaborate. There is an intangible power in the chemistry of gathering together and interacting in real time, like playing in a band. That's why "Getting the Band Back Together" was the perfect theme and metaphor for the UCA Annual Convention this May; it was the UCA's first in-person gathering in over 3 years. And it was clear we all needed it.

I think one of the most pernicious lies we told ourselves during the lockdown days of the early pandemic was that virtual conferences were a suitable surrogate for meeting in-person. It was easier than despairing over the "new normal" we found ourselves perpetually stuck in. I even convinced myself it was actually a win. I consoled myself about all the money I'd save by doing my CME virtually: no hotels, flights, or car rentals. However, while attending the UCA conference, I was disabused of that flawed notion on day 1.

There are moments of inspiration and collaboration only accessible through gathering in real life. Until very recently in human history, in fact, this is the only way that simultaneous interaction was even possible. While it can be helpful for our safety (like during a pandemic, for example), overreliance on virtual community ultimately detracts from our collective progress and well-being.

To be certain, it's not all bad that we've fumbled through the process of "leveraging" technology to make remote meeting possible.

Telemedicine and video meetings, for example, continue to play a critical role for many, but a surrogate for face-to-face human interaction they are not.

Meandering through the conference rooms of Caesar's Palace, I was struck with a profound realization that I never experienced during any of the virtual urgent care meetings: feeling like I'm part of a community—the urgent care community. On a cognitive level, the "we are in this together" reality though was something I understood to be true in my prefrontal cortex, however; I hadn't felt it to be true until the symposium.

The author (left) and Michael Weinstock, MD performing at the UCA Annual Convention, Las Vegas, May 2022.

This sense of isolation is exacerbated because the default state of UC is fairly fragmented. We all practice in a siloed fashion within our centers. We may be members of listservs, Facebook groups, and WhatsApp group texts, but these don't provide true community. These are seldom the venues where brainstorming breakthroughs or effective networking take place. Rather, they are, again, technological solutions for highly practical and specific needs. The camaraderie afforded through live gathering has always been irreplaceable. I'd just forgotten how it felt.

Moreover, it was surprising how much more impactful it was when seeing the hundreds of faces of members of my community surrounding me rather than looking at an equally long list of webinar attendees. It was a highly visible representation of how UC and the involvement of members of the community has grown over recent years. The first UCA (UCAOA, at the time) meeting was held in 2005 and about 200 people attended. The conference in Vegas this May was the largest ever, with attendance exceeding a thousand for the first time. I put faces to names of people who I had collaborated with (nominally) for years. On several of these occasions, we accomplished more in envisioning and planning our mutual future efforts during a 10-minute conversation than we had over years of emailing back-and-forth.

Conversely, seeing the group's membership splayed out before me in this fashion, I also realized that while we've come quite far as a community, we still have tremendous unrealized potential.

The UCA's membership has grown exponentially, but there are nearly 14,000 UC centers in the U.S. alone and tens of thousands of UC clinicians worldwide. The attendance represents a relatively small fraction of the global UC community when considered in these terms.

It's almost as though we have reached the halfway point of a marathon. We've come so far and yet we have so far left to go. Both perspectives are simultaneously true, and we should be mindful of which one we put our focus on day-to-day. If you're among those discouraged that UC still has not received its due respect as a distinct specialty or a site where high-quality, cost-effective care is rendered, it'd be wise to remind yourself of just how much progress we've made. If you're among those motivated by the vision of everything that UC could be, turn your attention on the road ahead. And when your mood changes, try the other point-of-view.

For many of you, however, it's likely that neither of these perspectives describes your mindset as it relates to UC. Clearly, based on UCA membership and attendance at national conferences, it seems most common that UC providers see themselves first and foremost as clinicians: people who show up to their shifts, see patients, go home, and repeat. And there's certainly nothing wrong with faithfully working your schedule and leaving thoughts of urgent care at work. Perhaps you value other pursuits or don't find working in UC to be an important part of your identity. Or, perhaps, working within organizations towards bigger goals in the past, you've burned yourself out by overcommitting to various task forces and committees.

There is another group, however, I'd like to draw attention to: those of you who are still playing guitar alone and who've never before tried joining with the band. Playing guitar alone as a hobby was boring to me, but playing the guitar alone for a job, 40+ hours/week, would have been soul crushing.

That's what it often can feel like clocking in-and-out, shift after shift, without an experience of community. We are predisposed to isolation simply by virtue of working in UC, but humans were built to play together. There's low-hanging joy waiting to be found when we meet and discover common ground and unified purpose. So, if you find yourself languishing or burnt out (as so many of us do right now), the antidote may very well lie in running towards the UC community rather than backing away from it. We've come a long way, but we also have far to go, so we need all the help we can get. Plus, the more of us playing together, the better the harmony. ■

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CLINICAL

IN THE SEPTEMBER *JUCM*

While which strains are in play and how severe the season runs remain somewhat of a mystery from year to year, there's a fairly familiar ebb-and-flow to seasonal influenza. Not so with SARS-CoV-2. New variants emerge on a regular basis, without warning and without us being able to predict how effective existing vaccines may be. In the September issue of *JUCM*, we will share original research based on data gathered at a federal qualified healthcare center's urgent care department during the omicron wave.

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JUCM The Journal of Urgent Care Medicine (ISSN 19380011) supports the evolution of urgent care medicine by creating content that addresses both the clinical practice of urgent care medicine and the practice management challenges of keeping pace with an ever-changing healthcare marketplace. As the Official Publication of the Urgent Care Association and the College of Urgent Care Medicine, *JUCM* seeks to provide a forum for the exchange of ideas regarding the clinical and business best-practices for running an urgent care center.

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In an ideal world, all decisions clinicians make would be clearly based on widely accepted best practices and all urgent care patients would heal perfectly, with no lingering effects from their diagnosis or treatment.

That's not how it works, of course. Sometimes the path toward healing isn't clear. Such is the case with burn blisters, the treatment of which, as the authors of this issue's cover article acknowledge, can be both vexing and controversial. Multiple questions, many of which require sometimes subjective observation, have to be answered in order to choose the most appropriate treatment option: How did the burn occur? What part(s) of the body are affected? How old is the patient? How thick is the blister?

Answer them all correctly and the patient's chance for a full recovery and minimal scarring are quite good. Misinterpretation or misunderstanding, sometimes based on faulty intel from the patient, changes the prognosis dramatically.

So, Management of Burn Blisters in Urgent Care (page 13) should be considered essential reading if you're at all concerned that you may not be fully prepared for such a patient. We appreciate the willingness of **Muhammad Zeeshan Ahmed MBBS, FRNZCUC** (Waikato DHB & Tui Medical Ltd, Hamilton, New Zealand), **Winston McEwan FRACS** (Alison Surgical Centre), and **Sana Maqsood MPhil, Cert PH** (Waikato District Health Board) to shed light on this topic.

Injuries to the skin due to sharp objects present an entirely different sort of challenge. Before you can even address the wound itself, you have to be able to assess the dimensions and severity of the laceration—and for that you have to ensure a bloodless field. Finger tourniquets can facilitate that, but what's the best approach? And what happens if you don't have the proper supplies on site—do you shrug your shoulders and tell the patient to get to the emergency room as fast as possible? If you read Essential Tools for Urgent Care—Finger Tourniquet, which starts on page 40, you'll understand why the answer should be a resounding *No*. The author, **Patrick O'Malley, MD** is an emergency physician at Newberry County Memorial Hospital, Newberry, SC.

That point where you have to decide whether the patient can be treated safely in your urgent care center or would be better off in the ED is fundamental to urgent care medicine. Secondary, but also important, is the relative expense of treating the patient's illness or injury. Firm data on this have been scarce, but thanks to **Lo Fu Tan, MD, MS, FCFP, FAAFP** and **Jillian Kreston, MBA, MEcon**, *JUCM* is part of the solution in changing that. The authors describe research into it in Cost-Effective Ambulatory Care for Emergency Department Avoidance, starting on page 25. Dr. Tan is senior medical director, digital health at OPTUMCare, where Ms. Kreston is risk and quality director, health economics.

Even the most mundane and commonplace urgent care complaints require careful consideration, of course. Take headache for example. It's unlikely the etiology is anything menacing, but making that assumption could be a grave mistake. Such is the case in Brain Abscess in an Immunocompetent Patient: Complex Pathology and Communication (page 21), by **Rachel Murphy** and **Lindsey E. Fish, MD**. Ms. Murphy and Dr. Fish are both affiliated with the University of Colorado School of Medicine; Dr. Fish is also affiliated with Denver Health & Hospital, and serves as editor, images for *JUCM*.

With everything you've just read in mind, it shouldn't be surprising to learn that urgent care as an industry is in a period of growth, and that prospective investors view its prospects with great optimism. In As COVID Turns Endemic, Investors Remain Bullish on Urgent Care Growth (page 35), **Alan A. Ayers, MBA, MAcc** shares that de novo growth of urgent care continued through the pandemic and that any periodic uncertainty is just the nature of the beast.

That same sense of optimism is at the heart of **Monte Sandler's** Revenue Cycle Management column. In A Half Century of Urgent Care: What Today's Startups Need to Know (page 51), Mr. Sandler, who is executive vice president, revenue cycle management at Experity, notes that adapting to changing conditions is also in the DNA of urgent care operators and providers. Fine-tuning the business model to meet *today's* conditions has become just another distinguishing characteristic of the industry.

Finally, we appreciate the efforts of **Ivan Koay, MBChB, FRNZCUC, MD** in reviewing current, urgent care-relevant literature from other journals. This month, he draws your attention to articles on colchicine in acute gout, point-of-care ultrasound and necrotizing fasciitis, assessing patient satisfaction, misinterpreting pediatric radiographs, lung ultrasound and pediatric pneumonia, and diagnosing pneumothorax. Dr. Koay is an urgent care physician based in Dublin, Ireland, as well as a Royal New Zealand College of Urgent Care Examiner; Education Faculty for the RCSI Fellowship of Urgent Care Medicine; and Head of Faculty na hÉireann, RNZCUC. Abstracts in Urgent Care begins on page 42.

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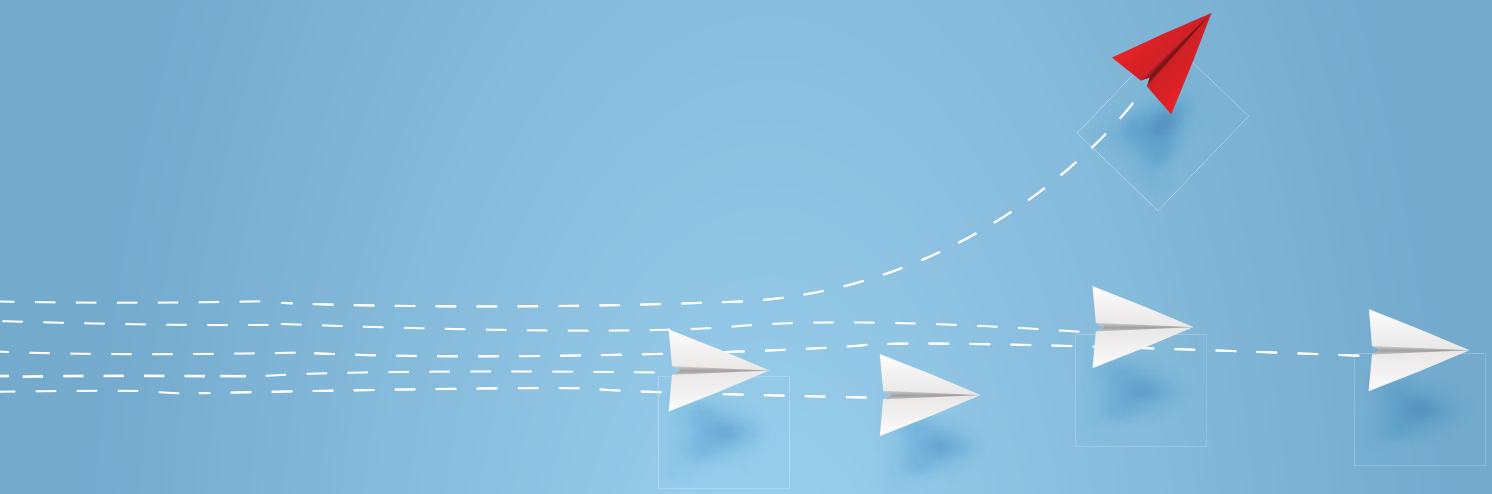

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A Bittersweet Introduction

MAX LEBOW, MD, MPH


Armando Samaniego

This month's column is not supposed to be written by me. This month's column should have been written by Dr. Armando Samaniego, who became UCA's President at our Annual Meeting in Las Vegas, just a few months ago. Tragically, Armando passed away unexpectedly on May 21. He was an esteemed colleague, mentor, and friend to all who knew him, and I am honored to have worked alongside him on the UCA Board of Directors.

Armando and I were close because of our work on the Board, but also because we had a shared dedication and commitment to family. His face, like mine, would light up when we talked together about our children, their accomplishments, and the vital role that family played in our lives. In addition to family and the Board, Armando was committed to his patients, and to the principles of quality medical care and healthcare equity. He was a moral compass to me and to those with whom he worked.

Armando's enthusiasm and dedication to excellence in medical care and practice were contagious. It was only through his support and encouragement that I ran for President-Elect, and it is because of his confidence in me that I now (albeit a year prematurely) have become UCA President. I will always be grateful to him for sharing his wisdom on the Board. Because he was especially generous with his time with new members of the Board, his inspiration and ideas will live on for many years to come. We will update you on plans for a tribute to his legacy. For now, suffice to say that Armando and his commitment to the advancement and long-term success of urgent care will not be forgotten.

As I enter my year as President of the Urgent Care Association, I have set certain goals which I would like to share. First, I want to see an increase in UCA membership. Greater numbers mean a stronger voice for UCA in promoting the interests of urgent care medicine and the urgent care industry to stakeholders, legislators, and decision-makers.

Equally important, I wish to increase the *involvement* of our membership with the organization. UCA has committees and sections for almost any interest group within urgent care.

That involvement includes coming to the Convention. If you were with us in Las Vegas in April, you know what a powerful gathering that was. You could literally feel the energy of the future of our industry in the vibe of the people in the hallways, in the classrooms, on the stages and in the celebrations. One of the speakers said that it felt like we were beginning all over again—and I believe the best is yet to come for urgent care.

My next goal is to increase the value and benefits of UCA and CUMC membership—more on this in a future column.

I am also firmly committed to healthcare equity and inclusion. Armando helped form the Commission on Diversity, Equity and Inclusion to ensure those ideals would be an active and vital part of our organization's mission.

Do not take my optimism to mean we are not facing challenges. The latest UCA benchmarking survey shows that staffing issues are difficult for many practices, but this is a symptom of steady demand. We have some of the most creative, entrepreneurial, determined people working in our industry. We believe in quality of care and in patient experience. Through hard work and dedication, our urgent care centers will become an even more important part of the healthcare delivery system in each of our communities.

I hope that if you or your organization is not yet a member you will join us this month. UCA continues to improve its resources and benefits for members, and works hard on behalf of every one of you—member or not—toward long-term goals that will ensure the long-term success of urgent care. We will get there faster if our membership is greater and more representative. I invite you to join us and be part of the group ensuring our future. And I look forward to serving you in the coming year. ■

Max Lebow, MD, MPH is medical director of Reliant Immediate Care Medical Group.

Max Lebow, MD, MPH
President, UCA

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Release Date: July 1, 2022
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Management of Burn Blisters in Urgent Care (page 13)

1. **Which of the following is among the critical parameters that help define treatment options for patients with burn blisters?**
   a. Ease of dressing
   b. Cost-effectiveness
   c. Aesthetic outcome
   d. All of the above

2. **Flame burns are the most common mode of burn injury in:**
   a. Adults
   b. Children
   c. Both adults and children
   d. Neither adults nor children

3. **When treating a patient with thick-walled blisters on the palm, fingers, soles, or toes, the optimal course of action is to:**
   a. Leave the blister intact
   b. Make a small window to remove fluid to relieve pressure and assess the wound
   c. Deroof to prevent loose dead skin from acting as a source of infection
   d. Refer to a burn center

Brain Abscess in an Immunocompetent Patient: Complex Pathology and Communication (page 21)

1. **While most causes of headache in patients presenting to urgent care are benign, factors that should serve as red flags for a more emergent condition include:**
   a. Altered gait
   b. History of substance use
   c. Age
   d. All of the above

2. **Most brain abscesses stem from:**
   a. Previous neurologic surgery
   b. Injury
   c. Hematologic spread
   d. Any of the above

3. **The most common triad of brain abscess symptoms includes:**
   a. Headache, fever, rhinorrhea
   b. Headache, fever, focal neurological deficit
   c. Headache, focal neurological deficit, cough
   d. Fever, focal neurological deficit, conjunctival injection

As COVID Turns Endemic, Investors Remain Bullish on Urgent Care Growth (page 35)

1. **Of the roughly 350 urgent care centers added per quarter in the United States, what proportion are affiliated with health systems?**
   a. 27%
   b. 33%
   c. 42%
   d. 56%

2. **Between 2013 and 2020, the urgent care industry grew at a rate of approximately:**
   a. 3.6%
   b. 7%
   c. 12%
   d. 16%

3. **Advantages of scaling within your existing market include:**
   a. Flexible, rotating staffing
   b. Reduced management fees
   c. Bigger marketing return-on-investment
   d. All of the above

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1. ID NOW™ COVID-19 Product Insert 2. Merckx J, et al. Diagnostic Accuracy of Novel and Traditional Rapid Tests for Influenza Infection Compared With Reverse Transcriptase Polymerase Chain Reaction: A Systematic Review and Meta-analysis. Ann Intern Med. 2017 Sep 19;167(6):394-409. Based on the reported Flu A sensitivities of readers and ID NOW 3. ID NOW™ Strep A 2 Product Insert 4. Chartrand, C. et al. Diagnostic Accuracy of Rapid Antigen Detection Tests for Respiratory Syncytial Virus Infection: Systematic Review and Meta-analysis. J Clin Microbiol. December 2015 vol. 53 no. 12 3738-3749 5. ID NOW RSV Product Insert

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Management of Burn Blisters in Urgent Care

Urgent message: Though data are limited and approaches to burn blister management remain controversial (eg, leaving blisters intact vs deroofing or aspirating), appropriate initial care in the urgent care setting is both feasible and advisable and can reduce risk for infection and scarring.

MUHAMMAD ZEESHAN AHMED, MBBS, FRNZCUC; WINSTON MCEWAN, FRACS; and SANA MAQSOOD, MPHIL, CERT PH

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Introduction

Though positive outcomes can be achieved with appropriate wound care and dressing, assessing and managing burn injuries can be a challenge in the urgent care setting, especially concerning burn blisters and immediate dressings. What literature exists leaves the clinician on the horns of a dilemma: whether to aspirate or deroof blisters or leave them intact to act as a biological dressing.

Varying opinions on management of burn blisters emphasize their biochemical, physiological, and anatomical features. Burn blisters contain a mixture of several chemicals; some promote, while others delay, wound healing.

Arguments favoring the preservation of intact blisters focus on the idea of a natural biological protective process from intact blisters. On the other hand, those favoring aspiration or deroofing perceive that it reduces wound infection rate and complications and makes dressings more secure. In addition, there have been conflicting statements on the management of small and medium or large blisters. Some propose leaving small blisters less than 6 mm^2 intact, with debridement for others.

Case Description

A 12-year-old girl presented to the urgent care facility with a burn on her right thigh. Her parents accompanied her.

The girl burned her thigh after hot boiled water spilled over her thigh approximately 2 hours prior to presentation. She had immediate severe pain, and later blisters started to develop. The burn area cooled with

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Figure 1A. Children's Place of Burning[8]

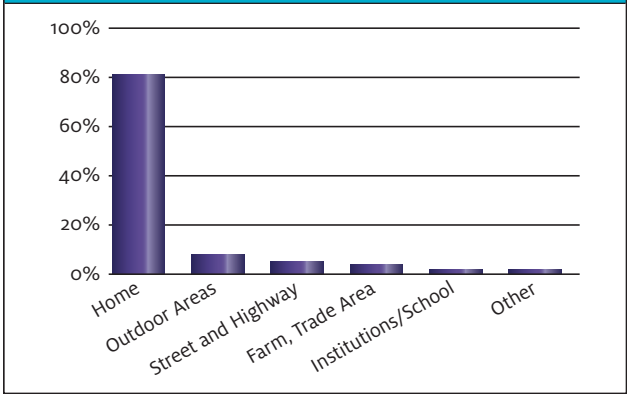
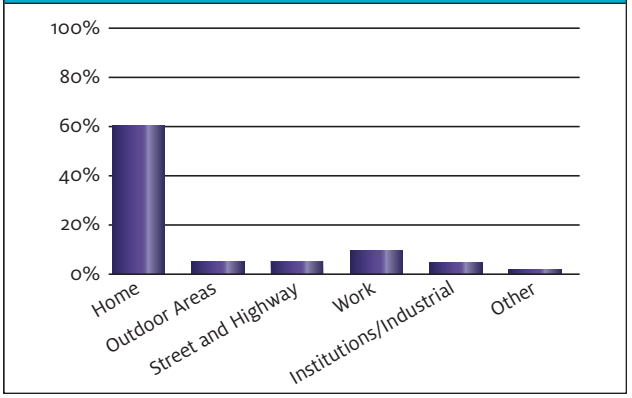


Figure 1B. Adult's Place of Burning[8]



running water at home for 5 minutes.

Past medical history was not significant, and she had no known drug allergies. She was fully immunized.

Examination

The patient had a pulse of 115 with a blood pressure of 122/72, and she was afebrile. She was alert and well-appearing on general examination. She was given acetaminophen 500 mg on arrival during triage.

Examination of the leg revealed a superficial dermal burn of approximately 5 x 6 cm / 1% total body surface area (TBSA) on the right lower anterior thigh with small blisters formation.

The rest of the examination revealed no other injuries, and the limb's distal neurovascular status was intact.

The Plan

Further cooling with running water was provided at the clinic intermittently for 20 minutes. Gentle cleaning with saline and chlorhexidine was done. The wound was dressed with Jelonet.

On discharge, she was advised to rest and keep the limb elevated. She was given a script for acetaminophen and ibuprofen for pain relief, with instructions to return for review and a change of dressings in 48 hours.

The follow-up exam 2 days later revealed erythema was decreasing, though there was still some tenderness. Most small blisters were still intact. A couple of them were self-ruptured but still acting as good biological skin, and there was not much loose skin for doing any debridement. The plan was to continue with similar dressings and care.

Short-term and long-term scar care plans, including moisturizer use and protecting the burn area from the sun, were explained to the patient and family. Follow-up for ongoing review with the general practitioner and scar care with the scar team was advised.

Background

This article will review published literature and guidelines on the management of blisters in the partial-thickness burn (superficial and mid-dermal) with emphasis on implementing appropriate methods into clinical practice to achieve optimal outcomes.

While some urgent care providers leave blisters intact, others aspirate or deroof the blisters. In deciding, one has to consider a few essential aspects that are vital in general patient care and wound healing, such as:

- Are there some blisters that can be left as such?
- Is it necessary to debride blisters to assess the burnt area better?
- Is it painful for the patient?
- What is going to heal better and quicker?

Burn injuries are distinctive, as the injured area usually contains various zones of tissue damage depending upon the amount of heat transfer.[1] Clinicians working in emergency rooms, urgent care, or even primary care encounter burn blisters on a regular basis. Management of more minor burn injuries in the urgent care center can be improved by providing appropriate first aid, good burn dressings, and effective wound management. Overall, this will reduce the chances of a burn getting deeper or infected and reduce the need for specialist review or surgery.[2]

Burn wound healing is a very complex and intricate process that involves several cell types and chemical mediators.[3] Multiple factors (eg, burn area, patient's age, overall health level, comorbid conditions, smoking status, and many others) contribute to burn wound healing.

As a burn blister contributes to wound healing by

Table 1. Diagnosis of Burn Depth[9]

Depth of Burn	Color	Blisters	Capillary Refill	Sensation	Healing
Epidermal burn	Red	No	Present	Present	Yes
Superficial dermal burn	Pale pink	Small	Present	Painful	Yes
Mid-dermal burn	Dark pink	Present	Sluggish	+/-	Usually
Deep dermal burn	Blotchy red	+/-	Absent	Absent	No
Full-thickness burn	White	No	Absent	Absent	No

protecting the wound,[4] its management can prove to be pivotal for the outcome. The critical parameters that help define the treatment options are patient comfort, ease of dressing, cost-effectiveness, risk of infection, healing time, functional and aesthetic outcome.[4] Clinicians should take these outcome factors, as well as the available literature, into account when deciding on burn management.

Epidemiology/Statistics

A burn is a common form of trauma in all age groups. Burns are the fourth most common type of trauma worldwide following traffic accidents, falls, and interpersonal violence.[5]

Approximately 486,000 burns requiring medical treatment occur annually in the United States.[6]

In both adults and children, the most typical place to be burned is in the home.[7-9] In children, 82% of accidents occur at home.[9,10] (See **Figures 1A** and **1B**.) Most scald burns in children and adults happen in the kitchen and the bathrooms.

Data as recent as 2020 indicate that the most prevalent modes of burn among pediatric patients are scald (52%), contact burn (25%), and flame burn (11%). In contrast, flame burn (42%) is the most common mode in adults, followed by scalds (26%) and contact burns (18%).[8]

Assessment and Burn Classification

When assessing burns and considering treatment options, it is important to bear in mind certain aspects of the history, including:

- Mechanism of burn
- Time since burn
- Immediate cooling/irrigation
- Assessment of degree of burn
- When to refer based on TBSA burn, burn of particular areas, cause of the burn

Next, burn classification helps in identifying burn depth based on clinical assessment. Burns are subclassified according to the thickness of the burn (see **Table 1**):

- Epidermal burn
- Superficial dermal burn
- Mid-dermal burn
- Deep dermal burn
- Full-thickness burn

In practice, all burns are a mixture of different depths due to differences in heat transfer.[1]

The Nature of the Burn Blister

It is essential to know why burn blisters form in the first place. A burn induces inflammatory changes that lead to increased capillary permeability, resulting in the fluid collection between the dermis and epidermis.[4] The epidermis separates from the dermis, resulting in formation of blisters of various sizes.[1,4] The blister contains several chemicals and molecules that affect wound healing.[11]

Burn blisters occur mainly in superficial dermal burns, but they can also develop in mid- to deep dermal burn areas.[4,12] Superficial dermal burns damage the epidermis and upper part of the dermis, ie, the papillary dermis. The prominent feature of superficial dermal burn is blister formation. This type of burn should heal spontaneously by epithelialization within 2 weeks and leave only a color-match defect.[4,13]

In mid-dermal burn, spontaneous healing usually does not happen as the damage is deep, and thus there are fewer surviving cells to facilitate re-epithelialization.[4,13]

After initial assessment of the burn, it is vital to answer the following questions:

- Can that burn be safely managed on site?
- Does it need discussion with the plastic surgery team?
- Should the burn patient be transferred to a plastic surgery/burn center? (For example, burns >10% TBSA or 5% in a child, burns to special areas—face, hands, feet, perineum, over major joints, full thickness burns >5% TBSA, circumferential burns of the limbs or chest, burn with inhalation injury etc.[9])

Most reported burns in the community do not need hospital-level care and can be safely managed in the

Table 2. How to Deroof a Blister?

1. Explain the procedure to patient/parents
2. Give appropriate pain relief
3. Ask the patient to lie on bed to avoid fainting
4. Use sterile dressing pack with forceps and scissors
5. Wear sterile gloves and gently hold the blistered epidermis with forceps and make a small cut. Use gauze to soak the leaking fluid
6. Gently remove the epidermis with scissors going close to the edge of blister. Avoid touching the edge and base of blister as it can be very sensitive and painful.
7. Gently clean the wound bed with saline and use dressings to cover

urgent care center. A large proportion of these burns are superficial burns with the hallmark of blister formation. On the other hand, major burns reported to the burn centers usually require significant debridement.

Once the management plan is decided based on the burn assessment, the next step is dressings and addressing the blister areas.

Evolution of Burn Blister Management

Current evidence regarding management of burn blisters is limited and controversial.[1,14] The last three decades have seen a remarkable evolution in burn management, which has resulted in a vast reduction in mortality; further, morbidity outcomes are significantly better. Burn wound care has also evolved as more patients have survived. Research has advanced to the point that we now can observe details of wound healing at a microscopic level. In the process, several dressing options have emerged to allow wounds to heal more quickly and thoroughly.

Looking all the way back to the 1940s, management of burn wounds initially meant leaving the blisters intact.[4]

That practice was reinforced a decade later in a study that is likely to be considered unethical in the current practice. Gimbel, et al created a row of burns on healthy volunteers.[15] Few blisters were left intact, with others deroofed or aspirated. The intact blister group healed faster.

Later, concerns were raised that blister fluid might propagate bacterial growth, which led to the concept of debridement of the blisters and using some dressings. With advances in the 1970s and 1980s, dressings like silver sulfadiazine, auto and allografts, Biobrane and TransCyte were increasingly used, with the goal of increasing wound healing and achieving better scarring.[4] Burn wound or blister debridement was required for using these special dressings.[16]

Swain, et al published a study in 1987 analyzing bacterial colonization and wound pain in three treatment options for blisters—ie, deroofing, aspiration, and leaving blisters intact. The incidence of infection with *Staphylococcus aureus* was higher with the exposed (deroofed) group with a p-value of <0.05. The pain score was also higher and statistically significant in the exposed group.[17] The authors proposed aspiration to be superior over deroofing, but that study lacked randomization and blinding.[11,17]

Studies involving burn fluid analysis, which could prove to be an essential indicator in deciding the fate of blisters, have shown conflicting results.

Shin-Chen Pan published a study in 2013 analyzing the burn fluid in the neovascularisation of the burn wound healing.[3] Early injury conditions contain important angiogenic factors that promote the neovascularization phase of wound healing. The study noted high levels of angiogenin expression even at day 4 in deep partial thickness burn (DPTB) as compared to superficial partial thickness burn (SPTB). This differential angiogenin expression between SPTB and DPTB explains the different healing process of these burn wounds. It suggested that the burn blister should be left intact. The study provided a model to show how angiogenin factors, cytokines, and growth factors play a role in burn wound revascularization.[3]

On the other hand, Yoo, et al (2017) studied another spectrum of blister fluid.[13] They did serial analysis for heat shock protein 70 (HSP70) and interleukin-8 (IL-8) levels in the blister fluid. Previous studies have shown HSP70 and IL-8 as pro-inflammatory factors, prolonging the inflammatory phase of wound healing. HSP70 peaked at 12 hours postburn, and IL-8 peaked on the fourth day. Based on that, they suggested that these levels may help determine when the blister fluid should be removed. The study had some limitations, including small sample size, and it does not clearly describe the healing mechanism and role of those factors.[12]

In 2018, Chen, et al analyzed various chemicals and factors in burn blister fluids in superficial and deep partial-thickness burns.[12] Their data noted a predominance of $CD14^+$ in blister fluid of deep partial-thickness burns, and they suggested that it plays a role in burn wound neovascularization. Though the study did not directly suggest leaving the blisters intact, it indirectly shows that burn blister fluid has some factors that help to heal.

In 2018, Ro, et al published their prospective randomized controlled trial comparing aspiration with de-

Table 3. An Overview of Essential Burn Blister Studies

Study	Type	Patients	Conclusions
Swain et al (1987)	Prospective study	202 (316 blisters)	The authors proposed aspiration to be superior over deroofing, but that study lacked randomization and blinding.
Shin-Chen Pan (2013)	In vitro study of angiogenin in the burn fluid		The study noted high levels of angiogenin expression even at day 4 in DPTB as compared SPTB. This differential angiogenin expression between SPTB and DPTB explains the different healing process of these burn wounds. It suggested that the burn blister should be left intact.
Yoo, et al (2017)	In vitro burn fluid analysis	25 (36 blisters)	This study could not define the healing mechanism in burn blister, but it described the changing concentration of HSP70 and IL-8 with time after burn. It may help to determine when blister fluid should be removed.
Chen, et al (2018)	In vitro fluid analysis	24	$CD14^+$ blister cells were more abundant in deep partial thickness burns and may play a role in wound neo vascularization.
Ro, et al (2018)	Controlled, randomized trial	40	Some indicators suggest aspiration may be more effective than deroofing, but neither method met the standard for superiority.
Garg, et al (2022)	Prospective randomized study	27 (50 blisters)	Deroofing reduces the wound healing time and is recommended for second-degree burn.

roofing burn blisters (larger than 6 mm) as a method of burn blister management.[1] Outcomes included healing time, patient comfort, wound colonization, and functional and aesthetic outcomes. While the sample size was relatively small (N=40), neither aspiration nor deroofing treatment options was found to be superior.[1] It should be noted that aspiration was found to be a more effective method reducing pain and scar thickness, though not to a statistically significant degree. The researchers noted that the deroofed group had worse scarring than the aspirated group. Deroofing itself can be a painful procedure for the patient and can be a potential reason for increased bacterial colonization and infection. (See **Table 2**.) Surprisingly, the aspiration group with burns to the head and trunk areas, both of which are very vascular, healed more slowly than limbs. Again, however, this finding was not statistically significant.

Garg, et al in 2022 published their prospective study on 50 burn blisters in 27 cases.[16] They randomly assigned them into two categories and noted deroofing reduces the wound healing time and is recommended for second-degree burn. The study noted higher pain score in the deroofing group; 16 cases (64%) in the deroofing group gave a severe pain score of 4 or more on the visual analog scale as compared to 2 cases in the intact blister group with pain score of 4.

See **Table 3** for a summary of essential burn blister literature.

Blister Management Considerations

Burn blister management depends on the size of blisters; smaller blisters (<6 mm) are treated differently than larger ones.[1,17] Similarly, blisters on the soles of feet (more likely to rupture spontaneously) will be treated differently than blisters somewhere else on the body.[10,16]

There have been conflicting statements on the management of small and medium or large blisters. Some propose leaving small blisters <6 mm^2 and doing debridement for others. The New Zealand National Burn Centre (NZNBC) suggests small blisters can be left intact except for those over the joints or if movement is limited, whereas large, tense blisters should be snipped and covered with dressings.[9]

The British Burn Association (BBA) proposes management depending on the site and size of burn blisters.[14] They suggest leaving small blisters <6 mm^2 intact and debriding or deroofing larger blisters.

It is crucial to deroof blisters, at times, as this allows proper observation of the wound bed and accurate assessment of burn depth.[11] Ruptured blisters should be managed by removing the nonviable skin to allow faster wound healing and reduce risk for scarring.

Deroofing tense large blisters reduces tension on the underlying tissue, and thus preserves the wound microcirculation and prevents the progression of burn depth.[17]

The Royal Australian College of GP (RACGP) recommends blister debridement and applying nanocrystal-

Table 4. How to Manage Blisters?	
Small blisters less than <6 mm^2	Left intact
Thick-walled blisters on the palm, fingers, soles, and toes	Make a small window to remove fluid to relieve the pressure and assess the wound.
Large and thin-walled blisters	Deroof to prevent loose dead skin from acting as a source of infection

line silver dressings for 2 days before a decision regarding burn depth is made.[2]

Literature reveals some recommendations, but there are many limitations in those studies. There is a need for a large, well-designed randomized controlled study based on the available data and treatment options.

Small blisters less than 6 mm^2 can be left intact as they are unlikely to self-rupture or damage underlying tissues. Leaving them intact can also control pain as it does not expose the superficial nerves to the outside world.

Thick-walled blisters on the palm, fingers, soles, and toes are associated with discomfort and limited mobility. They can be managed by making a small window to remove fluid to relieve the pressure and assess the wound.

Large and thin-walled blisters are likely to rupture spontaneously, so they are better deroofed to prevent loose dead skin from acting as a source of infection. Debrided areas should be covered with recommended dressings.

See **Table 4** for a summary of blister management considerations.

Burn dressing availability is quite variable across the medical practices and emergency departments. Bactigras, gauze dressing, or Jelonet is usually available in most clinics, whereas silver dressing other than silver sulfadiazine availability has been quite variable. There is no role of systemic prophylactic antibiotics in prevention of infection.[18]

Recommendation based on the research is to have a burn management and blister care written protocol posted in the urgent care clinics. Most minor burns do not need discussion with the plastic surgery/burn team. If a commonly agreed protocol is available, it will reduce confusion amongst the treating clinicians and thus will provide continuity of care.

Case Resolution

In the case mentioned above, the burn area was relatively small, with small blisters, so leaving them intact was possibly the better option.[2] If blisters self-rupture, it is better to gently debride the dead loose skin as it can be a source of infection or discomfort for the patient.

The family followed up with their general practitioner as was recommended in the urgent care center. Further follow-ups with their doctor saw good signs of healing. The wound healed completely in 2 weeks.

Conclusion

Burn blister management remains controversial, though recommendations from the limited data support leaving smaller blisters intact and deroofing or aspirating the larger blisters. Since most minor and partial-thickness burns are common presentations in urgent care clinics, the outcome can be improved by providing appropriate initial care, including good wound care and dressings. Thus, it can reduce the risk of the burn becoming deeper or infected and potentially reduce over scarring. ■

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S-COM-ART-02381 R2 2022/04

Case Report

CME: This article is offered for AMA PRA Category 1 Credit.™
See **CME Quiz Questions** on page 11.

Brain Abscess in an Immunocompetent Patient: Complex Pathology and Communication

Urgent message: Remain diligent in the evaluation of headache; though often a benign condition, the possibility for severe morbidity and mortality warrants careful evaluation of subtle aspects within the history and/or physical exam.

RACHEL MURPHY and LINDSEY E. FISH, MD

Introduction

Headache is one of the most common complaints in the urgent care setting, yet also one that can be daunting for a provider. While there are many benign causes, such as a migraine or tension headache, the potential for an emergent condition exists. Accompanying symptoms can also be vague, making the decision to pursue further work-up even more difficult. Seemingly obvious "red flag" symptoms, like altered gait or level of consciousness, may be subtle in some patients, particularly in the acute setting. With a condition that is so common and often harmless in most patients, a diligent evaluation of the history and physical exam is necessary to recognize the few that truly are emergent headaches.

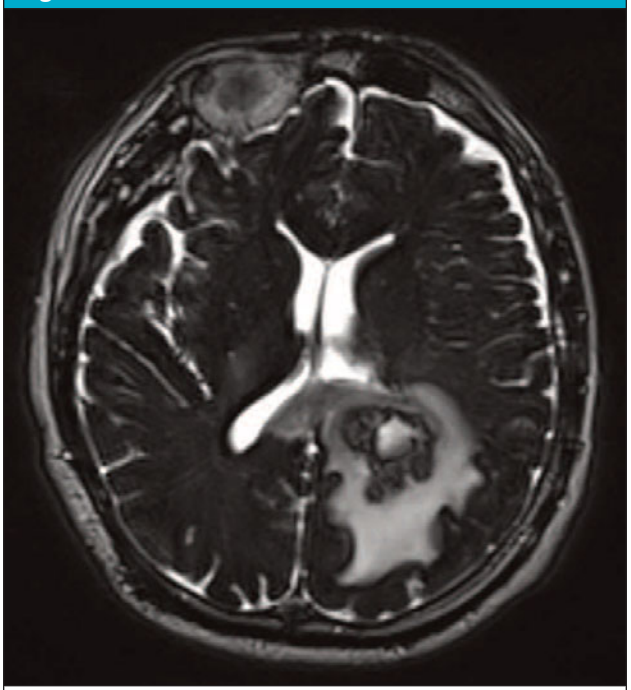
Case Presentation

A 54-year-old man with hypertension, migraines, and a history of NSTEMI presented to urgent care with 4 days of a diffuse headache. He was accompanied by his partner. He ranked the pain at 6/10 severity with associated malaise, dizziness, and nausea. He denied neck pain, vision changes, or shortness of breath. In eliciting history, it was difficult to establish a timeline and associated symptoms, as he and his partner reported differing symptoms (cough vs no cough, fatigue vs normal activity). His partner often spoke for him. She was adamant that he was acting normally and did not have altered mental status.

Vitals were T 37.1°C, BP 117/84, P 102, RR 40, O_2

Author affiliations: Rachel Murphy, University of Colorado School of Medicine. **Lindsey E. Fish, MD,** Denver Health and Hospital; University of Colorado School of Medicine. The authors have no relevant financial relationships with any commercial interests.

Figure 1.



MRI of the brain demonstrating parietal abscess with edema and midline shift.

95%. He appeared somnolent and in pain but was resting quietly. He followed commands with continued prompting. He was not oriented to place. His gait was slow and unsteady; PERRL with photophobia. His scalp was tender in the occipital region with no nuchal tenderness or rigidity. With the exception of poor dentition, the rest of his physical exam was normal. Lab studies revealed a WBC of 11,000 cells/mm^3, ESR of 24 mm/hr and CRP of 15.0 mg/L. All other labs were within normal limits. He was sent to the ED for further imaging.

MRI of the brain revealed a 3.1 x 3.0 cm, rim-enhancing mass in the left parietal lobe with significant edema and midline shift (**Figure 1**). Biopsy confirmed abscess formation; tissue culture revealed *Fusobacterium nucleatum* and *Parvimonas micra*. Blood cultures were not suggestive of systemic bacteremia. Transesophageal echocardiogram (TEE) found a small patent foramen ovale (PFO) with right-to-left shunting.

The patient was treated with abscess drainage and a regimen of ceftriaxone/metronidazole with full resolution of his symptoms.

Discussion

The lessons from this case are multifactorial, with implications for both clinical practice and decision-making. Patient communication discrepancies, paired with a vague neurological presentation, created a difficult dynamic for a correct diagnosis.

Brain abscess is not often high on the differential for a headache in an immunocompetent patient. It is a rare finding in the general population, with an incidence ranging from 0.4 to 0.9 cases per 100,000 people.[1] Among its rare incidence, it is also frequently associated with immunocompromised status or head trauma.

This patient had neither of these comorbidities. Given his history and lack of focal neurological deficit, it seemed more likely he was experiencing a migraine or other benign source of headache.

Symptoms of abscess can be subtle, and since there is no single unifying presentation, it can be difficult to determine the diagnosis clinically. Reports have shown symptoms ranging from blurred vision or memory loss to hemiparesis and fever with rigors; however, these severe symptoms are not always present. The most common triad of brain abscess symptoms—headache, fever, and focal neurological deficit—is complete in just 20% of patients.[2] In this case, the patient presented with only one of these three cardinal symptoms.

Lab values in brain abscess can also vary and are not specific. The only commonalities amongst patients in the literature include an increased serum C-reactive protein and leukocyte count, which are only seen in about 60% of patients.[3] Ultimately in this case, it was the determination of his subtle altered mental status, alongside the increased serum C-reactive protein and leukocyte count, that warranted head imaging.

Once it was determined his headache was the result of an abscess, the additional question arose about the origin of his infection. Most brain abscesses are seeded either from previous neurologic surgery, injury, or hematologic spread. He was an immunocompetent, nonseptic patient with no obvious infectious symptoms that would point towards a particular location. Confirmation of his right-to-left-shunting PFO raised concern for paradoxical embolism reported rarely in the literature. Dental caries and poor dentition were found on exam, implying the likely infectious origin to be the oral cavity. Biopsy results yielding *F nucleatum* and *P micra,* anaerobic bacteria associated with periodontal disease, provided further evidence for this theory.

The first suggestion of brain abscess secondary to paradoxical embolism through a PFO emerged in 2001.[3] Few case reports since have detailed cases similar to this patient's combination of immunocompetent status with a silent, right-to-left shunting PFO and presence of anaerobic bacteria on biopsy. There are reports detailing various combi-

Interacting with Family Members and Significant Others During a Medical Encounter

Per literature published by the American Academy of Family Physicians, certain factors may encourage maximum benefit when communicating with family members, partners, and significant others present, with the patient's consent, during encounters. These include:

- Acknowledge the presence of the family member.
- Identify the relationship between the patient and the family member; establish the role of the family member in decision-making.
- Recognize and acknowledge emotions expressed by the patient or family member.
- Encourage the family member to be specific.
- When indicated, assess the patient in private (ie, apart from the family member) for signs of physical, emotional, and/or financial abuse or neglect.
- Recognize the impact of the patient's health on their family.

Adapted from Omole FS, et al. *Am Fam Physician*. 2011;84(7):780–784.

nations of patients with a level of immunodeficiency (ie, IV drug user, COPD) or with other cardiac abnormalities such as Ebstein anomaly or ventricle septal defect.[4,5] Though there has yet to be a population study proving a causal relationship between PFO and brain abscess, this report joins the current literature to suggest a correlation.

His silent PFO, which likely acted as a catalyst for disease, serves as a reminder to maintain broad differentials. A paradoxical embolism through a PFO could be more common than one would expect, as roughly 25% of individuals in the general population have been found to have an incidental PFO on autopsy.[3] While brain abscesses are rare, their potential for mortality (18%–20% in those with an anaerobic abscess) lends reason to be diligent in the evaluation of a headache.[6]

Lastly, the patient-partner dynamic in this case highlights the complexity of communication and clinical decision-making in a patient encounter. Studies have shown a positive correlation with family-centered communication and health outcomes, such as increased patient advocacy and trust in the medical system. Physicians have reported that people accompanying patients had a positive influence on medical encounters about 95% of the time.[7] However, there is also recognition that inclusion of a third party can complicate the patient encounter and require an expanded communication skillset among physicians. Recommendations from the American Academy of Family Physicians to mediate this situation include: 1) establish the role of the family member, 2) encourage the family member to be specific, and 3) assess the patient in private when indicated.[8]

In this case, a thorough physical exam resolved communication discrepancies to establish that the patient truly did have altered mental status. This objective data point then served as a foundation to pursue further diagnostic evaluation.

Conclusion

Overall, this case of an immunocompetent 54-year-old man who presented to urgent care with headache and malaise, which ultimately resulted in discovery of a large parietal lobe brain abscess, highlights the importance of maintaining a wide differential. Though symptoms and lab abnormalities of brain abscess may be nonspecific, the potential for morbidity and mortality lends reason to be diligent. Physicians should recognize that the combination of a patent foramen ovale with poor dentition can result in this extreme pathology. In addition, urgent care physicians should remain attentive during patient encounters requiring complex communication skills, particularly involving information that could alter a differential diagnosis. ■

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TAKE-HOME POINTS

- "Red flag" symptoms that could suggest an emergent condition in a patient whose presenting complaint is headache (such as altered gait, history of substance abuse, and age) may be subtle.
- Most brain abscesses stem from previous neurologic surgery, injury, or hematologic spread.
- Headache, fever, and focal neurological deficit constitute the most common triad of brain abscess symptoms, though they are present together in only 20% of patients with brain abscess.
- A paradoxical embolism through a patent foramen ovale could be more common than one would expect, with approximately 25% of individuals in the general population having been found to have an incidental PFO on autopsy.
- While brain abscesses are rare, their potential for mortality (18%–20% in those with an anaerobic abscess) provide ample reason to be diligent when evaluating patients with headache.

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Cost-Effective Ambulatory Care for Emergency Department Avoidance

Urgent message: Industry perception is that urgent care offers the opportunity for potentially substantial cost savings while also providing safe, effective care for complaints of appropriate acuity. Data supporting those claims have been lacking, however.

LO FU TAN, MD, MS, FCFP, FAAFP and JILLIAN KRESTON, MBA, MECON

Citation: Tan L F, Kreston J. Cost-effective ambulatory care for emergency department avoidance. *J Urgent Care Med*. 2022;16(10):25-32.

Background

A 2019 brief published by the United Health Group found 18 million "avoidable" emergency room visits that added $32 billion in cost to the healthcare system. Ten common primary care conditions were considered, accounting for 46 million annual ED visits.[1] Acute conditions with greater risk of higher acuity and cost of care like shortness of breath were not included. A review of the financial impact of urgent care on ED diversion of low-acuity conditions showed a slight gain in diversion but high and costly utilization.[2] Again, high-acuity, more severe conditions were not considered.

Claims for acute, ambulatory care services submitted to United Healthcare (UHC) for its Commercial and Medicaid members and the care delivery organizations for their Medicare Advantage clientele come from many providers, groups, and institutions. In addition to the 275,000 per year seen in the Southwest Medical Associates (SMA) Urgent Care Division, another 375,000 visits occur annually in other urgent care clinics throughout Nevada. However, emergency departments' submitted claims charges to payers far exceed those of urgent cares.

This study seeks to identify a set of common acute conditions with high acuity and cost to determine if there is an opportunity to save claims charges by having some of these patients traditionally looked after in EDs moved over to urgent care.

Methods

We reviewed claims submitted for insured members empaneled to Southwest Medical clinicians from 2016 to 2018. Data came from two primary sources: Health Plan of Nevada, a subsidiary of UHC for their commercial and Medicaid members and Southwest Medical, the care delivery organization under OPTUMCare which was at full risk for their Medicare Advantage registrants. A retrospective study was done using propensity score matching. For our control group, we selected ED cases with one of four common acute unscheduled con-

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Table 1. Selected Confounding/Explanatory Factors Based on Likelihood of Contributing to Acute Hospital Admission

Congestive heart failure	Life support
Acquired immunodeficiency syndrome	Paralysis
Diabetes mellitus without cardiac complications	Cancer
Diabetes mellitus with cardiac complications	Lipid abnormal
Coronary insufficiency	Psychiatric
Peripheral vascular disease	Vertigo
Cerebrovascular disease	Difficulty walking
Dementia	Parkinson's
Chronic obstructive pulmonary disease	Podiatric care
Rheumatoid arthritis	Rehabilitation
Peptic ulcer disease	Arthritis
Multi-liver disease	Sepsis
Hemiparesis	Traumatic brain injury
Renal failure	Weakness
Liver disease	Bladder
Delirium	Coagulopathy
Weight loss	Skin ulcer
Falls	Cancer
Dehydration	Acute stay
Home hospice	Acute days
Wheelchair	ED claims
Home oxygen	

Table 2. C-Statistic = Area Under Receiver Operating Characteristic (ROC) Curve*

	Line of Business		
Condition	Medicare-Matched Area	Medicaid-Matched Area	Commercial Matched Area
Headache	70 0.734	12 0.664	15 0.685
Abdominal pain	153 0.694	8 0.813	25 0.676
Shortness of breath	90 0.819	145 0.512	572 0.659
Chest pain	835 0.668	104 0.672	611 0.633

*Unable to obtain reliable confidence intervals

ditions: abdominal pain, chest pain, headache, or shortness of breath using ICD-10 diagnostic codes on claims submissions. Cases were excluded if they were admitted to observation or a hospital from the ED.

We identified patients with the same four conditions who sought care within SMA's urgent care system for our test group. To reduce the chance of selecting cases that would have been appropriate for the ED or hospital care, we excluded those transferred from urgent care and admitted within 24 hours. To identify initial encounters for these acute conditions, we excluded patients who'd had an ED or urgent care encounter within a month before the index ED visit. These criteria were also applied to the urgent care "treatment" cases.

A propensity score was calculated using a logistic regression or logit model. Given some confounding variables, it is the probability for a patient to belong to one of two groups. Each treatment (urgent care) case was then matched to the closest control (ED) case with similarity evaluated as the distance on the propensity score's logit function.

Age and sex were selected as the demographic confounding variables. We excluded race, education, and income only due to unreliable data sources. Other confounding or explanatory factors were selected based on their likelihood of contributing to acute hospital admission. (See **Table 1**.) Claims records, namely ICD-10 diagnostic codes from the index event, were used.

Cases of other acute conditions were not included due to at least one of these reasons: limited amount and cost of testing or treatment required for these conditions admitted to hospital from ED; transferred from urgent care to ED; or difficulty in matching between ED and urgent care cases.

Average payer claims charge per case was calculated by payer for one of the four acute conditions for the initial visit, the 30 days after, and the two combined. The differences between the ED (control) group and the urgent care (treatment), if any, were determined based on the first condition or test identified by the ICD-10 code search for the index visit.

We followed Austin's recommendations regarding design, analysis, and reporting for propensity matching:[3]

1. The optimal algorithm in the statistical solution XLSTAT was selected.[4]
2. The balance in baseline characteristics between treated and untreated subjects was compared and reported. To test whether the propensity model had been specified adequately, we used "standardized" differences rather than "hypothesis" testing (ie, receiver operating characteristic curve area [c-statistic].[5]) C-statistic measures goodness of fit for binary outcomes in a logistic regression model. It

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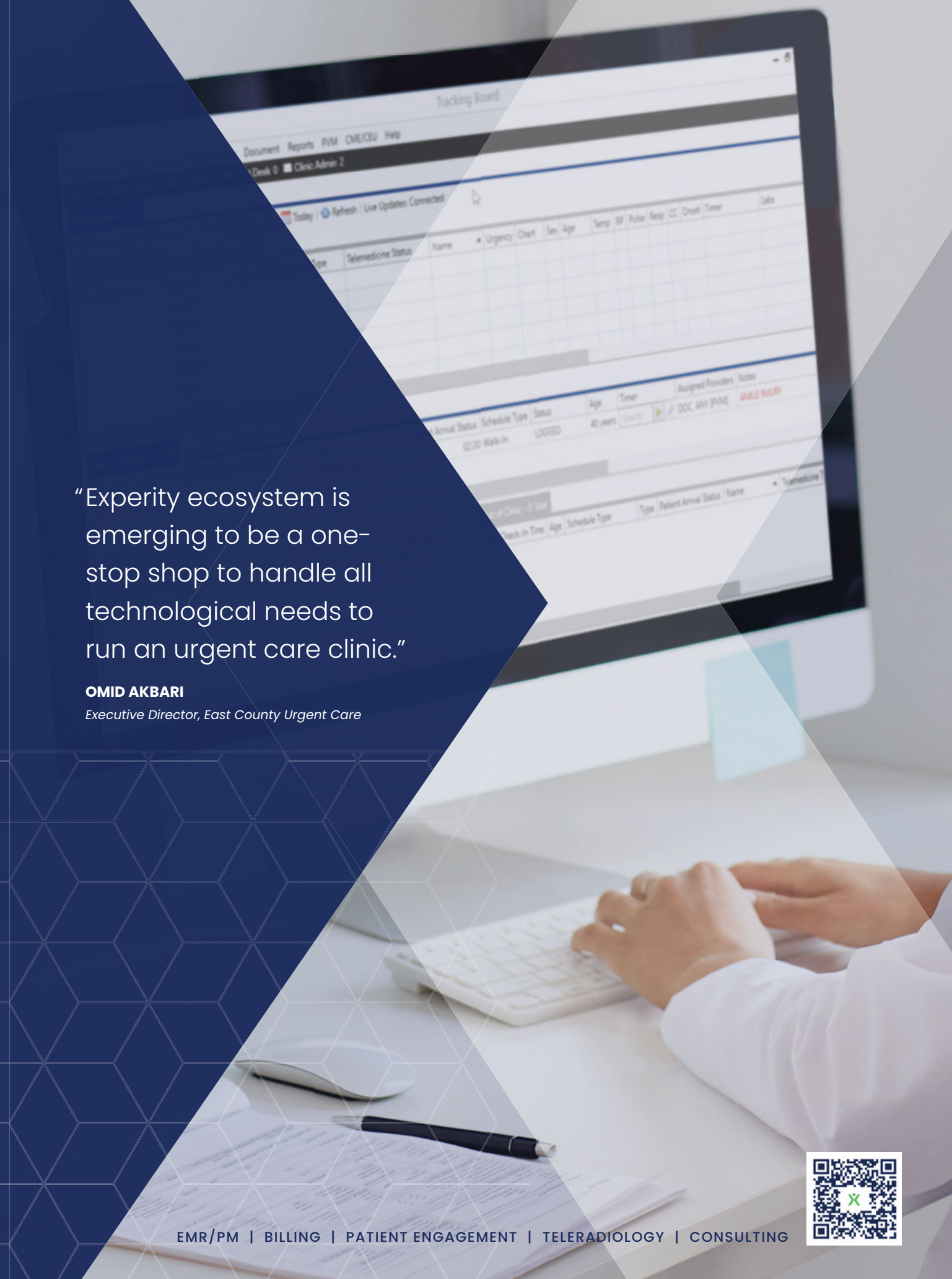

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Table 3. Effect Sizes for Matched Cases by Payer and High-Acuity, High-Cost Condition

	Condition	Abdominal Pain	Chest Pain	Shortness of Breath	Headache
Payer					
Commercial	# Matched	25	611	572	15
	Effect Size	0.676	0.633	0.659	0.685
Medicaid	# Matched	8	104	145	12
	Effect Size	0.813	0.672	0.512	0.664
Medicare	# Matched	153	835	90	70
	Effect Size	0.694	0.668	0.819	0.734
Total matched cases = 2,640					

Table 4. Claims Charges of Emergency Department versus Urgent Care—Initial, Next 30 Days, and Combined, Adjusted for Inflation via PCE-Health Index to 2019 U.S. Dollars.

		Charges			
Cohort	**Condition**	**Matches**	**Initial**	**Next 30 days**	**Total**
Emergency Department	**Combined**	**2,640**	**4,476,947**	**4,860,757**	**9,337,648**
	Abdominal pain	186	212,361	517,214	729,579
	Chest pain	1,550	2,544,779	3,394,744	5,939,462
	Headache	97	98,251	110,763	209,014
	Shortness of breath	807	1,621,556	838,036	2,459,592
Urgent Care	**Combined**	**2,640**	**640,876**	**5,383,752**	**6,005,969**
	Abdominal pain	186	51,870	785,750	837,620
	Chest pain	1,550	419,927	3,940,740	4,342,009
	Headache	97	22,679	134,218	156,896
	Shortness of breath	807	146,400	523,044	669,444

equals the area under a receiver operating characteristic curve, ranging from 0.5 to 1.0. If the area is <0.5, then the model is considered poor. If >0.7, it is strong.[6]

3. Finally, appropriate statistical methods for the analysis of matched data were used. We reported Cohen's d or standardized mean difference (SMD) as the preferred method for estimating treatment effects on outcomes.[7]

Results

Using traditional research values of p=0.05 for statistical significance and statistical power of 80%, we found that Cohen's d or SMD for payer acute condition subgroups were all Moderate (near or above 0.7) when the matched cases exceeded the minimum sample size requirement of 26 except in the case of Medicaid shortness of breath, which was Mild (0.5).[8] Sample sizes for commercial and Medicaid conditions of abdominal pain and headache were too small to be reliable for any SMD measurement (**Table 2**). The larger the SMD, the stronger the relationship between the two variables.[9] These results indicate that our matching of control ED cases to test urgent care was effective. **Table 3** summarizes the number of cases selected for matching using our propensity score method. From 67,975 initial ED visits and 7,798 initial urgent care visits, a total of 2,640 were matched, broken down by payer and by acute condition.

We used the Personal Consumption Expenditure-Health Index to adjust total medical expenditures for inflation over the 3-year study period.[10,11] Our study showed total (combined initial visit plus 30-day follow-up period) savings in claims charges of 35% for the propensity score-matched cases when the care was initiated in urgent care ($6.0 million) compared to ED ($9.3 million).

Table 5. Claims Charges to Payer Initiated in ED vs Urgent Care: Initial, Next 30 days, and Totals for Each Condition and Combined, Adjusted for Inflation via PCE-Health Index 2019 U.S. Dollars

		Initial $	Next 30 days	Total AP	Savings ED-UC
Abdominal Pain	**Commercial**			191,072	
	Emergency Department	66,172	32,005	98,177	**5,281**
	Urgent Care	12,146	80,750	92,896	
	Medicaid			42,211	
	Emergency Department	7,455	27,636	35,091	**27,970**
	Urgent Care	4,115	3,005	7,121	
	Medicare			1,333,911	
	Emergency Department	138,734	457,573	596,307	**-141,296**
	Urgent Care	35,609	701,995	737,603	
Chest Pain		**Initial $**	**Next 30 days**	**Total CP**	
	Commercial			3,150,897	
	Emergency Department	1,768,522	586,419	2,354,941	**1,558,986**
	Urgent Care	202,208	593,747	795,955	
	Medicaid			254,801	
	Emergency Department	56,430	105,426	161,856	**68,911**
	Urgent Care	32,566	60,378	92,945	
	Medicare			6,894,493	
	Emergency Department	719,827	2,702,899	3,422,726	**-49,041**
	Urgent Care	185,153	3,286,614	3,471,767	
Headache		**Initial $**	**Next 30 day**	**Total**	
	Commercial			129,351	
	Emergency Department	41,225	13,560	54,785	**-19,781**
	Urgent Care	4,387	70,179	74,566	
	Medicaid			18,894	
	Emergency Department	5,982	4,136	10,118	**1,342**
	Urgent Care	3,624	5,152	8,776	
	Medicare			217,665	
	Emergency Department	51,045	93,066	144,110	**70,556**
	Urgent Care	14,668	58,887	73,554	
Shortness of Breath		**Initial $**	**Next 30 days**	**Total**	
	Commercial			2,637,017	
	Emergency Department	1,504,006	635,553	2,139,559	**1,642,101**
	Urgent Care	104,277	393,181	497,458	
	Medicaid			176,019	
	Emergency Department	47,484	54,962	102,446	**28,873**
	Urgent Care	27,826	45,747	73,573	
	Medicare			316,000	
	Emergency Department	70,066	147,521	217,587	**119,174**
	Urgent Care	14,296	84,117	98,413	
Total		**Initial $**	**Next 30 days**	**Total Cost**	
	Commercial			6,108,337	
	Emergency Department	3,379,925	1,267,537	4,647,462	**3,186,587**
	Urgent Care	323,018	1,137,857	1,460,875	
	Medicaid			491,926	
	Emergency Department	117,351	192,160	309,511	**127,096**
	Urgent Care	68,131	114,282	182,415	
	Medicare			8,762,067	
	Emergency Department	979,672	3,401,059	4,380,730	**-607**
	Urgent Care	249,726	4,131,613	4,381,337	

Table 6. Average Submitted Claims Cost Saving per Matched Patient Seen in Urgent Care, by Payer and Condition, Adjusted for Inflation via PCE-Health Index to 2019 US Dollars

Payer	Abdominal Pain	Chest Pain	Headache	Shortness of Breath	Grand Total
Commercial					
# Matches	25	611	15	572	1,223
Total $ Savings	5,281	1,558,986	-19,781	1,642,101	3,186,588
Average Cost Savings per Matched Patient*	211	2552	-1319	2871	2606
Medicaid					
# Matches	8	104	12	145	269
Total $ Savings:	27,970	68,911	1,342	28,873	127,096
Average Cost Savings per Matched Patient*	3496	663	112	199	472
Medicare					
# Matches	153	835	70	90	1,148
Total $ Savings:	-141,296	-49,041	70,556	119,174	-607
Average Cost Savings per Matched Patient*	-924	-59	1008	1324	-1

The initial urgent care visit cost of $0.6 million was substantially less than that for the initial ED encounter of $4.5 million, which offset the higher cost over the next 30 days for the urgent care group of $5.4 million vs the ED one at $4.9 million.

By conditions, cost savings occurred for shortness of breath (72% lower when the patient went to the urgent care rather than the ED—$0.7 million vs $2.5 million); chest pain (27%, at $4.3 million vs $5.9 million); and headache (25%, at $159,000 vs $209,000). However, the abdominal pain cohort's total cost was higher for those seen initially in urgent care by 15%: ($838,000 vs $730,000). See **Table 4**.

For all payers, the claims charges for any initial visit were less for those seen first in urgent care instead of the ED, no matter the acute condition. However, the same trend did not hold for every payer and condition combination for costs incurred during the 30 days following the initial visit and total combined costs (**Table 5**).

Commercial matched cases seen in urgent care had a total cost of $1.46 million compared with the ED cost of at $4.65 million. Most of the savings in submitted claims charges occurred with shortness of breath ($1.64 million) and chest pain ($1.56 million). For the 611 commercial chest pain matched pairs, there was a significant difference in total charges between those seen initially in urgent care and those seen initially in the ED ($202,000 compared with $1.77 million, respectively).

However, over the next 30 days, there was no difference. The shortness of breath group had lower cost in the 30-day follow-up period if seen initially in urgent care, whereas this was higher for both the commercial and abdominal pain and members. There was minimal saving in total claims cost of $53,000 for patients with abdominal pain who presented initially to urgent care. There was a loss of $19,800 within the headache group. However, for commercial abdominal pain and headache, there were not enough matched pairs to determine reliable effect sizes.

For Medicaid, with all four acute conditions, the total cost was lower for members who initially went to the urgent care rather than the ED. The cost saving was $127,000—substantially less than the saving for the commercial group. In part, this was due to the smaller number of matched cases (269 vs 1,223).

Consistent with the commercial finding, chest pain and SOB cases accounted for most of their savings. Thirty-day follow-up costs were lower in all four acute condition groups if first seen in urgent care except for headache, which showed no significant difference. The Medicaid headache group had more cost to the urgent care cases over the next 30 days at $5,200 , but this was only $1,000 more than the matched ED patients. However, the sample size was inadequate. While there was savings over 30 days and total for the abdominal pain group, this sample size was also too small.

Of 1,148 matched Medicare cases, those with headache or SOB had total claims cost savings of $119,000 and $71,000 each, respectively. The chest pain group had a relatively small loss of $49,000, compared with

Table 7. Projected Payer Savings of Select % of All Study Patients Seen in Emergency from 2016 to 2018 Postulated to have been Seen in Urgent Care, Adjusted for Inflation via PCE-Health Index to 2019 US Dollars.

		Abdominal Pain	Chest Pain	Headache	SOB	Grand Total
Commercial	# actual cases initially seen in ED	6,419	4,682	6,019	798	17,918
	observed savings per member	211	2,552	-1,319	2,871	2,606
100%		1,356,060	11,946,273	-7,937,320	2,290,904	46,686,253
50%		678,030	5,973,137	-3,968,660	1,145,452	23,343,126
25%		339,015	2,986,568	-1,984,330	572,726	11,671,563
10%		135,606	1,194,627	-793,732	229,090	4,668,625
Medicaid		18,452	8,135	16,205	3,776	46,568
	observed savings per member	3,496	663	112	199	472
100%		64,512,413	5,390,316	1,812,097	751,898	22,002,279
50%		32,256,206	2,695,158	906,049	375,949	11,001,139
25%		16,128,103	1,347,579	453,024	187,974	5,500,570
10%		6,451,241	539,032	181,210	75,190	2,200,228
Medicare		1,255	858	1,313	93	3,519
	observed savings per member	-924	-59	1,008	1,324	-1
100%		-1,158,997	-50,392	1,323,430	123,146	-1,862
50%		-579,498	-25,196	661,715	61,573	-931
25%		-289,749	-12,598	330,857	30,786	-466
10%		-115,900	-5,039	132,343	12,315	-186

$141,000 for the abdominal pain category. The savings offset these losses in the other two condition groups, leading to overall savings for the Medicare matches.

We calculated the average submitted claims cost savings per matched patient seen initially in urgent care (**Table 6**).

Both SOB and chest pain conditions had considerable savings of over $2,500 per patient of the commercial cases. The cost-saving was small for abdominal pain at $211, and there was a loss for headache of $1,300, but both had inadequate sample sizes. Medicaid chest pain and SOB cases had savings per patient of nearly $700 and $200, respectively. Medicare patients with headache or SOB first seen in urgent care had savings of over $1,000 and $1,300 each. Of note, those with abdominal pain had a loss of nearly $1,000 per case. The chest pain cases had a slight loss of $59 per patient.

Discussion

Overall, an urgent care system capable of providing care for common acute high-acuity conditions requiring more monitoring, testing, and treatment was less costly per matched patient than care provided in EDs. To our knowledge, there has been no previously published evidence of this. The findings supported both payers' goal of reducing submitted claims charges (HPN with its commercial and Medicaid members and SMA with its Medicare Advantage).

This study focused on membership empaneled to SMA PCPs. While most of our payer membership in the Las Vegas metropolitan area belongs to SMA providers, we do have some non-SMA membership in other Nevada communities. Scaling is dependent on the viability of standing up and maintaining urgent cares that can accommodate cases that otherwise would end up at an ED.

Two limitations that need to be addressed include payer willingness to engage both members and provider groups in redirecting care to these ambulatory settings, and professional and community acceptance.

Why was there a significant difference between chest pain or SOB and abdominal pain or headache? The first

two may be better defined and worked up clinically. Due to their inherent life-threatening nature, they often require a more comprehensive workup. The insufficient samples for Medicaid and commercial members with abdominal pain and headache may have played a role. More study is needed, but it may be reasonable to focus on chest pain and SOB for further rationale to establish, maintain, and grow a model of this kind.

Likely, there would have been more submitted claims charge savings by each high-acuity condition and in combination if we had a larger number of matched cases. Only one third of the total number of 7,780 patients seen initially in urgent care with one of the four conditions was matched during our 3-year study period. Also, over 65,000 study patients seen initially in the ED were not matched to an urgent care case, and we feel that at least some of these could have been seen in urgent care without transfer to the ED. We extrapolated the calculated average savings per matched patient seen first in the urgent care to projected savings for all patients selected who went to the ED from 2016 to 2018. In 100% of the Emergency cases, the potential submitted claims charge savings to all three lines of business (commercial, Medicaid, and Medicare Advantage), and our four selected conditions could have been $69 million. At 50% projected, this would be $38 million saved. Even down to 10%, this is still $6.9 million (**Table 7**).

It is revealing to look at the breakdown of payer type for these Emergency visits for the four selected conditions. Nearly 28,000 (30%) are commercial, 47,000 (70%) are Medicaid, and the remaining 3,500 (5%) Medicare.

The Medicaid group's high utilization of EDs for these four common acute conditions calls for further study. Our findings suggested value in chest pain and SOB, which might have been confirmed for abdominal pain and headache if the sample size had been enough.

The commercial group, while more minor, is still significant at nearly one third of Emergency visits. The savings from even a small additional number of chest pain and SOB cases diverted to urgent care would be substantial.

Finally, for Medicare, focusing on headaches and SOB may be cost-effective. Simultaneously, considering mov-

ing Medicare abdominal pain patients to Emergency from urgent care is worth discussing. The pervading belief is that this population has a relatively high chance of having significant pathology within 3 months of initial presentation with abdominal pain.

We have assumed that all admissions from the ED were necessary. Therefore, these cases were excluded. Counting some could increase the urgent care value proposition.

Consideration should also be given to those patients sent to EDs from urgent cares that are part of the insured network. Most of these clinics can only care for low-acuity conditions like viral URIs, rashes, and UTIs. These urgent care clinics often act as direct conduits for EDs. Southwest Medical has a protocol that requires non-emergent patients to get prior authorization from a medical director before being sent to an ED for evaluation.

Limitations

The study has limitations. First, we analyzed only patients with one of four acute high-acuity conditions. Others have limited testing, monitoring, and treatment needs, making ED evaluation less warranted. Ideally, we would determine precisely what is causing any difference in costs—for example, in ED procedures or tests vs higher ED charges or both.

We only used one propensity score measure, albeit a reliable one for this purpose.[12] As some feel that matching is not an appropriate method since it can accomplish the opposite of its intended goal of preprocessing data for causal inference,[13] we should do the study using other propensity score tests. Propensity matching cannot control for unobserved differences associated with treatment (using UC) and outcome (cost), which means that it is essential to consider whether or not covariates used in the propensity model are adequate (ie, is there unobserved acuity/severity in these ED patients that are not being captured?). We excluded those who were admitted to the hospital to limit this.

A prospective study would be ideal, but this may not be practical due to cost and ethical considerations. A time-series analysis of changes in the total acute care spending UC vs ED instead of limited to four conditions would be a reasonable next step.

We did not look at costs other than to the payer as submitted claims charges for the initial and follow-up period of 1 month of care. Urgent cares' investment and maintenance spending to support high-acuity cases should be reviewed in a future cost-benefit analysis. While we would like to know the actual difference in costs for treating similar conditions at the ED vs the UC, this is challenging due to the considerable heterogeneity in patients who use EDs over UCs.

"Instead of an ED, using an urgent care capable of looking after selected higher-acuity cases led to submitted claims charge savings for the payers, HPN (commercial and Medicaid members), and SMA (Medicare Advantage members). More study needs to be conducted, but there is an opportunity to increase savings using this model."

Finally, data regarding UC/ED utilization pattern change over time with more UCs would be welcomed.

Conclusion

In conclusion, instead of an ED, using an urgent care capable of looking after selected higher-acuity cases led to submitted claims charge savings for the payers, HPN (commercial and Medicaid members), and SMA (Medicare Advantage members). More study needs to be conducted, but there is an opportunity to increase savings using this model. Scaling this ought to be explored. ■

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As COVID Turns Endemic, Investors Remain Bullish on Urgent Care Growth

Urgent message: De novo growth of urgent care continued through the pandemic. As COVID turns endemic, investors remain bullish on urgent care growth.

ALAN A. AYERS, MBA, MAcc

Despite concerns about fluctuating visit volumes and long-term sustainability, uncertainty and urgent care have always gone hand in hand. Case in point: Largely driven by flu, the urgent care industry has first-hand insight into years of flu research, seasonal trends, and vaccine efficacy. Yet amid everything we already know about the flu, each flu season arrives under a cloak of uncertainty.

Financial statements provide evidence of this unpredictability. If you look at historical financial statements for any urgent care over a stable multiyear period before the pandemic, you'll find both strong and weak years, revenue-wise. While the statements themselves offer little insight into revenue swings between one year and the next, established owners will tell you why: "It's impossible to predict the severity of the flu."

The same principles of uncertainty hold true for COVID. While we know COVID is here to stay, we can't predict every new variant, its scope of severity, or when it will spread. As ongoing waves of panic and restrictions subside for good, urgent care is well-positioned as the leading healthcare setting for all upper respiratory symptoms, including flu and COVID.

Post-COVID drop-offs in demand, coupled with wage inflation and fixed payer contracts, have become common concerns for urgent care providers in the COVID era. So…should we expect volume levels to plummet when the world shifts back to normalcy? The short answer is, No.

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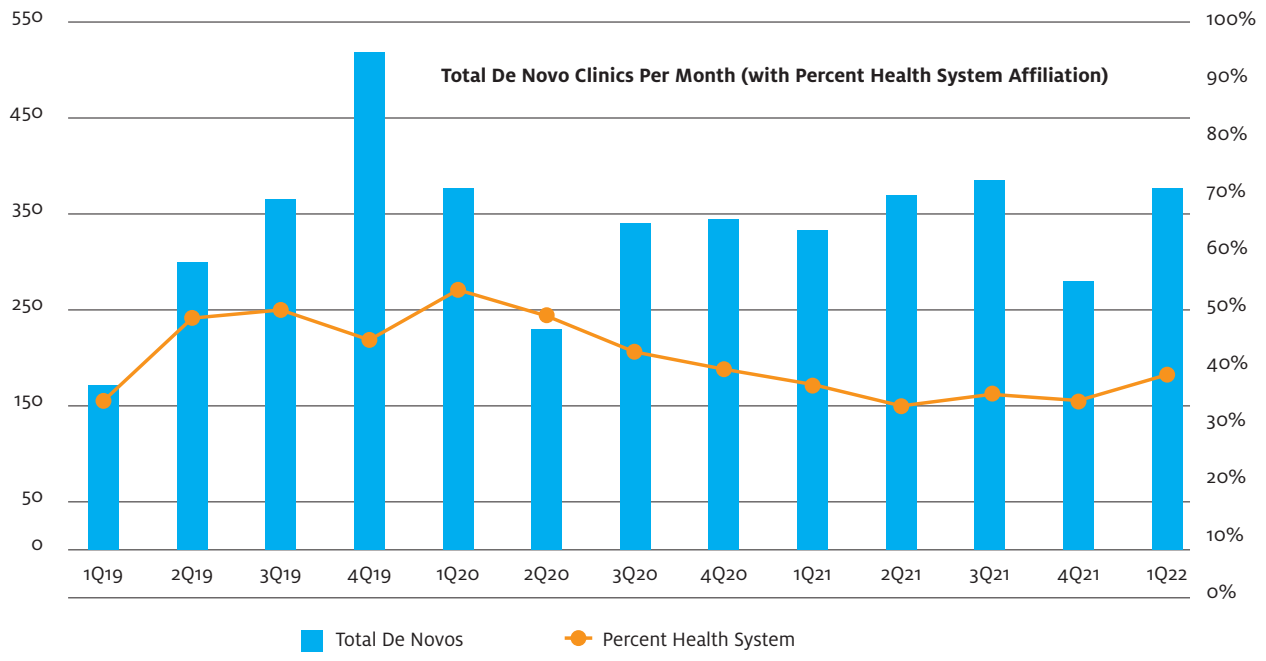
Industry Growth Opportunities of Today Will Remain Tomorrow

As of the writing of this article, urgent care is at 2019 levels, and the summer months are typically off season. So while we're seeing a dramatic fall-off from the Omicron spikes earlier this year, metrics indicate an overall return to "normalcy."

Even before the pandemic, roughly 80%-85% of urgent care visits were, and continue to be, upper respiratory in nature. While a lot of reported urgent care visits throughout the pandemic involved COVID tests for respiratory concerns, the visit itself wasn't necessarily COVID-related. Some estimates even suggest that only

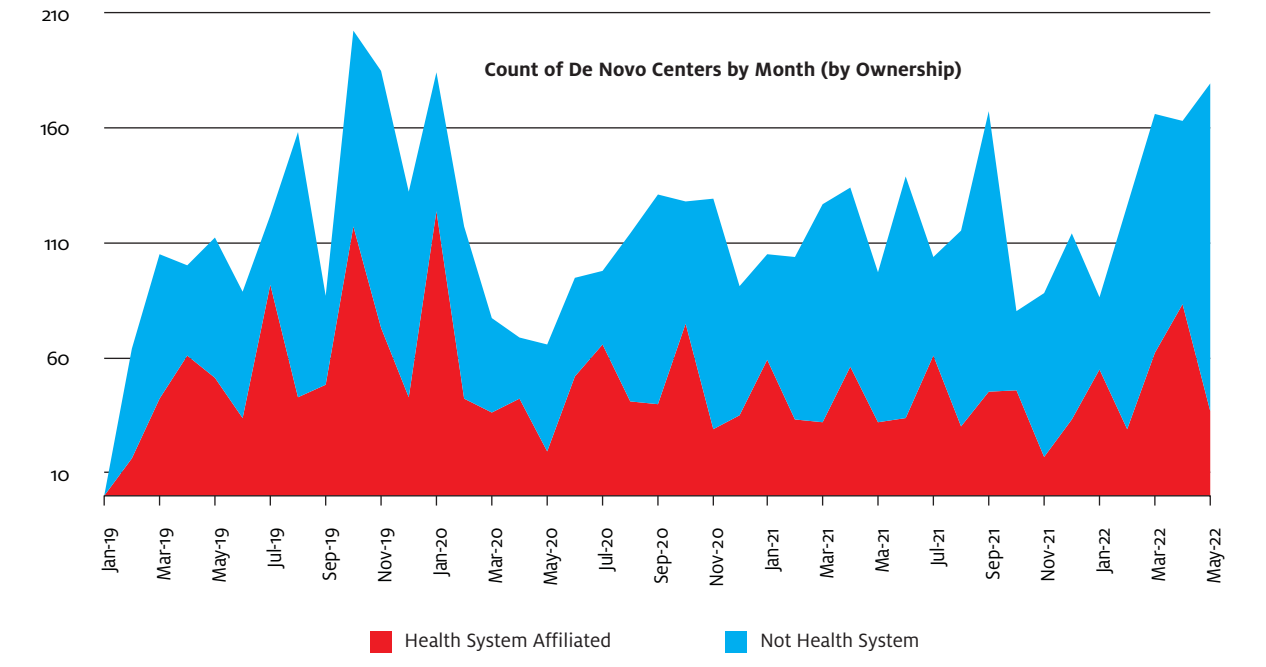
Alan A. Ayers, MBA, MAcc is President of Experity Networks and is Practice Management Editor of *The Journal of Urgent Care Medicine*. The author has no relevant financial relationships with any commercial interests.

Figure 1. Total De Novo Clinics per Month



Source: National Urgent Care Realty

Figure 2. Breakdown of de Novos by Health System Affiliation



Source: National Urgent Care Realty

Scaling Within and Outside Your Market	
Why Opening in a Secondary Market or Scaling Within Your Own Can Unlock Greater Revenue Opportunities	
Three advantages to scaling within your existing market	**Thinking outside of the box (and your market!)**
Expanding coverage in an existing area is an efficient way to build economies of scale, especially if market research points to an optimal location nearby. Doing so cuts down on costs while helping you spend money more efficiently long term. If you're considering scaling operations closer to home, factor these three advantages into your growth planning: • **Flexible, rotating staffing.** With nearby locations, you can rotate providers and staff between different centers to better meet fluctuating patient needs and/or volume. It's easier to manage and keeps the patient experience consistent across your different locations. • **Reduced management fees.** Likewise, you can use the same management team rather than hiring a separate team to manage a new area. In addition to the cost savings, it also keeps your brand and internal culture closely aligned. • **Bigger marketing ROI.** Marketing opportunities get much bigger when you pool budgets to advertise across more premium channels like television and radio. These highly trafficked channels can help you boost brand recognition quickly across the community.	Many secondary and tertiary markets, such as those in rural areas, struggle with inadequate healthcare access, such as primary care shortages, hospital closures, and, in a lot of cases, reasonable insurance coverage. Yet these areas have enough density to support urgent care. As a rule of thumb, if a city or county is large enough to support a Walmart Supercenter, it's likely big enough for urgent care. With this in mind, we estimate there's enough runway to add 1,000 more rural and tertiary urgent care centers in the United States. Centers in rural areas come with plenty of advantages, such as cheaper rent, less expensive labor, and word-of-mouth marketing. Because you're adding a service that didn't exist before, ramp-up times to break even are much faster, as well—near-immediate in many cases. But these rural opportunities come with a caveat: These are "one-center towns," so once someone plants the flag in that location, the opportunity is gone. **Reimbursement opportunities for rural healthcare providers** It's important to note that federal subsidies, designed to offset foot traffic concerns in less-populated areas, are available for centers serving vulnerable, underserved, and rural communities. Investigating ways to expand healthcare coverage to underserved communities, the American Hospital Association (AHA) has proposed several federally backed payment models for rural centers. With growing, widespread gaps in healthcare access exposed by the pandemic, we expect these types of subsidies to become promising avenues for rural expansions.

a third of urgent care visits in 2021 were driven solely by COVID.

Up to 80% of patients who were classified as "COVID" most likely would have been seen anyway in past years for flu, strep, RSV and other concerns.

Indeed, the impact of COVID is overstated in some capacities, as are the concerns about post-COVID volume declines. We also expect the "floor" of visits to rise as there's now a "second flu" circulating. With COVID antiviral medications like Paxlovid (nirmatrelvir tablets; ritonavir tablets, Pfizer) and monoclonal antibody treatments now readily available, urgent care providers can both test *and* treat patients who experience COVID symptoms. As vaccine efficacy and herd immunity wanes, COVID will continue and the "ideal" urgent care visit might entail a 3-in-1 test for influenza, RSV, and COVID for every patient with viral respiratory concerns.

Another consideration pointing to sustained patient volumes is the impact of widespread hygiene practices adopted during the pandemic, which reduced herd immunity for common viruses like the flu. This indicates that the flu will become more virulent in the coming years. So, whether it's the flu, COVID, strep throat, or similar symptoms, communities will continue to rely on urgent care services for trusted, accessible upper respiratory care. Revenue-wise, we expect these sustained traffic levels will be akin to year-round flu seasons over the coming years.

On average, urgent care centers saw a 25% increase in usership through the duration of the pandemic. Retention of first-time pandemic users at 66% is similar to pre-pandemic first-time users at 75%. Effective re-marketing is required to retain patients introduced to UC during the pandemic.

Bullish Investments Point to Sustained Profitability and Growth

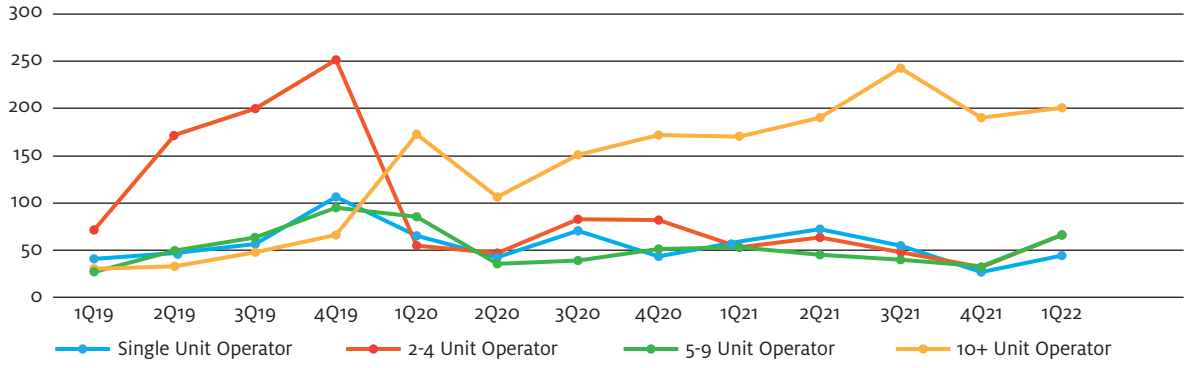
If institutional and private investors learned anything during the pandemic, it's that "discretionary" consumer businesses such as casinos, dining, and entertainment are vulnerable not just to changing economic winds—factors like inflation, fuel prices, unemployment—but can be completely shut down in a crisis. As a result,

Who's Now Driving Urgent Care Growth?

Historically, urgent care growth has been driven by the entrepreneurial efforts of founder-run businesses. However, pure "start-ups" or new, single-site operators, decreased from 20% of de novos in 2019-2020 to approximately 14% of de novos over the past 18 months. Despite this decrease, the industry is still adding 50 entrepreneurial start-ups per quarter.

Although many of these single-location operators are content to remain as "onesies," others aspire to grow to "twosies" and beyond. Thus, the greatest growth of urgent care locations has been driven by expanding 2-4 center "chains." But, today, these are the same operators who are squeezed by wage inflation and staffing difficulties, provider and staff burnout, owners who are being called by acquisition scouts, and who vacillate between growing and selling their business. The problem with selling, however, goes to difficulty in valuing urgent care business on pandemic volumes and earnings. These tightly controlled businesses tend to be more risk-averse with their hard-earned "COVID profits" than larger, corporate entities and, lacking a crystal ball, are more likely to sit on the fence.

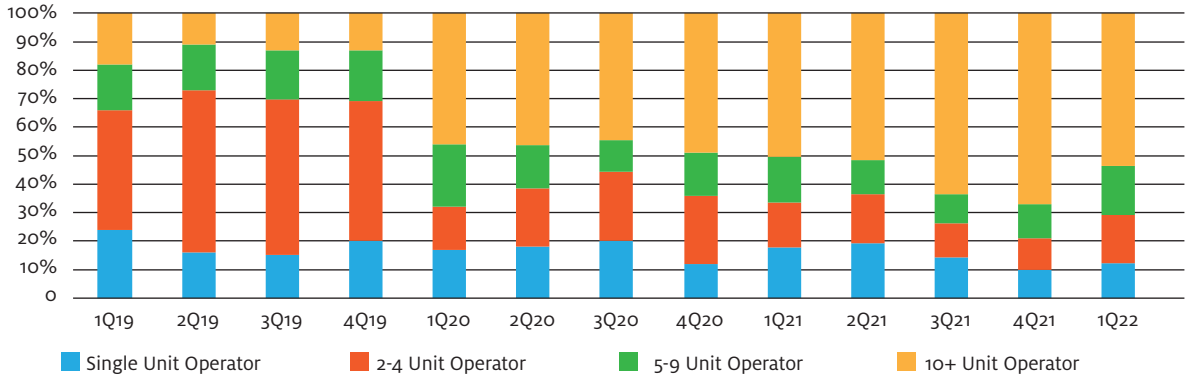
Quarterly de Novo Locations Added by Operator Size



Source: National Urgent Care Realty

With 2-4-unit operators sitting on the fence, the biggest "growth engine" for urgent care is now 10+ unit operators reflecting increased investment in "scaling platforms," private equity reinvestment of COVID profits vs taking taxable distributions, and new sources of equity coming into the urgent care space. These scaled platforms see ample opportunity for revenue and profitability growth through new geographies, patient populations, payers, and services.

Percent of De Novo Urgent Cares by Operator Size



Source: National Urgent Care RealtySo, while the base of pure "start-ups" will continue, the coming years will see more units controlled by the largest urgent care entities.

So, while the base of pure "start-ups" will continue, the coming years will see more units controlled by the largest urgent care entities.

those types of investments have fallen out of favor with investors, replaced by those offering steady cash flows and proven resilience.

Thus, we continue to see "smart money" injected into urgent care by private equity firms, family offices, and institutions seeking high-quality platforms through de novos and fill-in acquisitions. Healthcare systems are also building out urgent care on local levels—either on their own or in joint ventures with private equity partners—which further indicates a sustained recognized value of urgent care across the broader healthcare ecosystem.

Indeed, urgent care has grown at a steady pace, adding approximately 350 centers per quarter, 42% of which are health system-affiliated (see **Figure 1** and **Figure 2**), according to National Urgent Care Realty. We only saw declines in opening during the busiest months of the Alpha, Delta, and Omicron waves, in which centers struggled with hiring and staffing. Given the greatest expense of a new center is working capital to fund operating losses until break-even volumes are attained, opening to the high demand of COVID enabled centers to break even almost immediately.

More than steady cash flow and economic resilience, urgent care remains a beacon of opportunity and growth. Reaching new populations through geographical expansions and new audiences represents a critical growth driver for urgent care. Growing at a rate of approximately 7% between 2013 and 2020, we expect future growth to continue at historic levels for the foreseeable future.

While some of the more suburban markets may appear oversaturated with competition, the urgent care industry hasn't yet reached a point of national maturity. On the contrary, it remains early in its consumer adoption curve. It's estimated that a third of the U.S. population—100 million people—have yet to even visit an urgent care location. In many cases, this is because they simply haven't experienced an urgent medical issue. In others, it comes down to accessibility, insurance coverage, or both.

Inadequate healthcare access is a well-known struggle for rural populations—exposed cracks that have deepened and widened throughout the course of the pandemic. These secondary and tertiary markets are naturally prone to more primary care, hospital, and healthcare shortages and coverage despite carrying enough population density to warrant healthcare access and services.

Casting the net even wider, adding new payers is another opportunity to promote, elevate, and grow industry awareness among populations such as Medicaid and Medicare patients. Medicaid patients often drive much of the nonemergent use of ERs, which means that urgent care can offer tangible cost savings to Medicaid programs.

While it's true that lots of folks will continue to favor their primary care providers, today's reality is that it's unusual to secure appointments with the same provider on a timely or regular basis. As Baby Boomers are aging into Medicare, we've seen many states expand and privatize Medicaid, which translates to millions more newly insured patients. Medicaid and Medicare patients, who tend to be far less exposed to urgent care than those in more commercial populations, stand to benefit greatly from the convenience, affordability, and easy healthcare access that urgent care provides.

Conclusion

Urgent care providers have even more opportunities post-COVID, both testing and treating patients experiencing symptoms. Investors remain attracted to urgent care's steady cash flows and proven resilience, continuing to invest significantly in high-quality platforms. Expanding geographically and reaching new populations are additional growth drivers for the industry. ■

Take-Home Points

- There are numerous advantages to scaling within your existing market, including flexible, rotating staffing; reduced management fees; and bigger marketing return-on-investment.
- The post-pandemic healthcare marketplace will likely favor urgent care for multiple reasons, such as:
  - As vaccine efficacy and herd immunity wane, you can expect COVID to continue and that the "ideal" urgent care visit might entail a 3-in-1 test for influenza, RSV, and COVID for every patient with viral respiratory concerns.
  - Reduced herd immunity, a result of more intensive hygiene practices during the height of the pandemic, suggests that influenza will become more virulent in years to come. As such, communities are expected to rely heavily on urgent care, with sustained traffic levels driving revenue akin to a 12-month flu season.
- A dearth of existing healthcare options makes secondary and tertiary markets (eg, rural areas) fertile ground for urgent care. Don't assume that lower population levels can't support the arrival of an urgent care center. In fact, it's estimated that there's enough "runway" to accommodate 1,000 more rural and tertiary market urgent care centers in the U.S.
  - Advantages of opening in secondary and tertiary markets include lower rent, less expensive labor, and word-of-mouth marketing.
  - A disadvantage is that many rural communities are "one-center towns." In other words, if you're not the first to open your doors, it may not be worth your while.
- Conversely, on the surface it may appear that suburban markets are oversaturated. However, the reality is that on a national level urgent care has not reached its maturity. It's estimated that 100 million Americans have yet to visit an urgent care center.

Essential Tools for Urgent Care—Finger Tourniquet

Urgent message: Use of a finger tourniquet can ensure a bloodless field when performing laceration repair to fingers and toes, thereby reducing risk for damage to underlying vital structures and increasing the prospects for positive outcomes.

PATRICK O'MALLEY, MD

Having repaired scores of finger lacerations, I have learned there are a few essential supplies required for these cases, the most critical of which is the finger tourniquet. This simple device makes a world of difference.

We've all experienced how the fingers have a rich blood supply and can bleed profusely. Combined with the fact that so many patients are on agents that affect coagulation, the reason a finger tourniquet must be in your digital laceration tool kit should be clear. A field obscured by actively oozing blood creates a nearly impossible situation for fully evaluating the presence of joint capsule or tendon injury and foreign body. The "bloodless field" improves precision in repair and reduces risk of inadvertently damaging underlying vital structures or violating the joint capsule during repair.[1,2] While there are many commercial products available, other methods of tourniquet creation can be used with readily available supplies.

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Improvised Tourniquets

One improvised tourniquet approach is the *glove technique*. To perform this, have the patient put a glove on the affected hand, cut a small hole at the tip of the affected finger and roll the rest of the material down to the base of the finger while the fingers are pointed up. This will constrict the base of the finger, thereby acting as a tourniquet. (See **Figure 1**.)

As with commercially available products, the glove technique acts to exsanguinate the finger as the glove material is being rolled down. It also keeps the hand covered, reducing the risk of cross-contamination. Ensure an appropriate glove size is used so rolling the material down the finger does not generate too much pressure, potentially causing nerve injury.

Another method for an ad hoc tourniquet: use a standard IV tourniquet or the elastic band from the wrist of a disposable glove. To perform this technique, wrap the elastic material around the finger and hold it in place with a hemostat. See **Figures 2** and **3**.)

With a little practice, you can determine which technique is for you within your clinical setting.

Tips

A digital block is best performed prior to tourniquet application, regardless of the method you use.

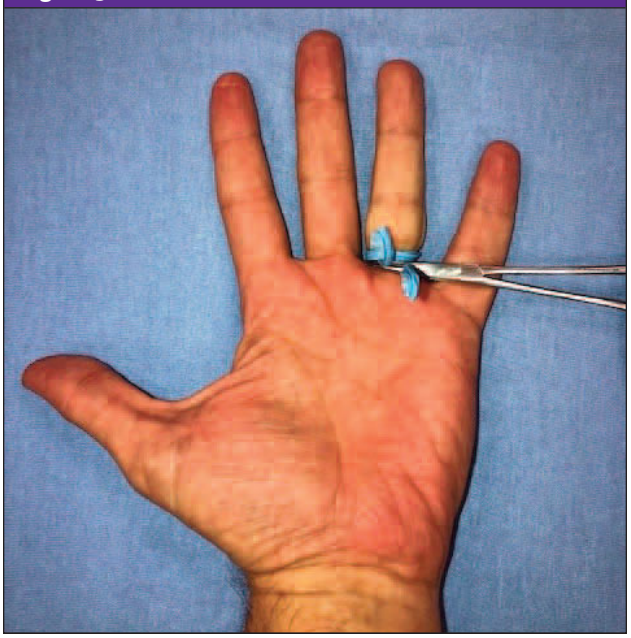
It's also important to push the tourniquet as prox-

Author affiliations: Patrick O'Malley, MD is an emergency physician at Newberry County Memorial Hospital, Newberry, SC.

Figure 1.

Figure 2.

Figure 3.



imally as possible (ideally to the base of the finger at the webspace). This will create a near-bloodless field, allowing for better visualization.

Once the repair is complete, make sure to remove the tourniquet promptly. Remarkably, there have been cases of patients being sent home after a finger procedure with the tourniquet left on, likely because the finger was anesthetized and a medical assistant dressed the wound. This leaves the finger at serious risk of irreparable ischemic injury.[3,4]

Furthermore, the amount of pressure generated by these devices and techniques can reach upwards of 600 mmHg—enough to cause significant nerve damage. You must be familiar with this and be sure to not use a device or technique that will lead to this potentially disastrous complication.[5,6] ■

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ABSTRACTS IN URGENT CARE

- Colchicine in Acute Gout
- POCUS and Necrotizing Fasciitis
- Assessing Patient Satisfaction
- Misinterpreting Pediatric Radiographs
- Lung Ultrasound and Pediatric Pneumonia
- Diagnosing Pneumothorax

IVAN KOAY, MBCHB, FRNZCUC, MD

A Review of the Evidence for Colchicine in Acute Gout

Take-home point: Colchicine appears to be no more effective than NSAIDs for acute gout flares and evidence does not indicate greater efficacy at higher doses.

Citation: Gottlieb M, Rabah W, Long B. Colchicine for acute gout. *Acad Emerg Med*. 2022;29(3):387-388. Epub ahead of print December 13, 2021.

Relevance: Colchicine has been used historically in treating acute gout flares, a common presentation to urgent care.

Study summary: This was a brief summary of the present literature and evidence available of the effectiveness of colchicine in the treatment of gout. Current guidelines recommend that NSAIDs, oral colchicine, or glucocorticoids may be considered for the treatment of acute gout flares.

The authors reviewed four meta-analyses and systematic reviews comparing colchicine with placebo, NSAIDs, or higher doses of colchicine. They found that lower-dose colchicine (1.8 mg over 1 h) improved pain control compared with placebo. Higher-dose colchicine (4.8 mg over 6 h) also improved pain compared with placebo. Compared with lower-dose colchicine, higher-dose colchicine did not improve pain. Lower-dose colchicine (0.5 mg three times per day for 4 days) did not improve pain compared with NSAIDs (naproxen 750 mg).

Editor's comments: This was a review article and therefore limited by the quality of the original research. The sample sizes of most of the studies included were small. Most notably, the study suggests that NSAIDs and colchicine are roughly equivalent and that higher-dose colchicine does not seem to result in greater relief of symptoms. ■

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Diagnosing Necrotizing Fasciitis with Point-of-Care Ultrasound

Take-home point: There is promising potential for the use of point-of-care ultrasound (POCUS) in diagnosing necrotizing fasciitis (NF).

Citation: Lahham S, Shniter I, Desai M, et al. Point of care ultrasound in the diagnosis of necrotizing fasciitis. *Am J Emerg Med*. 2022;51:397–400.

Relevance: POCUS can augment clinical examination when considering various conditions. NF is a life-threatening, time-sensitive diagnosis and increasing tools available in urgent care to expedite diagnosis is critical.

Study summary: This was a prospective study by convenience sampling of patients presenting to the ED at an academic, Level 1 trauma center. Eligible patients underwent a POCUS examination at bedside by the treating physician prior to CT scan or surgical consultation. Outcome measures were the sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of POCUS in identifying patients with NF. Early POCUS findings of NF were thickened fascial planes with fluid accumulation, turbid fluid collections, and subcutaneous edema. The presence of fluid tracking along the deep fascial layers was useful in differentiating NF from cellulitis.

The authors enrolled 64 patients. They found a sensitivity of 100.0% (95% CI: 63.1%–100%), specificity of 98.2% (95% CI: 90.4%–100%), PPV of 88.9% (95% CI:51.8–99.7%), and NPV of 100% (95% CI: 93.5%–100%) in the diagnosis of NF.

Editor's comments: This was a convenience sample from a single center, which could lead to selection bias. The consent process of the study meant that seriously ill patients were not included. The study did not evaluate the training required for

the POCUS operators, but given that this is a large, academic medical center, it is likely that clinicians were more comfortable using POCUS than many urgent care providers. ■

Google Reviews in Assessing Patient Satisfaction

Take-home point: Google Reviews contains a substantial quantity of patient satisfaction data.

Citation: Derdzakyan N, Pourmand A, Shesser R, et. al. The potential use of Google Reviews to assess patient satisfaction in the emergency department. *Am J Emerg Med*. 2022;52: 110–113.

Relevance: Google Reviews are the most publicly available source of customer satisfaction data. Urgent care center strategies for growing patient volumes rely heavily on positive reviews.

Study summary: This was a cross-sectional study of Google Reviews data for EDs in the United States. Data were collected from Google Reviews in all 50 states and Washington, DC using a Google search engine query for each state. Data analysis included topic analysis of review text which categorized its contents into topics based on prior research: Physician, Nurse, Wait, Environment, Other Staff, Financial, and Medical Personnel. Google Reviews text "sentiment analysis" was performed by an artificial intelligence service that provides "sentiment scoring" across four categories (positive, negative, neutral, mixed).

The authors found a total of 13,883 Google Reviews regarding 255 unique ED facilities. Most had less than 200 reviews (median=30 reviews/ED). The topics "Wait" and "Financial" resulted in significant negative coefficients (1-star ratings) whereas topics involving ED staff resulted in significant positive coefficients (5-star ratings).

Editor's comments: Patient reviews are inherently biased. This study highlights how Google Reviews are no exception. ■

Diagnostic Errors in Pediatric Radiographs

Take-home point: Ankle, elbow, and humeral condylar fractures were missed most often compared with other fracture patterns.

Citation: Li W, Stimec J, Camp M, et al. Pediatric musculoskeletal radiographs: anatomy and fractures prone to diagnostic error among emergency physicians. *J Emerg Med*. 2022; 11:S0736-4679.

Relevance: Interpretation of pediatric musculoskeletal (MSK) radiographs can be challenging even for the most experienced urgent care clinician. Care needs to be taken when interpreting specific areas, especially lateral condylar injuries.

Study summary: This was a study to identify radiograph-specific factors that resulted in diagnostic interpretation errors for emergency physicians (EPs) reviewing pediatric MSK radiographs. Of 1,850 pediatric MSK radiographs obtained in a pediatric ED and reviewed by EPs to rule out fracture or dislocations, there was an equal mix of pathology and normal images used. Radiographs were organized into six learning modules, each of which contained 200–400 case examples, presented with the standard number of views for a particular body region: shoulder, clavicle, humerus, elbow, wrist, forearm, hand, pelvis, femur, knee, tibia-fibula, ankle, and foot.

There were 244 EPs recruited from 22 countries; 179 (73.4%) were residents of Canada or the U.S. They found that supracondylar fractures of the elbow were the easiest to identify; lateral condylar fractures of the elbow were the most difficult. Diagnostic errors in radiographs without fractures or dislocations were largely due to normal anatomy or projection issues that were mistaken for fractures. Growth plate and avulsion fractures and dislocations were more difficult to diagnose.

Editor's comments: The radiographs used were from an electronic learning platform, which may not translate to a clinical setting. Information regarding the level of training and experience of participants was not investigated. Pathological radiographs were more common in the study set than would be expected in any clinical setting. ■

Accuracy of Lung Ultrasound for Diagnosing Pneumonia in Children

Take-home point: Lung ultrasound (LUS) is an effective imaging technique for detecting childhood pneumonia.

Citation: Lu X, Jin Y, Li Y, et al. Diagnostic accuracy of lung ultrasonography in childhood pneumonia: a meta-analysis. *Eur J Emerg Med*. 2022;29(2):105-117.

Relevance: Identifying accurate ways for diagnosing pneumonia without radiation exposure is of particular interest in pediatric populations.

Study summary: This was a meta-analysis summarizing the available data on the diagnostic accuracy of LUS in childhood pneumonia. Articles selected concerned patients with suspicion of pneumonia, available confirmatory CXR data, and who had undergone LUS to diagnose pneumonia. Twenty-nine publications were identified for analysis. The pooled sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) with 95% CI for diagnostic accuracy of LUS were calculated and compared with CXR. The authors found that average pooled sensitivity and specificity were 83% (95% CI, 81–84%) and 84% (95% CI, 81–86%) respectively for LUS.

Editor's comments: Chest x-ray was used as the gold standard for diagnosing pneumonia. Ultrasound's test characteristics are particularly user-dependent and it remains relatively rarely available in many UC settings. ■

The 35 mm Rule for Guidance of Pneumothorax Management

Take-home point: The 35 mm guideline could potentially, safely decrease chest tube insertions in hemodynamically stable patients without hemothorax.

Citation: Figueroa J, Karam B, Gomez J, et al. The 35 mm rule to guide pneumothorax management: increases appropriate observation and decreases unnecessary chest tubes. *J Trauma Acute Care Surg*. 2022;92(6):951-957. Epub ahead of print February 4, 2022.

Relevance: Avoiding unnecessary chest tube insertion will minimize risk of complications and unnecessary expense to patients with small pneumothorax (PTX).

Study summary: This was a single-center retrospective review of patients presenting to a Level 1 trauma center in the U.S. Patients included had a CT-diagnosed traumatic PTX with dimensions obtained by nonradiological researchers. There were two cohorts in the study: those pre- and postimplementation of a 35 mm dimension guideline. Patients were observed for 4 hours postadmission; those who deteriorated and required chest tube insertion were deemed as failures of observation. Reasons for failure included clinical deterioration (respiratory rate >30, SpO_2 <90% on room air, or hemodynamic changes attributed to PTX), presence of new hemothorax, and significant progression of the PTX in size. PTX enlargement was assessed on a routinely ordered CXR 4-6 hours after the CT scan.

Of 266 patients included in the study, 62% were examined postimplementation of the 35 mm guideline. The authors found decreased chest tube insertions postimplementation of the guideline with no increase in observation failure, length of stay or complication rates. The most common reason for observation failure was the presence of a new PTX (41%).

Editor's comments: The use of CT imaging to diagnose PTX makes this study somewhat impractical to apply, as such imaging can rarely be obtained in urgent care. However, it is important to be aware of increasing trends toward observation of small PTXs to guide patient expectations before being referred to the ED. ■

INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 1

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*.

A 12-Year-Old Boy with Knee Pain After a Baseball Game


Figure 1.


Figure 2.

Case

The patient is a 12-year-old boy who presents with pain in his left knee. His mother reports that during a baseball game earlier in the day he slid hard into a base and came up limping.

Review the x-rays taken and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

THE RESOLUTION


Figure 3.


Figure 4.

Differential Diagnosis

- Heterotopic ossification
- Osteosarcoma
- Multiple osteochondromas
- Osteomyelitis

Diagnosis

The images reveal irregular prominence of the distal femoral cortex and downward angulated osteophyte at lateral margin proximal tibia and posterior fibula. This patient was diagnosed with multiple osteochondromas.

Learnings/What to Look for

- Osteochondromas are cartilage-capped bony spurs on the external surface of a bone. They grow throughout childhood (while growth plates are open) and the distal femur is the most common location
- Multiple osteochondromas suggests hereditary multiple exostoses (HME), which follows an autosomal dominant inheritance pattern
- Osteochondromas are typically asymptomatic and incidental. They can be palpable and cause pain if associated with local trauma. An osteochroma can be a lead point for a pathologic fracture
- Larger exostoses may impinge on nerves, tendons, or blood vessels, causing extreme pain
- Rarely, osteochondromas can have malignant transformation into a chondrosarcoma

Pearls for Urgent Care Management

- Small exostoses are often incidental, cause no symptoms, and require no treatment, although they can be lead points for pathologic fractures
- Differentiating these exostoses from osteosarcomas and other lytic bony lesions is most important
- Follow-up with a bone specialist is recommended to guide whether monitoring is necessary or to discuss excision if the exostoses are causing impingement symptoms

Acknowledgment: *Images and case presented by Experity Teleradiology (www.experityhealth.com/teleradiology).*

CLINICAL CHALLENGE: CASE 2

A 43-Year-Old Woman with a New Ulcer on One Hand


Figure 1.

Case

A 43-year-old woman presents with 2 weeks of a smooth nodule on her right hand. The patient denies recent travel but recalls that she "banged up" her hand while cleaning out a fresh-water fish tank prior to noticing the nodule. Past medical history is significant for renal transplantation.

Exam reveals a tender, erythematous plaque with an ulcer on dorsal aspect of her hand.

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

THE RESOLUTION

Figure 2.

Differential Diagnosis

- *Mycobacterium chelonae* infection
- *Mycobacterium marinum* infection
- Cutaneous phaeohyphomycosis infection
- Foreign body granuloma

Diagnosis

This is *Myobacterium marinum* infection. *M marinum* is an atypical mycobacterial skin infection contracted from contaminated fish tanks, swimming pools, lake water and salt water. Minor trauma is a predisposing factor.

Men are affected more commonly than women.

Learnings/What to Look for

- The typical skin lesion consists of a pustule or nodule and develops 2–3 weeks after exposure
- Nodules may ulcerate, suppurate, and spread via lymphangitic spread (about 25% of cases)
- In more severe infections, deeper manifestations such as tenosynovitis, arthritis, bursitis, or osteomyelitis may be seen
- In immunosuppressed patients, disease can disseminate to the lungs or other systems; bacteremia is rare

Pearls for Urgent Care Management

- Infection is usually mild and self-limited, with lesions healing over 1 to 2 years if left untreated
- Treatments found to expedite healing include minocycline, clarithromycin, doxycycline, and trimethoprim-sulfamethoxazole
- While *M marinum* is naturally multidrug-resistant, drug resistance varies. As such, combination therapy may be required
- Cryotherapy, x-ray therapy, electrodesiccation, photodynamic therapy, and local hyperthermic therapy have also been reported to be effective

Acknowledgment: *Images and case presented by VisualDx (www.VisualDx.com/JUCM).*

CLINICAL CHALLENGE: CASE 3

An 87-Year-Old Male with Chest Pain, SOB, and a History of Valvular AFib, Stroke, and Heart Failure

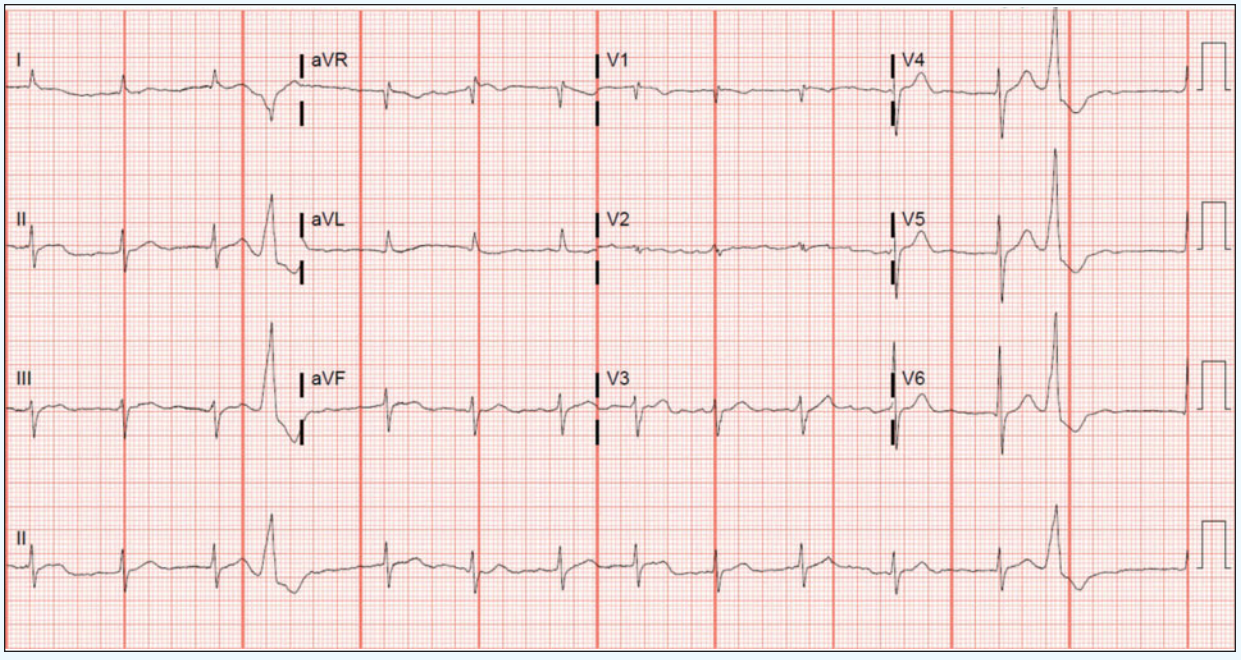

Figure 1.

An 87-year-old male with past medical history of valvular atrial fibrillation, prior stroke, and heart failure presents to urgent care with chest pain and shortness of breath for 3 days. The pain and difficulty breathing are associated with bilateral lower extremity swelling for 1 week.

View the 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 Whitney Skidmore, MD, PGY2 McGovern Medical School, Department of Emergency Medicine, UTHealth Houston with assistance from Catie Reynolds, MD, McGovern Medical School, Department of Emergency Medicine, UTHealth Houston.)

THE RESOLUTION

Figure 2. Prolonged RR interval (*) followed by short RR interval (+) terminating in an aberrantly conducted beat (↓)

Differential Diagnosis

- Premature ventricular contraction (PVC)
- Third-degree heart block
- Ashman phenomenon
- Atrial fibrillation with rapid ventricular response
- Nonsustained ventricular tachycardia

Diagnosis

This patient was diagnosed with Ashman phenomenon. This ECG shows an irregularly irregular rhythm with a rate of 83 bpm and a normal axis. There are no p waves present, the QRS complex is generally narrow, and there are no signs of ischemia in the ST segments. There are two aberrantly conducted beats with wide QRS complexes and unifocal morphology. In both instances, a prolonged R-R interval is followed by a relatively short R-R interval, which is then terminated by an aberrant beat. This is consistent with Ashman phenomenon.

Ashman phenomenon was first described by Drs. Gouaux and Ashman in 1947 and is a result of the variability in the refractory periods of the myocardium with varying heart rates.[1] The refractory period of the His-Purkinje system is proportional to the length of the preceding R-R interval, so longer R-R intervals result in longer refractory periods and vice versa.

When a long R-R interval precedes a short R-R interval, parts of the His-Purkinje system are still refractory, and the resultant beat appears abnormal (**Figure 2**). Commonly, this aberrant beat will have a right bundle branch block (RBBB) morphology because the right bundle has a longer refractory period than the left.[2]

This pattern is typically seen in atrial fibrillation, where a short R-R interval can frequently follow a longer one. However, it can also be seen in other supraventricular arrhythmias.

Ashman phenomenon can be diagnosed by the Fisch criteria, first described by Dr. Charles Fisch. The criteria include: a relatively long R-R interval preceding an R-R terminated by the aberrant QRS complex, a RBBB-like aberrancy with normal orientation of the QRS vector, irregular coupling of aberrant QRS complexes, and the lack of a fully compensatory pause following the aberrant beat.[3]

Ashman phenomenon is often confused for a PVC if a single aberration is present, and less commonly mistaken for nonsustained ventricular tachycardia when a series of aberrant beats are present. It can be differentiated from both by the lack of compensatory pause following the aberrantly conducted complex. PVC action potentials initiate in the ventricles and result in a compensatory pause during which the ventricles repolarize; however, Ashman phenomenon beats are supraventricular in origin and lack a compensatory pause. It is important to differentiate Ashman phenomenon from wide complex tachycardias of ventricular origin and other cardiac dysrhythmias to avoid unnecessary diagnosis and interventions.

Third-degree heart block, a condition in which complete atrioventricular dissociation leads to a slower, escape rhythm, is not present on this ECG; nor is atrial fibrillation with rapid ventricular response.

Learnings/What to Look For

- Ashman phenomenon is an aberrantly conducted supraventricular beat that results from the variability of refractory periods within the conduction system
- Identification of this phenomenon will help distinguish it from an ectopic beat or ventricular tachycardia
- While commonly seen in atrial fibrillation, Ashman phenomenon can be seen in any supraventricular arrhythmia

Pearls for Initial Management

- No treatment is required for isolated complexes seen in Ashman phenomenon[3]
- Identifying Ashman phenomenon and differentiating it from ectopic beats and ventricular tachycardia will prevent unnecessary transfers and consults
- While there is no treatment necessary for Ashman phenomenon, always consider the underlying cardiac condition and initial presentation when determining the need for transfer or cardiology consult

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ECG STAMPEDE

A Half Century of Urgent Care: What Today's Startups Need to Know

MONTE SANDLER

The urgent care industry is in its fifth decade and still growing! The driving forces of affordability and accessibility continue to fuel this growth. Success has been propelled by the agility of urgent care operators in adjusting their business model to meet the demands of their communities.

Initially, urgent care centers were a welcome supplement in communities where the emergency department was the only option for medical care apart from PCPs or specialist offices. Roughly a decade ago, the increased adoption of high-deductible health plans shifted much of the financial burden of medical services from the insurance companies to the patients. This shift has required patients to become well-informed consumers of medical services. Today's patients are more knowledgeable than ever before about medical billing practices, their own insurance policies, and the true cost of healthcare in America. Urgent care operators are wise to not only consider the medical needs of the community, but to also purposefully bring the most value to their patients by blending access, efficiency, and affordability.

In the current competitive market, consumers can't tell the difference between many urgent care "brands." Thus, differentiation is critical to ongoing success.

Depending on the market, differentiation may be a superior site with the most accessibility and visibility. In other markets it could be a strategic partnership with an esteemed physician group or hospital system. And yet in others, it may come down to hours of operation or services offered.

While it may be tempting to target a specific medical segment or latest fad in medical services adjacencies and throw "urgent care" behind it, the brass tacks are that trends fade and, with them, possibly the entire business. Stick to the tried-and-true business model and be flexible to address the community needs (eg, COVID) and never stop considering additional services that compliment urgent care and provide additional revenue streams.

New urgent care operators not only face all the same challenges of the past, but now also have to consider a myriad of additional hurdles. In most cases, they will face the delicate balance of creating a worthwhile profit margin in an intimidating financial climate. Labor costs are increasing, and payer reimbursements are stagnant—or worse, decreasing. In just the last 10 to 15 years, the average reimbursement across the nation has declined by at least 15%, but the entry into the market and everyday operational expenses have grown by 25% or more.

The good news is that today's operators are nimble; they continuously seek to offer additional services that will benefit their community, and that are largely not reliant on a payer relationship. The best example of this is occupational medicine.

This involves developing a relationship with area employers for their pre-employment and routine needs, as well as working with them to develop preventative programs and even taking on their worker's compensation cases. Worker compensation cases are reimbursed through the work comp carriers; all other employer-paid services will be a cash-based revenue stream with reimbursement directly from the company clients. In studying the needs of patients and offering a convenient and affordable solution, these operators will realize more visits and revenue, while continuing to deepen the connection to the community they serve.

Differentiation and managing an increasingly delicate balance of revenue and expenses are not the only challenges that new operators face. According to Experity consultant Heather Real, "In some markets, the insurance companies are not always interested in contracting with new urgent care businesses. Insurance companies often cite 'saturation' as a reason for withholding the contractual

Monte Sandler is Executive Vice President, Revenue Cycle Management of Experity (formerly DocuTAP and Practice Velocity).

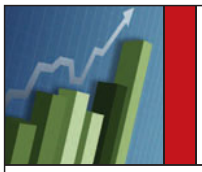
relationship."

While this is sometimes true, in other cases the insurance companies might be obliged to protect the interests of their parent companies. Then, the parent companies may have adopted a vertical integration growth model where they own many layers of the patient experience (including capitated physician groups and payer-owned urgent care centers), reaping profits at every level. While a new business may not be able to compel the payers to work with them, they can seek to avoid an undesirable outcome by performing a Payer Landscape Review prior to advancing in a particular market. The investment in this early process can ensure startups have a sturdy foundation to start from and will likely result in a thriving business with a bright future.

In examining the largest changes of the urgent care industry, it's difficult to ignore the fact that large groups are getting larger and independent operators are consolidating. This shift is largely due to merger-and-acquisition activity, as well as growth through private equity investments. While, historically, urgent care businesses had to scale to double-digit rooftops before consideration for acquisition, today's businesses may only have one or two locations before transacting. Very large operators, private equity firms, hospitals, and even those only just breaking into the urgent care industry may find acquiring an existing, well-run business more appealing than starting from scratch.

Smaller acquisitions may occur for a multitude of strategic purposes; it may be for quick expansion into new geographies, or even simply to obtain a coveted payer relationship that is no longer accessible to startups. Whatever the reasons, today's entrepreneurs will do well to position themselves for acquisition at startup. This includes developing a brand that exemplifies excellence within the community, streamlining all aspects of operations for smooth transitions later, and minding the bottom line. While the multiple of EBITDA used for valuation will vary based on an array of factors, maintaining a healthy and growing EBITDA will pay off now and later.

The landscape of the urgent care industry has changed significantly over the last 50 years. Urgent care has gone from being supplemental to existing medical services to now being essential. While rooftop growth may slow, it's not likely to cease altogether. The ingenuity and agility of today's operators are a testament to the lessons learned in the past and give reason to believe that the next 50 years of urgent care will be nothing but innovative and bright. ■



DEVELOPING DATA

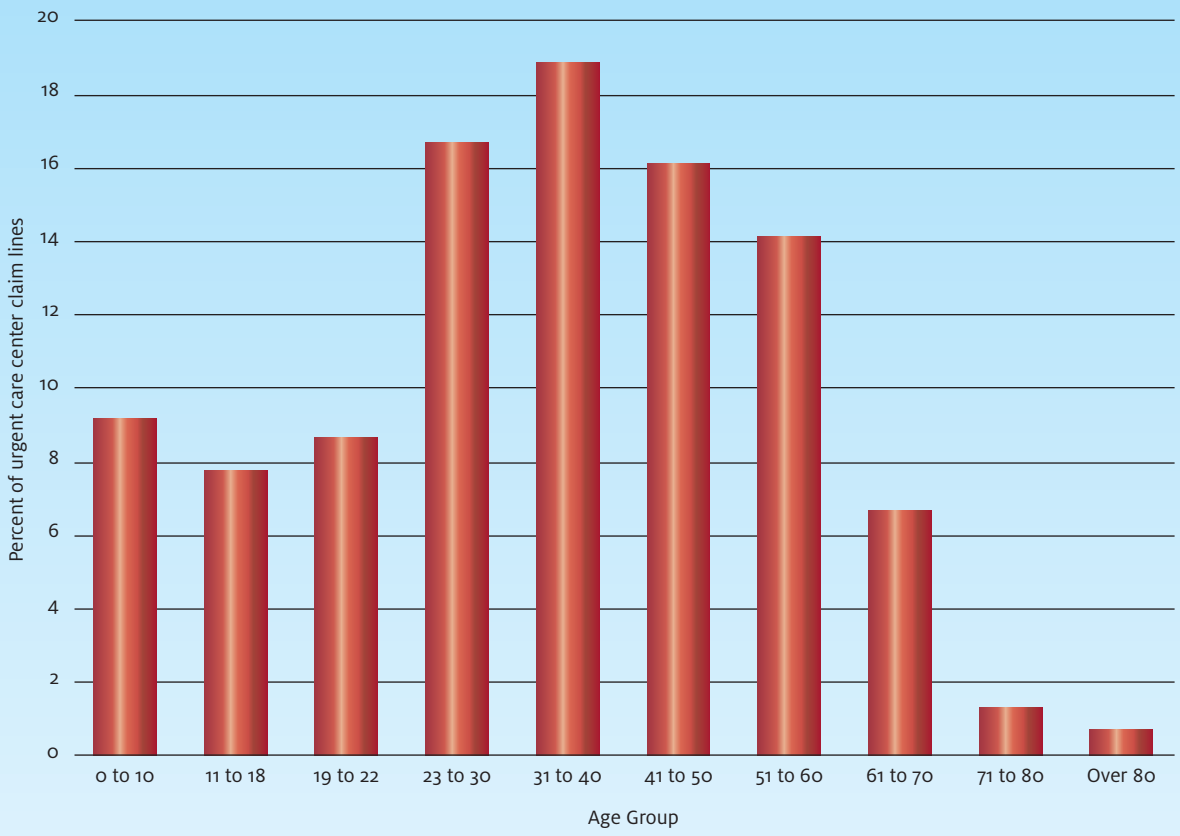
Urgent Care—It's a Millennial's Market

In terms of services offered, urgent care "should" appeal to patients of all ages. And it does. But to which age groups does it appeal the most? If you guessed "Millennials, " you're right—and that's nothing new, according to the *FH Healthcare Indicators and FH Medical Price Index 2022*. In fact, those born between 24 and 39 years of age in 2020, when the data were collected, have been urgent care's top customers for several years running.

What may be a little surprising, however, is how narrow the gap is from decade to decade. Also somewhat startling is the precipitous dropoff starting with the 61- to 70-year-old age group.

The graph below will help you understand the nuances, which could be helpful as you continue to try to attract new patients (presumably of all ages). ■

PERCENT OF CLAIM LINES WITH URGENT CARE CENTER USAGE BY AGE GROUP, 2020



Data source: *FH Healthcare Indicators and FH Medical Price Index 2022*—A FAIR Health White Paper. March 31, 2022.

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