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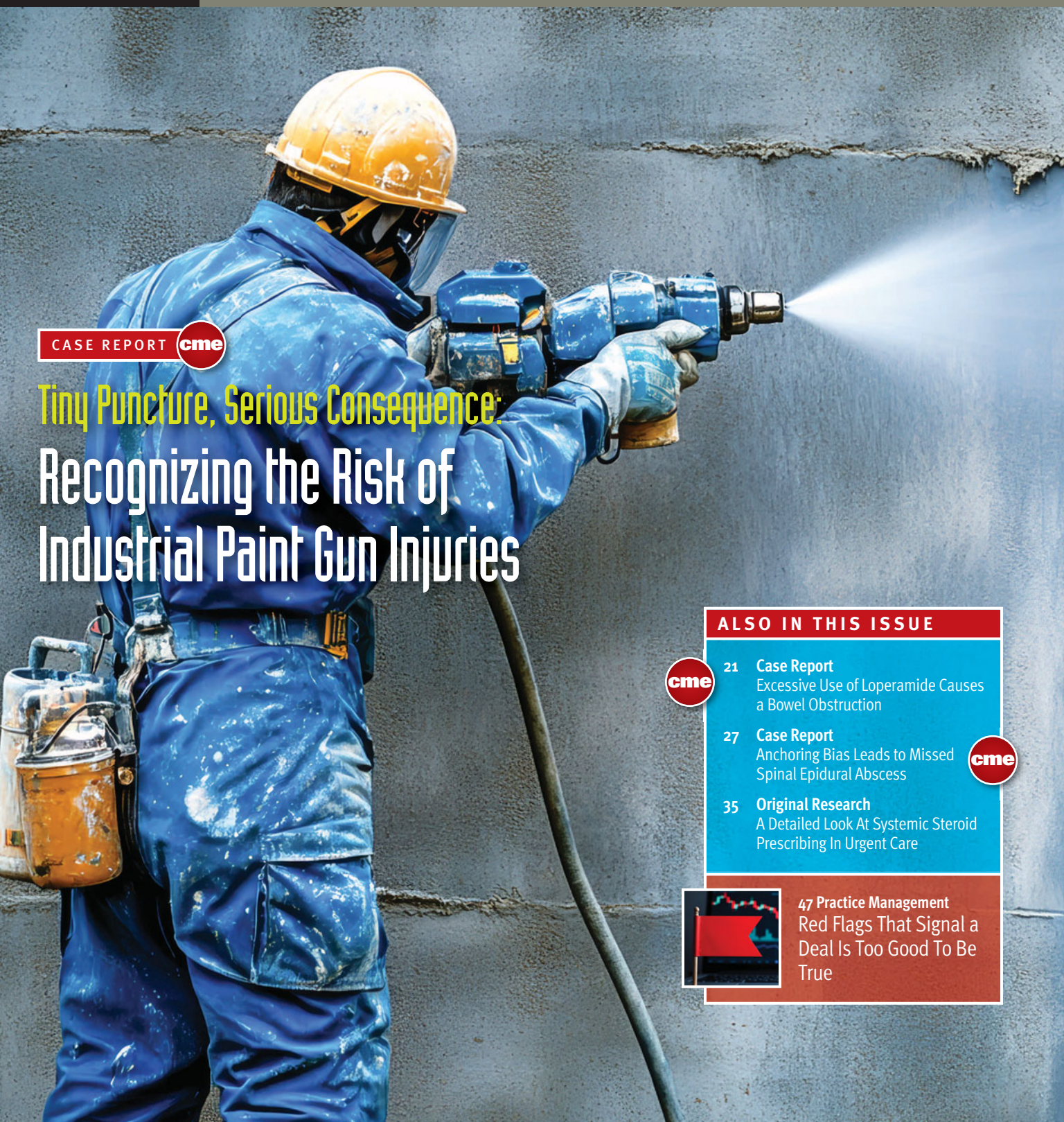

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URGENT INTERACTIONS

"The goal in medicine is progress—not perfection. We must continue to learn, improve, grow, and accept feedback over the course of our careers. We will never be perfect, but we must continue to make forward progress."

— Lindsey E. Fish, MD, FCUCM
JUCM Editor in Chief

"If you don't have adequate data, you're just hoping to get lucky. And in our jobs, lucky is not good enough."

— Michael Weinstock, MD
JUCM Senior Clinical Editor

"Many patients assume over-the-counter medications are inherently safe and may not adhere to recommended dosing. As physicians, it is our responsibility to counsel them on the potential risks and unintended consequences of improper use."

— Badi Eghterafi, DO, University Medical Center of Southern Nevada, author of "Viral Gastroenteritis With Bowel Obstruction: A Case Report." (page 21)

A WORD OF THANKS

The Journal of Urgent Care Medicine would like to thank the dedicated group of urgent care professionals listed below who graciously contributed their time and insight to review recent articles for publication. The peer reviewer status is worthy of inclusion on your curriculum vitae, so if you're interested in becoming a peer reviewer, reach out to the *JUCM* team at: editor@jucm.com.

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Artificial Intelligence With a Heart: How Front Desk Automation Is Rehumanizing Urgent Care

Saji Rajasekharan

Urgent care is no longer the healthcare industry's understudy or stopgap solution—it's become a primary point of access for millions. According to Urgent Care Association, more than 200 million visits are made to urgent care centers annually in the United States, reflecting patients' growing demand for fast, reliable, and accessible care.[1] Patient expectations mirror those of retail: seamless digital check-ins, price transparency, and instant answers. Meeting these demands isn't a value-add—it's a strategic imperative.

At the heart of this transformation to retail-level operations is the front desk. Tasked with scheduling, registration, insurance verification, and payment collection—often simultaneously—these teams are stretched to the limit. According to an analysis of 7,000 medical practice phone calls, 42% of patient calls went unanswered during business hours.[2] The issue isn't dedication; it's a flawed system that asks too much while offering too little.

This is where artificial intelligence (AI) can make a meaningful impact. Beyond automating routine tasks, AI has the potential to support frontline staff in ways that reduce friction and restore human connection. When deployed with intention, AI doesn't replace people—it gives them back what they need most: time, focus, and the ability to truly be present with patients.

The Hidden Crisis at the Front Desk

Front desk staff are expected to keep everything running: managing workflows, solving problems, and setting the tone for the patient experience. They do this while navigating real-time pressure from patients, systems, and teams. The role is one of the hardest in the clinic and, often, one of the most overlooked.

Saji Rajasekharan is Chief Technology Officer, Product and R&D for Experity.

"When a significant proportion of calls go unanswered, it's not just a service issue. It's lost revenue and a missed opportunity to connect with a patient who may never call back."

When a significant proportion of calls go unanswered, it's not just a service issue. It's lost revenue and a missed opportunity to connect with a patient who may never call back. The front desk isn't just the first impression, it's the foundation of the urgent care experience. If we don't support that role, the whole system suffers.

Efficiency That Enables Empathy

There's a common belief that AI makes healthcare feel cold or impersonal. In reality, the right tools create space for connection by handling repetitive tasks that take time away from people.

When staff no longer have to manually verify insurance, answer routine calls, or track down forms, they can focus on the patient in front of them. Technology becomes an ally, not a barrier. It helps clinics deliver both efficiency and warmth—something urgent care uniquely demands.

Real-World AI That's Already Working

Technology should never be an extra layer between patients and care. If built right, it becomes the bridge. Every

task AI reliably removes from the front desk is another moment a staff member can spend connecting with a patient—and that's where the real value is. Here's how AI is delivering measurable results in clinics today:

- **Voice assistants** can now automate more than 50% of inbound phone calls, handling scheduling, billing, and insurance questions around the clock.[3] That frees up staff to stay focused on in-person care.
- **AI-driven insurance matching** helps eliminate payer errors by using optical character recognition and past claims data to suggest the correct payer during registration. This reduces billing rework and denials.
- **Digital intake and visit-type workflows** allow clinics to customize intake forms based on the visit reason. A patient presenting for a flu vaccine, for example, only sees the questions they need to answer—nothing more.
- **Ambient AI scribes** listen to and transcribe provider-patient conversations into a standardized format supporting clear and concise reporting in the medical record—helping reduce after-hours documentation and allowing clinicians to stay present.
- **Predictive triage tools** surface high-risk patients earlier, improving prioritization and care delivery.

Guardrails That Keep People in Control

AI in healthcare must always be assistive, not autonomous. That's why human-in-the-loop design—a model in which people remain actively involved in reviewing, validating, or adjusting AI outputs—is critical. Staff can override, confirm, or redirect what the system recommends, keeping clinical judgment and operational control exactly where it belongs: with people.

Privacy and ethics are equally essential**.** AI systems that process Protected Health Information must adhere to Health Insurance Portability and Accountability Act regulations to ensure patient data is secure and confidential. But ethics goes beyond compliance. When AI is involved in clinical decisions or patient communication, it must uphold transparency, fairness, and accountability. This means avoiding algorithmic bias, ensuring patients understand how decisions are made, and giving providers the information they need to trust—or challenge—AI-generated outputs.

The regulatory landscape is also evolving. The Food and Drug Administration has proposed a framework for AI and machine-learning-based software-as-a-medical-device tools, which emphasizes continuous learning, safety, and real-world performance monitoring.[4] This underscores a growing industrywide expectation: AI must not just perform, but perform transparently and responsibly.

"Imagine a clinic where patients aren't asked to repeat their insurance details multiple times, where every call is answered promptly, and where staff are present and focused instead of stretched thin."

Smarter systems are only as good as they are reliable. The goal isn't just automation—it's confidence, clarity, and care.

The Human-Led, AI-Supported Clinic

Imagine a clinic where patients aren't asked to repeat their insurance details multiple times, where every call is answered promptly, and where staff are present and focused instead of stretched thin. That's the kind of environment AI can help create.

Technology, when designed with intention, doesn't replace human connection. It protects it. The best systems don't just run smoother—they feel better for everyone involved.

Final Thought

If we want to rehumanize urgent care, we have to start by supporting the humans inside it. AI gives us the chance to do that. Not by replacing people but by giving them room to do what they do best. ■

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AI: Closing the Gap in Point-of-Care Ultrasound Adoption in Urgent Care

Tatiana Havryliuk, MD

Point-of-care ultrasound (POCUS) has become a cornerstone of emergency medicine, yet its uptake in urgent care has been slow. Despite the emergence of affordable handheld ultrasound devices, many urgent care clinics have yet to integrate POCUS into routine practice. The common barriers to adoption include limited provider competence, the cost of devices, archiving solutions, and training, as well as a lack of administrative resources to support a high-quality POCUS program. The growing capabilities of artificial intelligence (AI) could be the catalyst that accelerates adoption.

Current POCUS Landscape in Urgent Care

POCUS use in urgent care is still in its early stages. Adoption tends to occur in clinics led by emergency medicine-trained physicians, those offering higher acuity care, or orthopedic procedures that required ultrasound guidance. The field lacks formal guidelines for urgent care akin to those developed by the American College of Emergency Physicians.[1] While case reports have demonstrated the utility of POCUS in urgent care, comprehensive studies on meaningful outcomes are still lacking.[2-4]

In many clinics where POCUS is available, it is used informally for limited applications, such as evaluating abscesses or joint effusions, without structured documentation or billing. This underutilization limits both its diagnostic value and financial sustainability. A structured approach supported by AI could address these gaps. Handheld ultrasound devices now range from approximately $2,000 to $5,000, with cloud-based storage solutions adding another $200 to $500 annually per user. When implemented with proper documentation, POCUS exams are eligible for reimbursement under existing CPT codes, providing an opportunity to offset these costs and create a sustainable, revenue-positive workflow. According to the 2025 national Medicare fee schedule, global physician fees range from $56 for a soft tissue scan to $180 for a FAST (Focused Assessment with Sonography in Trauma) exam.[5] If a practice performs just 2 reimbursable POCUS exams per day at an average reimbursement of $65 for exams performed by advanced practice providers, that can generate approximately $47,000 in annual billable revenue. This makes POCUS not only clinically impactful but also an attractive and financially strategic investment.

Tatiana Havryliuk, MD, is an emergency physician and founder of Hello Sono.

How AI Can Support Broader POCUS Use

AI integration may remove some of the barriers that have slowed POCUS implementation in urgent care.

- **Image acquisition:** AI tools inside the scanning software could guide providers to obtain diagnostic-quality images with minimal experience. They offer real-time feedback on probe positioning and image quality. In one study, a variety of medical professionals, including nurses and medical assistants, achieved a 98% diagnostic image rate after a brief training.[6]
- **Exam interpretation:** Software enhanced with AI can highlight abnormalities such as pulmonary edema or deep vein thrombosis, enabling novice users to perform basic image interpretation without relying on immediate input from a POCUS trained expert.[7]
- **Reporting**: Automated labeling and reporting features ensure consistent and adequate documentation, save time, and improve billing compliance.[7]
- **Quality assurance:** AI can help verify that scans meet diagnostic standards and assess interpretation accuracy.
- **Standardization**: AI reduces variability in image acquisition and interpretation, helping ensure consis-

tent results across providers regardless of skill level.[7,8] Research has shown that even non-clinicians can perform POCUS successfully with minimal guidance, supporting the feasibility of expanding POCUS use among urgent care providers with AI assistance.[8]

- **Novice users:** AI improves confidence by offering real-time support and reducing the cognitive load involved in scanning and interpreting. This support encourages repetition and faster skills acquisition, allowing providers to integrate POCUS more naturally into clinical workflows.
- **Experienced users:** For those already skilled in ultrasound, AI frees up time by automating repetitive tasks like measurements, labeling, and reporting.

These combined effects could significantly lower the learning curve and operational friction that have historically hindered widespread adoption in urgent care.

Caveats and Considerations

While promising, AI is not without limitations.

- **Reliability concerns:** AI tools reflect the data on which they were trained. Algorithmic decisions are often not clear, and underlying biases may affect diagnostic accuracy.[7] It's essential that providers maintain oversight and apply critical thinking to AI outputs.
- **Training needs:** AI should augment—not replace—hands-on learning. Effective POCUS use still requires formal training, including didactic instruction, hands-on scanning, and expert review.
- **Technique-dependent:** AI can't compensate for improper scanning technique. If the probe is misapplied or compression is inadequate, even advanced software may produce incorrect interpretations.
- **Risk of overdependence:** Relying too heavily on AI might degrade clinicians' fundamental ultrasound skills, similar to how over-reliance on ECG machine reads can undermine ECG interpretation proficiency.
- **Cost**: AI functionality typically requires a subscription, often ranging from $400 to $500 per user per year for handheld devices. While this cost is usually included as part of the image storage subscription, it represents an additional expense beyond the basic cost of the device itself.

Looking Ahead

By enhancing usability, streamlining image interpretation, and building user confidence, AI could increase the adoption of POCUS in urgent care to enhance patient care and address critical gaps in imaging access.

"By enhancing usability, streamlining image interpretation, and building user confidence, AI could increase the adoption of POCUS in urgent care to enhance patient care and address critical gaps in imaging access."

However, the benefits of AI can only be realized if implemented strategically and with supervision. Oversight, education, and clinical context remain indispensable. As we move forward, the urgent care community must ensure that training programs, reimbursement structures, and clinical protocols evolve alongside the technology. Artificial intelligence is rapidly redefining healthcare, and its integration with POCUS could be highly impactful. ■

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Saying Goodbye

Lou Ellen Horwitz, MA

My friends, we have come a long way together in the last 5 years! Let me remind you of how far. My first *JUCM* column in my second term as CEO at the Urgent Care Association (UCA) in July 2020 was an admonishment to us all: We had to come together if we were ever going to create change on a national level.

Over the next 5 years, you did precisely that. Through tremendous adversity, you built confidence in yourselves and in each other. You leaned on and into our Urgent Care community for resources, advice, camaraderie, inspiration, tough love, and courage. You drove change over and over, and you are still doing it. You lived the values that UCA eventually codified and adopted as our own in 2024. You inspired us to figure out who we are as a professional field (5 distinct associations as of this January), and you are still doing it. You made us rethink everything that UCA and our affiliates had to offer, upgrade our experiences, transform our convention, and reimagine our relationships, and you are still doing that.

We'll never stop trying to be better for you. Together we have raised standards, challenged thinking, held hands through tough times, and shouted each other's praises, and we are going to keep doing it.

The Distinct Identity of Urgent Care

For the first 20 years of our field, Urgent Care tried to blend in with the healthcare establishment. However, the COVID-19 pandemic taught us that it was time to stand up, so we did. We even decided to capitalize "Urgent Care" in all settings to emphasize its importance. Now when we visit Congress or the Centers for Medicare and Medicaid Services, they know who we are. I think that phrase should just sit there by itself for a second and be appreciated: They know who we are.

This is all thanks to you. I could have shouted at the top of my lungs alone for 5 years, but without you, I would have just been really hoarse. You answered the call. You donated your time, opinions, and energy, while also showing up to make things happen. I am so grateful for that. Being your leader through this particular time has been the privilege of my life. The first time was fun, but this time was really quite something.

In addition to all of you—the professionals of our field—I must give top honors to the UCA staff members, both past and present, who have been on the inside of our organizations giving their blood, sweat, and tears to bring all of us through the challenges of 2020 to today. Our team thinks about you all day long and have become experts at change management and resourcefulness. They respect each other, hold each other accountable, act with integrity, and "throw out the baby with bathwater" when we need to reinvent. They link arms, dig in, and figure out the next move that will be best for the field. They love Urgent Care and each other, and I hope that all leaders someday get to work with a team like ours.

Welcome Steve Sellars

Which leads me to my successor. It would be harder to leave if I didn't know that all of this was going to be in the hands of Steve Sellars, UCA's new CEO. When I agreed to come back as CEO, one of my criteria was having a key vote in selecting my successor, and I am so happy that it was such an easy vote. I have known Steve for more than 20 years, and I know that his character, love for our field, and unique experience make him absolutely perfect as our next CEO. He's just what we need for the next phase of Urgent Care.

Which leads me to goodbye at last. It is going to be hard for me to leave this role.

We still have our challenges, but our momentum is fantastic. The next 5 years are going to be even greater than the past 5. I'm so excited to watch you continue to collaborate and advance the field, get the payment and recognition that you deserve, and raise the bar for everyone else in healthcare. I love you all. Thank you for everything. *Onward!* ■

Lou Ellen Horwitz, MA is the former Chief Executive Officer of the Urgent Care Association.

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Saying Hello

Steve Sellars

It's an incredible honor to be writing this column as the new CEO of the Urgent Care Association (UCA). I've long admired the work of this organization, and over the past several years, I've had the privilege of engaging with many of you as a colleague, advocate, and fellow believer in the value Urgent Care brings to healthcare. Stepping into this role feels less like a new beginning and more like a full-circle moment—one that fills me with immense gratitude.

Many of you know me from my time leading an Urgent Care organization and serving on boards and committees within UCA and its affiliates. Like so many in this field, I didn't necessarily plan on a career in Urgent Care, but once I was in, I never looked back.

I'm incredibly grateful for my time at Premier Health, where I was introduced to Urgent Care and had the privilege of working alongside some of the most talented professionals in the field. That experience shaped me both personally and professionally, and it deepened my appreciation for the complexity and the reward of delivering high-quality services. The team I worked with embodied the best of what Urgent Care represents: dedication to patients, innovation in delivery, and a deep sense of mission.

Through my involvement with UCA, I've found a community of professionals who are smart, mission-driven, and deeply committed to meeting people where they are. Over the years, Urgent Care has grown not only in size and visibility but also in purpose and influence. One of the things I've always appreciated about Urgent Care is how personal it feels. We talk a lot about patient-centered care, but this field has always been clinician- and people-centered, too. The way we collaborate, share ideas and support each other through tough times makes UCA feel more like a family than just a trade association. That's not just a metaphor—I've experienced it firsthand.

I'm immensely proud of our field. We've transformed how healthcare is accessed and delivered, making it more convenient, responsive, and affordable for millions each year. We fill critical gaps in the system, absorb surges during public health crises and bring care into communities that need it most. We innovate with technology, adapt to regulatory change and rise to meet workforce and economic pressures. But now, we must also meet the expectations of today's healthcare consumer. That means doubling down on high quality, clinical excellence, and exceptional outcomes. In an environment where value is measured not just by convenience, but by consistency and results, Urgent Care must rise to the occasion—and I know we will.

There's important work ahead in an increasingly complex and competitive healthcare landscape. Our members need a strong voice to ensure Urgent Care receives the recognition it deserves. We must also remain focused on delivering the education, tools and support our members need. Whether you're focused on operational sustainability, workforce development, clinical excellence, or improving reimbursement strategies, UCA wants to be your trusted partner.

As your CEO, I'm committed to building on the strong foundation that's already in place. UCA has grown in reach and relevance thanks to years of thoughtful leadership—from our founders and volunteer boards to our dedicated members. I intend to listen, learn, and stay close to the people who make this field what it is.

My ask is simple: Whether you're new to the field or a long-time leader, get involved with UCA. Lend your voice, share your experience and help shape the future of Urgent Care. We are stronger, smarter, and more impactful when we do it together.

I also want to thank Lou Ellen Horwitz for her incredible contributions and passionate leadership. Her tireless advocacy, relentless dedication, and unwavering commitment to making us better have made a lasting difference. She leaves big shoes to fill, and I step into this role with deep respect for the path she helped carve.

Thank you for the warm welcome, the trust you've placed in me, and the tireless work you do every day. I'm honored to be part of this journey with you. ■

Steve Sellars is Chief Executive Officer of the Urgent Care Association.

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High-Pressure Paint Gun Finger Injury: A Case Report (page 15)

1. What are the potential risks associated with injuries from high-pressure devices when surgical intervention is delayed?
a. Infection
b. Tissue loss
c. Amputation
d. All of the above

2. What is the amputation rate of injuries from high-pressure devices carrying solvents like paint and grease when surgical intervention is delayed?
a. Up to 50%
b. Up to 60%
c. Up to 70%
d. There is no risk of amputation

3. Why should digital nerve blocks be avoided for injuries from high-pressure devices?
a. May prevent antibiotic effectiveness
b. May increase compartment pressure
c. May create false positives in x-ray
d. May create false positives in computed tomography

Viral Gastroenteritis With Bowel Obstruction: A Case Report (page 21)

1. The Infectious Disease Society of America recommends against using antimotility agents in which population?
a. Anyone under 18 years of age
b. Anyone over 50 years of age
c. Those taking anti-inflammatory drugs
d. Anyone with vitamin D deficiency

2. Which of these is not a red-flag feature for acute gastroenteritis warranting further evaluation?
a. Significant electrolyte abnormalities
b. Fatigue
c. Significant weight loss
d. Pregnancy

3. In which time of year is acute gastroenteritis most prevalent?
a. Spring
b. Summer
c. Fall
d. Winter

When Neck Pain Arises From Spinal Epidural Abscess: A Case Report (page 27)

1. What is a spinal epidural abscess (SEA)?
a. Pyogenic infection of the epidural space
b. Rare cancerous granuloma
c. Common occurrence of torticollis
d. None of the above

2. Where in the spine does SEA most often occur?
a. Cervical
b. Thoracolumbar
c. Sacrum
d. Coccyx

3. Which pathogen is most often associated with SEA?
a. *Clostridioides difficile*
b. *Streptococcus*
c. *Staphylococcus aureus*
d. *Escherichia coli*

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Case Report

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High-Pressure Paint Gun Finger Injury: A Case Report

Urgent Message: While the initial clinical presentation of a high-pressure paint gun injury may not elicit concern, it is truly high-risk and requires emergent recognition and surgical intervention.

Alejandro Bocanegra, MD, FAAFP, DABOM; Daniela Santos Cantú, MD; Evan D. Perez, MD, CAQSM; Guillermo Tercero Bocanegra Hernández, MD

Citation: Bocanegra A, Santos Cantu D, Perez ED, Bocanegra Hernandez GT. High-Pressure Paint Gun Finger Injury: A Case Report. *J Urgent Care Med.* 2025; 19(11): 15-19

Key words: High-Pressure Injection Injury, Paint Gun Injury, Finger Trauma, Pyogenic Tenosynovitis, Occupational Injury, Subcutaneous Paint Infiltration, Finger Compartment Syndrome, Finger Emergency

Abstract

Introduction: High-pressure injection injuries of the hand are rare but represent true surgical emergencies. Despite often appearing deceptively mild on initial presentation, these injuries can rapidly progress to extensive soft tissue damage, compartment syndrome, and tissue necrosis. The mechanism of injury—frequently involving industrial equipment—should immediately raise concern for deep structural involvement, even in the absence of significant pain or visible trauma. Urgent care providers must maintain a high index of suspicion when evaluating apparently benign puncture injuries with this mechanism.

Case Presentation: An 18-year-old construction laborer presented to a rural clinic 15 hours after sustaining a high-pressure paint gun injection injury to the right middle finger. Initially painless, the injury evolved over several hours with progressive swelling, erythema, and aching discomfort limiting movement of the finger.

Physical exam revealed puncture wounds at the volar base of the finger, fusiform swelling, pain with passive extension, and erythema extending to the dorsal hand and wrist.

Diagnosis: Although features of Kanavel's signs were present, the clinical concern centered on evolving compartment syndrome and extensive soft tissue injury, given the mechanism of high-pressure paint injection.

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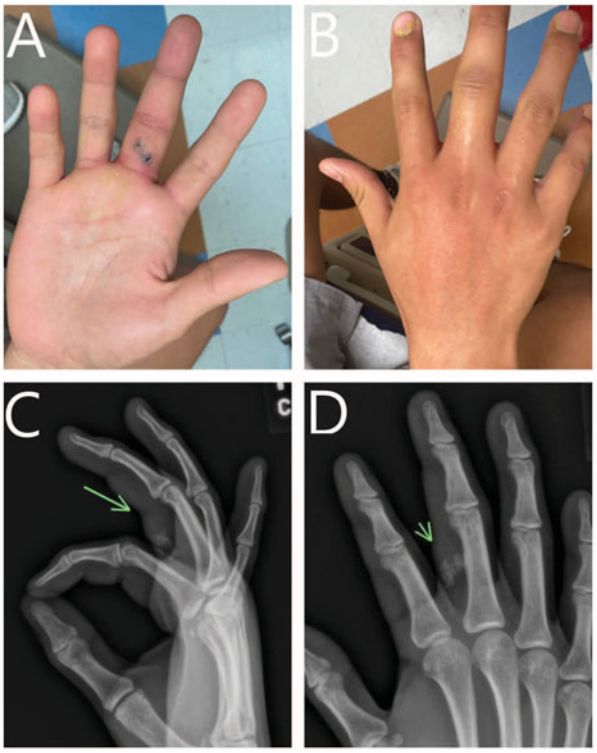
Figure 1. Paint Gun Injury With Radiographs



A: Small punctate entrance wounds with purple margins on the volar aspect of the right middle finger. B: Erythema extending from the dorsal hand to the wrist with dry yellow paint visible on the skin and fingernails. C, D: Lateral and anteroposterior radiographs showing radiopaque foreign material in the volar soft tissue of the middle finger. Images courtesy of the authors.

Radiographs confirmed the presence of radiopaque foreign material, further supporting the need for emergent surgical management.

Case Resolution: The patient underwent surgical decompression, fasciotomy, and removal of injected material, followed by staged debridement and soft tissue reconstruction with rotational flap closure. Early surgical intervention, combined with antibiotic therapy and occupational rehabilitation, led to preservation of the digit and restoration of hand function.

Conclusion: This case illustrates the critical importance of prompt recognition and surgical referral for high-pressure injection injuries, with the mechanism of injury serving as a key diagnostic indicator. While certain physical findings may overlap with other pathologies such as flexor tenosynovitis, the risk of compartment syndrome and irreversible soft tissue injury mandates emergent evaluation. Delays in diagnosis and treatment are strongly associated with infection, tissue loss, and amputation.

Introduction

High-pressure injection injuries to the hand are uncommon but represent a true surgical emergency.[1] They frequently present to urgent care or outpatient settings with deceptively mild symptoms.[2,3] Typically affecting working-age men engaged in industrial or maintenance work,[4,5] these injuries result from accidental contact with high-pressure devices such as paint, grease, or hydraulic guns.[2,6] Despite appearing as small puncture wounds, high-pressure devices—often generating pressures ranging from 1,000 to over 15,000 pounds of force per square inch (psi)—can force substances deep into tissue planes, resulting in extensive and potentially devastating damage.[1]

Clinical severity depends on the injected material's cytotoxicity, volume, and pressure.[2] Organic solvents like paint and grease are particularly destructive, carrying amputation rates of up to 50% when surgical intervention is delayed.[2,3] Even water or air, though less toxic, can cause compartment syndrome and tissue necrosis if not recognized early.[1]

Initial symptoms may be minimal, often leading to delayed diagnosis.[7] However, rapid progression to ischemia, infection, and necrosis can occur within hours. Urgent care providers play a crucial role in early recognition.[1] Any suspected injection injury should prompt tetanus prophylaxis, intravenous antibiotics, imaging, and immediate surgical consultation. Referral within 6 hours is ideal to reduce morbidity and preserve hand function.[8]

Case Presentation

An 18-year-old right-hand dominant construction worker presented to a rural clinic 15 hours after sustaining a high-pressure paint gun injection injury to his right middle finger. While cleaning the nozzle of a paint sprayer, he inadvertently triggered a burst of paint onto his finger. Initially asymptomatic without any apparent skin lesion, he noticed swelling after 5 hours, which progressed overnight to throbbing pain and discoloration.

On exam, the right middle finger was flexed and swollen, with 2 puncture wounds (1 mm) at the volar base of the proximal phalanx. The wounds showed pur-

Table 1. Kanavel's Signs

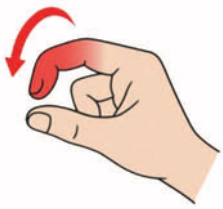
Fusiform Edema	Held in Passive Flexion	Pain With Passive Extension	Tendon Sheath Tenderness
			

Table 2. Key Prognostic History Elements.[2,5,6,9,10]

Key History Elements	Clinical Relevance	Prognostic Importance
Time from injury to treatment	Early recognition and referral are critical; delays can lead to progressive tissue damage and infection risk	Delays >6–10 hours are linked to increased risk of infection, necrosis, and amputation
Type of material injected	Organic/caustic (eg, paint, grease, solvents, oil) are cytotoxic Water and air are less harmful but not always benign	**Organic/caustic:** highest risk of necrosis, infection, and amputation **Water:** increased infection risk; delayed care increases compartment syndrome risk **Air:** low risk; may cause tissue emphysema
Volume injected	Larger volumes elevate compartment pressure and tissue disruption	Larger volumes increase risk of compartment syndrome and poor outcomes
Injection pressure	Higher pressure (eg, industrial sprayers) drives deeper material dispersion and soft tissue trauma	Higher pressure increases injury severity, compartment risk
Injury location	Fingers (especially index finger) have less tissue compliance and volume buffering	Finger injury increases risk of tissue loss due to confined anatomy compared to palm/thumb

ple discoloration with surrounding erythema. Pain limited passive and active range of motion. Capillary refill was delayed, and sensation was reduced without signs of lymphangitis. Radiographs revealed radiopaque material in the volar soft tissue **(Figure 1)**.

Medical Decision Making

Initial concern centered on flexor tenosynovitis due to the presence of all 4 Kanavel's signs **(Table 1)**. However, the history of high-pressure paint exposure, delayed onset, and radiographic evidence of foreign material raised urgent suspicion for a high-pressure injection injury with possible compartment syndrome. The patient was emergently transferred to a trauma center.

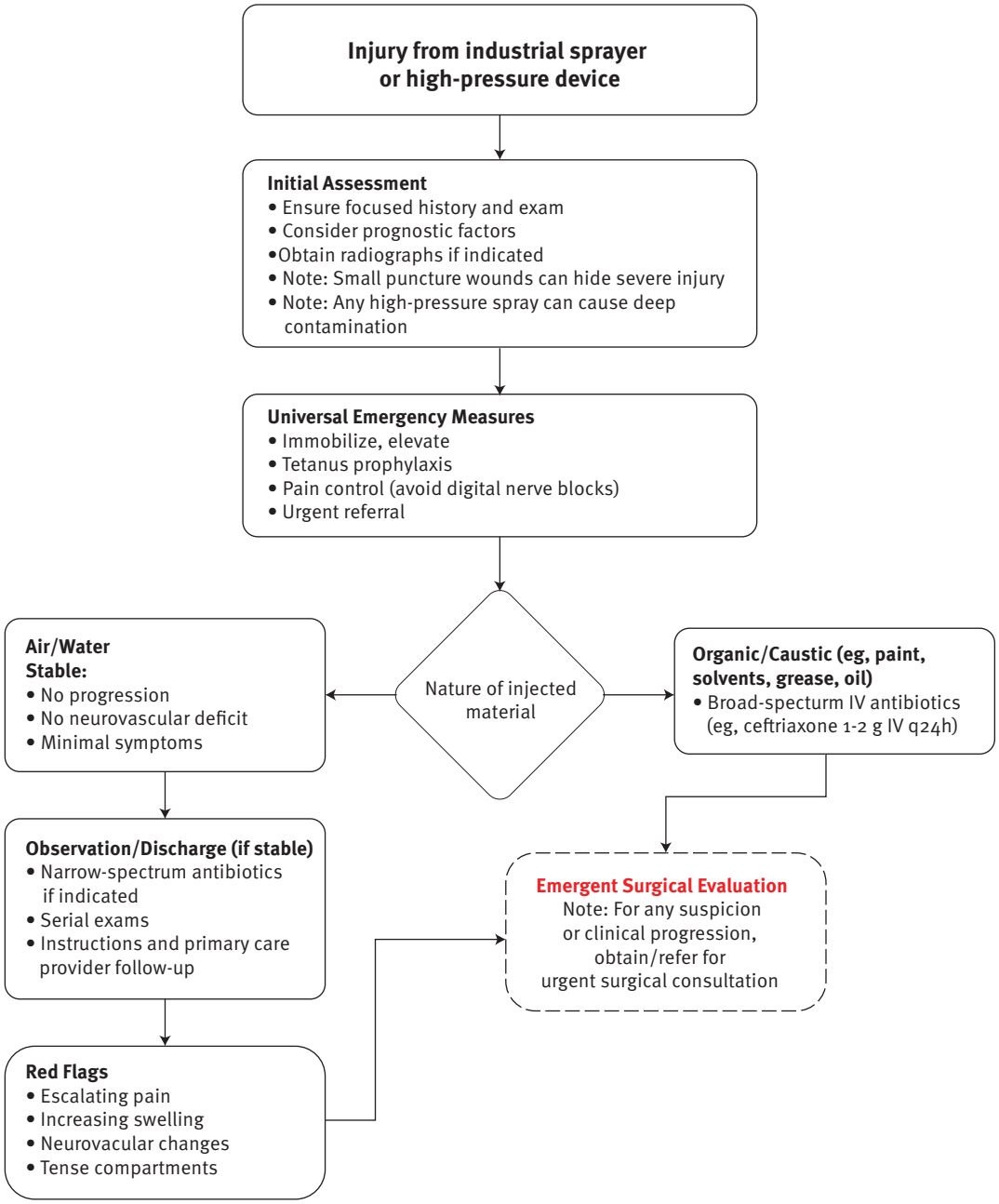
Differential Diagnosis and Final Diagnosis

The initial differential diagnosis included pyogenic flexor tenosynovitis, cellulitis, and retained foreign body. Emergent surgical exploration confirmed a high-pressure injection injury with retained paint, resulting in secondary compartment syndrome and flexor tenosynovitis.

Discussion

High-pressure injection injuries of the hand are rare (1 in 600 hand injuries), but carry significant risk of infection, tissue loss, and amputation, particularly if surgical debridement is delayed beyond 6 hours.[1] The pathophysiology combines mechanical trauma, chemical irritation, infection, and vascular tamponade, leading

Figure 2. Initial Approach to Suspected High-Pressure Injection Injuries in Urgent Care



rapidly to compartment syndrome and irreversible necrosis. Up to 50% of cases are initially misdiagnosed in urgent care settings because early presentations may appear deceptively benign.[1,6]

Urgent care providers should obtain a focused history to determine mechanism, material type, estimated pressure if known, time since injury (**Table 2**) and perform a thorough exam assessing wound size, swelling, erythema, pain with passive motion, and early signs of compartment syndrome (**Figure 2**). Pain out of pro-

portion and pain with passive stretch are particularly concerning. Kanavel's signs are not specific and may also indicate compartment syndrome or deep tissue involvement in these injuries.[5,11] Imaging with radiographs can detect radiopaque material; computed tomography (CT) or magnetic resonance imaging (MRI) may assist in complex cases, but diagnosis is primarily clinical.[10]

Initial management includes immobilization, elevation, tetanus prophylaxis, pain control, and empiric antibiotics. Digital nerve blocks should be avoided as they may increase compartment pressure and exacerbate ischemia in compromised tissues.[1] For organic or caustic materials such as paint, solvents, or grease, broad-spectrum intravenous (IV) antibiotics are recommended (eg, ceftriaxone 1–2 g IV q24h) along with urgent surgical consultation for prompt debridement.[5,10]

For air or water injuries, conservative management may be appropriate if the patient is stable with no progression, no neurovascular deficit, and minimal symptoms. Narrow-spectrum antibiotics may be indicated (eg, cefazolin IV or cephalexin oral [PO] if mild and outpatient) with serial examinations to monitor for escalating pain, swelling, tense compartments, or neurovascular changes requiring urgent reassessment.[6,11] Discharge with clear instructions and close primary care follow-up is essential for stable, low-risk cases. Urgent care providers play a critical role in early recognition, initial stabilization, and timely referral to prevent severe morbidity.[1,6]

Disposition

The patient underwent surgical decompression, debridement, and rotational flap closure, Wound cultures grew *Pseudomonas*, which was managed with oral antibiotics. The patient underwent 2 additional reconstructive surgeries, occupational rehabilitation, and eventually regained full hand function.

Patient Perspective

The patient expressed that he underestimated the injury and therefore delayed care. He was surprised by the emergent need for surgical treatment, and following recovery, he expressed gratitude for his care.

Ethics Statement

The patient was unable to be contacted because the contact information on record was no longer active, and therefore, demographics and some details of the case were changed to protect patient anonymity and confidentiality.

Takeaway Points

- All high-pressure injection hand injuries are surgical emergencies, regardless of initial appearance.
- Diagnosis is clinical and hinges on the mechanism of injury—always inquire about the use of high-pressure equipment.
- The type of material injected is a key prognostic factor: organic, caustic, or high-viscosity substances (eg, paint, grease, oil) are associated with higher rates of necrosis and amputation, but even air or water can cause significant morbidity and require close monitoring.
- Document both the time of injury and time of presentation, as prognosis worsens with delays to surgical intervention beyond 6 hours.
- Imaging may help identify foreign material or extent of injury but should not delay surgical evaluation.
- Initiate broad-spectrum antibiotics, tetanus prophylaxis, and pain management (avoiding digital nerve blocks) as part of initial care.
- Prompt referral for emergent surgical evaluation is essential for all cases with early and thorough debridement critical for optimal outcomes. ■

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Case Report

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See CME Quiz Questions on page 13.

Viral Gastroenteritis With Bowel Obstruction: A Case Report

Urgent Message: While acute gastroenteritis is typically self-limiting, inappropriate or excessive use of over-the-counter antimotility agents like loperamide can lead to serious complications—such as bowel obstruction or ileus—highlighting the critical need for patient education on safe medication use.

Badi Eghterafi, DO; Nazanin Hazhir Karzar, MD

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Key Words: Gastroenteritis, Over The Counter Medications, Loperamide, Case Report, Bowel Obstruction

Abstract

Introduction: Acute gastroenteritis (AGE) is a common condition characterized by rapid-onset diarrhea, often accompanied by nausea, vomiting, fever, and abdominal pain. While most cases are self-limiting and viral in etiology, inappropriate use of over-the-counter (OTC) antimotility medications such as loperamide can lead to serious complications, including bowel obstruction or paralytic ileus.

Case Presentation: A 62-year-old man with a history of type 2 diabetes mellitus presented to urgent care for worsening abdominal distention following a 3-day history of abdominal pain, nausea, and multiple episodes of watery diarrhea after a restaurant meal. He denied fever, hematochezia, or recent antibiotic use. He had self-medicated with over-the-counter loperamide.

Physical Examination: His abdomen was distended with hyperactive bowel sounds. There were no peritoneal signs. An abdominal x-ray revealed dilated bowel loops with air-fluid levels, raising suspicion for small bowel obstruction (SBO) or evolving ileus.

Diagnosis: The patient was transferred to the emergency department, and a diagnosis of small bowel obstruction was confirmed.

Resolution: Following hospitalization, the patient improved and was discharged home.

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Conclusion: AGE is generally self-limited and managed with supportive care. OTC medications like loperamide may precipitate bowel dysfunction, especially when used excessively. This case underscores the importance of patient education regarding OTC medication safety to prevent medication induced complications.

Introduction

Acute gastroenteritis (AGE) presents with rapid-onset diarrhea (3 or more episodes daily or over 200g of stool), often accompanied by nausea, vomiting, fever, and/or abdominal pain.[1,2] Vomiting and diarrhea commonly co-occur but may appear separately. In emergency settings, predominant symptoms include nausea (93%), diarrhea (89%), vomiting (81%), and abdominal pain (76%).[3,4,5,6] Respiratory symptoms such as sore throat, cough, and rhinorrhea are seen in about 10% of cases, along with occasional weight loss and fatigue.[1] Fever (38.3°C to 38.9°C) is observed in roughly half of cases.[7] Patients may exhibit mild abdominal tenderness and voluntary guarding. While uncommon, dehydration may be identified through signs such as dry mucous membranes, reduced skin turgor, tachycardia, hypotension, or altered mental status, which present in less than 10% of emergency cases.[1]

A viral cause of AGE is suggested by an incubation period of 24–60 hours, illness duration of 12–60 hours, and frequent vomiting. Foodborne bacterial infections should be considered when symptoms appear within a shorter period of time after food ingestion (ie, 8–16 hours).[8] Distinguishing viral from bacterial etiologies based on symptoms alone is challenging, though norovirus tends to resolve within 2 days, rotavirus within 3-8 days, and bacterial infections like *Campylobacter* and *Salmonella* last 2-7 days.[9,10] Viral gastroenteritis does not typically cause bloody diarrhea.[6]

Diagnosis is clinical, based on rapid-onset diarrheal illness with supportive examination findings. Routine stool studies are unnecessary unless alarm signs (discussed below) suggest bacterial or inflammatory causes.[11] Persistent diarrhea in travelers or those with fecal-oral exposure additionally warrant protozoal evaluation. Recent antibiotic use should raise suspicion for *Clostridioides difficile*. Chronic conditions like colorectal cancer, inflammatory bowel disease, and malabsorption syndromes may occasionally mimic acute viral gastroenteritis.[12]

Acute viral gastroenteritis is typically self-limited and managed with supportive care, primarily fluid repletion, and an unrestricted diet. No specific antiviral treatments exist. According to the Infectious Disease Society of America (IDSA) 2017 guidelines, mild to moderate cases without dehydration can be managed with oral hydration solutions, while severe cases or those with signs of dehydration require intravenous fluids with isotonic solutions (lactated ringers or normal saline).[11] Antiemetics can help with persistent vomiting, and antimotility agents may be used in the right clinical scenario. The IDSA recommends against using antimotility agents in children under 18 years of age, patients with persistent fever, cases of bloody diarrhea, and cases where there is a risk of toxic megacolon. However, these agents may be used in healthy adults with watery diarrhea and may be combined with antibiotics for the treatment of traveler's diarrhea.

"Acute viral gastroenteritis is typically self-limited and managed with supportive care, primarily fluid repletion, and an unrestricted diet. No specific antiviral treatments exist."

Features of AGE warranting further evaluation (red flags) include severe dehydration, electrolyte abnormalities, bloody stools, significant weight loss, prolonged symptoms (>1 week), recent hospitalization or antibiotic use, advanced age, severe abdominal cramping, comorbidities, or pregnancy.[7,11,13,14]

Dietary restrictions are not strongly supported by evidence, though bland foods may be better tolerated. The role of probiotics and zinc in treatment remains unclear and requires further study.[15,16,17,18,19,20,21,22,23,24] While viral gastroenteritis is usually self-limited, complications include dehydration and postinfectious irritable bowel syndrome (IBS). Prevention focuses on hand hygiene, infection control, and addressing contaminated food or water sources.[9]

Case Presentation

A 62-year-old male with a history of type 2 diabetes mellitus presented to the urgent care with a 3-day history of diffuse abdominal pain after eating at a new restaurant. He stated he was on no new medications or supplements and had no recent increases in current

medication dosing, recent antibiotic use, or travel out of the country. He reported non-bloody, non-bilious vomiting and multiple episodes of watery diarrhea. He denied fever, hematochezia, or melena. The patient had been taking over-the-counter loperamide 4 mg every 2-4 hours and noticed abdominal distension after using the medicine on day 3. His last colonoscopy was >10 years ago. He had no surgical history.

Vital signs included the following:

- Temperature: 37.3°C
- Heart rate: 85 beats per minute
- Respiratory rate: 16 breaths per minute
- Blood pressure: 138/87 mm Hg
- Oxygen saturation: 98% on room air
- Pain level: 4/10
- Body mass index: 32.1 kg/m^2

Pertinent physical exam findings included the following.

- General: tired appearing
- Heart: regular rate and rhythm without murmurs, gallops, or rubs
- Lungs: clear to auscultation bilaterally
- Abdomen: distended and firm; diffuse tenderness to palpation; hyperactive bowel sounds; no guarding or peritoneal signs

Initial management included ondansetron 4 mg oral dissolving tablet. Abdominal x-ray revealed dilated loops of bowel with air-fluid levels but no free air.

Medical Decision Making and Diagnosis

The history and x-ray findings raised concern for a possible small bowel obstruction (SBO), large bowel obstruction (LBO), evolving ileus, toxic megacolon, or Ogilvie syndrome among others. As such, the patient was transferred to the emergency department (ED) via ambulance for further evaluation, including advanced imaging and surgical consultation. A final diagnosis of SBO was made, and the patient made a complete recovery following hospitalization.

Discussion

Annually, there are more than 179 million cases of AGE causing more than 1 million hospitalizations with the highest incidence during the winter months.[2,25,26] Most cases are viral, self-limiting, and do not require antibiotics unless red flags are present. Antimotility agents may be used safely in the acute setting for otherwise healthy patients who are afebrile and have non-bloody diarrhea. However, use beyond these circumstances may worsen the clinical course or mask a potentially life-threatening, undiagnosed condition.[11,27,28,29] Our case study illustrates this principle: a patient developed dilated loops of bowel and SBO after excessive use of loperamide.

Loperamide is a peripheral opioid agonist which slows intestinal motility through directly affecting circular and longitudinal muscles of the small and large intestines. This in turn reduces fecal volume and increases viscosity leading to decreased stool output. In the urgent care clinic, use of history, examination, and x-rays can help identify medication complications from loperamide. It should be noted that abdominal radiographs are not highly sensitive for diagnosing acute SBO, and in 1 study, authors found sensitivities ranging from 59-93%.[30]

There are several cases in the literature that demonstrate bowel obstruction secondary to loperamide use. One case involved an 81-year-old woman with past medical history of diabetes mellitus, dementia, and chronic diarrhea who presented to the ED with abdominal pain and diarrhea. The patient became progressively obtunded, necessitating endotracheal intubation. Computed tomography (CT) imaging confirmed large bowel obstruction with bilateral hydronephrosis believed to be secondary to mass effect from the dilated sigmoid colon, attributed to excessive loperamide use. The patient was initiated on an aggressive bowel regimen. Within 12 hours, her symptoms improved and she was successfully extubated. Follow-up CT imaging demonstrated complete spontaneous resolution of sigmoid dilation and bilateral hydronephrosis.[31]

"In the urgent care clinic, use of history, examination, and x-rays can help identify medication complications from loperamide."

Another case describes a 57-year-old man who presented to the ED with abdominal pain, constipation, and nausea. The patient was self-treating his diarrhea with loperamide, which ended up causing Ogilvie syndrome (acute colonic pseudo-obstruction and/or colonic dilatation without a mechanical obstruction). After symptoms failed to improve with multiple interventions including neostigmine and endoscopic decompression, his pseudo-obstruction required a subtotal colectomy with end ileostomy.[32]

In children, similar circumstances have been reported. A 2-year-old girl was diagnosed with acute gastroenteritis with severe diarrhea, for which she was prescribed a loperamide solution. Following this she developed paralytic ileus. She was then treated conservatively with parenteral fluid and electrolytes. She started to recover after 48 hours.[33]

This urgent care case highlights the critical need to educate patients, particularly the elderly, about the potential risks of overuse of OTC medications, as they may mistakenly assume these drugs are entirely safe.[27,28,29]

Ethics Statement

Due to the need to rapidly transfer the patient to a higher level of care, patient consent and perspectives were not obtained. An effort was made to reach out to the patient; however, it was unsuccessful. Details of the case were changed to protect patient anonymity and confidentiality.

Takeaway Points

- For acute gastroenteritis, antimotility agents may be used safely in healthy patients who are afebrile and have non-bloody diarrhea. However, use beyond these circumstances may worsen the clinical course.
- Acute gastroenteritis is typically a self-limited illness that in most cases requires only supportive care.
- The use of antibiotics should be reserved for specific indications given their limited role in the management of acute gastroenteritis. ■

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Case Report

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When Neck Pain Arises From Spinal Epidural Abscess: A Case Report

Urgent Message: Though atraumatic neck pain is a common condition in the urgent care setting, spinal epidural abscess is relatively uncommon and may present without classic symptoms, which makes it a challenging diagnosis to make. Early recognition, timely imaging, and thorough documentation are essential to prevent a devastating outcome and to mitigate medicolegal risk.

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Key Words: Neck Pain, Spinal Infection, Cervical Epidural Abscess, Spinal Epidural Abscess, Medicolegal Risk, Anchoring Bias

Abstract

Introduction: Acute atraumatic neck pain is a common condition encountered in both the urgent care and emergency department (ED) settings. Neck pain may stem from various etiologies ranging from benign to life-threatening, such as a spinal epidural abscess (SEA), which can be easily missed if a patient does not present with the classic symptoms of the disease.

Presentation: A 30-year-old otherwise healthy female presented multiple times to an urgent care and primary care for worsening neck and upper back pain after recent drainage and antibiotic course for buttock abscess.

Physical Exam: The exam included initially normal vital signs. She was uncomfortable appearing with left neck tenderness and decreased range of motion with associated muscle spasm. The rest of her neurological examination was nonfocal.

Diagnosis: The patient ultimately presented to the ED with altered mental status and was found to have bacterial meningitis and septic emboli secondary to a spinal epidural abscess.

Conclusion: Missed or delayed diagnosis of SEA can lead to devastating outcomes. To improve patient safety

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and mitigate medicolegal risk, especially when evaluating severe or persistent neck pain, clinicians must maintain a high index of suspicion, obtain appropriate imaging, and document exam findings and clinical reasoning thoroughly.

Introduction

Neck pain is a common condition experienced in up to two-thirds of the global population.[1] The annual incidence of atraumatic neck pain is estimated to be approximately 10-21%.[2] In the urgent care center or emergency department (ED), atraumatic neck pain is a frequently encountered complaint.

Neck pain can stem from a variety of etiologies including mechanical, infectious, malignant, and inflammatory conditions.[1] While many neck pain presentations may resolve without intervention, the resolution of pain does not exclude the possibility of it being the initial presentation of a serious or emergent condition. In the urgent care setting, management of acute pain can be difficult due to the consideration of a broad differential diagnosis. A thorough history and physical exam are required to exclude causes that need immediate diagnosis, referral to the ED, and treatment to prevent permanent disability or severe illness, while considering the possibility of spinal epidural abscess (SEA).

Case Presentation

A 30-year-old female presented to an urgent care for neck and upper back pain. She reported no pertinent past medical history and did not take any daily medications. She was taking ibuprofen for her current pain and finishing a course of trimethoprim-sulfamethoxazole for a recent buttock abscess that she had an incision and drainage 5 days prior.

Visit 1: Urgent Care

Chief Complaint: 2 days of neck pain

The patient presented with 2 days of gradually worsening neck pain that started in the left periscapular region and spread to the left side of the neck and left arm. She had no other associated symptoms or inciting events. Her vital signs were within normal limits. On examination, she had a limited range of motion of her neck and was holding her cervical spine at rest in a left lateral position secondary to discomfort.

An x-ray of her cervical spine was obtained and interpreted as normal. She was diagnosed with torticollis and received a prescription for oxycodone and cyclobenzaprine prior to discharge.

Visit 2: Urgent Care

Chief Complaint: 4 days of neck pain, new stiffness

The patient presented two days after her initial visit to urgent care for worsening left-sided neck pain and stiffness with severely limited range of motion. She stated that she had been limited to over-the-counter pain medications as she lost her prescriptions on the way home from her last urgent care visit.

Vital signs were significant for mild tachycardia to 100 beats per minute (bpm) but were otherwise within normal limits. Her examination revealed a tender left trapezius muscle with palpable spasm and limited neck range of motion in all directions. She had good strength and sensation in her bilateral upper extremities.

She was diagnosed again with torticollis and received a prescription for oxycodone, cyclobenzaprine, and prednisone. She was instructed to follow up with a primary care physician (PCP).

Visit 3: Primary Care

Chief Complaint: 6 days of radiating neck pain, chills, and sweats

This patient followed up as instructed with her PCP 2 days after her second urgent care visit. At this visit, she continued to complain of persistent neck pain and stiffness, now radiating to her bilateral shoulders. She was also experiencing chills and sweats.

Her vital signs were significant for tachycardia to 107 bpm and hypertension of 147/104. The rest of her vital signs, including her temperature, were within normal limits. Her examination was significant for a well appearing female with tenderness over her left trapezius muscle. She had good strength and sensation of her upper and lower extremities.

A complete blood count (CBC) and computed tomography (CT) scan of neck with intravenous contrast were ordered and obtained later that day. Her CT imaging did not show any abnormalities within the neck. Her CBC demonstrated a leukocytosis of 15,000 with 78% neutrophils.

She was diagnosed with a musculoskeletal strain. Her leukocytosis was attributed to prednisone use. She was instructed to continue the prescriptions that she received at her prior urgent care visit.

Visit 4: Urgent Care

Chief Complaint: 7 days of radiating neck pain

The patient returned to a different urgent care for worsening neck and upper back pain. The pain was now present over both sides of neck, worse with turning her neck, and radiated into her bilateral upper extremities.

Vital signs were notable for tachycardia to 118 bpm, a temperature of 100.3°F (37.9°C), and a blood pressure of 137/88. Her examination revealed an uncomfortable appearing female with reported normal range of motion of her neck with tenderness along the paraspinous muscles of the neck bilaterally with palpable spasm. She continued to have good strength and sensation of her upper extremities.

She was treated with diazepam and ketorolac with improvement of her tenderness on repeat examination. The patient was discharged with a continued diagnosis of torticollis and was prescribed another short course of oxycodone. She was instructed to return to the ED for any worsening symptoms.

Visit 5: Emergency Department

Chief Complaint: Altered mental status, headache, 7 days of radiating neck pain

The patient was brought to the ED by ambulance for neck pain, headache, and altered mental status several hours after returning from her urgent care visit. Paramedics reported that they were called for neck and back pain, however on arrival, they noted the patient was confused. Her family reported to the paramedics that she had been complaining of a headache, nausea, and chills just prior to their arrival in addition to her neck and back pain. Her family also agreed that she seemed confused, which they attributed this to excessive use of prescription medications for pain control.

Her vital signs were notable for a temperature of 100.8 °F (38.2°C), tachycardia to 139 bpm, a respiratory rate of 30, and blood pressure of 122/57. Her examination was significant for an ill-appearing female who was awake and alert but disoriented with slowed speech. She had decreased range of motion of the neck secondary to pain. She was appreciably tachycardic and tachypneic. The rest of her examination was normal, and the rest of her neurologic exam was nonfocal.

Laboratory studies including CBC, complete metabolic panel, venous blood gas, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), blood cultures, and a urinalysis were ordered. CT imaging of her head and chest and cerebrospinal fluid (CSF) studies were also ordered. Her results were notable for a leukocytosis of 13.1, an acute kidney injury with a creatinine of 2.8, and an elevated ESR and CRP to 71 and 33, respectively. Her head CT was normal, and her chest CT findings were concerning for septic emboli. A lumbar puncture was performed, and CSF studies are consistent with bacterial meningitis. She was started on broad spectrum antibiotics and admitted to the intensive care unit (ICU) for management of meningitis and sepsis.

Diagnosis

Blood cultures returned positive for methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia the day following admission and magnetic resonance imaging (MRI) of her entire spine was consistent with SEA of the cervical spine. The patient ultimately developed severe acute respiratory distress syndrome with refractory hypoxemia, severe metabolic acidosis, and septic shock with multisystem organ failure. Unfortunately, soon after her admission to ICU, this patient suffered a cardiac arrest, and care was ultimately withdrawn due to her poor prognosis.

Discussion

Spinal Epidural Abscess Epidemiology and Pathophysiology

SEA is a rare pyogenic infection of the epidural space—the anatomical area between the outer membrane covering the spinal cord (the dura) and the vertebrae. The incidence is estimated to be about 0.2-2 per 10,000 hospital admissions, although this rate is likely increasing over the last few decades.[3,4] This rising incidence is thought to be due to increased spinal instrumentation, higher prevalence of risk factors including chronic disease and immunocompromised states, and an aging population more likely to develop comorbidities that increase susceptibility to SEA.[3,4,5] Most cases appear to occur in patients aged 30-60 years.[3]

The infection most commonly occurs in the thoracolumbar region rather than in the cervical region.[5,6] SEA can develop through several routes, such as hematogenous or contiguous spread. Approximately half of cases reach the epidural space from hematogenous spread from a distant site of infection, and about a third of cases occur through contiguous spread from nearby infections (eg, osteomyelitis from nearby vertebrae).[4] Other common ways SEAs develop are through direct introduction from spinal surgeries or procedures. In many cases however, the etiology is not identified.

Staphylococcus aureus, including both methicillin-sensitive and methicillin-resistant strains, is typically the most common pathogen associated with SEA and is found to be the cause in over 60% of cases.[4,5] Other common pathogens include *Streptococcus* species and gram-negative bacteria, such as *Escherichia coli*.[4,5,7]

Risk Factors

Risk factors for SEA include conditions that increase risk of infection and potential exposure to infectious pro-

cesses. Diabetes mellitus is the most common risk factor, however immunocompromised states, including HIV infection, alcohol use, and liver disease are all conditions associated with increased risk for SEA.[3,4] Individuals who are at higher risk for bacteremia are also predisposed to developing SEA. This includes those with a history of intravenous drug use and patients with end stage renal disease on dialysis. Furthermore, recent infections, such as skin abscess, are among the most frequently reported infections associated with SEA.[3] Direct inoculation of bacteria into the spinal region, such as from recent spinal procedures, trauma, or placement of hardware/devices, also increase the risk of SEA.[3,8]

Clinical Manifestations

The collection of purulent fluid in the epidural space can compress the spinal cord resulting in symptoms, such as localized pain, radicular pain, fever, weakness, sensory changes, and bowel/bladder dysfunction, and ultimately lead to devastating neurologic disability.[9] The classically taught triad of back pain, fever, and neurological deficits is only present in a minority of patients (around 8-13%), so the diagnosis should be carefully considered in patients even without all 3 of these classic findings.[9]

The typical progression of SEA can be described in 4 stages as the infection progresses. Stage 1 is described as neck/back pain with possible associated fever. Pain is typically, but not exclusively, localized to the area of infected space and can span 3-4 vertebral spaces.[10] This is followed by stage 2, which is characterized by radicular irritation and present with radicular or radiating pain. Stage 3 is characterized by early neurological deficits such as weakness, sensory changes, and/or bladder or bowel incontinence. The fourth stage is comprised of late findings in SEA and characterized by paralysis and permanent neurological sequelae.[3,11]

SEA is notoriously difficult to diagnose and often missed. Not only is this a relatively rare condition, but its presentation can often be subtle and nonspecific, similar to many benign causes of neck pain. Over half of patients with SEA presented 2 or more times before receiving the diagnosis of SEA, and on average, these patients had 5-9 days of symptoms by time of diagnosis in the ED or hospital admission.[9] Altogether SEA is a diagnostic challenge for an urgent care provider, however, the early identification and treatment of SEA is paramount for a favorable outcome.

Laboratory Studies

While laboratory studies are rarely needed for the initial evaluation of atraumatic neck pain, they should be considered in patients for whom the clinician has suspicion for spinal infection, especially in patients for whom risk factors for SEA are present.

Studies including a CBC, ESR, and CRP can be obtained. Leukocytosis is not a very sensitive finding of SEA and may be absent in approximately 30% of spinal infection cases.[12,13] ESR and CRP may help guide further downstream testing depending on pretest probability as they are considered a more sensitive screen than a leukocytosis with a 94-100% sensitivity.[12] Normal inflammatory markers may make SEA more unlikely, whereas elevated markers may prompt emergent MRI imaging and therefore prevent diagnostic delay.[14] Two sets of blood cultures should always be obtained in suspected cases to help determine the causative pathogen as many cases have associated bacteremia.

Imaging

MRI with gadolinium contrast of the entire spine is the gold standard for the diagnosis of SEA since it has a greater than 90% sensitivity and specificity.[8,10] It is recommended that the entire spinal column be imaged due to the risk of skip lesions which may not be identified at time of evaluation if a spinal area is nontender, which can occur in up to 15% of cases.[15] If there is a clinical concern for SEA and appropriate imaging modalities such as MRI are not available, transfer or referral may be necessary to ensure prompt diagnosis. CT with intravenous contrast has a relatively high false negative rate and poor sensitivity.[6,9] The use of CT should only be considered if MRI cannot be obtained along with the understanding that a negative test cannot rule out the diagnosis. CT myelograms have similar sensitivities to MRI but are overall less preferred given the invasive nature and additional risk of infection. Plain films are not recommended for the initial work up as they have a poor sensitivity and specificity for SEA.[6]

Treatment

Empiric intravenous antibiotics should be initiated once the diagnosis is made or clinical suspicion is high. Antibiotic selection should treat the most likely causative organisms (*Staphylococcus aureus)* and can be tailored later during hospitalization after culture results are available. The inclusion of gram-negative coverage in the initial treatment, including pseudomonal coverage, will depend on patient-specific risk factors, including the risk of hospital-associated infection or intravenous drug use.[3,7]

Aside from antibiotics, patients with SEA will need emergent surgical evaluation by a neurosurgeon for

consideration of surgical decompression and drainage of the SEA to prevent severe and permanent neurologic sequelae.

Clinical Decision Making

The patient in this case presented with what initially seemed like an innocuous presentation that ultimately led to a devastating course of events that culminated in her death. The patient had a methicillin-resistant *Staphylococcus aureus* skin and soft tissue infection from the recently incised and drained abscess that was overlooked in many of her visits. This likely led to a hematogenous spread to the epidural space. She developed difficult to treat and persistent neck pain that continued to progress despite aggressive outpatient symptomatic treatment, followed by development of associated infectious (chills, sweats, fever) and neurologic symptoms (radicular pain followed by altered mentation). Despite multiple presentations for the same yet worsening complaint of neck pain, she continued to be discharged with incorrect benign musculoskeletal diagnoses.

Cases such as this demonstrate the importance of both diagnostic consideration and proper evaluation of patients with what at first seem like common, benign complaints. The consideration of spinal infections in patients, particularly with severe or atypical neck pain and/or significant risk factors, should be routine and well-documented. This can prevent potentially devastating outcomes. Although SEA is classically difficult to diagnose, there are several important learning points.

- **Anchoring bias:** It is likely the providers in this case fell into the trap of anchoring bias and diagnostic momentum—when an initial, and possibly premature, diagnosis is carried forward through subsequent encounters. This bias reduces the likelihood of alternative diagnoses to be considered or pursued. Avoiding this bias is critical in instances of patients who have repeat presentations, especially if returning for unresolved or worsening symptoms. In this case, the patient was repeatedly diagnosed with torticollis or muscle strain. Although acute muscle spasms and strain can cause significant pain, resolution of the muscle spasms should have addressed her pain. Persistent pain requiring multiple prescription pain medications is not expected and should have raised questions to her providers regarding her prior diagnosis.
- **New or worsening symptoms:** A patient who is presenting multiple times to a clinical care setting with new or worsening symptoms should prompt consideration of a wider differential and question previously completed workups. Particularly in cases in which a patient is diagnosed with a benign or self-limited process (in this case, torticollis) that does not follow its expected course, it should serve as an indication that a more serious process may be present. This should prompt consideration of a wider differential diagnosis and potentially broader work up.
- **Unexplained tachycardia:** The patient became gradually more tachycardic with each visit. This did not appear to be appreciated on each provider's physical exam or assessment. The documentation offered no alternate explanation regarding the etiology of tachycardia such as pain, fever, or dehydration. Abnormal vital signs, particularly tachycardia, are associated with death within 7 days of emergency department discharge, so special consideration should be taken when discharging patients with unexplained abnormal vital signs.[16]
- **Wrong imaging:** The patient had both plain films and a CT scan of her cervical spine. These likely provided false reassurance to her providers that the patient had a benign etiology of her neck pain. SEA, among other serious and potentially debilitating diagnoses, including spinal osteomyelitis or discitis, are not reliably visualized through these imaging modalities. A complete differential diagnosis needs to be considered to determine appropriate imaging (in this case, MRI spine with contrast). If these rare but serious diagnoses are not considered during the initial evaluation, the likelihood of downstream effects such as missed or delayed diagnosis, permanent disability, and potentially death are much higher.

Legal Outcome

The case had a devastating outcome and led to litigation. The patient's family filed a malpractice lawsuit against the clinicians who treated the patient in the last few visits prior to arriving to the ED. The patient never exhibited signs of the classic triad for SEA in any of her visits which unfortunately led to a delayed diagnosis. Moreover, each clinician was working within the confines of the information they had at the time to explain their current suspicions. Multiple repeat visits, a careful review of the clinical timeline, clinical documentation (including the physical exam findings and re-evaluations), diagnostic testing, and expert statements were all important components to the legal case. The case was ultimately resolved in favor of the plaintiff.

Ethics Statement

Demographics and some details of the case were changed to protect patient anonymity and confidentiality with consideration for the patient's death.

Takeaway Points

- SEA can present rarely and subtly but is a critical diagnosis to consider. Suspect SEA in patients who have the appropriate risk factors and presentation.
- Vital signs are vital for a reason. Any abnormalities should be addressed by the clinician, especially in the setting of a patient being discharged without any attempt of correction or clear explanation.
- Always pause to reassess a patient's repeat presentation from a new perspective to avoid anchoring bias or perpetuation of a diagnosis. ■

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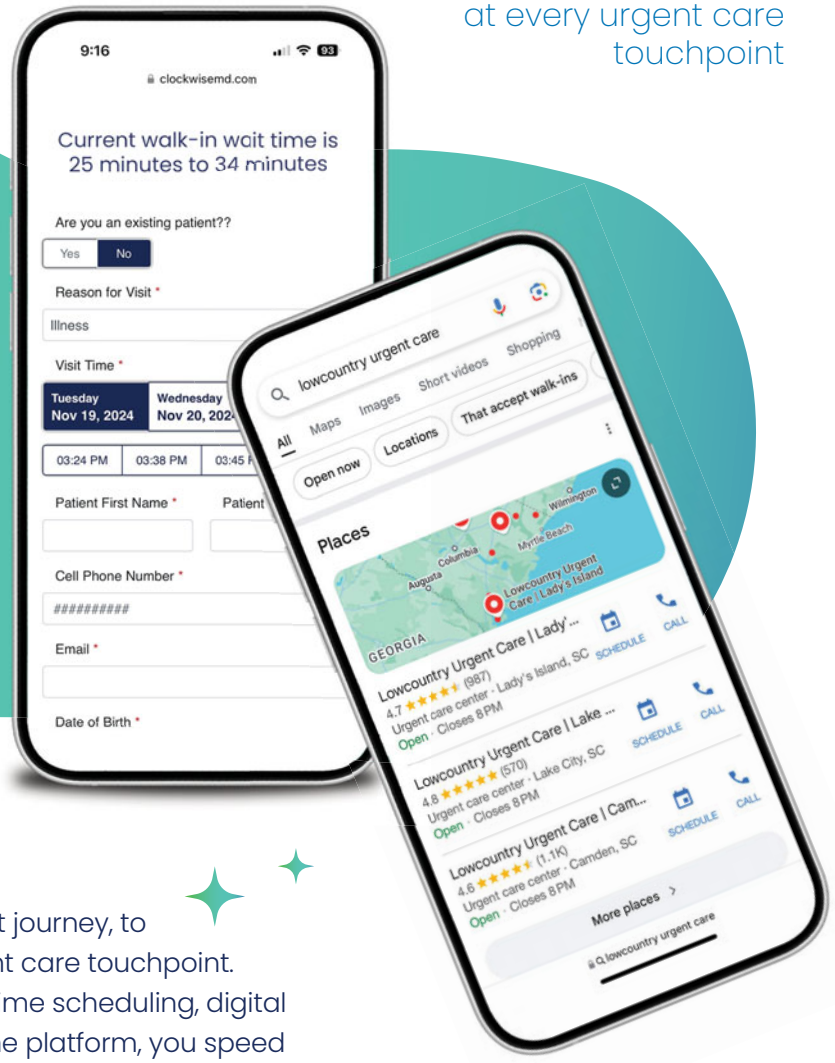

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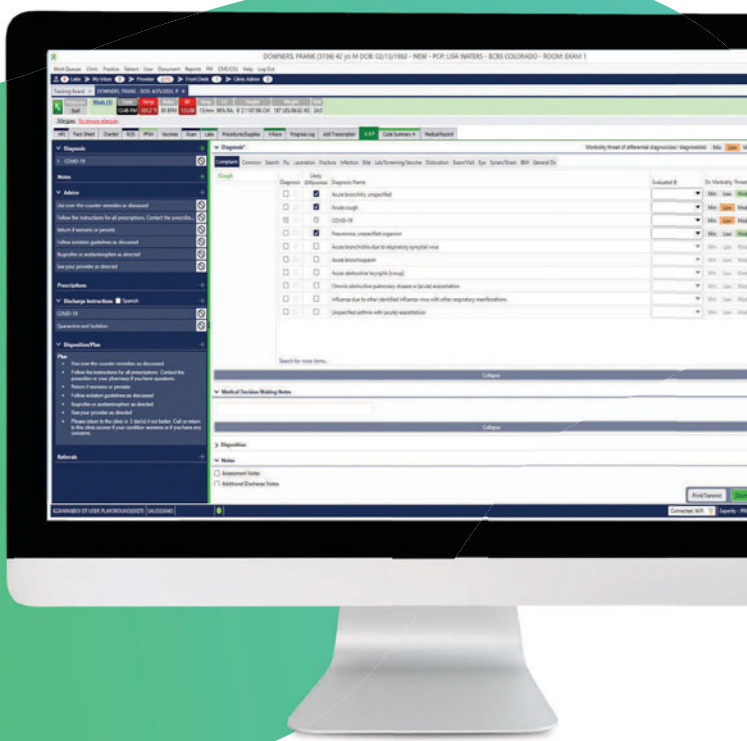

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Original Research

Analysis of Short Course Systemic Glucocorticoid Prescribing in Urgent and Convenient Care Clinics

Urgent Message: Across a tristate urgent-care and convenient-care network, systemic steroid use occurred in nearly one-sixth of encounters (15.5%). And 72.5% of those were for likely avoidable indications and 66% for acute respiratory infections. The finding highlights the need to establish systemic steroid metrics to drive stewardship efforts.

Paul Hansen, MD; Yang Wang, PhD; Muhammad Naseer, MD

Citation: Hansen P, Wang Y, Naseer M. Analysis of Short Course Systemic Glucocorticoid Prescribing in Urgent And Convenient Care Clinics. *J Urgent Care Med.* 2025; 19(11): 35-45

Abstract

Background: The College of Urgent Care Medicine released a position statement advocating for corticosteroid stewardship best practices in 2022, but the extent of avoidable systemic short-course glucocorticoid (SSCG) use in urgent or convenient care clinics is unknown.

Methods: Using data from the electronic medical record, a cross-sectional analysis of in-person or video telehealth encounters occurring from July 2022 through June 2023 of patients without chronic steroid use aged 3 months and older from 55 urgent or convenient care clinics across Missouri, Oklahoma, and Arkansas was completed. Variables related to encounter diagnoses, patient age and location, clinic type, medication prescribed, and provider degree were analyzed to inform data on SSCG use rate, the SSCG use rate for acute respiratory infections (ARIs), and the estimated SSCG use that was likely avoidable using a tier-based diagnosis schema, with 95% confidence intervals (CI), p-values, and univariate odds ratios (ORs) reported when appropriate.

Results: Of the 586,653 encounters analyzed, 15.5% involved SSCG use, with adult encounters receiving SSCGs more often than pediatric encounters (adult SSCG rate 18.5% vs pediatric SSCG rate 8.4%, OR 2.47, CI 2.42-2.51, p <0.001). It was estimated that approximately 7 in 10 (72.5%, CI 72.2%-72.8%) encounters utilizing SSCGs were likely avoidable based on diagnostic tier assignment. The diagnoses that SSCGs were most frequently utilized for were pharyngitis (14,164 SSCG encounters, SSCG use rate 12.1%), acute sinusitis (8,697 SSCG encounters, SSCG use rate 36.0%), and acute upper respiratory infections (5,574 SSCG encounters,

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SSCG use rate 23.3%). ARI encounters accounted for 66.0% (CI 65.7-66.3%) of SSCG use and represent 77.7% (CI 77.3-78.0%) of likely avoidable (ie, tier 2 and tier 3) SSCG use. Significant geographic and provider variability was noted.

Conclusions: SSCG use was noted in nearly 1 in 6 encounters in a large network of urgent and convenient care clinics from July 2022 through June 2023, often for avoidable indications and ARIs. This highlights the need for monitoring specific SSCG measures to advance corticosteroid stewardship efforts in the urgent and convenient care setting.

Introduction

While systemic glucocorticoids have numerous evidence-based indications in patients of all ages, they are often used for short courses in clinical scenarios when patient benefit is expected to be minimal or absent. This trend, combined with data from the last decade outlining the potential harms of short courses of systemic corticosteroids, clarifies why steroid stewardship efforts are warranted. Steroids are used with increasing frequency, often when they could be avoided, leading to a risk of avoidable harms beyond well-known risks like hyperglycemia, to include risks such as sepsis and gastrointestinal hemorrhage in adults and children, pneumonia in children, and congestive heart failure, venous thromboembolism and fracture in adults.[1,2]

In August of 2022, the College of Urgent Care Medicine released a position statement advocating for corticosteroid stewardship best practices for adult and pediatric patients in the urgent care setting.[3] However, the fraction of systemic corticosteroid use that is avoidable and therefore amenable to reduction is unknown. To our knowledge, there is no recent analysis of outpatient systemic short-course glucocorticoid (SSCG) use in the COVID-19 era, nor is there an overall estimate of avoidable urgent or convenient care SSCG use that considers adults and pediatrics, all conditions that SSCGs are utilized for, or the fraction of overall SSCG utilization for acute respiratory infections (ARI).

The overarching objective of this study was to establish SSCG baseline use data within a large healthcare system, which could inform how best to enact systemic steroid stewardship efforts in urgent and convenient care clinics. Specifically, we sought to establish a baseline of SSCG use rate overall per 100 encounters, by age and diagnoses, to estimate the rate of potentially avoidable SSCG use per 100 encounters and report the percentage of SSCG use for ARIs. We further examined SSCG use based on additional patient, prescriber, and clinic variables outlined below, along with a duration analysis to inform the duration definition for SSCG use in this care setting.

Methods

Study Design, Data Sources, and Study Population

This was a retrospective cross-sectional analysis of in-person and video-telehealth encounters of patients aged 3 months and older occurring at any of the 47 urgent care and 8 convenient care clinics within a large healthcare system across Missouri, Oklahoma, and Arkansas from July 1, 2022, through June 30, 2023. The data source utilized was the electronic medical record (EMR) of our healthcare system (Epic, Madison, Wisconsin), which is integrated across our hospitals and clinics. Encounters not fulfilling the inclusion criteria (eg, orders only or x-ray imaging) or encounters with missing diagnosis data were not included in the dataset. Additional encounters were excluded if they involved a patient with chronic steroid use, defined as any current or previous prescription within the 365 days prior to the index encounter where a supply of 30 days or more was provided for a systemic glucocorticoid, or if an intraarticular steroid injection was administered without concurrent systemic glucocorticoid use. The Mercy Institutional Review Board reviewed the study protocol and determined it met exemption criteria. This study adheres to the Strengthening the Reporting of Observational Studies in Epidemiology recommendations.

SSCG use was defined as an outpatient prescription for or an in-clinic administration of a systemic (ie, oral [PO], intravenous [IV], or intramuscular [IM]) glucocorticoid of less than 30 days duration. Duration of SSCGs was determined from data within the medication order; duration data was utilized when available, and amount of medication dispensed combined with directions for use was utilized to determine the duration (when duration data was unavailable). Glucocorticoids prescribed or administered via non-systemic routes, such as inhaled, topical, intranasal, or ophthalmic were excluded.

Estimating Avoidable Steroid Use

As our healthcare system's EMR does not require links between diagnoses and medication prescriptions, urgent or convenient care visit diagnoses were classified based on the most likely indication for SSCG use in a tiered fashion, modeled after existing antibiotic stewardship methods.[4] Given the clinical versatility of SSCGs, a diagnostic categorization scheme was created that aims to

be both comprehensive and nuanced, based on clinical judgment of the lead author. Only perinatal diagnoses codes were not categorized given age restrictions within our study patient population.

- Tier 1 diagnoses were diagnoses for which SSCGs are often indicated as the expected benefits commonly outweigh the risk of harm in the urgent or convenient care setting: asthma, chronic obstructive pulmonary disease (COPD) or gout exacerbations, autoimmune or rheumatologic conditions, contact dermatitis, etc.
- Tier 2 diagnoses were diagnoses for which SSCGs may be indicated in other care settings (eg, inpatient) or depending on the specific clinical circumstance but are usually avoidable in the urgent or convenient care setting: pneumonia, COVID-19, pharyngitis, etc.
- Tier 3 diagnoses were all other diagnoses for which use of SSCGs were avoidable regardless of care setting, where the risk of harm is expected to outweigh the potential benefit, or the indication is unclear given a lack of supporting evidence of guidance: acute upper respiratory infection, bronchitis, non-radicular low back pain, etc.

In assigning each visit a single diagnosis for tier assignment, priority was given to tier 1 diagnoses, then tier 2 diagnoses, then tier 3 diagnoses. If a visit contained multiple diagnoses from a single tier, the first-listed diagnosis was assigned.

Acute Respiratory Infection

Independent of the tier-schema-assigned single encounter diagnosis described above, all encounter diagnoses were screened for ARI diagnoses. While the definition of ARI utilized for this study has been previously defined,[5] the subgroupings were modified to fit within the above-described tier schema. Eligible ARI diagnoses included bronchitis, pneumonia, otitis media and other ear complaints, sinusitis, pharyngitis, influenza, COVID-19, croup, cough, laryngitis, and other acute upper or lower respiratory tract infections.

Other Variables

Patient age was categorized by National Institutes of Health recommended age groups (3 months-1 year; 1-12 years, 13-17 years, 18-64 years, ≥65 years)[6] with larger groupings reported to summarize pediatrics (3 months-17 years) and adults (18 years or older). Patient variables analyzed in addition to age included biologic sex, state, and ZIP code. Clinic data was categorized

Table 1. Patient, Clinic, Provider, And Diagnostic Characteristics And Association With Use of Systemic Short Course Glucocorticoids

Characteristic	Total Encounters 586,653	SSCG Use Rate (15.5%)	SSCG Use Rate OR with 95% CI	SSCG Use for Tier 1 (4.3%)	Tier 1 Contribution to SSCG Use Rate OR with 95% CI
Age Group					
18 – 64 Years	336,063	19.0%	Ref	4.7%	Ref
3 Months – 1 Year	6,116	7.4%	0.34 (0.31, 0.38)	2.8%	1.89 (1.56, 2.28)
1 – 12 Years	124,733	8.0%	0.37 (0.36, 0.38)	3.3%	2.09 (2.00, 2.19)
13 – 17 Years	42,719	9.7%	0.46 (0.45, 0.48)	2.9%	1.26 (1.18, 1.35)
65+ Years	77,022	16.5%	0.84 (0.83, 0.86)	4.8%	1.24 (1.19, 1.30)
Sex Group					
Male	234,456	15.3%	Ref	4.6%	Ref
Female	352,135	15.7%	1.03 (1.01, 1.04)	4.1%	0.83 (0.80, 0.85)
Clinic Type					
UC	515,358	15.5%	Ref	4.3%	Ref
CC	71,268	15.4%	0.99 (0.97, 1.01)	4.2%	0.98 (0.94, 1.03)
Provider Type					
Physician	104,245	13.1%	Ref	4.0%	Ref
NP	361,755	16.4%	1.30 (1.28, 1.33)	4.4%	0.84 (0.80, 0.87)
PA	116,190	14.9%	1.17 (1.14, 1.19)	4.1%	0.87 (0.83, 0.92)
Provider Quartile					
Low SSCG Use Quartile	111,601	5.3%	Ref	2.7%	Ref
High SSCG Use Quartile	176,921	25.2%	6.07 (5.90, 6.24)	4.9%	0.22(0.21, 0.24)
Patient State					
Missouri	319,424	12.9%	Ref	4.3%	Ref
Oklahoma	155,331	19.7%	1.66 (1.63, 1.69)	4.3%	0.55 (0.54, 0.57)
Arkansas	97,112	17.3%	1.41 (1.39, 1.44)	4.2%	0.64 (0.61, 0.66)
Other States	14,786	17.6%	1.45 (1.38, 1.51)	4.9%	0.77 (0.71, 0.84)
ARI Status					
No ARI	320,833	11.7%	Ref	6.1%	Ref
ARI Present	265,820	18.7%	1.75(1.72, 1.77)	2.8%	0.16 (0.15, 0.16)

Abbreviations: ARI, acute respiratory infection; CC, convenient care; CI, confidence interval; NP, nurse practitioner; OR, odds ratio; PA, physician assistant; Ref, reference category; SSCG, systemic short course glucocorticoid; UC, urgent care

into either urgent or convenient care clinics. Ordering provider data was analyzed by provider type (physician, nurse practitioner, or physician assistant), SSCG use quartile among providers with at least 100 encounters, and a selected analysis of the 35 providers with 100 or more encounters who had the highest overall SSCG use rates reported by what percentage of their total use included use in ARI encounters to provide detail on variability of ordering provider use patterns. SSCG variables included systemic glucocorticoid utilized, route of administration, and prescription duration.

Statistical Methods

Statistical analyses were performed using R (version 4.4.0) and Python. The overall, tier-based, and ARI-related diagnostic mean rates of SSCG per 100 patient encounters were calculated and analyzed based on the above pre-specified variables (age, gender, etc.). Except for the prespecified ARI group and its subgroupings of diagnoses, diagnoses were grouped based on the individual categorizations outlined in the tiering schema. Descriptive statistics, including proportions and means, were used to summarize encounter characteristics and SSCG utilization across tiers 1 through 3 and ARI diagnoses. For inferential analyses, univariate logistic regression was used to estimate odds ratios (ORs) between groups, along with corresponding 95% confidence intervals (CIs) and p-values to determine statistical significance. When 95% CIs are presented without accompanying p-values, they were calculated using the Wilson score interval. Subgroup analyses were conducted to examine variations in SSCG use across patient age groups, provider types (physicians, nurse practitioners, and physician assistants), clinical settings (urgent vs convenient

care), gender (male vs female), and patient states (Missouri, Oklahoma, and Arkansas). Missing data were not handled using complete case analysis; records were included in each analysis if complete data was available for the variables used in that specific model.

Results

There were 616,551 urgent or convenient care encounters involving 419,870 patients. A total of 29,898 encounters from 15,619 patients were excluded, all due to chronic steroid use, leaving 586,653 encounters (87.9% occurring in the urgent care setting) from 404,251 eligible patients (mean age 34 years; female 60.0%). Analysis shows 20.1% of patients received SSCGs from an urgent or convenient care encounter during the study period, which equaled a SSCG encounter rate of 15.6%. SSCG use rates were similar in urgent and convenient care clinics (convenient care OR 0.99, CI 0.97-1.01, p=0.198). Prednisone was the most

Figure 1. Analysis of Steroid Use Rates by Patients' Location, Across Missouri, Oklahoma, and Arkansas

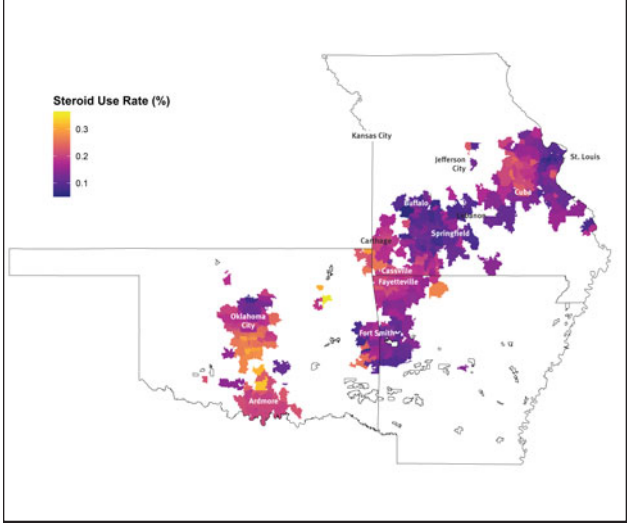


Table 2. Top 6 Diagnoses With Highest SSCG Use Counts Within Each Age Group

Age Group	Diagnosis	SSCG Use Counts	Number of Encounters	SSCG Use (%)
3 months - 1 year	Cough	53	317	16.7%
	Acute URI	52	764	6.8%
	Wheezing	43	92	46.7%
	General Symptoms and Signs	28	438	6.4%
	AOM	26	1241	2.1%
	Rash	24	140	17.1%
1 – 12 years	Acute Pharyngitis	1536	38421	4.0%
	Croup	911	1002	90.9%
	Acute URI	801	6584	12.2%
	Asthma	742	1054	70.4%
	Wheezing	602	941	64.0%
	Cough	566	3309	17.1%
13-17 years	Acute Pharyngitis	1066	12755	8.4%
	Acute sinusitis	287	965	29.7%
	Asthma	262	378	69.3%
	Acute URI	234	1448	16.2%
	Cough	143	735	19.5%
	Rash	143	297	48.2%
18 – 64 years	Acute Pharyngitis	10626	60775	17.5%
	Acute Sinusitis	6891	17935	38.4%
	Bronchitis and Other Acute LRI	3824	6312	60.6%
	Acute URI	3724	12419	30.0%
	Unspecified Sinusitis	3087	6715	46.0%
	Cough	2445	7398	33.1%
≥65 years	Acute Sinusitis	1250	4024	31.1%
	Bronchitis and Other Acute LRI	1066	2223	48.0%
	Acute Pharyngitis	919	5120	18.0%
	Acute URI	763	2732	27.9%
	Cough	697	2473	28.2%
	Unspecified Sinusitis	676	1677	40.3%

Abbreviations: LRI, lower respiratory infection; SSCG, systemic short course glucocorticoid; URI, upper respiratory infection

Table 3. SSCG Usage Rates and Distribution Across Diagnostic Tiers

Tier	SSCG Use Encounters	Total Encounters	Percentage of Encounters with SSCG Use (%)	Contribution to Overall SSCG Use (%)
1	25,065	53,413	46.9%	27.5%
2	29,678	200,383	14.8%	32.6%
3	36,283	332,857	10.9%	39.9%

Abbreviation: SSCG, systemic short course glucocorticoid

common SSCG utilized, followed by methylprednisolone, dexamethasone, and triamcinolone (58.8%, 25.5%, 13.0%, and 2.7%), respectively. PO administration was the most common route utilized (79.6% PO, 20.3% IM, 0.03% IV). Among adults, SSCG course median duration was 7 days, with a 5-10 day interquartile range. Extended courses beyond 14 days were uncommon, occurring in only 2.9% of total SSCGs ordered.

SSCG use varied significantly by age groupings: 8.4% of pediatric (age 3 months through 17 years) encounters vs 18.5% of adult (age 18 years or greater) encounters utilized SSCGs (adult vs pediatric OR 2.47, CI 2.42 - 2.51, p<0.001). Variations noted within each age grouping are summarized in **Table 1** with the highest SSCG use rate noted in adults aged 18-64 years (19.0%) and the lowest SSCG use rate noted in patients aged 3 months through 1 year (SSCG use rate 7.4%, OR 0.34, CI 0.31-0.38, p<0.001). Compared with male patients, female patients were slightly more likely to receive SSCGs (OR 1.03, CI 1.01-1.04, p<0.001).

Geographic Variability

We found significant geographic variability. When analyzing data by state, Oklahoma residents' encounters were 53% more likely (OR 1.66, CI 1.63-1.69, p<0.001) to involve SSCGs than Missouri residents' encounters. Intrastate geographic variations in SSCG use were more pronounced when analyzed by patient ZIP code **(Figure 1)**. When comparing the highest and lowest SSCG use rates within a state by patient ZIP code, we found a nearly fourfold higher odds variation of SSCG use within Arkansas (OR 3.73, 95% CI 1.80–7.69, p<0.001), and greater than sevenfold higher odds variation within Missouri (OR 7.58, 95% CI, 2.3–25.0, p<0.001) and Oklahoma (OR 7.87, 95% CI 2.14–28.90, p=0.002).

Steroid Use Rate by Diagnoses and Tier

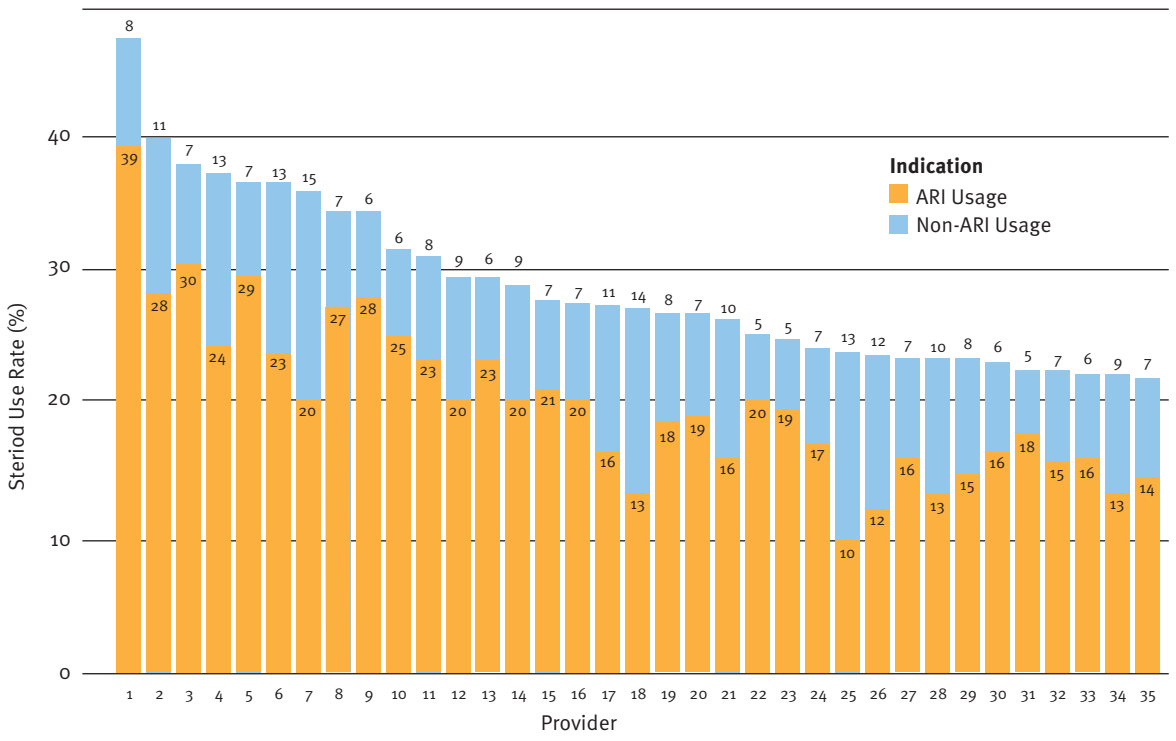
The top 3 diagnoses with 100 or more encounters associated with the highest SSCG use rates were croup (SSCG use rate 90.3%), contact dermatitis (SSCG use rate 80.4%), and anaphylaxis or allergic reaction diagnoses (ie, adverse events not elsewhere classified, SSCG use rate 76.2%), all of which are tier 1 diagnoses. However, when ranking the top 3 diagnoses by total SSCG use encounters, SSCGs were most frequently utilized for likely avoidable (tier 2 or 3) indications involving ARIs: pharyngitis (tier 2, 14,164 SSCG encounters, use rate 12.1%), acute sinusitis (tier 2, 8,697 SSCG encounters,

Table 4. Summary of ARI Diagnostic Subgroups With Greater Than 100 Encounters

Tier	ARI Subgroup	SSCG Use Counts	Number of Encounters	SSCG Use Rate (%)
1	Croup	1003	1111	90.3%
1	Other Respiratory Disorders	386	1188	32.5%
2	Pharyngitis & Tonsilitis	14805	121139	12.2%
2	Acute Sinusitis	8697	24159	36.0%
2	Pneumonia	442	1819	24.3%
2	Covid-19	406	28034	1.5%
3	Nonspecific Upper Respiratory Infection	5574	23947	23.3%
3	Acute Bronchitis	5453	9473	57.6%
3	Cough	3904	14232	27.4%
3	Otitis Media	2114	27577	7.7%
3	Other Respiratory Diagnosis	316	3759	8.4%
3	Laryngitis	244	375	65.1%
3	Influenza	238	5392	4.4%
3	Unspecified Acute Lower Respiratory Infection	132	424	31.1%

Abbreviations: ARI, acute respiratory infection; SSCG, systemic short course glucocorticoid

Figure 2. Systemic Short Course Glucocorticoid Use by Providers: ARI vs non-ARI



Abbreviation: ARI, acute respiratory infection

use rate 36.0%), and acute upper respiratory infections (tier 3, 5,574 SSCG encounters, use rate 23.3%). Common indications for SSCGs varied by age grouping, as summarized in **Table 2**.

SSCG use rates and distribution across diagnostic tiers are summarized in **Table 3**. As expected, tier 1 encounters had the highest SSCG use rate (46.9%, CI 46.5%-47.4%). However, it only accounted for 27.5% of overall SSCG use, suggesting more than 7 in 10 (72.5%, CI 72.2%-72.8%) encounters utilizing SSCGs were likely avoidable (tier 2 32.6%, CI 32.3%-32.9% and tier 3 39.9%, CI 39.5%-40.2%).

Acute Respiratory Infections

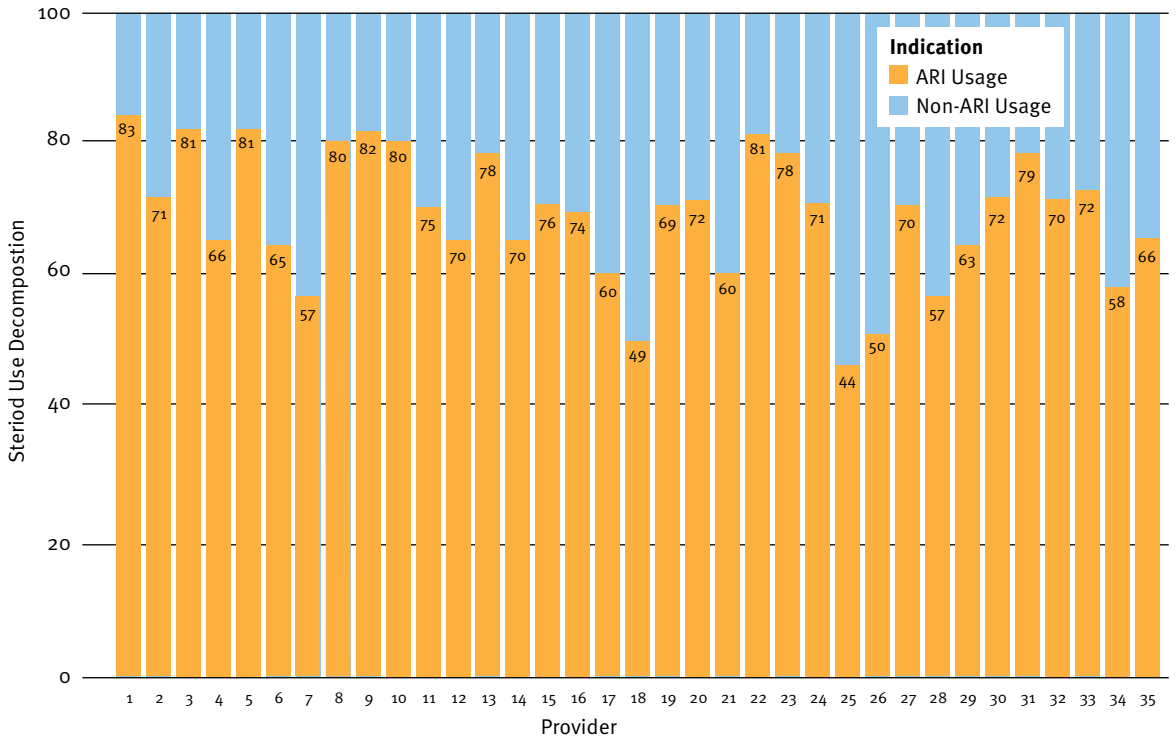
ARI encounters were treated with SSCGs 18.7% of the time vs 11.7% for non-ARI encounters (OR 1.75, CI 1.72–1.77, p<0.001). As shown in **Table 1**, only 2.75 percentage points of the total 18.7% SSCG use for ARI encounters were for tier 1 indications, compared to 6.1 percentage points of the total 11.7% SSCG use for non-ARI encounters. The odds ratio for tier 1 contribution to total steroid use in ARI encounters was 0.16 (CI 0.15–0.16, p<0.001), indicating that SSCG use in ARI encounters was more likely to be avoidable. ARI encounters accounted for 66.0% (CI 65.7-66.3%) of SSCG use and represent 77.7% (CI 77.3-78.0%) of all non-tier 1 SSCG use (tier 2 89.1% [CI 88.7-89.4%] and tier 3 68.3% [CI 67.9-68.8%]).

SSCG rates by tier assigned diagnoses for croup, pharyngitis, sinusitis, and URIs were previously discussed. As noted in **Table 4**, the SSCG use rates for many ARI diagnoses from tier 2 or 3 neared or exceeded 25%. Laryngitis and bronchitis were treated with SSCGs more than half of the time (laryngitis rate 65.1%, CI 60.1-69.7% and bronchitis rate 57.6%, CI 56.6-58.6%), while other lower acute respiratory infections, cough, and pneumonia, received SSCGs 31.1% (CI 26.9-35.7%), 27.4% (CI 26.7-28.2%), and 24.3% (CI 22.4-26.3%), respectively. Conversely, only other respiratory diagnoses, (rate 8.4%, CI 7.6 - 9.3%), otitis media (rate 7.7%, CI 7.4 - 8.0%), influenza (rate 4.4%, CI 3.9-5.0%), and COVID-19 (rate 1.5%, CI 1.3-1.6%) had SSCG use rates below 10%.

Provider Analysis

Compared to physicians, nurse practitioners (NPs) had

Figure 3. Percent of ARI Contribution to Total Systemic Short Course Glucocorticoid Use by Provider



Abbreviation: ARI, acute respiratory infection

30% higher odds (OR 1.30, CI 1.28–1.33, p<0.001) and physician assistants (PAs) 17% higher odds (OR 1.17, CI 1.14-1.19, p<0.001) to utilize SSCGs. This trend was also observed in SSCG use rates for ARI encounters, which were 15.2%, 19.1% (OR 1.32, CI 1.28-1.36, p<0.001), and 19.7% (OR 1.37, CI 1.33-1.40, p<0.001) for physicians, PAs, and NPs, respectively. Tier analysis revealed that tier 1 use contributed a larger percentage of overall SSCG use for physicians than their advanced practice provider (APP) colleagues. Tier 1 SSCG use was 30.5%, 27.7% (OR 0.87, CI 0.83,0.92, p<0.001), and 26.8% (0.84, CI 0.80-0.87, p<0.001) for physicians, PAs and NPs, respectively.

After excluding providers with fewer than 100 encounters, comparing providers in the upper vs lower quartile of SSCG use rates revealed striking differences. Odds that an encounter involving providers in the highest quartile of SSCG use were 6 times higher that SSCG would be used than their peers in the lowest quartile (25.2% vs 5.3% OR 6.07, CI 5.90-6.24, p<0.001). Providers in the highest SSCG use quartile accounted for 30.4% of the total encounter volume within the study yet were responsible for nearly half (49.3%, CI 49.0-49.6%) of the SSCG use. Tier analysis shows that tier 1 use accounted for more than half (52.0%) of the overall SSCG use among providers in the lowest SSCG use quartile vs only 19.4% (OR 0.22, CI 0.21-0.24, p<0.001) of the SSCGs in the highest use quartile. Analysis of individual providers with at least 100 encounters revealed the highest SSCG use rate noted was 46.4%. Additionally, 21 of the 277 providers with 100 or more encounters had SSCG use rates exceeding 25%. Among the 35 providers with the highest SSCG use rates, the proportion of SSCG use associated with ARI encounters ranged from 44.2-83.3% **(Figure 2,3)**.

Discussion

This study describes SSCG use during urgent care and convenient care visits in a large healthcare system from July 2022 through June 2023. This is the first study to focus on SSCG use in the urgent or convenient care setting or to describe SSCG use since the COVID-19 pandemic. Overall, nearly 1 in 6 (15.5%) of these visits were associated with SSCG use, with higher rates seen in adult vs pediatric age groups and slightly higher rates seen in female vs male patients. The majority were

likely avoidable based on tier-assigned (tier 2 or tier 3) diagnostic indication. Widespread, increasing SSCG use for avoidable indications has been suggested in several previous publications from locations throughout the world.[1-2,7-8] In a U.S. nationwide study of steroid use in acute respiratory tract infections (ARTIs) from 2007 through 2016, the systemic steroid use rate increased from 10.5% to 16.3%, with urgent care clinics identified as the care setting with the highest use rate.[9] While that study also noted a higher steroid use rate for ARTIs in urgent care vs walk-in retail clinics, we did not note a similar difference in urgent vs convenient care clinics' overall SSCG use within our healthcare system. This may be due to differences in walk-in retail clinics (where care may be driven by standing treatment protocols) vs convenient care clinics in our healthcare system—which primarily differ from our urgent care clinics by a lack of on-site x-ray.

In our analysis, children received SSCGs less than half as often as adults. This relative reduction in SSCG use for pediatric patients appeared roughly consistent for ARI and non-ARI encounters. Furthermore, when SSCGs were utilized for pediatric patients, they were more commonly used for tier 1 indications—a trend that was stronger in our younger age brackets relative to adolescents **(Table 1)**. This differs from previous literature where use rates were similar between adult and pediatric patients.[1-2] The etiology for this difference is unknown. It may be that acute care providers are more cautious to utilize SSCGs in younger children unless indicated given concerns pediatric adverse effects.[10, 11] The reasons behind the differential SSCG use rate warrant further exploration, as it may inform how to best tailor provider education on corticosteroid stewardship efforts.

We utilized a tier schema for SSCG use similar to existing tier categorizations for antibiotic use; however, the expected and appropriate use rates by tier are significantly different given key distinctions. First, we note that the determination of whether a SSCG is avoidable for both tier 1 and tier 2 indications may rely on severity of presentation not captured in diagnosis data more so than antibiotic tier categorizations. As an example, for tier 1 antibiotic indications (eg, non-viral pneumonia, pertussis, urinary tract infection, syphilis), the expected antibiotic use rate would approach 100%,[4] whereas the SSCG use rates for tier 1 encounters (46.9% overall, 54.8% and 30.7% for providers in the highest and lowest SSCG use quartiles, respectively) was much lower. This highlights that, although tier 1 SSCG use was likely appropriate for these indications, it does not necessarily mean that all tier 1 SSCG use was unavoidable. This assumption likely results in underestimation of avoidable SSCG use for certain tier 1 indications such as contact dermatitis, which may be amenable to topical rather than systemic therapy, or acute gout exacerbation, which can also be treated with non-steroidal anti-inflammatory drugs (NSAIDs) or colchicine. Second, we utilized a simplified approach relative to existing 3-tier antibiotic schema: tier 1 SSCG use was deemed likely appropriate, whereas tier 2 or 3 SSCG use was likely avoidable. While it is true that a small percentage of the tier 2 SSCG use may have been appropriate on a case-by-case basis (eg, severe pharyngitis), most tier 2 SSCG use observed was likely avoidable in the urgent or convenient care setting. This assumption means that the estimated inappropriate antibiotic use rates for tier 2 antibiotic indications such as sinusitis, pharyngitis, and acute otitis media would be much lower than the expected avoidable SSCG use for tier 2 SSCG indications in the urgent or convenient care setting.

"The data suggests that educational interventions for medication stewardship may be more impactful if specific content is tailored to APPs."

Regarding the optimal definition for SSCG use, our study utilized a duration of less than 30 days, as variable durations from 14-30 days have been noted in the literature.[1,2,8,12] Our data indicates that a duration of 14 or fewer days captures greater than 97% of SSCG use in urgent or convenient care clinics within our healthcare system. Though this data may be useful for future research, healthcare systems or clinics interested in implementing corticosteroid stewardship efforts would need to recognize that inclusion of any steroid duration cap within the definition of a potential corticosteroid stewardship metric may inadvertently lead to longer steroid courses than indicated.

The variable practice patterns we observed in our geographic and provider analyses, which were similar to a previously published nationwide analysis on systemic steroid use for ARTIs in the United States from 2007 through 2016,[9] suggest that patient expectations and local culture likely play a role in noted regional differences, as does provider training. Similar to previous

studies, urgent or convenient care visits among patients living in Oklahoma were 53% more likely to have SSCGs utilized vs visits in Missouri, with more pronounced local geographic differences noted on intra-state patient ZIP code analysis.

Likewise, our analysis of urgent and convenient care APPs also found a similar provider type trend. In our analysis, APPs had higher SSCG use rates and utilized SSCGs more often for non-tier 1 indications than physicians, a trend that is very similar to available data on systemic steroid use for ARTIs[9] and antibiotic use.[13] It is important to highlight that the differing medication use rates by provider training seen in our study and others[9,13] are expected to have a larger impact in the urgent and convenient care clinics given the typical medical provider staffing ratios utilized in these care settings. In our study, APPs accounted for just over 80% of the total patient encounters. The data suggests that educational interventions for medication stewardship may be more impactful if specific content is tailored to APPs, and that opportunities exist to support APP participation and leadership within medication stewardship programs in this APP-predominant care setting.

While patient age, geographic variability, and provider training may all impact SSCG use, one of the strongest predictors of SSCG overuse appears to be the individual provider's practice pattern. As noted, the highest SSCG rate noted by an individual provider neared SSCG use for nearly half (46.4%) of that provider's 4,561 encounters. Among the 277 providers with at least 100 encounters, the 5 providers with the highest SSCG rates accounted for just over 10% of all the SSCG use noted within our study of over half a million patient encounters. This striking variability in provider practice patterns noted in our study, while not unique to SSCGs,[14] highlights why it is important to monitor SSCG use at the individual provider level, as it allows for SSCG overuse to be appropriately identified and addressed via targeted educational efforts.

A substantial amount of SSCG overuse was driven by use in ARI encounters. With the notable exception of croup in pediatric patients—where a SSCG such as a single dose of dexamethasone is the first line treatment given evidence of reduction in symptoms and the rate of return visits[15]—there is very little evidence supporting the routine use of SSCGs for ARIs, and their use in outpatients is not routinely recommended by clinical guidelines. For pharyngitis, which accounted for 15.5% of SSCGs utilized in our study, data have shown that SSCGs may shorten the duration of this self-limited illness by about 11 hours.[16] Given the limited expected benefit and inconclusive benefit to harm ratio, most major organizations do not recommend the routine use of SSCGs.[3,17-19] Similarly, minimal benefit of SSCGs in acute sinusitis seen in studies may be attributable to attrition bias or secondary care settings in which the studies were performed.[20] Acute sinusitis clinical practice guidelines (CPG) recommend intranasal corticosteroids rather than SSCGs.[21, 22] For pneumonia and COVID-19, while SSCGs may be indicated for patients with severe illness requiring inpatient level care, they are not indicated for outpatients.[23-29] Moreover, although SSCG use for tier 3 ARIs was common, the research and guidelines available for bronchitis,[30] laryngitis,[31] otitis media,[32] URIs,[33] and influenza[34] recommend against SSCG use.

Our data on SSCG use stratified by tier based diagnostic indication vs SSCG use in ARI encounters may inform future corticosteroid stewardship clinical quality metrics needed to advance steroid stewardship efforts. As an example, for our healthcare system's network of urgent and convenient care clinics, an approach that focused solely on reducing SSCG use in ARIs would identify most opportunities to reduce avoidable steroid use but would have missed more than 1 in 5 (or 14,731 encounters) opportunities for improvement. However, understanding that the level of support will vary by institution and that SSCG use for ARI varies considerably by geographic location, we would recommend collecting baseline data of SSCG use rates overall and for ARI encounters then utilizing that data to implement a corticosteroid stewardship program that excludes tier 1 diagnoses.

Limitations

Our study has important limitations to consider. First, though our sample size is robust, it is limited to urgent or convenient care clinics located in 3 states and may not be generalizable to other geographic locations, given the known geographic variations.[9] Second, while some may view the limited exclusion criteria as a limitation, we felt that limited exclusions provide a fuller picture of how SSCGs are being used in this setting and controlled against selection bias. Third, our analysis did not consider all covariates that may impact SSCG use or severity of illness data, which could further inform whether the SSCG use was appropriate. A covariate warranting further analysis in future studies is SSCG use in video telehealth vs in-person encounters. Fourth, the lack of a diagnostic indication requirement for all medication orders in our electronic medical record means that, despite our best efforts to infer the diagnostic indication in the tiered fashion described, our analyses

are at risk for misclassification bias and may be limited by a lack of diagnostic specificity. Fifth, the tier schema developed for this study, which, to our knowledge, is a novel approach for SSCG analysis, was created by the lead author rather than a clinical consensus. Sixth, the limitations of our method to estimate the percentage of avoidable SSCG use based on tiered categories discussed previously likely result in offsetting errors in our estimation. Finally, the design of our study did not seek to identify SSCG overuse by other means, namely dose or duration analysis by diagnostic indication, or SSCGs ordered outside of urgent or convenient care encounter types meeting inclusion criteria, which likely results in further underestimation of SSCG overuse.

Despite these limitations, our findings that SSCGs were utilized in 18.5% of adult and 8.4% of pediatric urgent or convenient care encounters from July 2022 through June 2023 in a large healthcare system, and that approximately 7 in 10 of the SSCGs used may have been avoidable, highlight the need to establish specific SSCG measures to advance corticosteroid stewardship efforts in the urgent and convenient care setting. ■

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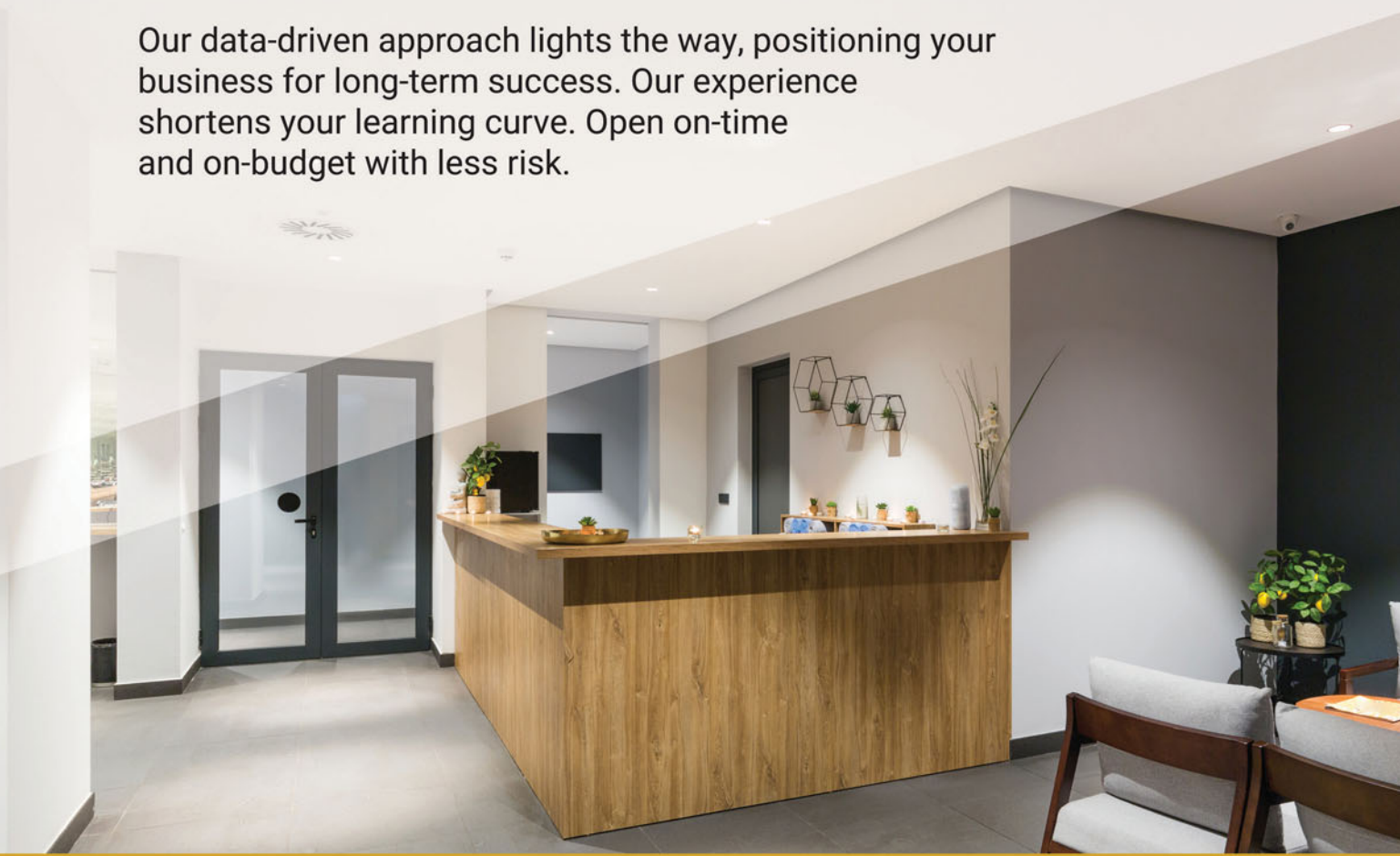

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Red Flags When Selling Your Urgent Care Practice

Urgent Message: Offers to buy urgent care centers typically follow due diligence processes, and the assets are valued within predictable market ranges. Offers to purchase a center that fall outside usual and customary parameters should be evaluated with scrutiny and skepticism.

Alan A. Ayers, MBA, MAcc

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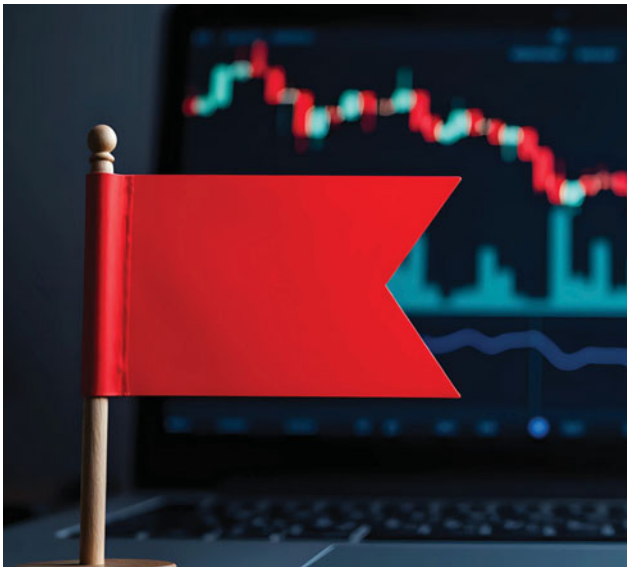
Selling your urgent care business may be an opportunity to reap a return on your investment. However, there could be buyers looking to take advantage of your enthusiasm and urge you to sign an unsolicited deal that's no deal for you.

What Is a Term Sheet?

Urgent care owners may be approached by a potential buyer with a term sheet. Also called a letter of intent or memorandum of understanding, this document states certain terms of a transaction agreed upon in principle between parties. It is usually negotiated and signed at the start of a transaction. Term sheets evidence serious intent but generally aren't legally binding.[1,2] Although, some term sheets have legally binding provisions, such as confidentiality agreements.[3] Some of the common components of term sheets are:

- A valuation of the business establishing the net worth of the company prior to new investment
- Liquidation preference of how the seller will get paid in the event of a future sale of the company
- Provisions for anti-dilution protecting an investor's ownership percentage should the company issue new shares in the future
- A "drag-along" provision limiting shareholders' ability to block a future sale of the company[4,5]

Specific details of the term sheet are affected by whether the transaction is an asset sale or equity sale.



Asset Sale

In an asset sale, the buyer selects the assets they want to purchase and leaves the rest of the business with the seller. Assets purchased by the buyer may include real estate, equipment, supplies, trademarks, patient lists, and other intellectual property. *All liabilities remain with the seller* unless they're assumed by the buyer.[6] After an asset sale, the existing business entity survives without the transferred assets.[7,8]

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Liabilities can also be part of an asset sale, however, they won't be assumed by the buyer unless so stated in the sales agreement.[9,10] The most common liabilities assumed by buyers are the lease on the physical space and service contracts on equipment. Debt and other obligations typically remain with the seller.

"In an asset sale, sellers have flexibility when negotiating the price of individual assets, enabling them to potentially achieve higher valuations for specific assets that may have strategic value for the buyer."

In an asset sale, sellers have flexibility when negotiating the price of individual assets, enabling them to potentially achieve higher valuations for specific assets that may have strategic value for the buyer.

However, asset sales can mean higher taxation for sellers compared to equity sales when the assets are sold for more than their depreciated value.[11,12] Asset sales also entail extensive effort in negotiating the value of individual assets and liabilities. As a result, these sales can frequently be more time-consuming and resource-intensive than an equity sale.

In urgent care, an "asset sale" typically occurs when an established urgent care operator—that has insurance contracts—wants to acquire a physical facility, its team members, and patients. The seller typically retains and continues to collect on the accounts receivable, and the seller will be responsible for paying off any debts of the business. In addition, the seller will be liable for any litigation against the business.

Sellers should bear the following in mind when contemplating an asset sale:

- Clearly identify the assets in the transaction and create a comprehensive list.
- Determine the allocation of the purchase price among different assets, and clearly defined categories of tangible and intangible assets, which helps with tax planning and financial reporting.
- Be aware of any conditions to address before the deal can move forward, such as obtaining necessary permits or licenses.
- Review any non-compete and confidentiality agreements that keep the seller from competing with the buyer in the future. The terms and limitations should be succinctly defined to ensure their enforceability.

Equity Sale

In an equity sale, the current owners sell *all* of the outstanding shares or interests of the business to the buyer. The buyer acquires ownership of the *entire* business entity, including all its assets, known and unknown liabilities, contracts, and obligations. With an equity sale, the existing business continues to operate—just under new ownership and management.[13,14]

There are several advantages to an equity sale. First, this type of sale almost always provides more favorable tax treatments for sellers compared to asset sales. In contrast to asset sales (where the sale of certain assets can result in the recognition of ordinary income), equity sales let sellers (who own their equity for more than a year) enjoy long-term capital gains tax treatment on all proceeds received from the sale of their equity. Another benefit of this type of sale is that it lends itself to a more straightforward transaction structure for sellers than asset sales.

In an asset sale, each asset and liability must be identified, negotiated, and valued. However, in an equity sale, the process entails valuing the entire operation as an ongoing business. Equity sales provide for a more comprehensive and precise determination of company value. Intangible assets like the urgent care's customer base, goodwill, and brand recognition are converted into profits and losses that are reflected in the financials. Equity sales offer a streamlined approach to valuation, which can mean closing the sale more quickly and with fewer obstacles.[11]

An equity sale provides sellers with a "clean break" from the business. This is because the buyer assumes all assets and liabilities, which permits the seller to fully disengage after the sale. However, sellers will usually realize a lower sale price on an equity sale due to the buyer's foregone tax benefits.[11]

Unlike an asset sale—in which the buyer can enjoy a "stepped-up" tax basis on the acquired assets (allowing buyers to depreciate the asset and generate tax savings)—equity sales don't have this tax advantage for the buyer. As a result, the buyer assumes the business's existing tax basis in the assets and only gets the basis in the purchased equity that can't be depreciated. In this case, buyers often negotiate for a lower purchase price to compensate for any foregone tax benefits.[11]

There also may be legal restrictions that prevent certain buyers from owning or controlling the business. For instance, corporate practice of medicine laws at the

state level may require that the practice be owned by a physician.

Finally, in an equity sale, the buyer assumes the risk of all unknown or undisclosed liabilities that come with the business, such as future taxes or pending malpractice litigation that wasn't raised or known during due diligence. With this, buyers will ask sellers to put some of the sales price in escrow or provide further assurances (eg, indemnities or warranties) to shield against the risks of these potential unknown liabilities.

In an equity transaction, the seller would typically receive cash in exchange for their asset. Otherwise, if a seller receives illiquid stock in a "consolidation entity," the seller may not be "paid" until the acquiring entity subsequently sells. In effect, this is not a sale of the practice so much as giving someone else the right to sell the practice as part of a larger portfolio. Not only is there a risk that a subsequent sale will never occur, or will not occur at an expected future valuation, but it also prevents the seller from transacting with anyone else during the contract term.

Other Red Flag Clauses to Scrutinize Regardless of the Type of Sale

Extraordinary Valuation

A buyer may describe a future in which equity in a consolidation portfolio subsequently sells for an irresistibly high multiple of revenue.

Urgent care chains have never been valued as a multiple of revenue, but rather as a multiple of EBITDA. The types of companies that trade on a multiple of revenue—think early Uber, Amazon and Tesla—are capital-intensive, focused on quickly proving demand, with a plan to become profitable once operations scale. These can be described as "frothy" businesses, characterized by speculative fervor, investor overconfidence, and a general disregard for traditional valuation metrics.

These "frothy" characteristics do not describe established local businesses like urgent care.

Choice of Law

The governing law clauses stipulate which state's laws will govern the contract and where any disputes must be heard. An unfavorable jurisdiction can create issues in litigation and add to legal expenses. Plus, it could mean biased outcomes if the jurisdiction is more favorable to the other party than to you. Favorable choice of law terms can decrease risks and ensure fairness in lawsuits. So, if you're buying an urgent care in Florida, for example, but the seller is in New Jersey and advocates use of that state's law, it can be less favorable for you.

Unbalanced Clauses

Unbalanced clauses can dramatically shift the rights and obligations in favor of one party, causing an unfair contractual relationship. For example, a seller may be expected to continue running the practice and servicing the debt of the business, while turning over free cash flow and covering the buyer's working capital shortfalls. If the seller receives equity in a portfolio of other practices, this could result in the seller of one practice financing the shortfalls of other practices in the portfolio.

"Urgent care chains have never been valued as a multiple of revenue, but rather as a multiple of EBITDA."

Should your revenue fall, such would affect your share of proceeds from the portfolio sale. You could be left with little to nothing after all your debts are paid. Yet, the dealmaker will profit by taking a significant share of the proceeds if the portfolio sells.

Integration Clauses

This term states that the contract represents the full and final agreement between the parties. All previous emails and conversations that are not formally written into the contract are unenforceable. If the buyer verbally promised that your stock in a consolidation portfolio will "sell by a multiple of 7- or 8-times earnings," but that promise is not written into the final purchase agreement, the integration clause means you cannot sue them if you later find out it wasn't true.

Unilateral Amendments

Contracts are fundamentally mutual agreements but if the contract permits one party to change terms without the other party's notice or consent, the contract becomes unpredictable and potentially worthless for the party without the power to amend. The presence of unilateral agreements mean there is no certainty that the terms agreed upon at closing will remain in effect.

Penalty Clauses and Restrictive Covenants

Contracts frequently have penalty clauses for breaches, so make certain they are reasonable. The contract may also restrict the seller's future activities, such as noncompetition and nonsolicitation agreements that prohibit the seller from working for a competitor within a geographic region or with former employees or business associates for a specified period of time.

Dispute Resolution Method

The sales contract should specify the way in which disputes will be resolved, such as via mediation or arbitration.

"A sales contract should protect both the buyer and the seller, and as such, it should be clear, respectful, and fair."

Termination Clause

The contract should have a term that clearly states how either party can terminate the agreement, including the circumstances and ramifications.

Holdbacks

A portion of the agreed-upon purchase price may be withheld from the seller at the closing of the transaction. This amount is typically placed in an escrow account managed by a neutral third party and is held for a predetermined period, often ranging from 12 to 24 months. The primary purpose of a holdback is to cover any unexpected debts or legal claims, damages incurred by the buyer if claims about the condition of the business prove to be false, or working capital shortfalls owed to the buyer. Once the holdback period expires, and assuming no claims have been made, the remaining funds are released to the seller.

Earn Outs

A portion of the purchase price may be contingent on the future performance of the acquired business. Payments are made to the seller only if the company achieves certain previously agreed upon financial or operational milestones. Earn-outs can last for a few months to several years. Longer earn-out periods delay payment and increase risk to the seller if the business doesn't perform according to the buyer's expectations, which means the seller may not be paid the initially agreed-upon price.

Make certain that the transaction agreement is clear and specific. If the contract doesn't clearly detail items like payment amounts and deadlines, be wary. Likewise, if you feel that terms are ambiguous or unspecific, seek changes when negotiating. Finally, if the contract appears to be a "one-size-fits-all" template that lacks any details about your specific business transaction, it's another red flag.[15,16] You may have to walk away from the deal if the seller won't accommodate your concerns.

Conclusion

When faced with a term sheet or sales proposition, urgent care owners should examine the document carefully and with the aid of legal counsel. An attorney will help you understand the terms and conditions and seek clarification for anything that appears to be unclear or questionable. A sales contract should protect both the buyer and the seller, and as such, it should be clear, respectful, and fair. Be wary of the red flags mentioned above, especially with unsolicited offers with valuations that seem too good to be true. ■

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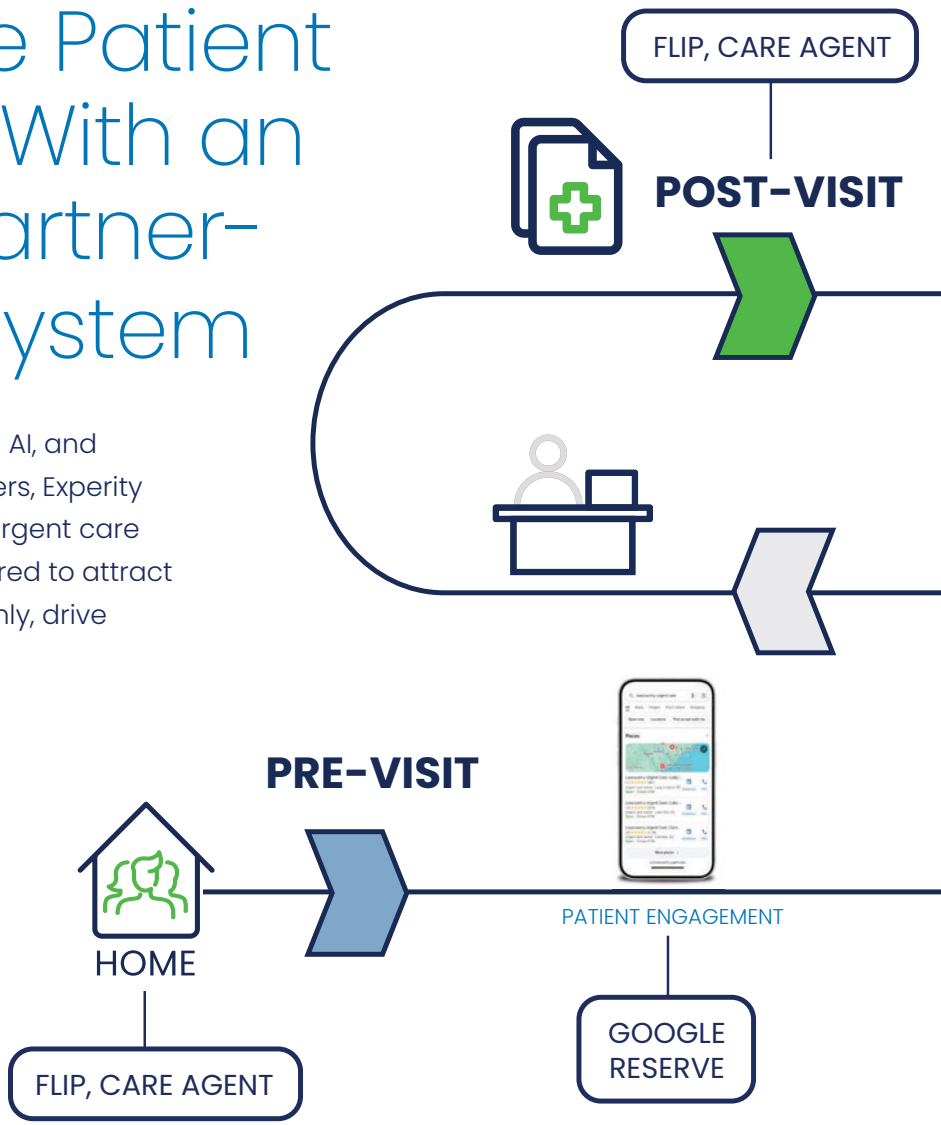

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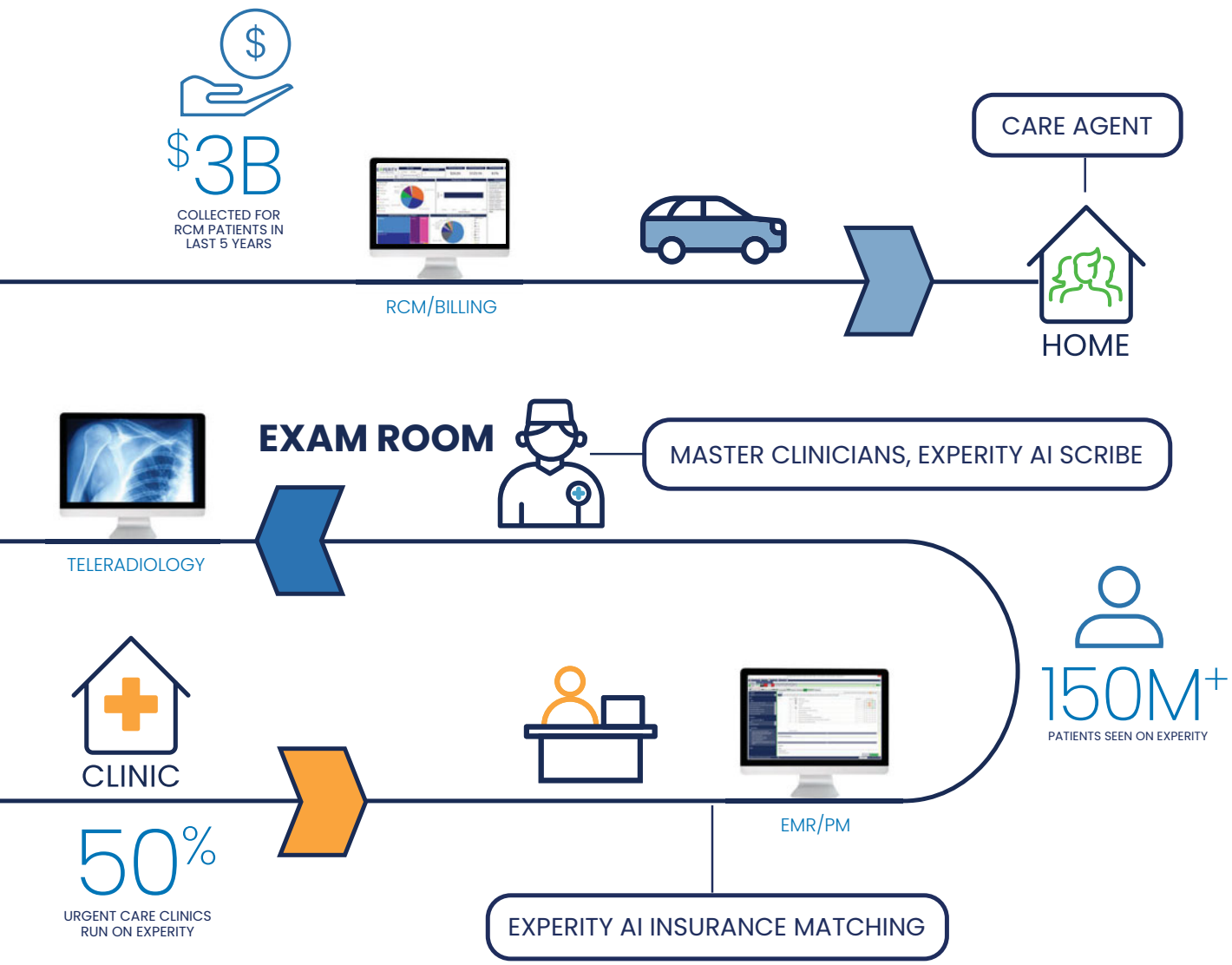

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Casting Rather Than Surgery for Medial Epicondyle Fractures in Children

Take Home Point: In this randomized trial, treatment for pediatric displaced medial epicondyle fractures with casting alone was noninferior to the traditional surgical fixation and casting at the 12-month follow-up period.

Citation: Grahn P, Helenius I, Hämäläinen T, et. al. Casting vs Surgical Treatment of Children With Medial Epicondyle Fractures: A Randomized Clinical Trial. *JAMA Netw Open*. 2025 May 1;8(5):e258479. doi: 10.1001/jamanetworkopen.2025.8479.

Relevance: Medial humeral epicondyle fractures account for 12-20% of all pediatric elbow fractures. There is currently no consensus regarding the treatment of displaced medial epicondyle fractures in children.

Study Summary: This was a multicenter, parallel group, noninferiority, nonblinded randomized clinical trial that compared operative vs nonoperative treatment of pediatric displaced medial epicondyle fractures of patients from 4 university hospitals in Finland. Participants aged 7-16 years presenting to the emergency department (ED) with a medial epicondyle fracture were screened for eligibility by a consultant orthopedic surgeon and randomly assigned (1:1) to operative or nonoperative treatment. In the nonoperative casting group, a long arm cast was applied for 4 weeks with the elbow at 90° of flexion and the forearm in neutral supination. The primary outcome was the Quick Disabilities of the Arm, Shoulder, and Hand (QDASH) score at 12 months.

In all, 72 patients were randomized: 37 to the surgery group and 35 to casting. The authors found no statistically significant differences in QDASH scores between the surgery and cast groups at 1, 3, or 6 months or at the end point of the study. At the end of the study, none of the casting group required additional support, and there was no cross over of patients from the casting group to surgical group throughout the study.

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Editor's Comments: The small sample size and location of recruitment of patients from university hospitals in Finland does limit its generalizability to urgent care (UC) practices. The nuanced nature of the study that focused solely on displaced medial epicondyle fractures also does not allow for extrapolation of these findings to other elbow fractures and dislocations. There is much that still needs to be agreed upon, particularly in the orthopedic specialty regarding elbow injuries, which requires UC clinicians to follow the locally agreed upon protocols and accepted orthopedic guidelines for these injuries. This study does allow for discussions between UC clinicians and their orthopedic counterparts around the best options for treatment for children with elbow injuries and may lead to collaborative investigations in the future. ■

Are Clinical Decision Rules Useful in Determining Septic Arthritis in a Limping Child?

Take Home Point: Septic arthritis (SA) is an uncommon finding in pediatric emergency department (ED) patients with an acute limp. However, the present clinical decision rules (CDR) are not robust enough in an ED population of patients to be useful.

Citation: Tu J, Lam S, Yamano C, et al. Test characteristics of clinical findings and clinical decision rules for the diagnosis of septic arthritis in children with an acute limp presenting to the emergency department: a prospective observational study. *Emerg Med J*. 2025;42:360–366.

Relevance: Nontraumatic lower limb pain is a common pediatric ED presentation with a broad differential diagnosis. The present CDRs have been developed by orthopedic teams, and their application to ED/UC populations has yet to be fully studied.

Study Summary: This was a prospective observational study of children presenting to 3 EDs in Melbourne, Australia, with atraumatic acute limp. Eligible children were enrolled, and data was collected from their hospital records. Participant families were contacted by phone initially, at the 1–2-week period, and at the 2–4-week period for a final diagnosis. Diagnosis of SA was determined from the clinical notes that were available for recruited patients—initial ED documen-

tation, subsequent documentation, and family reports of further hospital visits. The septic arthritis CDRs (Kocher's Rule and Caird's Rule) were applied.

Of the 147,754 ED encounters during the study period, the authors identified 535 patients with atraumatic acute limp who met inclusion for final analysis. They found 14 (2.6%) patients diagnosed with SA with an overall prevalence of 0.095 per 1,000 (95% confidence interval [CI] 0.054 per 1,000 to 0.163 per 1000) ED presentations. In the study, 13 of the patients diagnosed with SA had an initial presumed diagnosis in ED. Application of Kocher's Rule and Caird's Rule showed a 72% and 78% chance, respectively, of ranking a positive case higher than a negative case. The strongest predictors of septic arthritis in the study cohort were reduced range of motion of the affected joint, poor mobility (an inability to weight-bear), signs of systemic disease, and the presence of fever. However, the absence of these findings was less useful, with negative likelihood ratios ranging from 0.3 to 0.87.

Editor's Comments: The lack of a standardized definition of SA limited the authors in independently verifying their cohort. There is lack of generalizability to some UCs due to their lack of ability to perform CDR required blood tests, although it was noted to be not a useful conduit for detection of SA by the authors. These cases remain difficult diagnostic conundrums, and UC clinicians may want to err on the side of caution with referrals to the ED or same day orthopedic services to get their patients evaluated. There are opportunities for UC-specific work to be done in this area to distinguish those patients who need a referral, from those for whom watchful waiting may be appropriate. ■

The Impact of Timing of Inhaled Corticosteroid Use in Asthma

Take Home Point: In patients with asthma, mid-afternoon dosing of beclomethasone dipropionate (BDP) has better clinical outcomes without increasing steroid- related morbidity or costs.

Citation: Wang R, Maidstone R, Singh D, et al. The impact of dosage timing for inhaled corticosteroids in asthma: a randomised three-way crossover trial. *Thorax*. 2025 Apr 15:thorax-2024-222073. doi: 10.1136/thorax-2024-222073

Relevance: Being able to align asthma medication administration and dosing to biological rhythms of disease will help increase drug efficiency while minimizing medication harm and or side effects.

Study Summary: This was a randomized, open-label, 3-way crossover trial of BDP 400 µg daily dose administered once in the morning (between 8AM-9AM), one in the mid-afternoon (between 3PM-4PM), and 200 µg twice a day (between 8AM-9AM and between 8PM-9PM) in participants with mild to moderate atopic asthma. Peak flow meters and diary cards (morning and evening peak expiratory flow [PEF]), salbutamol (albuterol) use, adverse events, and medication adherence were recorded. Participants were asked to complete each routine for a period of 28 days with a subsequent washout period of 14-21 days without any treatment.

Overall, 25 participants were recruited into the study, and 21 participants (84%) completed all the components of the study. The authors found that all treatment regimens improved lung function. The greatest improvement in forced expiratory volume within 1 second was in the 3PM-4PM schedule compared to both the 8AM-9AM schedule and the twice daily schedule. There was modest improvement in forced vital capacity following the midafternoon routine compared with morning dosing routine (p=0.01). There was no difference in PEF among treatment regimens.

Editor's Comments: There were several limitations to the study, namely the small sample size, limited therapeutic period reviewed, and limited follow-up period. The use of inhaled corticosteroids as the agent of choice limits its generalizability to other inhaled asthma therapies including long-acting beta-agonists, long-acting muscarinic receptors, and leukotriene receptor antagonists. This trial does highlight the need for more evidence surrounding timing of medications when used in diseases that may have physiological timing burdens. UC clinicians may consider this study when counselling patients on the timing of asthma medication administration. ■

Suicide Risk Screening: Are We Asking the Right Questions?

Take Home Point: The predictive accuracy of a patient suicide risk assessment (SRA) improves significantly when clinicians incorporate information regarding recent suicidal thoughts and behaviors.

Citation: Bentley K, Kennedy C, Khadse P, et. al. Clinician Suicide Risk Assessment for Prediction of Suicide Attempt

in a Large Health Care System. *JAMA Psychiatry.* 2025 Jun 1;82(6):599-608. doi: 10.1001/jamapsychiatry.2025.0325.

Relevance: Suicide is the fifth most common cause of death among those aged 10-64 years with 90% of those dying from suicide having seen a healthcare professional within a year of death (>50% within the prior month).

Study Summary: This was a retrospective, electronic health record–based, prognostic study to assess the predictive accuracy of SRAs by clinicians in the Mass General Brigham health system. The authors collected data from SRAs that were documented and collected during clinical encounters with patients in outpatient settings (general medical or psychiatric), inpatient settings (general medical or psychiatric), or in the emergency department. Outcomes reviewed were subsequent ED visits with an ICD-10 classified suicide attempt within 90-180 days of the initial encounter. The SRA was designed to assess suicidal thoughts and behaviors (intent, plan, prior attempts), along with risk factors (depressed mood, recent loss), and protective factors (social support).

The authors reviewed 812,114 SRAs conducted by 2,577 clinicians at 12 hospitals among 89,957 patients: 86.13% were outpatient encounters; 9.45% were inpatient encounters; and 4.42% were from the ED. The suicide rate in outpatient encounters was: 0.12% within 90 days and 0.22% within 180 days; 0.79% within 90 days and 1.29% within 180 days for inpatients; and 2.40% within 90 days and 3.70% within 180 days for ED encounters. The authors found that clinicians estimated patients' suicide risk at levels significantly better than chance and this improved with incorporating all the factors in the SRA.

Editor's Comments: This is an important consideration that most UC clinicians may perhaps overlook when performing routine daily consultations. It is therefore key that we consider mental health related factors when assessing and addressing our patients. Using simple SRA tools in discreet ways that are incorporated into routine conversations and consultations may help with identifying those who potentially may need additional support. ■

New Legal Standards in Medical Malpractice

Take Home Point: In the new standard of care provided by the American Law Institute (ALI), there is a shift away from reliance of medical custom and an invitation for courts to incorporate evidence-based practice into malpractice law.

Citation: Aaron D, Robertson C, King L, et. al. A New Legal Standard for Medical Malpractice. *JAMA*. 2025 Feb 26. doi: 10.1001/jama.2025.0097.

Relevance: Unfortunately, up to one-third of physicians can expected to be sued for malpractice at least once in their careers. Although medical liability insurance provides compensation to those affected, it has not been consistently shown to address quality of care concerns.

Study Summary: This was a special communication review of the first ever ALI restatement of malpractice law, describing the new legal standards, its significance for healthcare professionals and organizations—particularly around 3 areas: clinical care; communicating with patients; and the practice environment.

The authors note that in legal standard of care, the approach of the "reasonable person" standard has been a feature of modern tort law nationwide. The restatement from the ALI centers medical negligence on reasonable care rather than on customary care. It takes into account the "resources available to the provider in the particular location or practice setting" in assessing the reasonableness of the care. In practicing latest evidence-based standards, the restatement identifies adherence to appropriate guidelines as sufficient evidence that the standard of care has been met. However, nonadherence to guidelines remains insufficient to establish negligence. In the use of informed consent, this care standard recognizes that patients have choices among different treatment options rather than just the right to refuse treatment altogether.

Editor's Comments: This is an encouraging step in the direction of improved quality of care for patients and decreasing defensive medicine. The restatement makes suggestions that the courts can use to ensure that the present-day best practices, that are evidence-based and up to date, are applied to the treatment of all patients. The main caveat for this article is that there is dependence on individual state courts to interpret and enact the ALI statement accordingly. UC clinicians should recognize that, at least for now, many courts will continue to rely significantly on prevailing customary practice in assessing medical liability. ■

Simple Sensory Test to Evaluate Hand and Finger Injuries

Take Home Point: The Ten Test, a newer sensory test, is a

reliable and reproducible test to evaluate sensory function of the hands/fingers which is fast and easy to implement in any clinical space.

Citation: Lothet E, Lacy A, Odom E. The Ten Test and Sensory Evaluation of Hand and Finger Injuries in the Emergency Department. *J Emerg Med*. 2025;71:54-59. doi: 10.1016/j.jemermed.2024.10.008.

Relevance: Hand and finger injuries are a common presentation to both emergency departments and urgent cares. There are various methods to evaluate sensory function and being able to communicate sensory findings clearly to other specialists is important for UC clinicians.

Study Summary: This was a descriptive review article examining various published hand and finger sensory-evaluation methods. The authors describe the 2-point discrimination (2PD) test, along with other methods discussed in plastic and orthopedic hand literature. These include the Semmes-Weinstein monofilament (SWM) test, the Weinstein Enhanced Sensory Test (WEST) test, and the Ten Test (TT). The authors describe the TT as a suitable and quick alternative test in busy ED settings to assess hand and finger sensation.

The TT was developed, and validated, to be a simple and reliable test in the late 1990s. The test is performed by presenting a stimulus in the form of moving light touch to an unaffected or uninjured digit. This normal stimulus should be given a 10 on a 1-10 scale by the patient. The normal digit and the affected digit are then touched simultaneously, and the patient should be asked to rate how the affected finger compares to the normal finger on the 1-10 scale. The authors note that the TT compares favorably to the WEST and SWM tests in previous literature. When compared with the 2PD test, the TT was found to perform better at early sensory loss identification.

Editor's Comments: This is an interesting test that appears to be simple, easy to perform and has useful daily applications in busy UCs. The nonreliance on any equipment makes it a simple tool for any UC clinician to incorporate into any hand injury assessment. The limitation of this technique is its reliance on the ability to compare with a contralateral innervated body part with the same dermatome. Additionally, difference in pressure applied by the examiner between hands could lead to variable patient-reported results. This is nonetheless an easy test that clinicians may be encouraged to incorporate (potentially as a screening tool) in any UC consultation that requires sensory hand or finger examination. ■

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Editor's Note: While the images presented here are authentic, the patient cases are hypothetical.

11-Year-Old With Heel Pain While Running

An 11-year-old male presents to urgent care complaining of bilateral heel pain, right worse than left. The patient denies recent trauma and reports experiencing increased pain when running. He has not tried any treatment and denies any history of similar episodes in the past.

Physical examination reveals bilateral pes planus and decreased dorsiflexion of the feet with weightbearing lunge against the wall. Pain is elicited with calcaneal compression test. The patient is noted to be favoring his right heel with barefoot gait. The Thompson's test is normal, pulses are normal, and his sensation is intact with brisk cap refill to bilateral toes. A right calcaneal x-ray is ordered.

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

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

THE RESOLUTION

Differential Diagnosis

- Calcaneal apophysitis
- Achilles tendonitis
- Retrocalcaneal bursitis
- Calcaneal stress fracture
- Painful heel pad syndrome (contusion)

Diagnosis

The correct diagnosis is calcaneal apophysitis, also known as Sever disease. Calcaneal apophysitis is characterized as the painful inflammation of the apophysis (growth plate) of the calcaneus, which is located at the insertion point of the Achilles tendon. It typically presents during periods of rapid growth combined with overuse, such as very active younger children and early adolescents that might have started a new activity or sport requiring running and/or jumping. It is more common in boys than in girls and is often bilateral. Calcaneal apophysitis is sometimes associated with high or low arches, over-pronation of the foot, and decreased flexibility in the calf.

What to Look For

- Sever disease is often diagnosed clinically based on clinical scenario.
- On x-ray, increased density and fragmentation of the calcaneal apophysis may be visible.
- The patient may walk with a limp, walk on their toes, and have difficulty running and jumping. Pain is worse when walking barefoot.
- The patient will likely exhibit pain upon squeezing both sides of the back of the heel.

Pearls for Urgent Care Management

- Bilateral use of 5 mm rigid heel cup or lift; eccentric calf strengthening and stretching exercises.
- Decreased participation in sports or activities that produce pain, gradually increase activity once pain has improved.
- Daily ice application for 20 minutes at a time and Non-steroidal anti-inflammatory drugs for pain management.
- Referral to physical therapy or sports medicine if no improvement after 4-8 weeks.

A 42-Year-Old With a Widespread Rash

A 42-year-old woman with widespread scaly lesions presents to urgent care. Superficial crusts and exfoliative plaques are seen on the face, neck, and chest. The patient reports that the lesions are painful, but she has no systemic symptoms. The rash emerged a couple of months prior. The patient has no recent history of travel or infections and is not currently on any medications. A skin biopsy and labs are ordered.

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

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

THE RESOLUTION

Differential Diagnosis

- Erythrodermic psoriasis
- Pemphigus foliaceus
- Pemphigus vulgaris
- Subcorneal pustular dermatosis
- Dermatitis herpetiformis
- Bullous impetigo

Diagnosis

The correct diagnosis is pemphigus foliaceus, a rare autoimmune disease that causes blisters on the skin (but not the mucous membranes, as in pemphigus vulgaris). A skin biopsy with H&E staining shows damage (acantholysis) in the upper layer of the skin. Direct immunofluorescence (DIF) shows IgG and C3 deposits spread evenly throughout the skin layer. Blood tests using ELISA detect antibodies against a protein called desmoglein 1 (Dsg1). The main harmful antibodies are mostly of the IgG_4 type, and they target Dsg1, though other antibody types and targets may also be involved.

What to Look For

- Superficial blisters, crusted erosions, and scaling in a seborrheic distribution (ie, scalp, face, and upper trunk). Lesions usually start on the trunk and rarely involves the mucosa.
- Nikolsky sign will be present in active disease, elicited by lateral pressure with a thumb or finger to the perilesional, affected, or normal-appearing skin, resulting in visible separation of the upper epidermal layers from the lower layers.
- In individuals with darker skin tones, healing may be accompanied by hypo- or hyperpigmentation.

Pearls for Urgent Care Management

- Corticosteroids are the first-line treatment for both adult and pediatric cases. Prednisone or prednisolone (1.0-1.5 mg/kg/day in a single dose or divided into 2 doses) may be used for acute control, especially with more severe cases.
- Sun avoidance and sun-protection measures (eg, using sunscreens, wearing barrier clothing) should be instituted.
- If biopsy and lab testing is not available in urgent care, referral to dermatology is appropriate for diagnostics and ongoing management.

80-Year-Old With Substernal Chest Pain

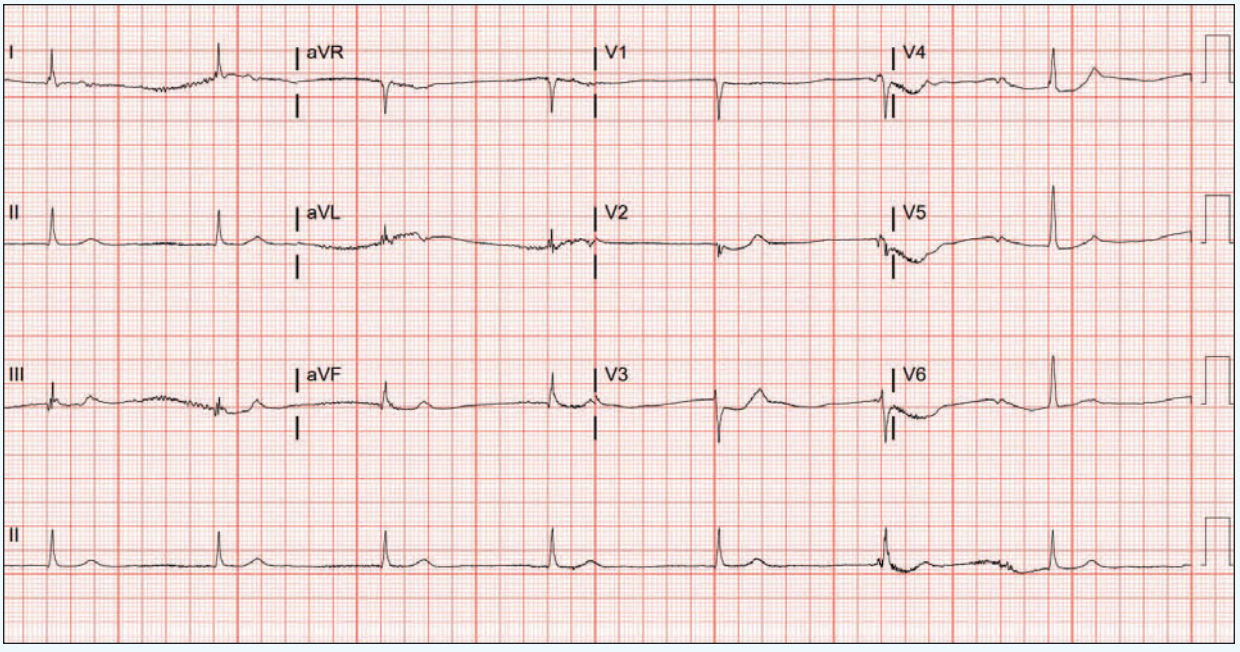

Figure 1: Initial ECG

An 80-year-old male with hypertension and hyperlipidemia presents to urgent care for 1 day of sharp, substernal chest pain radiating to his right arm with associated shortness of breath and diaphoresis. His wife notes that he is often nonadherent with his medications. An ECG is ordered.

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

Case presented by Akshay Elagandhala, MD, UTHealth Houston

Case courtesy of ECG Stampede (www.ecgstampede.com).

ECG STAMPEDE

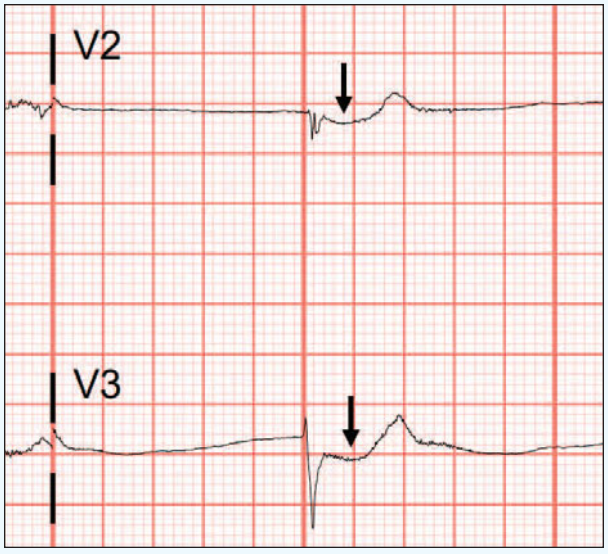

Figure 2: Focal ST-segment depressions in leads V2-V3 (arrows).

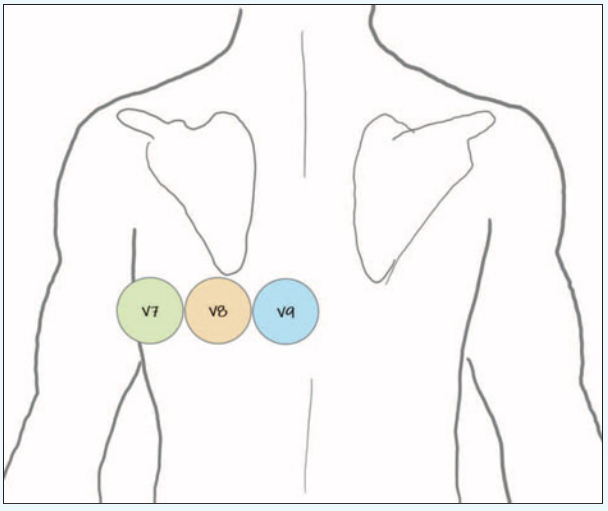

Figure 3: Placement of posterior leads.1 V4-6 are moved to the posterior chest wall, inferior to the scapula, and placed lateral to medial. These leads become V7-9.

Differential Diagnosis

- Second degree atrioventricular (AV) block (Mobitz type I) heart block
- Second degree AV block (Mobitz type II) heart block
- Posterior myocardial infarction (MI)
- deWinter T-waves
- Sinus bradycardia

Diagnosis

The correct diagnosis in this case is posterior myocardial infarction. The ECG shows a narrow complex, junctional bradycardia at a rate of 42. There are no discernible P waves (ruling out sinus bradycardia), and therefore no PR intervals (ruling out second degree AV block). There is focal ST-segment depression in V2 and V3, without ST-segment elevation elsewhere. The T-waves are not large in amplitude as expected with deWinter T-waves.

In the context of chest pain and anterior ST-segment depression, a posterior ECG should be performed on this patient by moving leads V4-V6 to the posterior chest wall, to better assess for posterior myocardial infarction **(Figure 3)**.

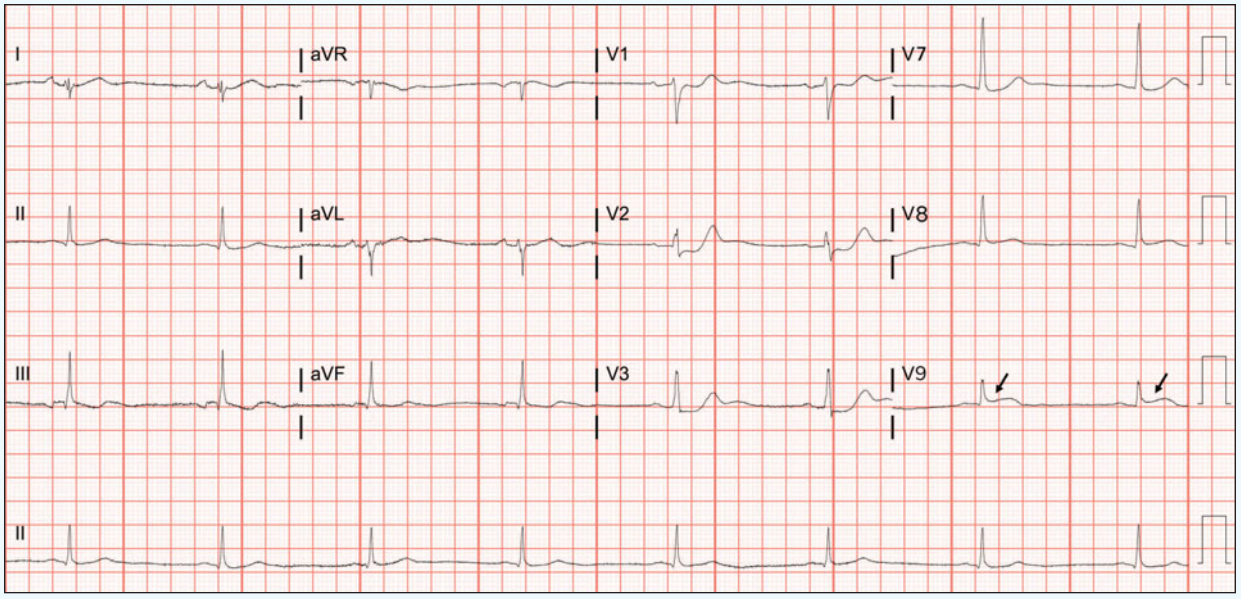

Figure 4: Posterior ECG revealing ST-segment elevation in V9 (arrows).

THE RESOLUTION

This patient was transferred to a percutaneous coronary intervention (PCI) center where an occluded proximal left circumflex was discovered and stented. The differential for ST-segment depression includes a broad range of conditions that can cause subendocardial (partial thickness) ischemia. The traditional 12-lead ECG does not contain leads that overly the posterior wall directly, therefore transmural infarction of the posterior wall is easily missed.[1–3] By moving leads V4-V6 to the posterior chest wall to become V7-V9, you can distinguish between anterior subendocardial ischemia and posterior transmural infarction. Posterior myocardial infarction will show ST-segment elevation in V7, V8, and/or V9. Patients with posterior myocardial infarction require emergent intervention. Activate emergency medical services (EMS) immediately for transfer to a PCI-capable facility.[4]

What to Look For

- Isolated posterior myocardial infarction is a rare finding, occurring in 3-7% of acute MI, and likely underdiagnosed.
- Focal ST-segment depressions in the anterior leads may represent a posterior myocardial infarction.
- Consider an ECG with posterior leads when anterior ST-segment depression is noted.

Pearls For Initial Management, Considerations For Transfer

- Perform an ECG with posterior leads if you note focal ST-depressions in leads V1-4. Remember to relabel V7-V9.
- Activate EMS immediately.
- Administer aspirin (162-325 mg).
- After EMS activation and aspirin administration, establish IV access if able.

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* A commissioned study conducted by Forrester Consulting on behalf Experity, 2/21/25 ** Experity Data

Timely Filing: What Every Practice Needs to Know

■ Nikki Benedict

Timely filing is a critical concept in medical billing that directly impacts claim reimbursement. Despite its importance, the specific requirements and terminology can vary across payer contracts, making it essential for billing teams to understand both the general rules and the payer-specific nuances.

When reviewing a payer contract, timely filing requirements may be outlined under the following sections:

- Submission/Adjudication of Claims
- Payment
- Time to File Claims

Providers can find Medicare and Medicaid timely filing requirements by consulting Centers for Medicare & Medicaid Services (CMS) and relevant state Medicaid websites. For example, Texas Medicaid requires claims to be filed within 95 days, and Florida Medicaid requires claims to be filed within 12 months of the date of service. Medicare is the only constant, as policies generally allow up to 12 months from the date of service or date of primary payment.

For most urgent care claims, the timely filing period begins at the time of service. For example, payers such as many of UnitedHealthcare's commercial insurance products have a 90-day filing limit, which means providers must submit claims within 90 days of the patient encounter. The timely filing limit is generally non-negotiable in a payer agreement, so the payer may deny the claim for timely filing even if the claim would otherwise have been reimbursable.

For secondary or tertiary claims, however, the timely filing period often begins on the date of the primary payer's determination, not the original date of service. This distinction is important in cases where delays occur while waiting for an explanation of benefits or responses from primary insurers, as it can impact filing timelines and prevent denials.

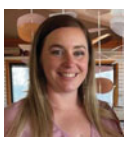
When claims are denied, most payers assign separate deadlines for submitting corrections or appeals. There are some exceptions to this.

- **Payer System Errors:** If a payer experiences internal issues that delay processing, they may allow late submissions.
- **Retroactive Eligibility:** When a patient is approved for coverage after receiving care (eg, backdated Medicaid enrollment), some payers allow the filing deadline to restart from the eligibility confirmation date. However, this often requires manual appeals and supporting documentation.
- **Public Health Emergencies:** During events like the COVID-19 pandemic, many payers temporarily extended filing deadlines to support overwhelmed healthcare systems. This often happens regionally in the case of natural disasters like hurricanes or tornados.

If a claim is submitted after the deadline and no exception applies, it is typically written off as appeal rights are lost. However, if the claim is filed on time and subsequently denied, it may still be eligible for appeal and reconsideration by the payer. In most cases, payers do not allow providers to bill patients for claims denied due to timely filing issues, although this can vary depending on the payer's processing rules and the specific terms outlined in provider contracts.

There are several factors that could hold up filing a claim:

- Incomplete documentation of the medical records or delays in completing the charts
- Missing or incomplete patient demographic or insurance information
- Eligibility or coordination of benefit issues
- Missing prior authorization, workman's compensation claim numbers, or referrals (if required)
- Providers not yet credentialed with payers at the time of service



Nikki Benedict is Revenue Integrity Analyst for Experity.

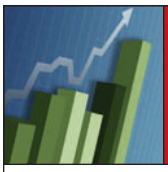
Claims rejected at the clearinghouse level may never reach the payer, yet the clock for timely filing continues to run. Monitoring these rejections closely and acting swiftly ensures claims are corrected and resubmitted within the deadline. Additionally, clearinghouses provide the submission documentation often required to prove timely filing during appeals.

To ensure claims are submitted within payer-specific timely filing deadlines, healthcare organizations should follow several best practices.

- **Insurance Verification:** Confirm insurance eligibility at the time of service. Ensure the correct payer is selected in the system and that all patient demographic and insurance details are accurate, including plan types like Medicare Advantage or managed Medicaid. Always verify whether the patient has multiple coverage sources to ensure proper coordination of benefits.
- **Timely Documentation:** Delays in charting can directly impact the billing timeline and increase the risk of missing filing deadlines. Work closely with providers to complete documentation and close encounters promptly. This includes signatures. Claims are not billable if the medical record is not signed.
- **Rejection Tracking and Analysis:** Routinely review claim rejections and denials, using them as learning opportunities. Identifying patterns and providing feedback helps reduce repeat issues and increases the number of clean claims submitted on the first attempt.
- **Credentialing Awareness:** Make sure providers are credentialed with key payers before seeing patients under those plans. Understanding which contracts are in place helps ensure providers are only scheduled with patients whose insurance can be billed appropriately.
- **Proactive Monitoring:** Leverage claim scrubbing tools, clearinghouse alerts, dashboards, and reports to catch and resolve issues early in the revenue cycle. Ongoing monitoring helps prevent bottlenecks and keeps claims moving forward efficiently.

At Experity, we maintain compliance with timely filing requirements by proactively reviewing contract language and collaborating with clinics to ensure timely documentation and claim submission.

Understanding the nuances of payers' timely filing deadlines, exceptions, and appeal rights are essential for optimizing revenue. While missed deadlines can lead to lost reimbursement, many denials that appear final can be overturned with a strong, well-documented appeal. By identifying common barriers and collaborating with an experienced revenue cycle management organization, providers can mitigate financial risk and improve reimbursement efficiency. ■

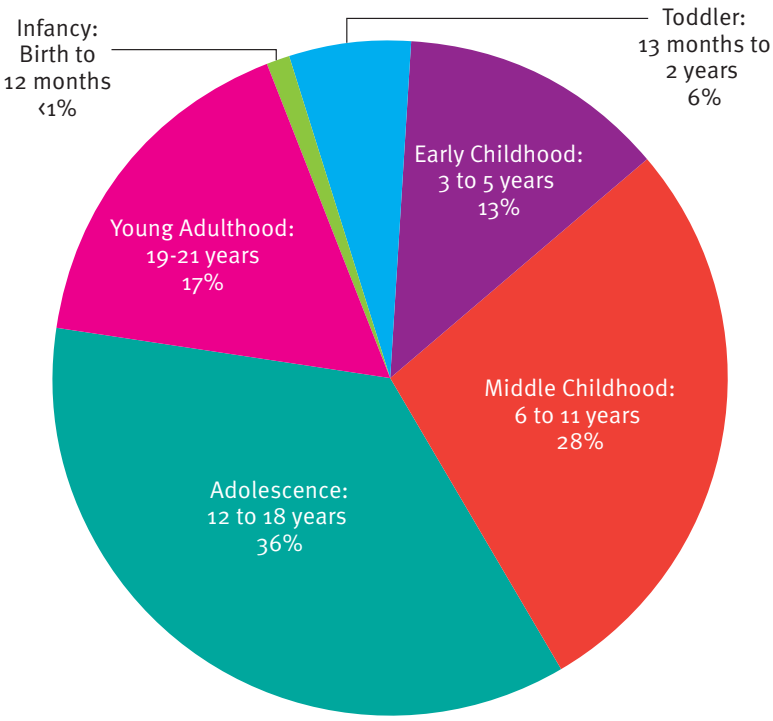


DEVELOPING DATA

Pediatric Populations Represent 29% of Urgent Care Patients

Alan A. Ayers, MBA, MAcc

PERCENTAGE OF URGENT CARE PATIENTS UNDER AGE 21, BY COHORT



Over the 12-month period ending June 15, 2025, 29% of urgent care patients were children and young adults aged 21 years or younger, while 71% were patients aged 22 years or older, according to an exclusive analysis of 35 million patient visits recorded in the Experity EMR.

Further, the chart demonstrates the age breakdown of the population of children and young adults who visited urgent care. This analysis omits visits for employer-paid services and workers compensation and does not include patients registered in other Experity systems during the time period.

Additionally, it's important to note that some urgent care centers do not provide care for pediatric patients less than a certain age—such as under the age of 12 months or in some cases, under the age of 2 years. Many newborns and infants may already be under the care of a pediatrician, and parents may default to a children's hospital emergency room for immediate concerns. ■

Alan A. Ayers, MBA, MAcc is President of Urgent Care Consultants and Senior Editor of *The Journal of Urgent Care Medicine.*

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