

# JUCM<sup>®</sup>

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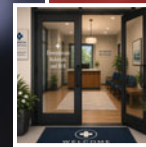
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The Official Publication of the UCA, CUCM, and UCCOP

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Necrotizing Fasciitis Without Obvious Soft Tissue Abnormalities



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Urgent Care Is a Front Door Wide-Open

ORIGINAL RESEARCH

## How Urgent Care POCUS Impacts ED Transfer Rates

## Back by Popular Demand: The Conference Focused 100% on **Starting an Urgent Care.**

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## ORIGINAL RESEARCH

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Lindsey E. Fish, MD, FCUCM; Genie Roosevelt, MD; Amanda G. Toney, MD

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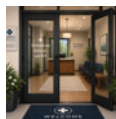


The placebo effect can produce clinical manifestations related to pain, which has practical implications for urgent care clinicians who routinely recommend oral pain medications.

Vinay Sharma, BS; Ariana M. Nelson, MD

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Alan A. Ayers, MBA, MAcc

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# Calling All Clinicians to Join the Colleges

With great excitement—and in full disclosure—I am writing this as the newly elected President of the College of Urgent Care Medicine (CUCM) and Urgent Care College of Physicians (UCCOP). It is truly a pleasure to have been elected during the most recent Urgent Care Conference this past April in Chicago, and I look forward to leading these organizations for the next 2 years.

Now I am calling all urgent care clinicians—nurse practitioners (NPs), physician assistants/associates (PAs), and physicians—to become members of the Colleges. We are the professional organizations of urgent care clinicians, and we want to represent you not just within urgent care but across the entire healthcare field!



*“We cannot move things forward without all of us working together.”*

### Who Can Join The Colleges

CUCM is open to all urgent care clinicians. Our mission is to elevate urgent care medicine through clinical care, education, collaboration, and advocacy for clinicians and patients. UCCOP is open to all urgent care physicians. Our mission

is to advance the specialty of urgent care medicine through research, education, clinical leadership, and support of physicians. All physician members of CUCM are automatically members of UCCOP. The Colleges work hand in hand to do this incredible work!

Additionally, CUCM and UCCOP are affiliate organizations of the Urgent Care Association (UCA). We work collaboratively with UCA and are grateful for its substantial support of our efforts and missions.

Enterprise organizations can also be members of UCA. If you are a clinician who works for a UCA member organization, then you are automatically a member of CUCM as an individual benefit recipient. Check your membership status by going to the UCA website ([urgentcareassociation.org](http://urgentcareassociation.org)) and clicking the “Profile Log

In” button in the upper right. To ensure you are in our database, click the area that says “Not sure if you have a login?” and the “Get Started” button. You can also become an individual member with the “Profile Log In” button.

As urgent care is a complex field of medicine that includes both clinical care and operational functions, we cannot move things forward without all of us working together. Ensure that you are a member!

### Our Strategic Goals

The Colleges have 4 strategic goals for the next 5 years:

1. Establish urgent care as a recognized medical specialty
2. Deliver comprehensive, high-value urgent care medical education
3. Advance urgent care medicine through original research
4. Grow and engage a committed clinical urgent care community.

To establish urgent care as a recognized medical specialty, we plan to advance national specialty recognition pathways for physicians and NPs/PAs. We will also formalize and sustain relationships with key medical, physician, NP/PA, and accreditation organizations. In terms of influence, we will create and support urgent care specialty interest groups, caucuses, and advocacy opportunities. And to extend our voice, we will increase urgent care representation and leadership visibility within external stakeholder organizations.

To deliver comprehensive, high-value urgent care medicine education, we plan to develop and maintain a curated library of evergreen clinical and leadership education. We will also expand and differentiate CUCM-led clinical education within the annual UCA Conference. We’re going to improve organization, accessibility, and transparency of CME offerings and tracking. We will also increase awareness and utilization of clinical practice guidelines and recorded education. Finally, we will leverage education analytics to continuously improve our relevance, reach, and value.

To advance urgent care medicine through original re-

search, we plan to facilitate and publish validated, urgent-care-specific research results. We will establish stewardship guidelines and clinical standards that are informed by research. To support this important work, we will secure diversified funding for independent urgent care research and expand data-sharing capabilities and clinical dashboards to enhance benchmarking. Additionally, we will increase the visibility and citation of urgent care research in academic and public forums.

To grow and engage a committed clinical urgent care community, we plan to increase membership and conference participation through clearer articulation of member value. We will create structured leadership and volunteer pathways, including expanded NP/PA opportunities. We will strengthen committee engagement through clearer entry points, expectations, and recognition. We will incentivize participation through badges, discounts, and visible recognition of our members. Finally, we will deliver insights and tools that reinforce the return on investment in membership in the Colleges.

### Our Community

We need our urgent care clinician “village” because it takes a village to support each other as we work together to advance our goals. There are tens of thousands of clinicians practicing urgent care medicine who should be represented by the Colleges. In many clinical settings, we are solo clinicians seeing patients; however, in reality we have a very large group of clinicians with whom we can collaborate, support, encourage, and develop.

Let the Colleges be that community and village for you. Come and join us, the professional organizations for urgent care clinicians! Become a member and get involved today! ■

### Lindsey E. Fish, MD, FCUCM

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

Email: [editor@jucm.com](mailto:editor@jucm.com)

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**Tom DePrenda**  
tdeprenda@jucm.com

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

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# URGENT INTERACTIONS



*“In a busy clinical setting, it is easy to forget what really may be at stake. Each patient is someone’s mother, father, sister, brother, son, daughter, husband, wife, aunt, uncle, or cousin, and they are in a state of need. You don’t want to miss the critical diagnosis...take time to really listen and critically think about the case.”*

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



*“A good history is free, but a poor history may be very expensive.”*

— **Michael Weinstock, MD**  
JUCM Senior Clinical Editor



*“Evidence-based care is the backbone of urgent care medicine. In a setting defined by speed and variability, guidelines keep us anchored—reducing unnecessary testing, standardizing decisions, and protecting patients from both under- and overtreatment. They elevate quality, safeguard clinicians, and ensure every patient receives care that’s consistent, defensible, and truly best practice.”*

— **Tracey Q. Davidoff, MD, FCUCM**  
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### UCA Urgent Care Conference

**May 1-4, 2027**  
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# The Next Chapter: From Alternative to Essential

■ Steve Sellars

As I continue to meet with operators, clinicians, policy-makers, employers, and healthcare leaders, I continue to hear many of the same challenges: reimbursement challenges, rising healthcare costs, workforce shortages, limited access to primary care, and growing pressure on emergency departments.

At the same time, I'm hearing something else: growing recognition of the important role Urgent Care plays in addressing these challenges. For years, Urgent Care was often viewed as an alternative, a convenient option when patients couldn't get in to see their physician or wanted to avoid a trip to the emergency department. Access, convenience, and efficiency fueled our growth and helped establish Urgent Care as a trusted care setting in communities across the country.

## Essential Access Point

Today, however, our role is evolving. Healthcare is changing, and Urgent Care is becoming an increasingly important part of the solution. Every day, clinicians working in Urgent Care centers provide timely, high-quality care for more than half a million patients. We help improve access, reduce unnecessary emergency department utilization, support employers, and provide care when and where patients need it most. In many communities, Urgent Care has become an essential healthcare access point.

With that opportunity comes responsibility. Being viewed as an essential part of healthcare requires more than growth. It requires leadership. It requires a commitment to quality, advocacy, collaboration, and continuous improvement. It requires us to demonstrate the value we provide and ensure that policymakers, employers, payers, and patients understand the important role Urgent Care plays within the healthcare system.



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

That work is happening today. This month, clinical and executive leaders from across the country will gather in Washington, D.C., for The Assembly. It's an invitation-only annual event that unites the Urgent Care Association (UCA) and the College of Urgent Care Medicine's key groups to discuss trends and advance new strategies. Bringing together influential leaders from across our industry, The Assembly reflects the growing recognition that Urgent Care must help shape the conversations that influence healthcare policy, reimbursement, access, and delivery.

At the same time, UCA continues to engage policy-makers, employer coalitions, and other healthcare stakeholders to advance awareness of the value Urgent Care delivers every day. Those conversations are important because decisions made outside our centers increasingly affect what happens inside them. The future of Urgent Care will not be shaped by any one organization or individual. It will be shaped by clinicians, operators, and leaders who choose to engage, share their expertise, contribute their perspectives, and help define what comes next.

I believe we are entering one of the most important periods in our field's history. For years, Urgent Care worked to establish itself as a trusted alternative within healthcare. Today, we have an opportunity to establish Urgent Care as an essential component of everyday healthcare.

## Shaping the Future

The next chapter will be defined by how effectively we work together to strengthen our voice, demonstrate our value, and lead the conversations shaping the future of healthcare. The opportunity before us is significant. Healthcare needs innovative, accessible, and affordable solutions, and Urgent Care is uniquely positioned to help meet that need.

I am optimistic about where our field is headed, and I believe our greatest contributions are still ahead of us. ■



# CONTINUING MEDICAL EDUCATION

**Release Date:** July 1, 2026

**Expiration Date:** August 31, 2028

## Target Audience

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

## Learning Objectives

Upon completion of this educational activity, the learner will be able to:

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

## Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Master Clinicians, LLC and the Institute for Urgent Care Medicine. Master Clinicians is accredited by the ACCME to provide continuing medical education for physicians.



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### Recognizing and Managing Adrenal Crisis in Urgent Care: A Case Report (page 19)

- 1. Which hormone, if deficient, is often associated with adrenal crisis?**
  - a. Estrogen
  - b. Oxytocin
  - c. Cortisol
  - d. Thyroid hormone
- 2. Which clinical manifestations are often associated with adrenal crisis?**
  - a. Fatigue, gastrointestinal distress, abdominal pain
  - b. Altered mental status
  - c. Hyponatremia, hyperkalemia, hypoglycemia
  - d. All of the above
- 3. What course of action aligns with treatment guidelines for adrenal crisis?**
  - a. Immediate administration of hydrocortisone
  - b. Immediate administration of amoxicillin
  - c. Referral to primary care
  - d. Influenza rapid testing

### The Placebo Effect and Its Clinical Implications in Urgent Care (page 23)

- 1. Which of these may positively contribute to analgesic responses to placebo for pain?**
  - a. Positive patient expectations about pain relief
  - b. Treatment from a provider perceived to be empathetic
  - c. Treatment from a provider wearing professional clothing
  - d. All of the above
- 2. Why should clinicians avoid giving patients placebos without notifying them the treatment is in fact a placebo?**
  - a. It is unethical
  - b. It does not allow the patient to freely choose their treatment
  - c. It may cause the patient to avoid seeking care in the future
  - d. All of the above

### 3. True or False: Placebo treatments can match or surpass the effectiveness of conventional treatments for pain

- a. True
- b. False

### Occult Presentation of Necrotizing Fasciitis With Subtle Clinical Findings: A Case Report (page 33)

- 1. What is necrotizing fasciitis?**
  - a. Stiff joints in the neck
  - b. Dry skin in infants
  - c. Severe, rapidly progressing soft tissue infection
  - d. Severe form of deep vein thrombosis
- 2. What is the preferred imaging modality to diagnose necrotizing fasciitis?**
  - a. Computed tomography or magnetic resonance imaging
  - b. X-ray
  - c. Slit lamp exam
  - d. Skin biopsy examined under microscope
- 3. What is often the earliest and most important finding in necrotizing fasciitis cases?**
  - a. Pain out of proportion to physical examination findings
  - b. Cobblestoning
  - c. Pale skin
  - d. Normothermia

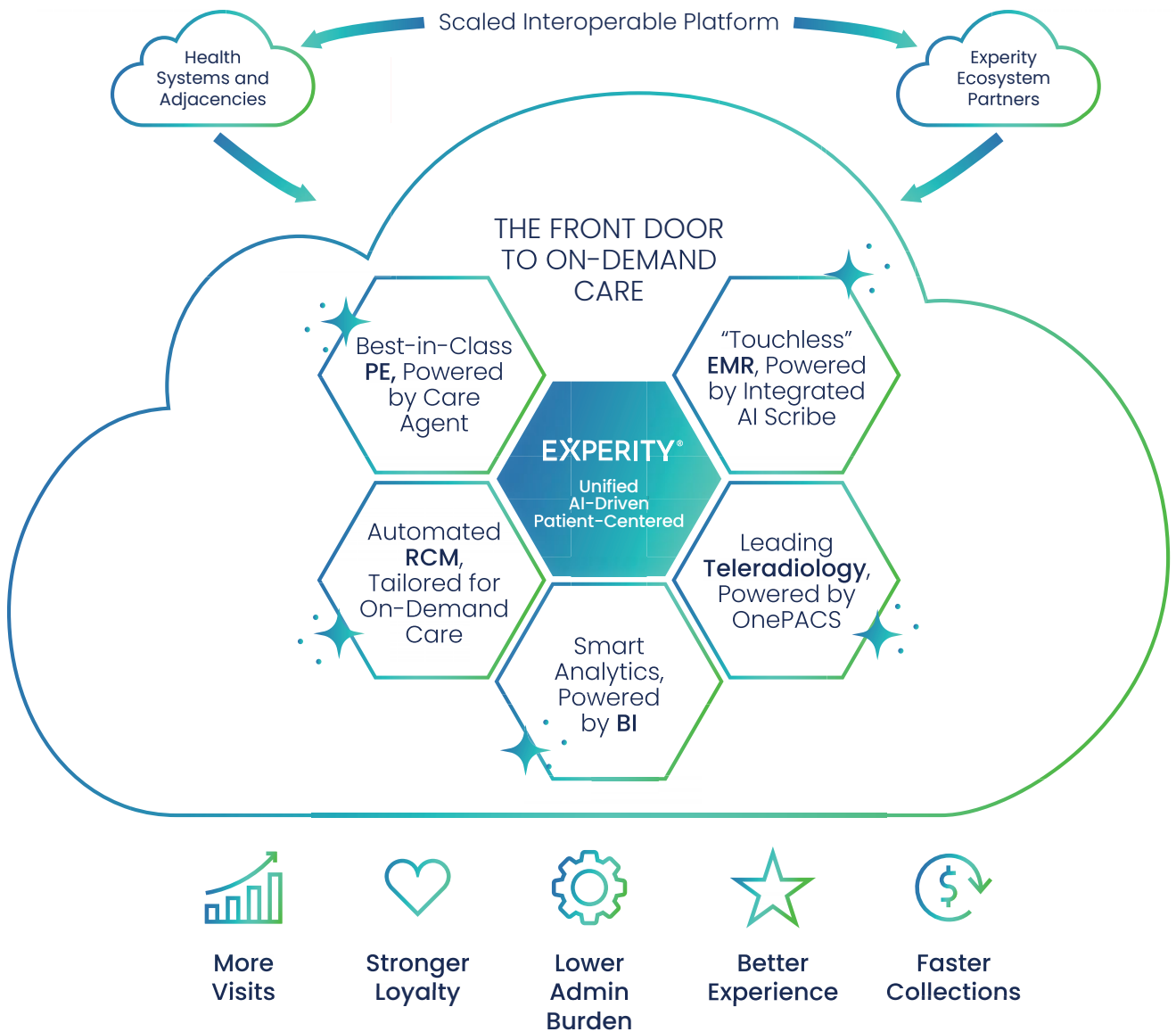
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# The Impact of an Urgent Care Point-of-Care Ultrasound Program on Patient Transfers to the Emergency Department

**Urgent Message:** Training urgent care providers to use point-of-care ultrasound resulted in fewer patient transfers to the emergency department for soft tissue/musculoskeletal and first-trimester pregnancy complaints, while also streamlining care in this single-center program.

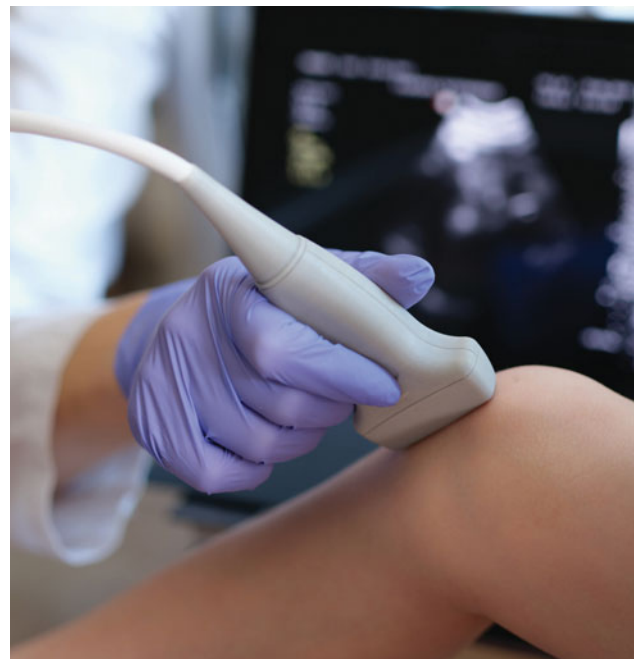
Lindsey E. Fish, MD, FCUCM; Genie Roosevelt, MD; Amanda G. Toney, MD

**Citation:** Fish LE, Roosevelt G, Toney AG. The Impact of an Urgent Care Point-of-Care Ultrasound Program on Patient Transfers to the Emergency Department. *J Urgent Care Med.* 2026;20(10):13-17

**Keywords:** point-of-care ultrasound; urgent care; emergency department transfer; soft tissue infection; musculoskeletal complaints; first-trimester pregnancy

## Abstract

**Introduction:** The use of point-of-care ultrasound (POCUS) is expanding into multiple clinical areas as it has been shown to improve patient outcomes and satisfaction, and decrease length of stay and patient costs. However, very limited research has been performed on the impact of POCUS implementation in the urgent care (UC) setting. We aimed to compare the transfer rate to the emergency department (ED) for ultrasound imaging for patients presenting to the UC with soft tissue/musculoskeletal (ST/MSK) and first-trimester-pregnancy-related complaints prior to and after a POCUS educational intervention.



**Author Affiliations:** Lindsey E. Fish, MD, FCUCM, Division of Urgent Care, Ambulatory Care Services, Denver Health and Hospital, Denver, Colorado; Division of General Internal Medicine, Department of Medicine, University of Colorado School of Medicine, Aurora, Colorado; *The Journal of Urgent Care Medicine*. Genie Roosevelt MD, Department of Emergency Medicine, Denver Health and Hospital, Denver, Colorado; Department of Emergency Medicine, University of Colorado School of Medicine, Aurora, Colorado. Amanda G. Toney, MD, Department of Emergency Medicine, Denver Health and Hospital, Denver, Colorado; Department of Emergency Medicine, University of Colorado School of Medicine, Aurora, Colorado. Authors have no relevant financial relationships with any ineligible companies.

**Methods:** UC providers from a single clinic participated in a 1-day POCUS training course focused on aorta, renal, ST/MSK, and transabdominal first-trimester pregnancy ultrasound studies. Using retrospective electronic record chart review, all patients who presented to the UC with a ST/MSK or first-trimester-pregnancy complaint were identified 10 months prior to and following POCUS training. Categorical variables were evaluated with the chi-square test, and relative risk ratios (RR) with 95% confidence intervals (CI) were calculated.

**Results:** For ST/MSK complaints, prior to the POCUS training course, 5.1% of patients were transferred compared to 2.2% after the course. The risk of transfer was 2.30 times higher (RR) (95% CI 1.27–4.14,  $p=0.0006$ ) before the course compared with after it, which was statistically significant. For first-trimester pregnancy complaints, prior to the POCUS course, 28% of patients were transferred compared to 20% after the course. The risk of transfer was 1.42 times higher (RR) (95% CI 0.99–2.05,  $p=0.06$ ) before the course compared with after it, which was not statistically significant.

**Conclusion:** In this single urgent care setting, teaching UC providers POCUS skills resulted in a decreased percentage of patient transfers to the ED for ST/MSK and first-trimester pregnancy complaints, thus streamlining patient care.

## Introduction

The use of point-of-care ultrasound (POCUS) is expanding into multiple areas of medicine, including emergency departments (ED), outpatient clinics, and inpatient units as it has been shown to improve patient outcomes and satisfaction while also decreasing length of stay and patient costs.<sup>1-7</sup> The American College of Emergency Physicians has an extensive policy statement regarding emergency, point-of-care, and clinical ultrasound guidelines for this expanding field.<sup>8</sup> Urgent care (UC) clinics are emerging as a new site for POCUS application, which may facilitate patient care. As with any new area of medicine, there are several challenges for UC in implementing POCUS.<sup>9</sup> Specifically, it appears that no curricula or guidelines exist, and very limited research has been performed on the impact of POCUS implementation in the UC setting. We hypothesized that the implementation of a POCUS training course and quality assurance (QA) program for UC providers (physicians, nurse practitioners, and physician assistants) would allow them to make better informed clinical decisions, thus decreasing transfers to the ED. The

objectives of the POCUS training course for this UC were to expedite patient care, decrease the cost of care for the patient by decreasing ED transfers (ie, avoiding 2 encounters for 1 complaint) and to decrease patient volume at the ED.

The Federico F. Peña Southwest Urgent Care Clinic opened in 2016 as a community-health-based UC clinic affiliated with Denver Health and Hospital (Denver, Colorado), a safety-net healthcare institution. The aim of the clinic is to provide diagnostic and management services to patients in their local community regardless of age, complaint, language, race/ethnicity, insurance status, or ability to pay. Daily clinic operations are performed by physicians, nurse practitioners, physician assistants, registered nurses, medical assistants, and patient access specialists. This moderate/advanced UC clinic provides onsite laboratory testing, x-ray, intravenous fluids, and clinic administered medications. However, it does not provide consultative ultrasound or computerized tomography (CT), cardiopulmonary monitoring, advanced airway support, or cardiac resuscitation. At the time of this program, this UC clinic provided over 25,000 visits a year to a primarily underserved population including patients covered by Medicare/Medicaid (65%), uninsured (15%), and sliding-scale self-pay (12%)—as well as Spanish-speaking patients (35%) and patients who speak other languages (5%). The transfer rate of patients to the hospital for a higher level of care was less than 5%. Transfers are performed via private vehicle, nonemergent ambulance, and emergent ambulance. The majority of transfers are referred to the Denver Health ED, which is 3 miles away from Peña Urgent Care Clinic, however, there are transfers to other local hospitals as well.

Our study objective was to compare the transfer rate to the ED for ultrasound imaging for patients presenting to the UC with soft tissue/musculoskeletal (ST/MSK) and first-trimester-pregnancy-related complaints prior to and after a POCUS training course.

## Methods

All UC providers (10) from the clinic participated in a 1-day POCUS training course on March 4, 2017. The training focused on 4 applications: aorta; renal; ST/MSK; and transabdominal first-trimester pregnancy ultrasound studies. The course was presented by the Denver Health Director of Pediatric Emergency Ultrasound—who is also the Director of the Pediatric Emergency Ultrasound Fellowship—along with several Denver Health emergency ultrasound fellows. The coursework included an overview of POCUS and its broad uses, instruction

Table 1. Demographic and Clinical Variables of Patients With Soft Tissue/Musculoskeletal Complaints			
	Prior to POCUS Training Course n=33	After POCUS Training Course n=18	p value
Mean Age in Years (SD)	46 (17)	48 (17)	0.73
Female (%)	15 (46)	8 (50)	0.77
Medicaid Insurance (%)	25 (76)	13 (81)	0.20
Median UC Triage Level (IQR)	3 (3–4)	3 (3–4)	0.68
Median Urgent Care LOS in Minutes (IQR)	77 (54–112)	65 (40–112)	0.51
Median ED Triage Level (IQR)	3 (3–3)	3 (3–3)	0.58
ED Ultrasound Performed (%)	10 (30)	4 (25)	0.70
Median ED LOS in Minutes (IQR)	296 (234–350)	324 (220–564)	0.37
<b>Disposition</b>			0.78
Admission (%)	18 (55)	9 (56)	
Discharge (%)	14 (42)	7 (44)	
Operating Room (%)	1 (3)	0 (0)	
IQR—interquartile range; LOS—length of stay; SD—standard deviation; UC—urgent care			

on the practical use of the specific ultrasound machine available in the UC, and standardized hands-on practice studies on multiple patients. Following the course, providers were evaluated on their clinic-performed ultrasound images and interpretations, which were reviewed for quality assurance by POCUS experts, with a goal of 25 scans for each of the 4 applications, aligned with hospital credentialing requirements.

Using retrospective electronic record chart review, all patients who presented to the UC with a ST/MSK or first-trimester pregnancy complaint were identified using ICD-10 diagnosis codes 10 months prior to POCUS training and 10 months following POCUS training. After an extensive search of all applicable ICD-10 codes, the codes utilized for ST/MSK complaints were L02.X, L03.X, L05.X, L08.9, M79.5, R19.XX, R22.XX, and T14.8XXA. The ICD-10 codes utilized for first-trimester pregnancy complaints were O02.X, O03.X, O20.X, O26.89X, O46.X, O99.89X, Z33.X, Z34.X, and Z3A.XX. The number of transfers to the ED for each of these complaints was identified from the UC transfer log—a manual log that records each transfer, including patient identification, complaint, reason for transfer, and method of transport.

Continuous variables with normal distributions were analyzed with a Student's t test. Continuous variables with non-normal distributions were analyzed with a Mann-Whitney U test. Categorical variables were evaluated with the chi-square test, and relative risk (RR) with 95% confidence intervals (CI) were calculated. A

p value of  $\leq 0.05$  was considered statistically significant. Analyses were performed using IBM SPSS Statistics, Version 28 (Armonk, New York).

## Results

### Soft Tissue/Musculoskeletal

During the time period before the training course, 40 (5.1%) out of 780 patients with ST/MSK complaints were transferred to the ED from the UC. Seven of those patients were excluded (5 patients were directly admitted without an ED visit; 2 patients did not present to the ED), leaving 33 patients for analysis. After the training course, 19 (2.2%) out of 871 patients with ST/MSK complaints were transferred from the UC. One of those patients was excluded (transferred to a different facility), leaving 18 patients for analysis. The patients in the precourse time period and postcourse time period had similar demographic and clinical characteristics (Table 1). The risk of ED transfer was 2.30 times (RR) higher (95% CI 1.27–4.14,  $p=0.0006$ ) in the time before the training course compared with after, which was statistically significant.

### First-Trimester Pregnancy

During the precourse time period, 45 (28%) out of 158 patients with first-trimester pregnancy complaints were transferred from the UC. Five of those patients were excluded (3 were transferred directly to the obstetrics service; 1 was transferred to another facility due to insurance; 1 did not present to the ED), leaving 40 patients

Table 2. Demographic and Clinical Variables of Patients With First-Trimester Pregnancy Complaints			
	Prior to POCUS Training Course n=40	After POCUS Training Course n=41	p value
Mean Age in Years (SD)	28 (8)	30 (7)	0.27
Medicaid Insurance (%)	37 (93)	35 (85)	0.22
Median UC Triage Level (IQR)	3 (3–4)	3 (3–4)	0.67
Urgent Care LOS in Minutes (SD)	98 (42)	85 (43)	0.20
Transfer For Ultrasound Imaging and Subspecialty Consultation (%)	40 (100)	41 (100)	0.32
Median ED Triage Level (IQR)	3 (3–3)	3 (3–3)	0.15
Median Quantitative hCG (IQR)	5333 (311–5333) n= 29	3872 (707–14882) n=34	0.66
Ultrasound Performed in the ED (%)	39 (98)	40 (98)	0.99
Median ED LOS in Minutes (IQR)	177 (145–218)	179 (130–230)	0.91
<b>Disposition</b>			0.72
Admission (%)	2 (5)	1 (2)	
Discharge (%)	37 (93)	38 (93)	
Operating Room (%)	1 (2)	2 (5)	

hCG—human chorionic gonadotropin; IQR—interquartile range; LOS—length of stay; SD—standard deviation; UC—urgent care

for further analysis. After the course, 43 (20%) out of 215 patients with first-trimester pregnancy complaints were transferred from the UC. Two patients were excluded (1 was transferred directly to the obstetrics service; 1 was transferred to another ED), leaving 41 patients for further analysis. The patients in the precourse time period and postcourse time period had similar demographic and clinical characteristics (Table 2). The risk of transfer was 1.42 times higher (RR) (95% CI 0.99–2.05,  $p=0.06$ ) before the training course compared with after, which was not statistically significant.

## Discussion

We were able to successfully create and implement a POCUS training course and QA program for a UC setting. To our knowledge, these are the first results of such a program to be published in the literature. Although we focused on 4 applications initially (aorta, renal, ST/MSK, and first-trimester pregnancy exam), the ST/MSK and first-trimester pregnancy applications were performed most often in the clinic. Furthermore, QA, including image and interpretation review and feedback, was necessary to develop and maintain ultrasound skills. The ongoing QA program not only provides feedback to the providers but also serves as a potential pathway for UC POCUS credentialing.

The UC POCUS program was effective and resulted

in a statistically significant 2-fold decrease in ED transfers for ST/MSK related complaints and a trend toward decreases in ED transfer for first-trimester-pregnancy complaints, thus expediting patient care.

While few studies from the United States assess the impact of POCUS on transfer rate to a higher level of care, a study from New Zealand reported that POCUS use by generalists in 6 rural hospitals decreased the rate of admission and transfer to an urban referral hospital by 4%.<sup>10</sup> The rural hospitals included were similar to UC clinics in the United States as only half had consultative ultrasound available during work hours, and 1 had computed tomography available. Another group of physicians working at a remote multiday music festival in British Columbia, Canada, found that POCUS use reduced ambulance transport off-site by 32%.<sup>11</sup> Further studies are needed to assess the impact of POCUS use on transfer rate and to assess for any potential patient harm if transfer did not occur.

The addition of POCUS in the UC clinic was not associated with a noted increase in length of stay (LOS) of the urgent care visit. Although not directly measured in this study, we can infer that by decreasing the transfer rate, we were able to decrease LOS for the entirety of the patient experience. Given the decrease in patient transfers, it is reasonable to assume patients spent less time in transfer, waiting in the ED waiting room, and

receiving care in the ED. Several studies have reported that the use of POCUS decreased LOS and expedited care in the ED and critical care settings.<sup>12-17</sup> LOS has been reduced for several patient groups including those with the following complaints: pelvic,<sup>13,17</sup> early pregnancy,<sup>16</sup> soft tissue,<sup>15</sup> appendicitis,<sup>14</sup> and shock.<sup>12</sup> POCUS use in UC appears to have the ability to significantly improve patient satisfaction by reducing the time spent receiving care.

Furthermore, we can reasonably assume that there was a reduction in costs for the patients because fewer patients were transferred to the ED for additional care. POCUS has also been shown in the literature to decrease patient costs.<sup>1,5,18</sup> For example, a 2019 study in a community ED in the United States found that POCUS use reduced costs by \$1,134.31 for privately insured patients, \$2,826.31 for out-of-network or uninsured patients, and \$181.63 for Medicare and Medicaid patients by avoiding additional testing.<sup>19</sup> POCUS may also offer an additional source of revenue for a UC clinic that is able to bill for the procedure.

Our study also suggests, given the decrease in transfer rate for patients with ST/MSK and first-trimester pregnancy complaints, decreased burden on the ED in terms of patient volume and utilization of resources. A reduction in transfer rate infers fewer ambulance transports, a lower ED volume, and a decrease in utilization of consultative radiology resources. A recent randomized controlled trial comparing lung POCUS with chest x-ray (CXR) in children suspected of having pneumonia in an ED showed a reduction in CXR use when POCUS was available.<sup>20</sup> The patients in the control arm had a POCUS exam and CXR. The investigational arm included patients who received a POCUS exam but the CXR was optional. Investigators found a 38% reduction in CXR use in the investigational arm, which reduced radiation exposure and cost. We did not directly assess ED resource utilization in our study, and future studies should explore these outcomes.

There are several limitations of our study including that it is a single-center study, which limits its generalizability to other urgent care centers. The study is retrospective, therefore, important variables may be absent, inconsistently recorded, or inaccurate in the analyzed data, and there may be other confounding factors. We did not directly study UC length-of-stay, the rate of consultative radiology orders, patient costs, and patient return visits, which are important outcomes and should be included in future studies.

## Conclusion

In this single urgent care setting, teaching UC providers POCUS skills resulted in a decreased percentage of patient transfers to the ED for ST/MSK and first-trimester pregnancy complaints, thus streamlining the care of the patient. ■

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# Recognizing and Managing Adrenal Crisis in Urgent Care: A Case Report

**Urgent Message:** Adrenal crisis is uncommon in the urgent care setting, but it can be rapidly fatal if diagnosis is missed. Early administration of hydrocortisone and fluid resuscitation with correction of electrolyte abnormalities are essential to reduce mortality.

Clayton R. Halford, PA-C

**Citation:** Halford C. Recognizing and Managing Adrenal Crisis in Urgent Care: A Case Report. *J Urgent Care Med.* 2026;20(10):19-22

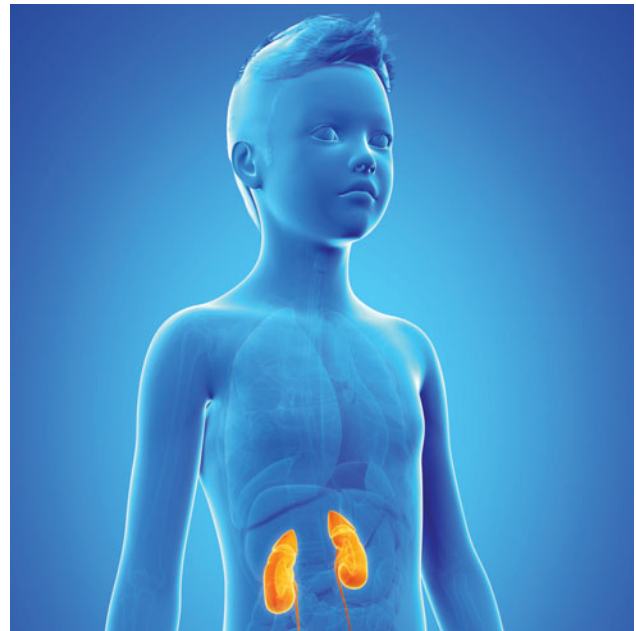
**Keywords:** adrenal crisis; urgent care; adrenal insufficiency; Addison disease; pediatric endocrine emergency; hyponatremia; hyperkalemia; hypoglycemia

## Abstract

**Introduction:** Adrenal (Addisonian) crisis is a rare but life-threatening endocrine emergency that can present to urgent care with nonspecific symptoms. Prompt recognition and early intervention with hydrocortisone, isotonic fluids, and correction of electrolyte abnormalities are critical to reducing morbidity and mortality.

**Presentation:** An 11-year-old previously healthy boy presented to urgent care with 24 hours of intractable vomiting, abdominal pain, fatigue, and dizziness, following 5 days of cold-like symptoms including cough, rhinorrhea, chills, and subjective fever. His parents had given him over-the-counter acetaminophen and ibuprofen with minimal relief.

**Physical Examination:** On examination, the patient appeared acutely ill and somnolent with intermittent lethargy. He was febrile, mildly tachycardic, and had dry mucous membranes. The abdomen was diffusely tender without peritoneal signs. Point-of-care glucose testing showed severe hypoglycemia. Intravenous access was established. Laboratory studies demonstrated hy-



ponatremia, hyperkalemia, and evidence of dehydration. Because of the hyperkalemia, a 12-lead electrocardiogram was performed and demonstrated tall tented/peaked T waves most prominent in the precordial leads. Emergency medical services was activated for transfer to a higher level of care.

**Diagnosis and Resolution:** In the emergency department, the patient received stress dosing of hydrocortisone based on the suspected diagnosis of adrenal crisis.

**Author Affiliation:** Clayton Halford, PA-C, Intermountain Health Urgent Care/Instacare, Utah North Region; Department of Physician Assistant Medicine, Weber State University. The author has no relevant financial relationships with any ineligible companies.

He was also treated for hypoglycemia, electrolyte abnormalities, and dehydration. Further diagnostic evaluation confirmed an adrenal crisis precipitated by an influenza A infection. Treatment included oseltamivir, hydrocortisone, and fludrocortisone. Upon hospital discharge, he was prescribed daily glucocorticoid and mineralocorticoid therapy.

**Conclusion:** Urgent care clinicians should maintain a high index of suspicion for adrenal crisis in patients presenting with unexplained shock or with the characteristic triad of hyponatremia, hyperkalemia, and hypoglycemia. Prompt administration of corticosteroids, aggressive isotonic fluid resuscitation, and rapid transfer to a facility with intensive care capabilities are essential to reduce morbidity and mortality.

### Introduction

Adrenal (Addisonian) crisis is a rare but life-threatening endocrine emergency that may present to urgent care or emergency settings with nonspecific symptoms, making early recognition particularly challenging.<sup>1,2</sup>

It results from an acute and severe deficiency of adrenal hormones—primarily cortisol and, in many cases, aldosterone—due to adrenal cortex failure.<sup>3</sup> Clinical manifestations often include profound fatigue, gastrointestinal distress, abdominal pain, altered mental status, and characteristic biochemical abnormalities such as hyponatremia, hyperkalemia, and hypoglycemia.<sup>2,4</sup>

Common precipitating factors include infection, surgery, trauma, abrupt withdrawal or reduction of chronic glucocorticoid therapy, and other acute physiological stressors.<sup>2,5</sup> Prompt recognition and immediate treatment with high-dose intravenous hydrocortisone and aggressive isotonic fluid resuscitation are critical to reducing morbidity and mortality.<sup>2,3,5</sup>

### Case Presentation

A mother brought her 11-year-old, previously healthy boy to the urgent care for 24 hours of persistent, nonbloody, nonbilious vomiting. He reported associated diffuse abdominal pain, described as crampy and moderate in intensity, without radiation, and significant fatigue and dizziness, particularly when standing. Five days prior to presentation, he developed upper respiratory symptoms, including a nonproductive cough, rhinorrhea, chills, and subjective fever. His parents administered over-the-counter acetaminophen and ibuprofen with minimal improvement. He had not had any diarrhea, hematemesis, melena, or hematuria. He had no recent travel or sick contacts, and no history of

similar episodes in the past. His past medical history and social history were unremarkable.

### Physical Exam

On presentation to urgent care, the patient's vital signs were as follows: temperature of 37.8°C (100.0°F); heart rate of 122 beats per minute (BPM); blood pressure of 92/58 mmHg; respiratory rate of 22 breaths per minute; and oxygen saturation of 97% on room air.

- **General:** Ill and fatigued, lying quietly on the examination table with intermittent episodes of lethargy
- **Oral:** Dry oral mucous membranes
- **Lungs:** Shallow breathing, otherwise clear to auscultation bilaterally
- **Cardiovascular:** Tachycardic with regular rhythm
- **Abdominal:** Mild, diffuse tenderness without rebound, guarding, or peritoneal signs

### Urgent Care Management

Based on the clinical presentation and vital signs, the triage nurse appropriately classified the case as urgent, prompting an immediate evaluation by a provider. An intravenous (IV) line was established, and point-of-care laboratory testing—including a complete blood count and a basic metabolic panel—was obtained (**Table 1**). A bedside fingerstick glucose measurement revealed hypoglycemia with a glucose level of 51 mg/dL. The patient appeared markedly somnolent, and 1 mg of intravenous glucagon was administered. A 500-mL bolus of normal saline was initiated. The hyperkalemia prompted a 12-lead electrocardiogram and cardiac monitoring, which revealed a narrow-complex tachycardia at 130 BPM and peaked T waves in leads V2–V4.

### Differential Diagnoses and Medical Decision Making

A broad differential diagnosis included acute viral gastroenteritis, dehydration, sepsis, appendicitis, and adrenal insufficiency. Given the urgent care findings and clinical concern for potential adrenal crisis, emergency medical services was activated for immediate transfer to a hospital with pediatric intensive care (PICU) capabilities.

### Emergency Department Course and Disposition

Upon arrival at the emergency department (ED), administration of intravenous hydrocortisone was provided based on the high suspicion for adrenal crisis. The patient was admitted to the PICU. Virology studies confirmed the presence of influenza A, the cause of his viral prodromal symptoms. This helped clarify the un-

Table 1. Laboratory Findings on Presentation			
Test	Result	Normal Range (Age 11, Male)	Interpretation
Sodium (Na <sup>+</sup> )	125 mmol/L	135–145 mmol/L	Low (Hyponatremia)
Potassium (K <sup>+</sup> )	6.3 mmol/L	3.4–4.7 mmol/L	High (Hyperkalemia)
Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	15 mmol/L	22–28 mmol/L	Low (Metabolic acidosis likely)
BUN (Blood Urea Nitrogen)	28 mg/dL	5–18 mg/dL	High (Azotemia)
Creatinine	1.1 mg/dL	0.3–0.7 mg/dL	High for age (Possible renal impairment or dehydration)

derlying etiology of his adrenal crisis. An adrenocorticotropic hormone (ACTH) stimulation test was performed, which confirmed the diagnosis of primary adrenal insufficiency (Addison disease) with acute adrenal crisis. The patient responded appropriately to therapy and was discharged home 4 days later with maintenance hydrocortisone and fludrocortisone.

### Epidemiology

Because adrenal crisis may present to urgent care with nonspecific symptoms, early recognition can be challenging.<sup>6</sup> For every 100 children with known adrenal insufficiency followed over 1 year, approximately 2.7–4.3 adrenal crisis events occur.<sup>7</sup>

### Cortisol, Aldosterone, and Pathophysiology

Addisonian adrenal crisis results from an acute and severe deficiency of adrenal hormones, primarily cortisol and often aldosterone, due to failure of the adrenal cortex.<sup>3</sup> The adrenal glands, located atop each kidney, consist of the cortex and medulla. The cortex produces 3 major classes of steroid hormones: glucocorticoids (cortisol); mineralocorticoids (aldosterone); and adrenal androgens (dehydroepiandrosterone [DHEA]).<sup>4</sup>

Cortisol is essential for maintaining vascular tone, blood pressure, and glucose homeostasis. It supports the body's response to stress by increasing gluconeogenesis, mobilizing energy stores, and enhancing catecholamine-mediated vasoconstriction.<sup>4</sup> Aldosterone regulates sodium and potassium balance, thereby controlling extracellular fluid volume and blood pressure by promoting renal sodium retention and potassium excretion. DHEA is a steroid hormone that functions primarily as an inactive precursor that is converted into more potent sex steroids—testosterone and estradiol.<sup>8</sup>

In Addisonian crisis, the deficiency of cortisol and aldosterone leads to impaired stress response, hypotension, hypoglycemia, and electrolyte abnormalities, particularly hyponatremia and hyperkalemia.<sup>4</sup> These pathophysiologic disturbances correlate directly with this patient's presentation of hypoglycemia and electrolyte abnormalities, as

well as his mild hypotension and fatigue.<sup>4</sup>

Crisis typically occurs during periods of physiological stress, such as acute illness, infection, trauma, or surgery, when the body's demand for cortisol increases but cannot be met due to adrenal failure. Without prompt treatment, this may progress to shock and multiorgan dysfunction.<sup>8,9,10</sup>

### Pathophysiology of Adrenal Insufficiency

The hypothalamic-pituitary-adrenal (HPA) axis regulates cortisol production. The hypothalamus secretes corticotropin-releasing hormone (CRH), stimulating the pituitary gland to release ACTH, which in turn stimulates the adrenal cortex to produce cortisol. Disruption at any point—hypothalamus, pituitary, or adrenal gland—can lead to adrenal insufficiency.<sup>3,11,12,13</sup>

- Primary adrenal insufficiency (Addison disease) results from direct adrenal gland dysfunction, most commonly from autoimmune destruction, but may also result from infections such as tuberculosis. This leads to deficiencies in cortisol, aldosterone, and adrenal androgens.<sup>3,11,12,13</sup>
- Secondary adrenal insufficiency results from pituitary failure to produce ACTH, often due to pituitary tumors, surgery, radiation, hemorrhage, or infiltrative diseases. This leads to cortisol deficiency. Aldosterone production remains largely preserved because it is primarily regulated by the renin-angiotensin system.<sup>3,11,12,13</sup>
- Tertiary adrenal insufficiency (often glucocorticoid-induced) results from hypothalamic suppression of CRH, usually due to chronic exogenous glucocorticoid therapy or abrupt steroid withdrawal.<sup>3,11,12,13</sup>

In primary disease, loss of cortisol-mediated feedback results in elevated ACTH levels, whereas in secondary and tertiary disease, ACTH levels are low or inappropriately normal.<sup>3,11,14,15,16</sup> In this patient's scenario, diagnostic testing with an ACTH stimulation test was necessary to identify and confirm primary adrenal insufficiency leading to adrenal crisis.<sup>13</sup>

## Clinical Presentation and Management

### Clinical Presentation

The initial clinical presentation is often vague, with symptoms such as fatigue (67%), hyperpigmentation (50.4%), dehydration (33%), and hypotension (31%). Laboratory findings may include hyponatremia (55%), hyperkalemia (32.7%), and hypoglycemia (33.7%).<sup>1,4</sup>

In this patient, the symptoms of fever, hypotension, tachycardia, dehydration, and the characteristic electrolyte triad (hyponatremia + hyperkalemia + hypoglycemia) raised a strong suspicion for adrenal crisis secondary to previously unrecognized primary adrenal insufficiency (Addison disease). His history revealed a preceding 5-day viral illness, later confirmed to be influenza type A. This infection significantly increased his physiologic cortisol requirement, but due to underlying adrenal insufficiency, his adrenal glands were unable to mount an adequate stress response.

The Endocrine Society guideline and large pediatric cohort studies support that the above clinical and laboratory findings are typical at presentation and confirm that infections or acute illnesses are common precipitants of adrenal crisis in children with undiagnosed or untreated adrenal insufficiency.<sup>2</sup>

### Management

Immediate administration of hydrocortisone should not be delayed in suspected adrenal crisis—even in outpatient or urgent care settings—as rapid treatment significantly reduces mortality. Guidelines emphasize initiation before laboratory confirmation because delays can lead to irreversible shock and death. Hydrocortisone (synthetic cortisol) is preferred over dexamethasone or other glucocorticoids because, at stress doses, it provides both glucocorticoid and mineralocorticoid activity, rapidly correcting hypotension, hyponatremia, and hyperkalemia. Its shorter half-life also allows easier titration as the patient stabilizes. If hydrocortisone is unavailable, dexamethasone may be used temporarily; however, its lack of mineralocorticoid activity necessitates concurrent mineralocorticoid replacement.<sup>2,4,10</sup>

### Ethics Statement

The patient was unable to be contacted as contact information on record was no longer active. Therefore, patient demographics and nonessential details have been altered to protect anonymity.

### Takeaway Points

- Adrenal (Addisonian) crisis is a rare but life-threatening endocrine emergency that may present with non-

specific symptoms. Prompt recognition and early intervention are critical to reducing mortality.

- Clinicians should consider adrenal crisis early in the differential diagnosis. Any ill patient with vomiting plus hypotension and/or altered mentation, along with the triad of hyponatremia, hyperkalemia, and hypoglycemia, warrants immediate empiric treatment for adrenal crisis.
- Increased physiologic stress—including acute illness, trauma, infection, or surgery—can unmask previously undiagnosed adrenal insufficiency. ■

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# The Placebo Effect and Its Clinical Implications in Urgent Care

**Urgent Message:** The placebo effect can produce clinical manifestations of various disease states, particularly for pain. It has practical clinical implications for urgent care clinicians who routinely recommend oral medications for pain.

Vinay Sharma, BS; Ariana M. Nelson, MD

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## Abstract

The placebo effect—the nonspecific beneficial effect of a medical treatment—involves complex psychological, biological, and physiological interactions. It was first described in the medical literature hundreds of years ago, with a definition that has evolved over recent decades. Much progress has been made in the disciplines of pharmacology, neuroimaging, and physiology in studying the placebo effect, which has contributed to an increased understanding of the neurological pathways, brain receptors, and neurotransmitters responsible for placebo responses. As biomedical ethics has progressed since the early 20<sup>th</sup> century, researchers and clinicians have wrestled with ethical considerations surrounding the use of placebos in both research and clinical practice. Despite these ethical considerations, placebo-related research continues to grow as medical science strives to elucidate the factors that both contribute to and hinder the placebo response across disease states. This review article will summarize our current understanding of the placebo effect including historical perspectives and the evolution in our knowledge of the underlying mechanisms, modulating factors, and ethical considerations.



While the placebo effect can affect clinical manifestations of various disease states, this review will focus on the placebo effect as it pertains to pain—one of the most common urgent care complaints.

## Introduction

The word “placebo” is Latin for “I wish to please.” While the term “placebo effect” appeared relatively recently, placebo effects have been described in medicine

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**Author affiliations:** Vinay Sharma, BS, University of California, Irvine Medical Center. Ariana M. Nelson, MD, University of California, Irvine Medical Center. Authors have no relevant financial relationships with any ineligible companies.

*“Research investigating the placebo effect in recent decades has uncovered the power of placebo and revealed ways in which this phenomenon can be leveraged in safely treating patients, especially those afflicted with pain.”*

for hundreds of years. One of the earliest mentions of the concept appeared in 1572 in a work by the French philosopher Michel de Montaigne who wrote “there are men on whom the mere sight of medicine is operative.”<sup>1</sup> In 1799, John Haygarth first demonstrated the placebo effect experimentally by testing “Perkins Tractors”—metal rods thought to draw illness out of the body. Haygarth found that Perkins Tractors were no more effective in treating illness than sham wooden rods, effectively demonstrating the power of placebo lay within the patient’s belief.<sup>2</sup>

One of the earliest reports of the use of a placebo as an experimental control occurred in 1784 when Louis XVI, king of France, commissioned Benjamin Franklin and Antoine Lavoisier to test Franz Mesmer’s “discovery” of what he termed “animal magnetism.” Animal magnetism, Mesmer claimed, was an invisible force that caused illness when the force was interrupted by “crises.” To examine Mesmer’s claims, Franklin and Lavoisier exposed patients to “mesmerized” objects or untreated objects (ie, control placebos). They found that patient responses to the objects were equivalent regardless of whether the objects were “mesmerized” or not.<sup>3</sup>

### The Placebo Effect

In modern times, the placebo effect has been conceptualized in 2 different ways: clinically in practice; and experimentally in research.<sup>4</sup> The clinical placebo effect consists of prescribing medication or treatment that has no known effect for a patient’s condition, such as the idea of the “sugar pill.”<sup>4</sup> With the advent of the randomized controlled trial, the placebo effect has also become synonymous with the average aggregate response of patients receiving placebo controls.<sup>5</sup> With this expansion in the definition of placebo, there has been a deflation in the value and utility of placebo in clinical medicine.<sup>4</sup>

Novel therapies are usually validated by comparing their effect to a placebo—which is equated to “no treatment.” It is important to note, however, that there is typically an effect from placebo itself. In other words, treatments that are dismissively said to be “no better than placebo” may in fact be more effective than no treatment. In some cases, improvement in a patient’s condition may be attributed to an intervention, rather than to a placebo effect. Research investigating the placebo effect in recent decades has uncovered the power of placebo and revealed ways in which this phenomenon can be leveraged in safely treating patients, especially those afflicted with pain.

### Mechanisms

The neurophysiological pathways involving pain and the placebo effect have been extensively studied using pharmacological, neuroimaging, behavioral, and physiological approaches. These studies have demonstrated that the placebo effect is multifactorial and rooted in the endogenous opioid, cannabinoid, and reward pathways.<sup>6</sup>

In 1978, Levine and colleagues ushered in an era of renewed interest in the placebo effect when they demonstrated that placebo-induced analgesia could be reversed with naloxone, implying that the placebo effect is mediated, at least in part, by the  $\mu$ -opioid system.<sup>7</sup> It was hypothesized that placebo analgesia arose from descending pain-modulating systems originating in the cerebrum. Since then, many groups have attempted to directly implicate the role of the endogenous opioid system in the placebo effect. Placebo administered with expected analgesic properties provides a morphine-like increase in pain endurance, which is reversed with naloxone.<sup>8,9</sup>

Zubieta et al. linked this placebo-induced activation of  $\mu$ -opioid receptor-mediated neurotransmission to specific associative, higher-order brain regions, such as the pregenual and subgenual areas of the rostral anterior cingulate cortex, dorsolateral prefrontal and insular cortex, and nucleus accumbens.<sup>10</sup> Moreover, placebo analgesia was shown to be related to decreased brain activity in some of these regions and increased brain activity in the prefrontal cortex with pain anticipation.<sup>11,12</sup> These regions are important for pain modulation because they integrate sensory, affective, cognitive, and motivational aspects of pain, enabling top-down control over both the perception and emotional response to pain through interconnected cortico-limbic circuits. These regions modulate pain by influencing descending inhibitory pathways, processing pain-related emotions, and linking

*“The placebo effect is not merely a passive phenomenon, but rather a dynamic process influenced by learning, temporal factors, and neurological mechanisms.”*

pain relief to reward mechanisms.<sup>13</sup>

The cannabinoid system's role in the placebo effect has also been explored using pharmacological antagonists to reverse placebo effects. One 2011 study by Benedetti et al. conditioned participants with ketorolac, a nonopioid pain medication. Participants in this group had reductions in pain even when given a placebo. This effect was reversed when the participants were given the cannabinoid type 1 receptor antagonist rimonabant, which suggests that the placebo effect is mediated at least in part by the endocannabinoid system.<sup>14</sup>

Recent placebo research has highlighted that having positive expectations about pain relief is a key factor in eliciting the placebo analgesic response. This effect is driven by the patient's belief or anticipation that a treatment will be effective, which activates endogenous pain modulatory systems and leads to reduced pain perception. Positive expectation of placebo analgesia is related to an increase in dopamine signaling in the nucleus accumbens, an area of the brain that is heavily involved in the reward pathway.<sup>15</sup> Moreover, subjects' individual variations in nucleus accumbens response to reward affected the formation of placebo analgesia.<sup>15</sup> The opposite is also true. Decreased dopamine signaling in the nucleus accumbens and decreased opioid release are associated with worse pain scores.<sup>16</sup> Clinically, this could indicate that if a patient expects little or no pain relief from a treatment, they are less likely to experience meaningful pain reduction.

### Demographics and Contributing Factors

Variation in individual responses to placebo is influenced by patient factors and characteristics of the caregiver. Contextual factors, such as verbal suggestion, dictate the effectiveness of the placebo effect. Levine and colleagues demonstrated that postsurgical patients experience greater levels of analgesia when a caregiver informs the patient of morphine administration as opposed to covert continuous infusion through a pump.<sup>7,17</sup> A simple verbal cue was so powerful in this study, that

administering saline was as potent as a 6-8 mg dose of morphine.<sup>17</sup>

This phenomenon is also present with nonopioid medications. Verbal suggestion reduced the medication required to observe a 50% reduction in pain as well as time course to significant pain reduction with medications such as buprenorphine, tramadol, ketorolac, and metamizole.<sup>18</sup> These findings alone have clinical implications for urgent care clinicians who routinely give patients oral medications, such as acetaminophen, for pain. Simply verbalizing to the patient that they are receiving medication “to help relieve pain” may result in meaningfully greater analgesic effects.

Patient responses to placebo are significantly influenced by a given patient's prior exposure to and benefits from analgesic interventions. Numerous studies have shown that previous experiences with pain relief can induce a placebo effect. Moreover, the combination of prior conditioning to a treatment and positive expectations can produce even more robust placebo effects.<sup>8,19</sup>

In a study involving patients with ischemic arm pain, subjects were initially conditioned with morphine over several days. Subsequently, when given saline, those informed they were receiving morphine reported a more substantial reduction in pain compared to those who were told they were given antibiotics.<sup>8</sup>

Colloca and Benedetti demonstrated that these learned responses also have a temporal effect.<sup>20</sup> Participants were exposed to a conditioning procedure in which the intensity of painful stimulation was reduced covertly without the knowledge of the participants to create the illusion that an analgesic treatment was effective. This procedure produced placebo responses that lasted up to 7 days.<sup>20</sup>

Interestingly, conditioning with negative results produces poorer placebo effects. This reduced placebo analgesia is correlated with higher activation of the posterior insulae (involved in the regulation of afferent nociceptive pain processes) and decreased activation of the right dorsolateral prefrontal cortex (involved in the formation of placebo effects).<sup>11,21</sup> These learned placebo effects are strengthened and last longer with more conditioning trials.<sup>22</sup> Taken together, these studies emphasize the complex interplay between prior experiences, conditioning, and expectations in shaping placebo responses to pain management. The placebo effect is not merely a passive phenomenon, but rather a dynamic process influenced by learning, temporal factors, and neurological mechanisms. Additionally, these findings suggest that in patients without beliefs about the efficacy of oral pain medications such as acetaminophen,

*“Unfortunately, it is practically difficult to ascertain whether an individual patient is amenable to a deceptive placebo treatment, leaving clinicians in a perpetual dilemma when faced with clinical scenarios where they feel a patient may improve with a placebo treatment.”*

a placebo effect conferring greater analgesic response would be expected. Patients who believe acetaminophen “doesn’t work” will not likely experience improved analgesia.

Furthermore, extrinsic factors, such as healthcare provider characteristics, have also been shown to contribute to the likelihood of placebo responses. Patients treated by more empathetic clinicians, for example, experienced a higher degree of placebo analgesia compared to those treated with less empathy.<sup>23</sup> Empathy from nonclinicians also can enhance placebo analgesia. Participants exposed to a noxious cold stimulus reported lower pain scores when a friend or stranger made encouraging or reassuring remarks, validated their feelings, and expressed concern.<sup>24</sup> This suggests that social support also has an analgesic effect and may mediate a portion of the placebo response.

Clinicians can leverage this phenomenon to ease pain by focusing on building rapport and trust with a patient and approaching encounters with a supportive demeanor. This has been demonstrated in a study of patients with irritable bowel syndrome (IBS) where subjects in the study experienced significantly greater improvement in IBS symptoms when clinicians focused on rapport by maintaining a positive and engaging demeanor through active listening, empathy, and confidence when treating patients.<sup>25</sup>

Nonverbal behaviors, such as facial expressions, affect placebo analgesia as well. Specifically, a happy facial expression was shown to increase placebo analgesia when compared with neutral or negative facial expressions in 1 study.<sup>26</sup> Clinician appearance can also affect the magnitude of patients’ placebo responses. Clinicians wearing more professional clothing, for instance, was shown to positively correlate with lower pain scores.<sup>27</sup>

### Ethical Considerations

As detailed in this literature review, placebos can create powerful, objective, and subjective responses. Despite this, the ethics of placebo use continues to be a topic of debate in clinical practice. For a placebo to be most effective, it is imperative that patients believe that the inert pill or sham procedure being administered has true therapeutic value. This belief, in turn, must be imparted by a clinician.

Ethical concerns begin to arise when clinicians face the dilemma of conveying the therapeutic potential while simultaneously knowing that the treatment is inert. While the clinician may be well-intentioned, misleading patients infringes upon patient autonomy. The American Medical Association thus has formalized the following position on placebo use in clinical practice: “...the use of a placebo without the patient’s knowledge may undermine trust, compromise the patient-physician relationship, and result in medical harm to the patient.”<sup>28</sup>

Autonomy is one of the core pillars of biomedical ethics, defined as the ability to make decisions for oneself without coercion or limitations such as an inadequate understanding that prevents meaningful choice.<sup>29</sup> Thus, clinicians have a duty to refrain from interfering with patients’ ability to choose freely and thus provide accurate information to allow the patient to make that choice. These obligations together are required to properly obtain informed consent.

The patient-clinician relationship must also be examined when considering the ethics of placebo use in clinical medicine. Trust is one of the most critical yet fragile parts of a therapeutic relationship.<sup>30</sup> The use of placebos without explicit patient consent can severely undermine this trust. Once broken, the bond between patient and clinician may be irreparably damaged. Patients may become skeptical of future treatments, hesitant to disclose crucial information, or even avoid seeking necessary medical care altogether.

In contrast, advocates of placebo treatments argue that deceptive placebos are justifiable in certain clinical situations. Those who espouse this view cite the ethical principle of beneficence and that the safety and efficacy of placebos may outweigh infringements on patient autonomy. Extensive research has demonstrated that placebo treatments can match or even surpass the effectiveness of conventional treatments, especially for pain.<sup>31</sup> Placebo may be an even more attractive option when other conventional therapies have been exhausted.<sup>32</sup> In a comparative study, from a patient perspective, placebo treatments were believed to be ac-

ceptable in general by 25% of survey participants. In the same survey, 63% of participants agreed that placebo treatments were acceptable if treating a patient who is terminally ill.<sup>33</sup>

Unfortunately, it is practically difficult to ascertain whether an individual patient is amenable to a deceptive placebo treatment, leaving clinicians in a perpetual dilemma when faced with clinical scenarios where they feel a patient may improve with a placebo treatment.

### Novel Approach to Placebo Use

In recent years, a novel approach to placebo use has been proposed. The nondeceptive use of placebos would theoretically side-step the ethical hurdles associated with intentionally misleading patients. One method of doing so is to use a neutral disclosure.<sup>34</sup> These disclosures communicate that the medication may help with the patient's disease, but are vague enough to maintain the illusion required for the placebo to work effectively.<sup>32</sup> Many argue that this method of disclosure avoids ethical dilemmas because the placebo may positively modulate the patient's symptoms.<sup>32</sup> However, opponents to this approach cite that patients reasonably assume that prescribed treatments have been tested and approved for their specific condition. While a vague "nondeceptive" disclosure may not contain any lies, it conveys the impression that the prescribed medication will have active ingredients designed to treat pain.<sup>34</sup> Therefore, this method of disclosure still violates the principles of informed consent.

### Open-Label Placebos

A final strategy, arguably the most ethically defensible, involves prescribing open-label placebos (OLP). Recent research has demonstrated that even placebos without deception may be effective in treating certain symptoms.<sup>35,36</sup> Researchers are actively exploring how open-label placebos can be prescribed ethically while limiting the influence of patient expectations and avoiding infringements on patient autonomy in order to promote placebo responses.<sup>34,35</sup>

Significant efforts are being directed into researching the effect of OLP on caring for common presenting complaints in the urgent care setting. One group found that OLP made of echinacea extract reduced cold symptom duration and severity compared to no placebo. This effect was greater in patients who believed echinacea was beneficial, regardless of whether the pills actually contained echinacea.<sup>37</sup> Another group demonstrated that OLPs improved quality of life and pain-related disability in patients with chronic mi-

*"The placebo effect is a complex set of physiologic responses, which can produce profound analgesic effects."*

graines.<sup>38</sup> While effective medications exist for symptomatic management of migraine, OLPs may be used as an adjunct to improve care. Moreover, when prescribing OLPs, clinicians should leverage verbal suggestion, patient expectation, and empathetic patient interactions to maximize the placebo effect.

### Conclusion

The placebo effect is a complex set of physiologic responses, which can produce profound analgesic effects. Sophisticated studies have elucidated the involvement of endogenous opioid, cannabinoid, and reward pathways to substantiate the mechanism by which inert substances or treatments can reduce pain. Studies have also shed light on the various patient, clinician, disease, and situational factors which affect the likelihood of placebo response.

While certain variables are outside of clinician control, data support the importance of rapport between clinician and patient in favoring positive expectations and thus more robust placebo responses. However, ethical considerations surrounding the use of placebos in clinical practice remain a significant challenge. Future research should focus on developing standardized protocols for ethically leveraging placebo responses in clinical practice, as well as investigating the long-term outcomes for patients receiving placebo.

By embracing a nuanced understanding of placebo responses, clinicians can potentially enhance pain management strategies without exposing patients to many of the harms associated with active ingredient therapies and nonsham procedures. Given the ubiquity of pain in many clinical settings, including urgent care, clinicians who understand how patient expectations influence placebo responses and those who can invoke the placebo effect are likely to provide their patients better pain control without exposure to excess risk.

### Takeaway Points

- The placebo effect is mediated by the brain's endogenous opioid, cannabinoid, and reward pathways,

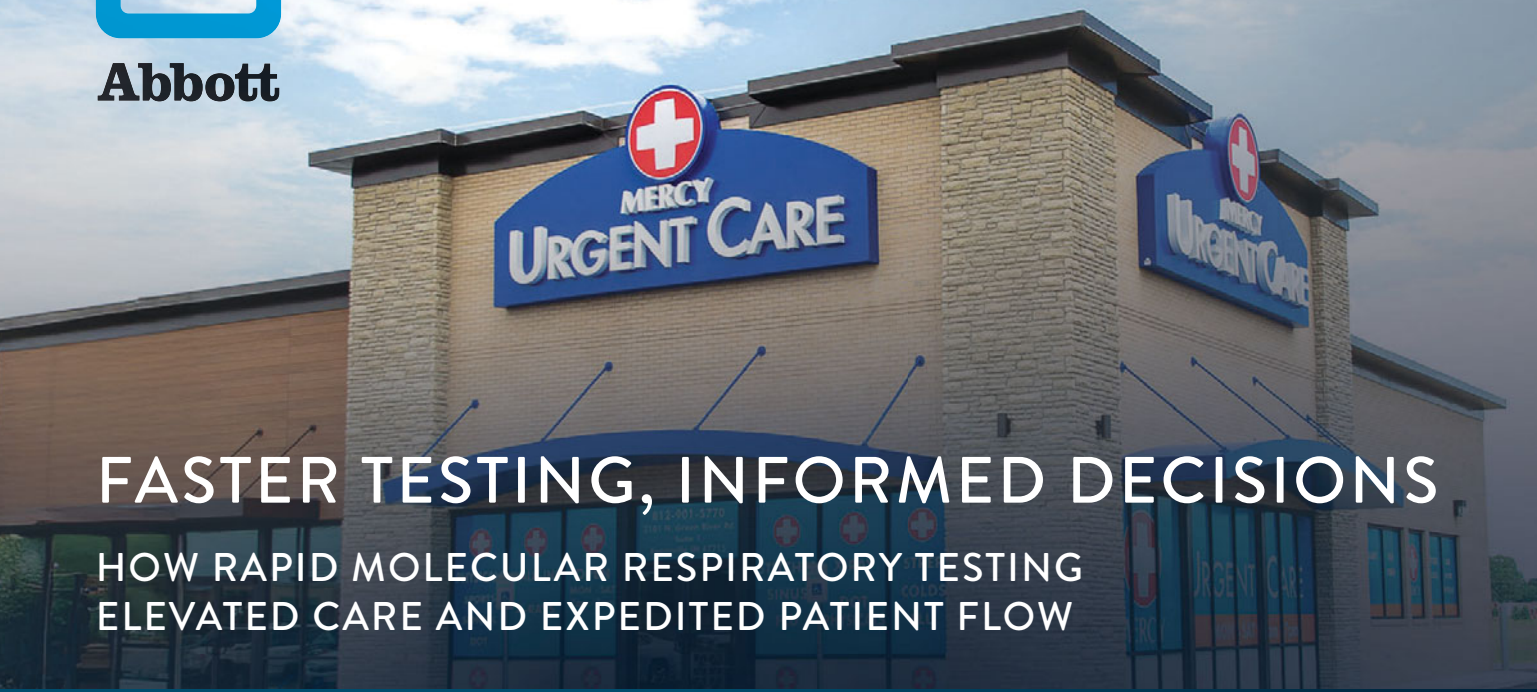
leading to measurable changes in brain activity and pain perception.

- The strength of the placebo response is influenced by a complex interplay of patient factors (eg, prior experiences), clinician characteristics (eg, empathy and demeanor), and contextual cues (like verbal suggestion and conditioning), all of which can be leveraged in clinical practice.
- While placebos can be highly effective, especially for pain, their traditional use requires deception, which undermines patient autonomy and trust. Emerging research on open-label placebos (given without deception) offers a promising and more ethically defensible path to harness this powerful effect in medicine. ■

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# FASTER TESTING, INFORMED DECISIONS

HOW RAPID MOLECULAR RESPIRATORY TESTING  
ELEVATED CARE AND EXPEDITED PATIENT FLOW

## SITE PROFILE

### GATEWAY / MERCY URGENT CARE

6  
urgent care  
locations

4 - 7  
exam rooms  
per site

81,000  
annual  
patient visits

40%  
respiratory  
illness visits

66.9%  
privately  
insured

## OVERVIEW

This case study highlights how an urgent care network improved speed and efficiency of patient care for respiratory illnesses. After identifying that up to 90% of respiratory test results were not available during the patient visit, the practice implemented a two-pronged strategy: redesigned clinical workflows and introduction of more rapid molecular testing directly into exam rooms. The efficiencies improved the quality and timeliness of patient visits, maintained high patient satisfaction, elevated provider satisfaction, and decreased exam room turnover time to increase the number of patients seen per day.

## HIGHLIGHTS

The combination of workflow modifications and placement of multiple ID NOW™ rapid molecular instruments into each patient exam room led to quantifiable improvements in time to results and patient care.

- **100%** test results available in time for clinical decisions
- **33.3%** reduction in diagnostic test time
- **14.8%** reduction in length of patient visits
- **8%** increase in potential patient visits
- **64.7%** decrease in patients needing > 1 test
- **43.8%** decrease in strep A pharyngitis workup time<sup>†</sup>

## FOCUSED ON RESPIRATORY TESTING

Gateway / Mercy Urgent Care operates six urgent care sites across southwest Indiana and western Kentucky. Care is provided by Advanced Practice Registered Nurses (APRNs), supported by triage and x-ray technicians, floating staff, and front desk personnel. Respiratory complaints are the most common reason for patient visits, driving over 46,000 tests annually. Prior to workflow adjustments, patient wait times averaged 16 minutes, with visits lasting 39.5 minutes from arrival to check-out. Based on their respiratory illness workload and commitment to delivering top-tier care, the practice evaluated the speed and efficiency of its respiratory visit workflows for improvement opportunities.

## PRIOR TESTING APPROACH AND CHALLENGES

### RESPIRATORY PANELS

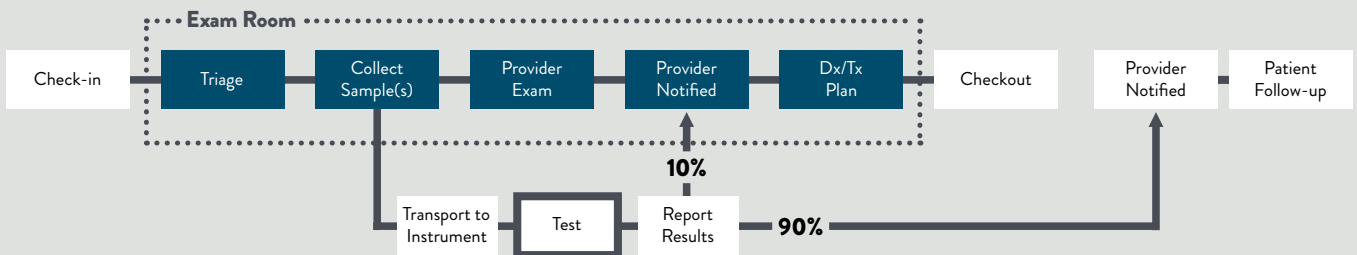
Each location had four molecular instruments positioned in a central hallway, running respiratory panels of up to 15 tests (**Figure 1**). With test times ranging from 15 to 45 minutes, results were often not available during the patient visit. Clinicians frequently needed to make empiric diagnoses and treatment decisions, while staff managed additional follow-up to communicate results and adjust care plans. Compounding these operational challenges, growing payer non-coverage for panel testing placed additional financial strain on both the practice and its patients.

### STREP A ANTIGEN

Because their existing molecular platform did not support strep A testing, the urgent care network relied solely on rapid antigen testing for patients with suspected strep A pharyngitis. While guidelines and the package insert recommend confirming negative results with lab cultures, doing so added over 20 minutes of staff time to process send-outs. As a result, only 3.5% of negative tests were sent for confirmation, potentially increasing the risk of missed diagnoses or issuing unnecessary antibiotic prescriptions.

Up to **90%** of respiratory test results were not available in time for clinical decisions.

Figure 1. PRIOR WORKFLOW – Molecular Panel Testing in Hallway Lab



## PRACTICE NEEDS

The management and clinical teams reviewed current practices and identified key areas for enhancement that would improve workflow and patient care.

### TESTING

- Fast and highly sensitive molecular technology
- Reduce unnecessary strep A send-outs and call-backs

### CLINICAL

- Test results available during patient visit
- Confidently diagnose with fewer tests

## REQUIREMENTS FOR IMPLEMENTATION

Management and clinical staff determined that any proposed change within their network must meet the four adoption criteria below to be considered for implementation.

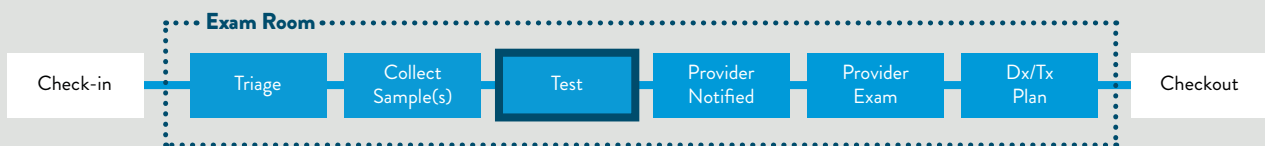
- 1 MAINTAIN PATIENT FLOW**  
Visits must remain quick and efficient.
- 2 BE CLINICALLY SOUND**  
Care needed to remain of high quality.
- 3 SATISFY PATIENTS**  
Maintain high (≥ 90%) Net Promoter Scores.
- 4 REMAIN PROFITABLE**  
The practice needed to continue to be solvent.

## PRACTICE IMPROVEMENTS

Based on the criteria established and product evaluated, Gateway / Mercy revised their clinical workflow to implement faster rapid molecular instrumentation. The practice transitioned to the ID NOW™ molecular instrument and moved testing from the hallway directly into the patient exam room (Figure 2). The network also updated their triage protocol to improve test selection for respiratory patients.



Figure 2. REVISED WORKFLOW - ID NOW™ in Each Exam Room



*“As a prior laboratory owner, molecular testing was essential for providing high-quality patient care. We just needed an easier and faster test to support timely clinical decisions.”* – John McNulty, Owner

## IMPLEMENTATION

The ID NOW™ instrument implementation was validated and piloted in the main office. Staff was trained on the new procedures, with a new location going live each week. To quantify the impact of the change, the practice measured staff time for new workflows and patient satisfaction (through Net Promoter Scores).

## THE IMPACT OF CHANGE

With the placement of ID NOW™ molecular testing in each patient exam room, testing time was reduced by 6 - 33 minutes, a time savings of 33.3%. Respiratory test results were available during every patient visit, allowing clinicians to make informed treatment decisions in real time. Strep A molecular testing eliminated 26.2 minutes per negative Strep A antigen testing confirmation, a 43.8% time savings. A more targeted symptom-based triage strategy reduced the need for more than one respiratory test by 64.7%.

As a result of these savings, there were notable improvements in patient visit duration and exam room turnover.

VISIT DURATION	5.8 minutes saved, a 14.8% decrease
EXAM ROOM AVAILABILITY	1,620 added hours per year without increased staffing
PATIENT THROUGHPUT	Up to 6,500 potential additional patient visits annually without increased staffing, an 8% increase
PATIENT VISIT REVENUE	\$696,000 potential additional annual revenue without increased staffing

Net Promoter Scores were maintained or increased to 92-95%, indicating high patient satisfaction. Clinicians were highly satisfied with improved exam room efficiency and reduced testing bottlenecks.

*“ID NOW™ allowed us to operate at the highest possible level for patient care and patient capacity – the impact has been extremely positive for both patients and the practice.”*

– Kristen Beers, Chief Operating Officer

## CONCLUSION

Across a 6-site urgent care network, adjusting patient triage and implementing ID NOW™ molecular testing in patient exam rooms eliminated molecular panel testing, reduced reliance on antigen testing and improved the availability of molecular test results during the patient visit. These changes led to shorter patient visits, streamlined staff workflows, and improved exam room availability all while maintaining or increasing patient satisfaction. This initiative highlights how strategic diagnostic investments can drive scalable and sustainable patient-centered improvements in urgent care.

TO LEARN MORE, CONTACT YOUR LOCAL ABBOTT REPRESENTATIVE OR VISIT [GLOBALPOINTOFCARE.ABBOTT](https://GLOBALPOINTOFCARE.ABBOTT)

<sup>1</sup>Staff workflow time for negative strep A antigen send-outs.

This material is intended for a U.S. audience only. The results shown here are specific to the implementation of ID NOW™ into one urgent care network and may differ from those achieved by other institutions. This case study was jointly developed with support from Gateway / Mercy Urgent Care and Abbott. Data and input were provided by Gateway / Mercy Urgent Care. Financial support for the time to develop this case study was provided by Abbott.

**References**

1. ID NOW™ Strep A 2 clinical trial data, held on file.

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# Occult Presentation of Necrotizing Fasciitis With Subtle Clinical Findings: A Case Report

**Urgent Message:** Necrotizing fasciitis may present without visible soft tissue abnormalities. Therefore, clinical signs and symptoms—including localized pain and tachycardia—are findings that should warrant further clinical investigation.

Megan Finch, BS; Brooke Ommert, BS; Zuha Nazir, BS; Michael B. Weinstock, MD

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**Keywords:** necrotizing fasciitis; urgent care; soft tissue infection; leg pain; deep vein thrombosis; pain out of proportion; tachycardia; septic shock

## Abstract

**Introduction:** Necrotizing fasciitis (NF) is a severe, rapidly progressing soft tissue infection. Early NF may present to urgent care without visible soft tissue abnormalities. As such, clinical signs and symptoms, including localized pain with tachycardia, should warrant further clinical investigation.

**Case Presentation:** A 43-year-old male presented to the emergency department (ED) with right posterior knee pain for 3 days. He denied redness, swelling, pitting edema, chest pain, shortness of breath, or local tenderness. Four days prior, he had been treated for influenza-like illness at an urgent care (UC) center and was prescribed oseltamivir. From the ED, he was discharged and scheduled for an outpatient ultrasound (US) due to suspicion for a deep vein thrombosis (DVT). However, he returned to the ED the following morning, complaining of worsening leg pain and new swelling.



**Physical Exam:** The physical exam during his first ED visit was remarkable only for tachycardia. During the following morning's ED visit, a physical exam revealed worsening tachycardia, unilateral leg swelling, calf tenderness, and mottled skin discoloration of the medial malleolar region.

**Author Affiliations:** Megan Finch, BS, Lincoln Memorial University-DeBusk College of Osteopathic Medicine. Brooke Ommert, BS, Lincoln Memorial University-DeBusk College of Osteopathic Medicine. Zuha Nazir, BS, Lincoln Memorial University-DeBusk College of Osteopathic Medicine. Michael B. Weinstock, MD, Adena Health System; Department of Emergency Medicine, Wexner Medical Center at The Ohio State University; *The Journal of Urgent Care Medicine*. Authors have no relevant financial relationships with any ineligible companies.

**Final Diagnosis:** The patient continued to decline after arriving at the ED. Computed tomography revealed diffuse subcutaneous and intermuscular fascial edema consistent with NF. Operative debridement demonstrated infection extension into his thorax. He developed worsening septic shock, organ failure, and cardiac arrest. He later died. The final diagnosis was necrotizing soft tissue infection that resulted in septic shock with multi-organ failure and death.

**Resolution:** Despite aggressive management, the patient died within 24 hours. The case later proceeded to litigation and was settled before trial.

**Conclusion:** It is important that clinicians maintain a broad differential and recognize concerning elements of history or exam that may warrant further workup or emergent referral to a higher level of care.

### Introduction

Necrotizing fasciitis (NF) is an infection characterized by rapid progression of soft tissue necrosis, pain out of proportion to physical exam, crepitus, erythema, and edema. While some cases of NF include skin discoloration secondary to tissue death, it is important to recognize that early NF may present without physical exam findings (as opposed to cellulitis). Clinical signs and symptoms, such as unexplained tachycardia, could suggest systemic toxicity and warrant further investigation. High clinical suspicion necessitates emergency department (ED) referral for labs, imaging, and/or possible emergent surgical debridement without delay. Early operative intervention is associated with improved survival outcomes, and surgical treatment delayed more than 6 hours from symptom onset is associated with increased mortality.<sup>1</sup>

### Case Presentation

A 43-year-old male presented to the ED with 10/10 right posterior knee pain for 3 days.

- **Past medical history:** He was acutely ill prior to the onset of knee pain with a 40°C (102°F) fever, myalgias, congestion, and cough. He sought care at an urgent care (UC) center. At the UC, he received negative test results for both influenza and streptococcal pharyngitis but was treated with oseltamivir due to high clinical suspicion of influenza.
- **History of present illness:** Now in the ED 4 days after the UC visit, the patient denied redness, swelling, edema, chest pain, shortness of breath, or local tenderness. He had been tolerating fluids and tak-

ing acetaminophen and ibuprofen as needed for the pain.

- **Past surgical history:** None.
- **Social history:** He denied drug and alcohol use.

### Physical Exam

The patient's vitals in the ED included: blood pressure of 105/63 mmHg; heart rate of 114 beats per minute; temperature of 36.7°C (98.0°F); respiration of 18 breaths per minute; and oxygen saturation of 100% on room air.

### Medical Decision Making

The patient's initial work-up considered deep vein thrombosis (DVT) due to his presenting symptom of unilateral leg pain. His labs were limited to a basic metabolic panel (BMP) as well as D-dimer, which was found to be elevated.

- **D-dimer:** 1140 ng/mL (normal: 0–599 ng/mL) (high)
- **Creatinine:** 1.4 mg/dL (normal: 0.40–1.20 mg/dL) (high)
- **Chloride:** 95 mmol/L (normal: 101–111 mmol/L) (low)
- **Sodium:** 132 mmol/L (normal: 130–142 mmol/L)
- **Potassium:** 3.6 mmol/L (normal: 3.8–5.0 mmol/L)
- **CO<sub>2</sub>:** 23 mmol/L (normal: 21–31 mmol/L)
- **Blood urea nitrogen:** 15 mg/dL (normal: 7–18 mg/dL)
- **Calcium:** 9.1 mg/dL (normal: 8.4–10.2 mg/dL)

Since he was initially deemed clinically stable with no visible limb-threatening symptoms, he was considered low risk for DVT. He received 1 dose of oral apixaban for anticoagulation and was discharged with a referral for outpatient ultrasound (US) given the suspicion of DVT. Further assessment of his tachycardia, such as a repeat set of vitals, was not performed.

### Differential Diagnosis

The differential diagnosis for this patient included DVT, NF, pulmonary embolism, acute limb ischemia, compartment syndrome, cellulitis, rhabdomyolysis, electrolyte abnormalities, and myositis. Many of these conditions may be differentiated with laboratory evaluation and physical examination. However, soft tissue infection and DVT can be difficult to differentiate, as they may present similarly with erythema, edema, warmth, and tenderness of the skin.<sup>2</sup> Cellulitis involves the lower extremity in 70%–80% of cases, consistent with this patient's symptoms.<sup>2</sup> Documentation from the initial visit focused primarily on exclusion of DVT and pulmonary embolism, with limited discussion of alternative diagnoses.

### Final Diagnosis

The following morning, the patient returned to the ED via ambulance, complaining of worsening right lower extremity pain and swelling. He denied chest pain, shortness of breath, trauma, or injuries. A physical exam revealed worsening tachycardia, unilateral leg swelling, calf tenderness, and mottled skin discoloration of the medial malleolar region.

Additional workup was initiated during this ED visit, including a CT scan that revealed diffuse subcutaneous and intermuscular fascial edema. Due to the severity of his condition, he was transferred to a different hospital for intensive care and surgical intervention. Operative debridement and right hip disarticulation revealed findings suggestive of a necrotizing soft tissue infection. He was ultimately diagnosed with NF, leading to septic shock with multiorgan failure, which resulted in death the next day.

### Indications For Referral to ED

A referral to the ED can facilitate direct admission to the hospital for medical treatment and prevent delayed diagnosis and management of NF. Indications for referral include the following:<sup>1,2,3,4</sup>

- Pain out of proportion to physical exam
- Sudden onset or rapid progression of symptoms
- Leg coolness, cyanosis, or numbness
- Rapidly spreading erythema, bullae, ecchymosis
- Hypotension
- Tachycardia
- Shortness of breath
- Chest pain
- Altered mental status

### Discussion

NF is a rapidly spreading infection commonly caused by group A *Streptococcus* or polymicrobial organisms that enter through breaks in the skin. Reported mortality and amputation rates for necrotizing soft tissue infections vary from 6%–33%, depending on time to treatment, comorbidities, and severity.<sup>1</sup> Advanced age, female sex, and sepsis at presentation are also associated with higher mortality rates.<sup>1</sup> NF can be challenging to diagnose due to its vague presentation, so early identification is critical to avoid catastrophic outcomes. Radiographic imaging and laboratory studies can be helpful with diagnosis, but no imaging should delay surgical exploration, as NF characteristically spreads rapidly within hours.<sup>1,5</sup>

### Imaging

Ultrasound (US) can be helpful in identifying subcuta-

*“NF can be challenging to diagnose due to its vague presentation, so early identification is critical to avoid catastrophic outcomes.”*

neous gas collection.<sup>6</sup> NF appears on US as thickened, distorted fascia with hypoechoic fluid collection and swelling in the muscle and surrounding tissue.<sup>7</sup> CT is the preferred imaging method to diagnose NF due to its higher spatial resolution and wider availability, making soft tissue gas more visible than US.<sup>6</sup> However, 36% of cases will not show this characteristic finding and will not be apparent on CT.<sup>8</sup> Though CT is highly useful, a negative CT should not postpone surgical referral.<sup>8</sup>

Magnetic resonance imaging (MRI) can also be helpful, as it is reported to have a 90% or greater sensitivity but a rather high false positive rate at 39%. However, due to the time commitment, MRI is not indicated in NF emergencies.<sup>5</sup> The most accurate diagnosis is made via surgical exploration and early operative debridement of necrotic tissue. Intravenous broad-spectrum antibiotics also are necessary to control the infection spread and bacterial load.<sup>1</sup>

### Work-Up Analysis and Considerations

With the benefit of hindsight, it is important for clinicians to review this case and consider measures that can be taken to prevent poor outcomes in patients presenting with leg pain. This patient’s initial lab workup was limited to a D-dimer and BMP, which raises the question: Could additional laboratory evaluation have resulted in a better outcome? Common labs, such as a complete blood count, erythrocyte sedimentation rate, and C-reactive protein (CRP) tend to have poor sensitivity and specificity, as they can be elevated in multiple conditions, including DVT, cellulitis, and erysipelas.<sup>9,10,11</sup> Even when distinguishing between 2 seemingly unrelated conditions, like DVT and cellulitis, D-dimer and Wells Scores can be elevated, so these measures should not be used to definitively establish a diagnosis.<sup>3</sup>

A physical exam may not always be immediately helpful in the diagnosis of NF. It can present vaguely,

*“Depending on the time of presentation and disease progression, skin findings may be mild or nonexistent.”*

as it did in this patient. Depending on the time of presentation and disease progression, skin findings may be mild or nonexistent. One study found that only 15% of patients with necrotizing fasciitis admitted to the ED were diagnosed at the time of admission.<sup>12</sup> Other symptoms, such as bullae (present in only 25% of cases) crepitus, or pain out of proportion to physical exam tend to be present later in the course of infection, but even these are not completely specific.<sup>13</sup> When conducting a physical exam in a suspected NF case, note the patient’s reaction to palpation, ask them to rate their pain, and feel for a crackling sensation beneath the skin. A finger probe test may also be performed, where a clinician makes a small incision to see if bleeding occurs. Lack of bleeding, poor tissue quality, pus leakage, or any signs and symptoms consistent with NF should warrant immediate surgical referral.<sup>12,13</sup>

The Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score was created to help efficiently identify NF. This score uses CRP, white blood cell count, hemoglobin, sodium, creatinine, and glucose to calculate a score to distinguish NF from other similarly presenting conditions. A score greater than 6 raises suspicion for NF.<sup>4</sup> Although useful and easy to use, a meta-analysis found that a LRINEC score  $\geq 6$  has a sensitivity of 68.2% and specificity of 84.8%.<sup>13</sup> Because of LRINEC’s poor sensitivity, it is not recommended to definitively rule-out necrotizing soft tissue infection.<sup>13</sup>

In this patient’s case, it may have been useful to use point-of-care imaging. Since the patient ultimately did not have DVT, US may have guided the clinician’s clinical decision making to consider other potential etiologies. Bedside US performed by an attending physician with training has shown in several studies to have adequate sensitivity and specificity in the diagnosis of DVT.<sup>14,15,16,17,18</sup> US can efficiently identify DVT, gas collection, perifascial edema, and cobblestoning (due to

fluid separating subcutaneous fat consistent with infections of soft tissue).<sup>7</sup>

### Disposition

At his first ED visit, the patient received medical management and orders for imaging for presumed DVT. Prior to his scheduled imaging appointment, he returned to the ED via ambulance for evaluation of worsening symptoms. The patient died within 24 hours due to NF, refractory septic shock, and multiorgan failure.

### Pearls For Urgent Care Management

- The earliest and most important finding in early NF is pain out of proportion to physical exam. Pain typically presents before skin findings (eg, erythema, ecchymosis, bullae, skin crepitus, or skin anesthesia) and should raise concern for NF.
- NF is a clinical diagnosis. If a patient describes rapidly progressing pain over the course of a few hours, consider a diagnosis of NF.
- X-ray and US can appear normal initially, and lack of gas on imaging does not rule out NF.
- If concerned for NF, do not delay emergent ED transfer.
- Repeat vital signs in patients presenting with vital sign abnormalities. Isolated tachycardia can be indicative of many acute pathologies.

### Red Flags and Legal Pitfalls

- Do not delay ED referrals for possible NF in UC for any reason, as this can delay life-saving surgical and medical intervention.
- Discharging patients with unexplained vital sign abnormalities may lead to delayed diagnosis of time-sensitive, life-threatening conditions.
- Analyze the benefits, risks, and differential diagnoses when considering presumed DVT for outpatient management.

### Ethics Statement

The patient’s next of kin was unable to be contacted. Demographics and some details of the case were changed to protect patient anonymity and confidentiality.

### Takeaway Points

- NF is a life-threatening condition which creates a diagnostic challenge. Early recognition and management is critical to prevent morbidity and mortality.
- Early NF may present without obvious skin findings; unexplained severe pain and isolated tachycardia should prompt consideration of possible infection.

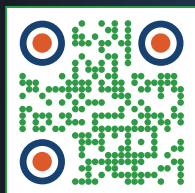
- Negative imaging in the urgent care does not exclude NF, and concern for the diagnosis should prompt emergent ED transfer for surgical evaluation. ■

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## Pediatric Antibiotic Prescribing: In-Person Vs Telemedicine

**Take Home Point:** Telemedicine integrated within primary care was associated with more judicious antibiotic prescribing without increased follow-up visits or inappropriate antibiotic use. Primary care telemedicine may improve access to care while supporting antibiotic stewardship efforts.

**Citation:** Ray K, Wittman S, Kelly M, et al. Primary Care Telemedicine vs In-Person Antibiotic Prescribing for Pediatric Respiratory Tract Infections. *JAMA Netw Open.* 2026;9(5): e2610062. doi:10.1001/jamanetworkopen.2026.10062.

**Relevance:** Acute respiratory illness (ARI) is a common presentation among children presenting to urgent care (UC) and frequently does not require antibiotics. Maintaining antibiotic stewardship during UC encounters can be challenging, particularly when patient expectations influence prescribing decisions.

**Study Summary:** This retrospective cross-sectional analysis evaluated pediatric primary care visits over 1 calendar year (2023) using an electronic health record-derived dataset from multiple research and practice networks across the United States. The authors identified telemedicine and in-person visits with bacterial and viral ARI diagnoses using International Classification of Diseases, Tenth Revision (ICD-10) codes. Primary outcomes included receipt of any systemic antibiotic prescription and receipt of guideline-concordant antibiotic prescription based on visit diagnosis.

The authors analyzed 449,630 ARI visits involving 302,817 children, including 438,148 in-person visits and 11,482 telemedicine visits. Antibiotics were prescribed in 46.8% (95% confidence interval [CI] 45.1%–48.4%) of in-person visits compared with 34.6% (95% CI 27.0%–42.3%) of telemedicine visits, a difference that was statistically significant. Guideline-concordant antibiotic prescribing occurred in 86.2% (95% CI 85.1%–87.3%) of in-person visits and 85.5% (95% CI 80.5%–90.4%) of telemedicine

visits, demonstrating no meaningful difference between groups. Subgroup analysis did not identify any patient groups in which telemedicine visits were associated with higher antibiotic prescribing rates compared with in-person care.

**Editor's Comments:** Although previous telemedicine studies have demonstrated increased antibiotic prescribing, that pattern was not observed in this study. Primary care settings, however, often involve ongoing clinician-patient relationships, which may contribute to these findings. This study cannot be generalized to UC practice. Additionally, the dataset did not allow the authors to distinguish among telemedicine visit types, such as audio-only versus video visits. Even so, the broader principles of guideline adherence and antibiotic stewardship remain highly relevant. ■

## Predicting Retinal Detachment

**Take Home Point:** This study suggests that vitreous floaters, with or without flashes, are associated with a clinically important increased risk of retinal detachment (RD), particularly when symptoms occur acutely.

**Citation:** van Zon B, Spoelder M, Peters H, Akkermans R, et al. Do Vitreous Floaters Predict Retinal Detachment? Retrospective Cohort Study in Primary Care. *Ann Fam Med.* 2026;24(2):111-116. doi:10.1370/afm.240149.

**Relevance:** Floaters and flashes may represent the first, and occasionally only, warning signs of a retinal tear or sight-threatening retinal detachment. Recognizing these symptoms as potential red flags can support timely ophthalmology referral and help prevent avoidable vision loss.

**Study Summary:** This retrospective cohort study used morbidity data from the Family Medicine Network, which included 7 family physician practices and 35 family medicine practices in the Netherlands. Investigators reviewed data from more than 42,000 patients and analyzed new reasons for a visit with a complaint of vitreous floaters or flashes. Floaters were defined as symptoms such as black spots, clouds, haze, or moving curtains. Flashes were defined as beams or flickering light of any color. The primary outcome was the absolute risk (AR) of RD after presentations in-



**Ivan Koay MBChB, MRCS, FCUCM, FRNZCUC, MD**, is an urgent care physician and Convenor of Ireland and UK Faculty of the Royal New Zealand College of Urgent Care as well as the London Representative Faculty of Prehospital Care of the Royal College of Surgeons, Edinburgh.

volving floaters, flashes, or both. Secondary outcomes included relative risk (RR) of RD for floaters alone and for the combination of floaters and flashes, using flashes alone as the reference group.

The authors identified 1,011 episodes starting with floaters, including episodes with both floaters and flashes, and 490 episodes starting with flashes, including episodes with both flashes and floaters. The incidence per 1,000 patient-years of floaters was 5.5 and of flashes was 2.7. The AR of RD was 6.1% for floaters alone, 4.7% for flashes alone, and 8.4% for floaters and flashes. Both acute and many floaters increased AR. The RRs for acute floaters and flashes (2.39; 95% CI, 1.11-5.15), many floaters (4.20; 95% CI, 1.87-9.40), and many floaters and flashes (6.20; 95% CI, 2.47-15.55) were significantly increased compared with flashes alone.

**Editor’s Comments:** The authors acknowledged that incomplete reason-for-encounter data may have led to underidentification of RD cases. In addition, reliance on free-text documentation introduced the potential for information bias, and the symptom profiles described were not specific to RD. For UC clinicians, these findings reinforce the importance of maintaining a broad differential diagnosis when evaluating patients with visual complaints. Isolated floaters should prompt clinical caution and appropriate ophthalmology referral. ■

## Topical Steroids to Treat Pediatric Phimosis

**Take Home Point:** Topical corticosteroids effectively provide clinically meaningful improvement in pediatric phimosis and likely could reduce the need for surgical management.

**Citation:** Campos JM, Ceballos V, Torres AF, et al. Topical Steroids Are Effective Even In Severe Phimosis: Evidence From a Multicenter Cohort. *J Pediatr Surg*. Published online March 24, 2026. doi:10.1016/j.jpedsurg.2026.163093.

**Relevance:** Phimosis is a common pediatric condition that is frequently managed with surgical circumcision. Topical corticosteroids have previously demonstrated favorable efficacy, and this study explored their effectiveness across severity and patient demographic characteristics.

**Study Summary:** This multicenter prospective cohort study was conducted across 12 hospitals in Chile. During the initial consultation, treating surgeons assessed phimosis

severity and foreskin skin quality using the Kikiros classification system. All enrolled patients were prescribed 0.05% topical betamethasone to apply gently after foreskin retraction twice daily for 8 weeks. Follow-up occurred between 8 and 16 weeks after treatment initiation, and the primary outcome was resolution of phimosis.

The authors enrolled 383 patients and 235 completed follow-up. Treatment success was 68%, with no significant differences across phimosis severity or age groups. During the study period, 3 patients underwent surgery, 2 withdrew consent, and 24 discontinued treatment—due to caregiver decision (n=10), lack of patient cooperation (n=7), and preputial irritation (n=7). The only factor significantly associated with treatment failure was altered preputial skin appearance (success rate of 72% with healthy skin vs 29% with altered skin; p=0.007).

**Editor’s Comments:** A major limitation of the study was a high loss-to-follow-up rate, which may reflect challenges with treatment adherence. The relatively short follow-up period may also limit assessment of long-term treatment failure or phimosis recurrence. In addition, patient and caregiver treatment preferences were not evaluated. Despite these limitations, the study supports the commonly used therapy of topical corticosteroids as first-line therapy for pediatric phimosis. ■

## Reducing Short-Acting Beta-Agonist Overprescribing for Asthma

**Take Home Point:** Engagement with electronic prescribing alerts appears to reduce overprescribing of short-acting beta-agonists (SABAs) for asthma patients.

**Citation:** De Simoni A, Hajmohammadi H, Pfeffer P, et al. Reducing short-acting beta-agonist overprescribing in general practice: Evaluation of a quality improvement programme in East London. *Eur J Gen Pract*. 2026;32(1):2619229. doi:10.1080/13814788.2026.2619229.

**Relevance:** SABA overprescribing remains common and has been associated with increased risk of all-cause mortality and greater use of antidepressants, hypnotics, and sedatives.

**Study Summary:** This quality improvement (QI) initiative involved 48 community care practices in East London, United Kingdom, with neighboring communities serving

as control groups. The study population included patients aged 5–80 years with a coded asthma diagnosis and at least 1 prescription for an inhaled asthma medication in the previous year. QI interventions included in-consultation prescribing alerts for patients prescribed more than 6 SABA inhalers during the preceding 6 months, clinician guidance based on national recommendations, patient educational materials integrated into asthma review templates, clinician webinars, and nurse-led asthma review programs. Patients overusing SABAs without inhaled corticosteroids (ICS) were advised to initiate ICS therapy, while those already receiving low-dose ICS were advised to increase dosing.

At baseline, the proportion of patients prescribed  $\geq 6$  SABA inhalers annually was 27% in the intervention community, 29% and 32% in the control communities. At the initiative conclusion, these proportions had decreased to 21%, 23%, and 25%, respectively. In the intervention community, this corresponded to an estimated absolute reduction in hospital admissions of 11%. Prescribing alerts integrated into practice software were associated with a 50% reduction in SABA overprescribing. Although ICS prescribing increased during the study period, the increase did not reach statistical significance.

**Editor's Comments:** This study was conducted during the COVID-19 pandemic, which may have influenced implementation due to new clinical and administrative workflows. In addition, the study evaluated prescriptions provided rather than medications used which introduces possible confounding. Even so, the findings highlight the value of system-wide prescribing interventions to impact prescribing rates. For UC clinicians, these results reinforce the importance of limiting unnecessary SABA prescribing and educating patients about the importance of long-term asthma control. ■

## Primary Care Point-of-Care Ultrasound Core Curriculum

**Take Home Point:** This study suggests 40 point-of-care ultrasound (POCUS) examinations as the foundation of a frontline primary care physician POCUS core curriculum.

**Citation:** Andersen C, Løkkegaard T, Nayahangan L, et al. A core curriculum of point-of-care ultrasound examinations for frontline physicians in primary care: results from a European Delphi study. *Ultraschall Med.* 2026;47(2):160-170. doi:10.1055/a-2590-5242.

*“Integrating POCUS education into UC training programs may help ensure clinicians are well prepared to perform these evaluations.”*

**Relevance:** POCUS is increasingly being used as an initial diagnostic and assessment tool in frontline clinical practice. As UC continues to expand, clinicians may increasingly rely on POCUS to improve diagnostic efficiency and overall patient care.

**Study Summary:** The authors conducted a systematic general needs assessment to generate consensus on ultrasound examinations that should be included in a core ultrasound curriculum for frontline primary care physicians. A total of 95 eligible primary care physicians from 28 European countries participated. These physicians with prior POCUS experience completed multiple surveys regarding which examinations should be included and whether a core curriculum would be feasible within primary care training.

Consensus identified 40 POCUS applications appropriate for primary care settings. Ultrasound-guided procedures were excluded from the proposed curriculum. The consensus applications covered 13 anatomical regions including abdominal, gallbladder, liver, urinary tract, spleen, cardiac, pulmonary, musculoskeletal, head and neck lymph node, male and female pelvic, skin, and vascular examinations. Examples included knee effusions, abscesses, foreign body, and deep vein thrombosis evaluation.

**Editor's Comments:** This study outlines a strong foundation of POCUS examinations that UC clinicians may wish to incorporate as they expand their diagnostic skill set. As handheld ultrasound devices become more affordable and increasingly integrate with smartphone-based platforms, POCUS will likely continue to grow in relevance within UC settings. Recent presentations at the Urgent Care Association Conference further support this trend. Integrating POCUS education into UC training programs may help ensure clinicians are well prepared to perform these evaluations. ■



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# Quantifying the Front Door: A Blueprint for Tracking Urgent Care Downstream Referrals and ROI

**Urgent Message:** Health systems must reframe urgent care from a low-margin cost center to a strategic front door that drives significant returns by utilizing technology to track and maximize “keepage”—the retention of high-value downstream referrals that otherwise leak out of the network.

Alan A. Ayers, MBA, MAcc

**Citation:** Ayers AA. Quantifying the Front Door: A Blueprint for Tracking Urgent Care Downstream Referrals and ROI. *J Urgent Care Med.* 2026;20(10):43-47

**Keywords:** urgent care; downstream referrals; keepage; referral management; patient retention; downstream revenue; return on investment; health systems

Urgent care is no longer just an access point; it is the strategic front door to the health system.

For many health systems, urgent care centers operate on thin or negative margins. A \$150 visit, for example, may not produce significant financial impact. But when that encounter feeds a downstream orthopedic surgery, magnetic resonance imaging scan, or physical therapy referral that stays in-network, the economics change. One urgent care referral can generate \$1,000–\$5,000 in contribution margin, which becomes transformative at scale.<sup>1,2</sup>

The real value is not the visit itself, but what happens next and how much of that activity the system retains.

This article outlines how health systems can quantify that front door value: defining the right key performance indicators; setting up compliant referral structures; and using data to prove urgent care’s return on investment (ROI).



## The Financial Case: From Loss Leader to Growth Engine

Health system leaders know the math. Urgent care margins are tight. Yet, strategically, urgent care sits at the most valuable moment in the care journey when patients need immediate access and are not yet loyal to a particular provider network.

Benchmarks show 20%–30% of urgent care visits generate downstream referrals,<sup>1</sup> and 30%–40% of urgent care patients are new to the health system.<sup>3</sup> Capturing

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

Table 1. Front Door Measurement Framework		
Metric	What to Track	Benchmarks/Impact
Referral Rate	Percent of urgent care visits with downstream referrals	20%–30% of visits generate referrals <sup>1</sup>
Keepage Rate	Percent of referrals retained in network	Leakage: 55%–65% Loss: \$200 million–\$500 million per system <sup>8</sup>
Patient Acquisition	Percent of urgent care visits for patients new to system	30%–40% are new to system <sup>3</sup>
Primary Care Provider Attribution	Percent of unattached patients assigned to a system	Convert 15%–20% of unattached patients to “lives under management”
Downstream Contribution	Margin from attributable services	\$1,000–\$5,000 per referral <sup>1,2</sup> \$37 million in incremental revenue <sup>9,10</sup>

and retaining those referrals is what justifies expansion and capital allocation.

Health systems increasingly view urgent care as an entry point with 58% reporting investment in urgent care to improve access.<sup>4</sup> Patient loyalty matters; a 1% lift in “loyal patients” can yield a \$40 million revenue boost in a \$2 billion health system.<sup>4</sup> Many large systems have introduced virtual, on-demand urgent care to improve timely access—which has become table stakes across the leading systems. And the lifetime value of a patient introduced through system tied urgent care can reach \$250,000.<sup>5</sup>

These trends are not theoretical; they are playing out in large, integrated health systems that are deliberately positioning urgent care as a front-door strategy.

For example, University of Pittsburgh Medical Center (UPMC) formed a joint venture with GoHealth Urgent Care, creating 81 co-branded UPMC-GoHealth Urgent Care centers across Pennsylvania and West Virginia—explicitly positioning them as the physical and digital front door to UPMC’s broader physician, specialist, and hospital services network.<sup>6</sup>

Similarly, HonorHealth acquired the remaining interest in 26 FastMed Urgent Care centers, converting them into wholly owned HonorHealth Urgent Care clinics tightly aligned with its hospitals, outpatient practices, and other system services—a move the organization described as bolstering access and alignment across care settings.<sup>7</sup>

### The Leakage Problem

Referral leakage is a silent drain on a system’s return on investment. It occurs every time an urgent care provider refers a patient to an out-of-network specialist. Nationally, systems lose 55%–65% of potential in network referrals, costing \$200 million–\$500 million per system

annually.<sup>8</sup> Each leaked referral is lost revenue and lost patient lifetime value.

To reframe the problem, measure “keepage” (referrals retained in network) alongside leakage. Even a 10% improvement in keepage can translate into tens of millions of dollars in recovered downstream value. Case studies demonstrate that targeted referral analytics and physician alignment can yield \$37 million in incremental downstream revenue by increasing in network keepage.<sup>9,10</sup>

### Building Compliant In Network Referral Pathways

Health systems must operate within regulations, such as Stark and anti-kickback rules, which prohibit financially incentivized referrals. That’s why the path forward relies on infrastructure and workflow alignment.

Effective, compliant referral strategies include:

- Leveraging clinically integrated networks, accountable care organizations, or aligned medical groups
- Offering providers embedded, system-approved referral directories
- Supporting real-time scheduling for in-network service lines
- Tracking referral completion and closure through analytics

When workflows are easy and quality-based, providers naturally keep patients inside the system.<sup>1,10</sup>

Health systems often fear that proactive referral management could trigger regulatory scrutiny. However, true keepage focuses on patient experience metrics without legal risk. When referrals are seamless—such as scheduling a specialist appointment directly at the front desk—patients *choose* to stay in-network because it is the path of least resistance. This organic retention relies on service excellence, aligning with regulatory standards while maximizing downstream value.



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### Metrics That Move the Boardroom

To move urgent care from anecdotal value to quantified value, health systems need a connected measurement framework (Table 1).

Collectively, these metrics allow organizations to connect access with outcomes and financial performance.

For example, if 10% of urgent care visits generate referrals to orthopedics, and 80% of those referrals stay in-network and convert, leaders can calculate a reliable estimate of downstream contribution margin. That data can then guide investments in provider alignment, scheduling tools, or patient navigation resources.

These key performance indicators also allow health systems to answer the most important question: What does 1 urgent care visit generate in total downstream system value over time?

With benchmarks indicating that 30%–40% of urgent care patients are new to the health system, the platform acts as a front door to convert unattached patients into in-house “lives under management,” rather than just transactional, temporary visitors.<sup>3</sup> In a value-based care environment, assigning that new patient to a primary care provider (PCP) within the system is the ultimate win because it transforms a low-margin episodic visit into recurring revenue through capitated payments and shared savings incentives. Ultimately, this assignment creates long-term network stickiness, allowing the system to capture a patient lifetime value that can reach \$250,000.<sup>5</sup>

### Technology: Optimizing Urgent Care for Downstream Value

Health systems may hesitate to expand urgent care if they have concerns about fragmenting patient records within their enterprise EMR. However, attempting to retrofit a complex inpatient platform for the high-velocity urgent care environment often creates bottlenecks. Purpose-built urgent care EMRs are specifically engineered for episodic care, delivering critical operational gains—including 30%–40% faster charting, denial rates under 4% (versus the ~10% industry average), and the ability to handle 50+ visits per day during peak seasons.<sup>11,12</sup>

Today, health systems no longer have to choose between operational speed and connected data. Modern purpose-built platforms include robust interoperability standards—such as HL7 interfaces and continuity-of-care document exchange—to push structured visit data into the enterprise system. This satisfies the requirement for a comprehensive longitudinal patient record while preserving the rapid throughput required in urgent care. By combining a seamless data exchange with embedded referral management tools and real-time scheduling,

health systems can ensure that the front door remains open without compromising the integrity of the care continuum.

*“When referrals are seamless—such as scheduling a specialist appointment directly at the front desk—patients choose to stay in-network because it is the path of least resistance.”*

### Visualizing Technology’s Impact: The Urgent Care Funnel

To understand how technology transforms urgent care into a growth engine, consider the patient journey as a funnel.

- **Urgent care visit:** ~\$150
- **Referral generated:** 20%–30% of visits<sup>1</sup>
- **Referral retained in-network:** raise keepage; combat 55%–65% leakage<sup>8</sup>
- **Downstream services:** eg, imaging, specialty consults, procedures
- **Contribution margin:** \$1,000–\$5,000 per referral<sup>1,2</sup>
- **Annual return on investment:** \$37 million with better keepage<sup>9,10</sup>

Each stage of this funnel is supported by technology, from rapid documentation and referral initiation at the front desk, to analytics that measure conversion and retention. Purpose-built EMRs and referral management platforms are not just operational tools; they are strategic assets that turn urgent care visits into measurable downstream value.

By using a dedicated urgent care EMR, health systems gain operational efficiency at the front door while still enabling more patients to enter and stay within the system’s continuum of care.

### Why This Matters Now

Access and loyalty shape long-term economics. Living within 1 mile of an urgent care center is associated with a lower likelihood of low-acuity emergency department (ED) use (adjusted odds ratio 0.87), and each month after opening corresponds to an additional ~1% drop

in such ED visits.<sup>13</sup> At the same time, the market is expanding and could oversaturate in certain geographies as care volumes normalize in this post-COVID era.<sup>14</sup>

In a capital constrained environment, urgent care must be positioned—and measured—as an engine for patient acquisition, downstream margin, and network retention. When leaders prove its impact with keepage, conversion, and contribution metrics, urgent care becomes not a cost center, but a growth platform. ■

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## CLINICAL IMAGE CHALLENGE

### X-RAY

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

# 28-Year-Old Female With Rolled Right Ankle



**Figure 1:** Initial X-ray

A 28-year-old female presents to urgent care complaining of right ankle pain after awkwardly stepping off a high curb, subsequently rolling her ankle while running outside earlier today. She is unable to bear weight on her ankle. She has no past medical history, takes no medications regularly, and has not tried any treatments since the injury. Physical exam reveals she is afebrile with normal vital signs, and

she has marked tender edema to the lateral malleolus. Pain is elicited with all planes of ankle range of motion. Pulses are normal, and sensation is intact.

View the x-ray images taken 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](http://www.experityhealth.com/teleradiology)).*



### Differential Diagnosis

- Isolated malleolar fracture
- Unstable ankle fracture
- High-grade ankle sprain
- Peroneal tendinopathy

### Diagnosis

The diagnosis of an unstable ankle fracture is confirmed by radiographic findings. Images show a minimally displaced, syndesmotic spiral fibula fracture with subtle posterior malleolus involvement and possible mortise widening. This is consistent with a Weber B/C type injury. This mechanism typically involves forced supination of the foot and external rotation of the talus, often associated with ligamentous injury (e.g., anterior talofibular ligament or deltoid ligament). Instability is present if 2 or more significant injury sites exist. Bimalleolar and trimalleolar (including the posterior malleolus, seen best on lateral x-ray views) fractures are inherently unstable and require specialist referral for orthopedic surgical management.

Ligamentous injury must also be evaluated by checking the medial clear space (talus to medial malleolus) on x-ray. A medial clear space  $>4$  mm on standard or weight-bearing views suggests deltoid ligament disruption. Weight-bearing radiographs require  $\geq 50$  body weight and are the gold standard for assessment. Bearing weight on the ankle is often intolerably painful after the initial injury;

gravity stress views are an appropriate alternative. Magnetic resonance imaging/ultrasound may further delineate deltoid ligament integrity, though they do not always determine stability. Complications of unstable ankle fractures can include acute compartment syndrome as well as chronic pain and instability.

### What to Look For

- Since these are often high-impact mechanisms of injury, evaluate for other injuries to the lumbar spine, head, hip or knee.
- Given the higher risk of complications from unstable ankle fractures, include a thorough neurovascular exam.

### Pearls For Urgent Care Management

- Emergency conditions such as open fracture or neurovascular impairment require immediate surgical consultation and treatment in an emergency department.
- Urgent ortho consult and/or referral is recommended. Counsel patient that surgical internal fixation will likely be required if ankle is unstable.
- Acute management includes short-leg posterior splint immobilization in neutral position at 90 degrees; sugar-tong splint can be added for additional mediolateral support.
- Counsel patient to maintain non-weight-bearing status until orthopedic follow-up. ■



## 63-Year-Old Female With Growth on Scalp



A 63-year-old woman visits urgent care with the chief complaint of an asymptomatic scabby growth on her scalp that developed 10 months prior and is gradually getting larger. The patient has no systemic symptoms and is otherwise well. She has a history of working as a welder in a metal fabrication plant for the past 35 years. On dermatological examination, an eroded and crusted plaque is seen

on the frontal scalp. A punch biopsy reveals strands and cords of epithelial cells with prominent nuclear atypia, squamous pearls, and pleomorphic and hyperchromatic squamous cells with variable nuclear size.

View the image taken 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](http://www.VisualDx.com/jucm)).*



### Differential Diagnosis

- Keratoacanthoma
- Actinic keratoses
- Superficial basal cell carcinoma
- Seborrheic keratosis
- Cutaneous squamous cell carcinoma
- Psoriasis

### Diagnosis

The correct diagnosis is cutaneous squamous cell carcinoma in situ (cSCC), or Bowen disease. Occupational risks for cSCC are primarily driven by chronic, long-term exposure to sun-related ultraviolet radiation (UVR) and specific chemical carcinogens. cSCC can develop on any surface of the skin, but sun-exposed sites are the most common locations. Involvement of other areas, particularly the lower legs and anogenital regions, is more common in people with darkly pigmented skin.

cSCC in situ lesions tend to grow slowly, enlarging over the course of months or years. Although clinical findings may strongly suggest a diagnosis of cSCC, histopathologic examination is necessary to confirm the diagnosis and determine factors which are important for tumor staging and prognosis.

### What To Look For

- Bowen disease typically presents as an erythematous, well-demarcated, scaly patch.
- Lesions can be skin colored or hypopigmented, particularly in individuals with darkly pigmented skin.
- Unlike the inflammatory disorders that may resemble cSCC in situ, such as psoriasis or chronic eczema, cSCC in situ lesions are usually asymptomatic.
- Full skin exam: If there is concern for malignancy, patients should be given a full body skin examination that includes palpation of regional lymph nodes.

### Pearls for Urgent Care Management

- Shave, punch, or excisional biopsies may be used for diagnosis. Biopsies that extend at least into the mid-reticular dermis are preferred to allow for adequate evaluation of invasive disease.
- Prompt referral to dermatology: Surgical excision (including Mohs surgical approaches depending on the location) is the preferred treatment for cSCC.
- Patients with a small, isolated lesion of Bowen disease can be treated with surgical excision, topical fluorouracil, or imiquimod. Large lesions (>3cm) may also be treated with photodynamic therapy, if available. ■



# 86-Year-Old With Palpitations

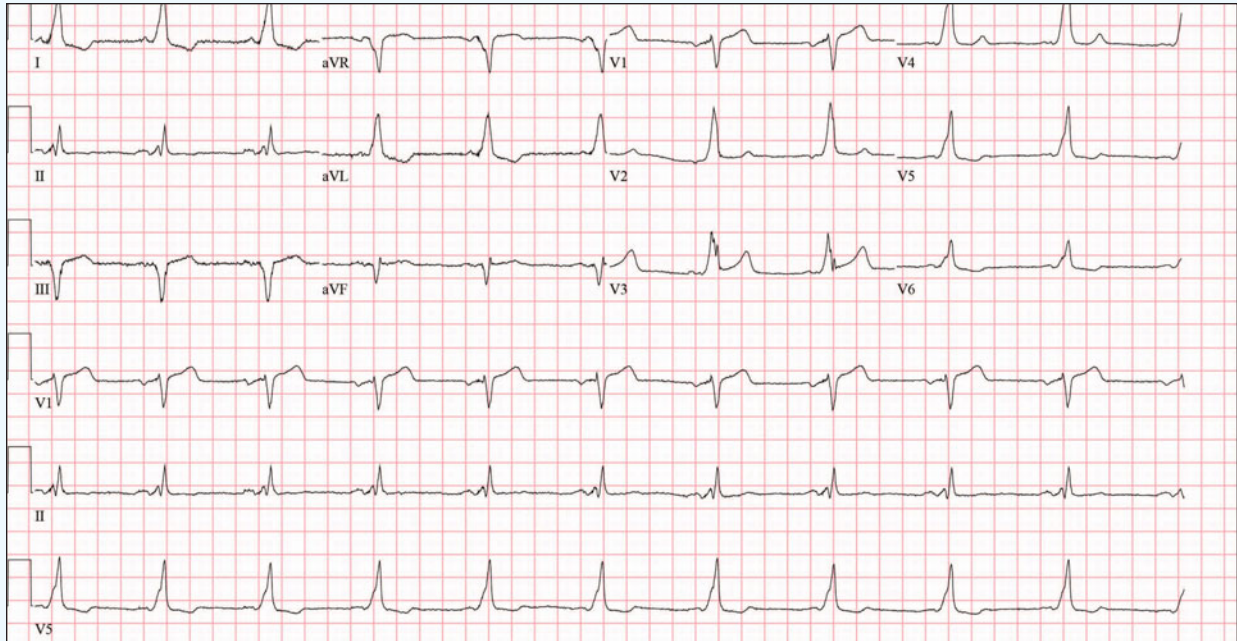


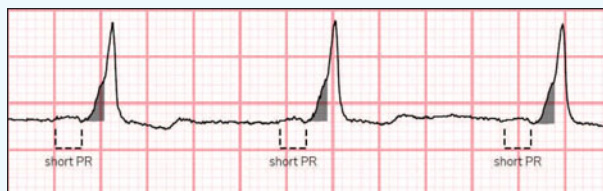
Figure 1: Initial ECG

An 86-year-old male presents to urgent care with intermittent palpitations for the past several days. He says he has a history of Wolff-Parkinson-White syndrome. An ECG is obtained.

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

Case presented by Catherine Reynolds, MD, McGovern Medical School at UTHealth Houston.  
Case courtesy of ECG Stampede ([www.ecgstampede.com](http://www.ecgstampede.com)).

ECG STAMPEDE



**Figure 2:** PR interval  $< 120$  ms (dotted lines) and delta waves (shaded region) in the V<sub>5</sub> rhythm strip.

### Differential Diagnosis

- ST-elevation myocardial infarction
- Ventricular pre-excitation
- Junctional rhythm
- Normal sinus rhythm

### Diagnosis

The diagnosis in this case is ventricular pre-excitation. The ECG reveals a normal sinus rhythm. The findings on this ECG are classic for ventricular pre-excitation: a delta wave, a shortened PR interval, and a slightly widened QRS (**Figure 2**).

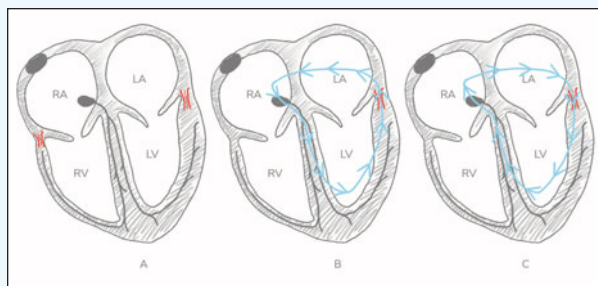
### Discussion

Ventricular pre-excitation occurs when an accessory pathway connects the atria and the ventricles. When the accessory pathway conducts in an anterograde (forward) direction, bypassing the atrioventricular (AV) node, the ventricles are “pre-excited,” yielding the characteristic delta wave on the ECG (**Figure 2**).

Patients with an accessory pathway are at risk of developing reentrant tachycardias. With *orthodromic* tachycardia, conduction moves down the atrioventricular node and returns via the accessory pathway, creating a narrow-complex rhythm. With *antidromic* tachycardia, impulses travel down the accessory pathway into the ventricles and then back up through the atrioventricular node, resulting in a wide-complex rhythm (**Figure 3**).

When arrhythmia occurs involving the accessory pathway, it is referred to as the Wolf-Parkinson-White (WPW) syndrome. These abnormal conduction pathways are formed during cardiac development and can exist in a variety of anatomical locations.

Accessory pathways can transmit atrial tachyarrhythmias to the ventricles at dangerously high rates. Unlike the AV node, which limits ventricular conduction by delaying and filtering impulses, an accessory pathway can conduct signals with little or no restraint. The highest-risk situation is atrial fibrillation in WPW syndrome, in which disorganized atrial activity is relayed rapidly and irregularly to the ventricles. Ventricular rates may reach 200–300 beats per minute, raising the risk of progression to ventricular fibrillation. Rarely, the accessory pathway conducts



**Figure 3:** The red bars in panel A represent possible locations of the accessory pathway. The blue line in panel B represents orthodromic conduction (narrow complex) and the blue line in panel C represents antidromic conduction (wide complex).

RA - right atrium; RV - right ventricle; LA - left atrium; LV - left ventricle.

only retrograde (ventricle-to-atrium) while anterograde conduction continues normally through the AV node. As a result, the resting sinus-rhythm ECG lacks evidence of pre-excitation though re-entrant tachycardia may still occur.<sup>1-3</sup>

When pre-excitation is discovered incidentally, no urgent action needs to be taken. However, when the patient (as in this case), is symptomatic, transfer to an electrophysiology-capable center is indicated.

### What To Look For

- Pre-excitation is caused by an accessory pathway that bypasses the AV node.
- Patients with accessory pathways are at risk for developing reentrant tachycardias that can be narrow (orthodromic) or wide (antidromic).
- Pre-excited atrial fibrillation may result in dangerously fast ventricular rates.

### Pearls For Initial Management, Considerations For Transfer

- Symptomatic patients with evidence of pre-excitation should be transferred to a cardiac care center.
- Asymptomatic patients with evidence of pre-excitation can follow up in the outpatient setting.
- Narrow re-entrant tachycardias can be managed like supraventricular tachycardia with adenosine or cardioversion.
- Avoid AV nodal blocking agents with pre-excited atrial fibrillation, as it can precipitate ventricular fibrillation.
- Place defibrillation pads on patients awaiting transport and electrically cardiovert if unstable. ■

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## 28-Year-Old Male With Suspected Shoulder Dislocation



Image 1

A 28-year-old male with history of left shoulder dislocations presents to urgent care with severe left shoulder pain. He reports an inability to move the arm after injuring his shoulder while taking off his shirt. He reports feeling the shoulder “shift out of place” during the movement.

On examination, the patient is in significant discomfort. He is holding the left arm in slight abduction with left shoulder external rotation. His elbow is flexed, and his forearm is pronated. There is no obvious left upper extremity deformity. The left upper extremity is neurovascu-

larly intact distally. Left shoulder range of motion is severely limited due to pain. Inspection and bony palpation are limited by large muscle bulk. Plain radiography is unavailable.

A point-of-care ultrasound (POCUS) of the left shoulder is performed using a posterior approach.

View the POCUS image and consider the likely diagnosis and next steps. The resolution of the case is described on the following page.

*Acknowledgment: Case presented by Tatiana Havryliuk, MD, an emergency physician based in New York, New York, and the founder of Hello Sono. Case and images provided courtesy of Hello Sono ([www.hellosono.com](http://www.hellosono.com)).*

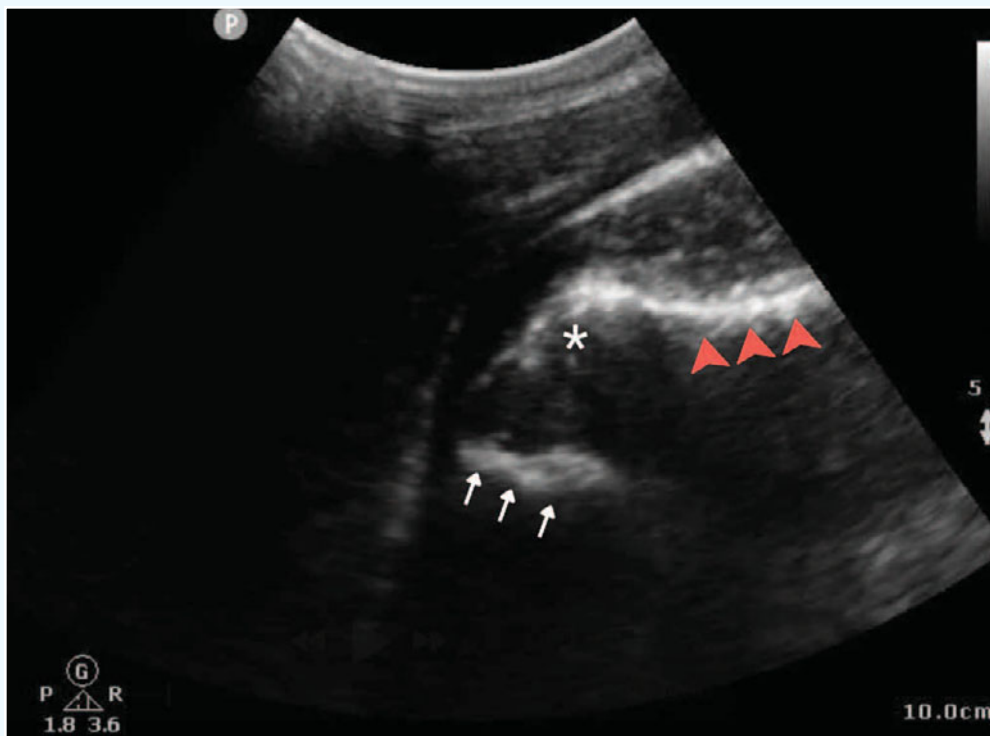


Image 2

### Differential Diagnosis

- Anterior shoulder dislocation
- Anterior shoulder subluxation
- Acute labral tear
- Posterior shoulder dislocation
- Occult proximal humerus fracture
- Rotator cuff injury

### Diagnosis

The correct diagnosis in this case is an anterior shoulder dislocation.

POCUS demonstrates that the humeral head (white arrows) is displaced anterior and inferior to the glenoid fossa (asterisk) (**Image 2**). Because the posterior approach was used, the anteriorly displaced humeral head appears deep relative to the glenoid and scapular spine (coral arrowheads). No cortical disruption suggestive of fracture is identified. Note that the humeral head sits in the glenoid fossa post-reduction (**Image 3**).

### Discussion

Anterior shoulder dislocations account for approximately 95-98% of shoulder dislocations and are the most common type encountered in urgent care and emergency med-

icine settings.<sup>1</sup> The classic mechanism involves forced abduction and external rotation. However, patients with recurrent instability may experience dislocation during low-force or atraumatic activities, such as dressing or undressing, as seen in this case.

Patients with anterior shoulder dislocations typically hold the affected arm in slight abduction and external rotation. Posterior shoulder dislocations, by contrast, are associated with adduction and internal rotation and are commonly seen after seizures, electrocution, or significant anterior shoulder trauma.

POCUS is a rapid and highly accurate modality for diagnosing shoulder dislocations. The most recent and largest meta-analysis (10 studies, 1,836 assessments, 636 dislocations) found POCUS was 99.1% sensitive and 99.9% specific for shoulder dislocation (likelihood ratio [LR] + 796.2; LR - 0.01), with the posterior technique showing greater sensitivity than the anterior/lateral approach.<sup>2</sup>

Even novice sonographers achieved 100% sensitivity and specificity across 84 patients after brief ultrasound training in 1 prospective cohort study.<sup>3</sup>

POCUS also offers a significant time advantage, with one study demonstrating diagnosis a median of 43 minutes faster than standard radiography and image acquisition

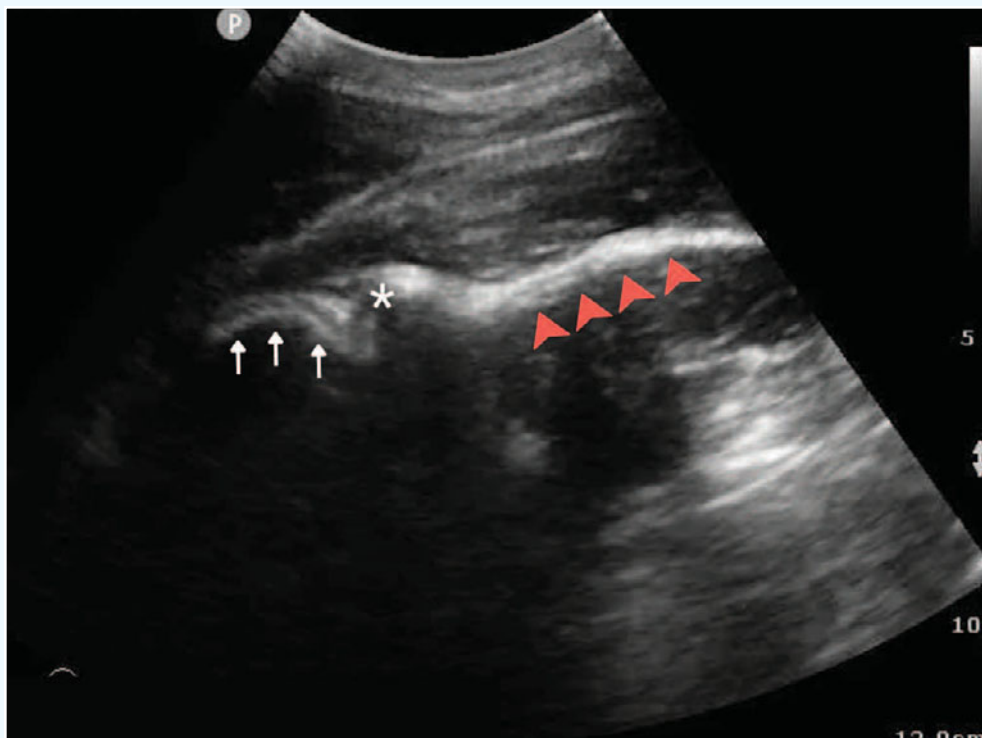


Image 3

times averaging only 19 seconds.<sup>4</sup>

Ultrasound allows for rapid bedside diagnosis, avoids ionizing radiation, and can be particularly valuable in urgent care settings where radiographs may be unavailable or delayed. Additionally, ultrasound may be used to confirm successful reduction immediately after the procedure.

Radiographs should still be obtained in select situations, including first-time dislocations following reduction, high-impact injuries with concern for associated fractures, or cases requiring preoperative planning.<sup>5</sup>

#### What to Look For

- Humeral head not centered over the glenoid fossa on the posterior approach.
  - **Anterior dislocation:** Humeral head appears inferior/deep to the glenoid.
  - **Posterior dislocation:** Humeral head appears superior/superficial to the glenoid.
- Compare with the contralateral shoulder when uncertain.
- Evaluate for cortical disruption suggestive of fracture.

#### Pearls for Urgent Care Management

- Ultrasound is highly sensitive and specific for diagnosing shoulder dislocations.
- Recurrent anterior shoulder dislocations may occur with minimal trauma.
- Small internal and external shoulder rotations can help identify the humeral head.
- POCUS can rapidly confirm successful reduction after the procedure. ■

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# Onboarding and Credentialing Challenges for Urgent Care in Today's Payer Environment

■ Kim Hardin

Urgent care organizations continue to face growing operational pressure as payer requirements become increasingly complex. Among the most significant challenges impacting revenue cycle performance today are provider onboarding and credentialing delays. In an environment where staffing shortages, payer consolidation, and administrative burden continue to rise, efficient credentialing has become critical to financial stability and patient access.

Credentialing is the process of verifying a provider's qualifications, licenses, education, training, malpractice history, and eligibility to participate with insurance payers. While this process has always been necessary, it has become far more complicated in the modern payer landscape. Many urgent care organizations now work with dozens of commercial payers, Medicare Advantage plans, Medicaid managed care organizations, and narrow network products, each with unique enrollment requirements and timelines.

### Enrollment Cycles

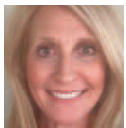
One of the key challenges facing urgent care operators is the length of payer enrollment cycles. It is not uncommon for credentialing approval to take 90–180 days. During this period, providers may see patients but cannot bill under their own credentials, creating reimbursement delays and operational risk. For growing urgent care organizations that rely on rapid provider onboarding to meet patient demand, these delays can significantly impact revenue and staffing efficiency.

Frequent payer policy changes also contribute to ad-

*“Many urgent care organizations now work with dozens of commercial payers, Medicare Advantage plans, Medicaid managed care organizations, and narrow network products, each with unique enrollment requirements and timelines.”*

ministrative complexity. Payers regularly modify enrollment forms, participation agreements, portal workflows, and documentation requirements. Revenue cycle and credentialing teams must constantly monitor updates to avoid application rejections or processing delays. Missing signatures, outdated forms, or incomplete supporting documentation can restart the entire process and extend approval timelines even further.

Meanwhile, the rise of delegated credentialing and centralized payer enrollment platforms has created additional challenges. Although these systems are intended to improve standardization, many urgent care organizations report inconsistent communication, limited transparency regarding application status, and difficulty resolving payer issues quickly. Credentialing teams often spend substantial time following up with payer representatives, tracking applications manually, and managing escalations.



**Kim Hardin** is Senior Vice President of Revenue Cycle Management Operations for Experity.

### Resource Demands

Staffing shortages have also intensified the resource demands. Many organizations struggle to recruit experienced credentialing specialists who understand payer-specific rules and enrollment workflows. High turnover within payer organizations can also lead to inconsistent guidance and delayed processing. As urgent care groups continue expanding into new markets, credentialing workloads often increase faster than operational resources can support.

Technology gaps further complicate onboarding processes. Many urgent care organizations still rely on spreadsheets, emails, and fragmented systems to manage credentialing tasks. Without centralized tracking and automation, organizations may miss deadlines for revalidation, contract renewals, or state license updates. These oversights can result in claim denials, payment holds, or temporary provider terminations from payer networks.

The financial consequences of credentialing delays can be substantial. Delayed enrollments can slow reimbursement, increase accounts receivable days, and reduce provider productivity. In some cases, organizations may be forced to hold claims until payer approval is finalized, cre-

ating cash flow instability. For urgent care operators managing tight margins and high patient volumes, even short disruptions can have a financial impact.

### Investment in Solutions

To address these challenges, many urgent care organizations are investing in credentialing automation, centralized onboarding teams, and payer relationship-management strategies. Technology platforms that provide real-time tracking, automated reminders, and document management are helping reduce manual work and improve visibility throughout the enrollment process. Organizations are also prioritizing earlier onboarding timelines and proactive payer communication to minimize delays.

In today's environment, efficient onboarding and credentialing are no longer simply administrative functions. They are strategic components of revenue cycle performance, operational scalability, and patient access. Urgent care organizations that modernize credentialing workflows and strengthen payer alignment will be better positioned to compete in an increasingly complex healthcare landscape. ■



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## DEVELOPING DATA

# The Anatomy of a 1-Star vs 5-Star Google Review

■ Alan A. Ayers, MBA, MAcc

### TOP THEMES AMONG 1-STAR AND 5-STAR REVIEWS

Theme	% of 1-Star Reviews	% of 5-Star Reviews	Percentage-Point Gap Between 1-Star and 5-Star Reviews
Staff friendliness	25.60%	73.80%	48.2
Doctor/provider	49.70%	45.10%	-4.6
Wait time	49.50%	41.10%	-8.4
Recommends to others	14.70%	36.20%	21.5
Front desk/check-in	34.80%	34.10%	-0.7
Children/pediatric	21.10%	13.80%	-7.3
Prescription issues	18.30%	9.20%	-9.2
Billing/cost	30.10%	7.30%	-22.7
“Never returning”	26.90%	1.80%	-25.1
Staff rudeness	33.30%	1.80%	-31.5

Source: Analysis of 3.1 million Google reviews across 3,665 urgent care centers

While many urgent care operators measure their overall Google ratings—focusing staff on capturing as many “5-stars” as possible—few understand the specific staff behaviors and patient experience that drive positive and negative reviews. To identify the differences, Urgent Care Consultants analyzed the content of 3.1 million Google reviews across 3,665 urgent care centers.

The table breaks down the specific themes driving positive and negative experiences. A positive gap indicates a theme more prevalent in 5-star reviews, while a negative gap indicates a theme more prevalent in 1-star reviews. Additionally, themes like “recommends to others” (appearing in 14.7% of 1-star reviews) may reflect natural language patterns among reviewers.

The key differentiator for earning 5 stars is not surprising: “friendly” staff. In fact, about 75% of 5-star reviewers describe the “warmth” of staff. In contrast, about one-third of

1-star reviewers describe the staff—even naming a specific staff member—in terms of “rudeness.”

Reviews also demonstrate that patients become fans or foes at the front desk, which is typically their first and last interaction with the clinic. Specific mentions of the front desk appear in a third of both 5-star and 1-star reviews, meaning the receptionist can swing the visit either way.

While providers were heavily scrutinized—appearing in nearly half of both negative (49.7%) and positive (45.1%) reviews—patients may use provider engagement as a proxy for the quality of medical decision-making.

After provider and staff interaction, the second major factor is familiar to urgent care operators. Wait times cluster in the positive (41.1%) but more so in the negative (49.5%) reviews.

Billing issues, including transactional errors and unexpected balances, may drag down an otherwise positive visit weeks after the fact. Billing complaints appear 4 times more often in 1-star than 5-star reviews (30.1% vs 7.3%). Clearly explaining financial policies and expected patient responsibility at check-in may be helpful.

In summary, 5-star reviews are won through a combination of friendliness, speed, competence, and financial transparency. ■



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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