

# JUCM<sup>®</sup>

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CLINICAL **cme**

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## Analogy: A Powerful and Underutilized Bedside Tool



Sophie was back with another one of her kids in tow. This was the fifth time in a month. I could almost hear my staff roll their eyes when she walked through the door. Even though she was a denizen of the clinic, I was about to meet her for the first time because I usually covered other sites. Although I was out of the loop, my medical assistant and x-ray tech were more than eager to fill me in as soon as she was out of earshot.

“I can’t believe she’s here again.”

“She always brings her kids in whenever they have the sniffles.”

“The PA who saw her last time spent like 20 minutes explaining why antibiotics don’t work for viral infections and she still just keeps coming back and asking for a Z-Pak.”

The unsympathetically whispered complaints from my staff about her decisions to seek care at our UC came one after another in almost choreographed syncopation.

I opened her son’s chart. He was 4 and had been seen in the clinic about 15 times in his short life. My team members’ comments weren’t off the mark. “Nasal congestion. Cough. Eye discharge. Sneezing, fever for 4 hours.” The chief complaints for this preschooler’s visits read like the list of symptoms for viral URI on WebMD.

I grabbed my stethoscope, put a smile on my face, and went to go meet Sophie and her son. I’m sure my staff thought my smile was forced—the product of an internal pep talk I might have given myself—but it wasn’t. It may seem crazy, but I actually enjoy these encounters. They’re fascinating. Of course, I don’t mean in the sense of solving a diagnostic dilemma. Quite the opposite, actually. Usually within 10 seconds of these visits, almost any UC clinician would feel well assured that the child needs nothing more than supportive care—and the parent needs only reassurance.

The problem arises, however, in these frequent scenarios when the patient (or parent) believes that more than reassurance is required. Often “more” means prescribing antibiotics, but conflicts with patients over differences of opinion about what is (or isn’t) medically necessary can occur with decisions surrounding imaging studies, vacci-

nations, referrals, and really anything that we are the gatekeepers of as clinicians. And to be certain, conflictual interactions can be draining. However, what I enjoy about these encounters is not the conflict but rather uncovering the root cause of the discrepancy in perception. The most frequent etiology of this is simple: an inaccurate understanding of their condition.

With relatively few exceptions, we have a much better grasp of the pathophysiology and appropriate treatment for the problems patients present with than they do. It may seem obvious, but I have observed this immutable reality result in daily frustration among my colleagues. Generally, this manifests with workroom complaints of disbelief about the uninformed comments and opinions they’ve heard from recent patients. But why should this be surprising at all? We have gone through extensive training and have the wisdom of our clinical experience. They almost always have neither. Would we think it reasonable for a mechanic to judge us for a less-than-complete understanding of the seriousness of a leaky head gasket or frayed timing belt? Sure, it might make our jobs easier if our patients knew everything that we did. But that scenario is unlikely and, were it true, we’d probably find ourselves irrelevant and quickly out of a job.

Instead, we must face the inexorable discrepancy in clinical knowledge between us and our patients head on during every shift. Furthermore, our patients don’t need to (or want to) become expert in all medical knowledge. They just want to understand the cause of their current symptoms and what’s going to happen. And most clinicians enjoy teaching patients about their respective diagnoses. There’s reward in transmitting the wisdom we’ve worked so hard to acquire to a grateful and engaged audience. The challenge is that we rarely have enough time to do it well.

Especially in UC, we have vanishingly few moments to spend with each patient. Moreover, the same conversations arise with mind-numbing frequency because the vast majority of our patients present with one of about five to 10 complaints. Additionally, we often find that, even when we try, our efforts are fruitless. This is actually why my colleagues resented Sophie. They saw no impact, and

consequently derived no reward for their investments of time and energy in explaining the differences between viral and bacterial infections. This is our essential Sisyphian struggle, and it can quickly lead to resignation, disillusionment, and burnout.

However, things don't have to be like this. There's hope for change if we approach these situations with a common and often underappreciated tool that we are all familiar with: analogy. Analogies basically assert similarity between two seeming unlike things. They are a communication tool which make the unfamiliar understandable by comparison to something familiar, and they offer the most powerful tool for distilling complex ideas and communicating them quickly.<sup>1</sup>

This is far from a novel concept. Aristotle said, "The greatest thing is to be a master of metaphor," and the transcendentalist Henry David Thoreau wrote that "All perception of truth is the detection of an analogy." In other words, comparators are fundamental to human understanding. In fact, analogies are so fundamental that we all use them unconsciously on a daily basis. I've used at least a handful already in this editorial and it's likely they have flown so sufficiently under the radar that you didn't even notice them.

This highlights the power and simplicity of analogy. A good analogy is highly efficient and largely inconspicuous. This is why John Pollack chose the title *Shortcut* for his big-idea book, in which he argues for the value of analogy as an instrument for teaching and understanding. His central contention is that analogy is the most valuable hack for teaching and persuasion because, with an adeptly chosen analogy, a foreign and complex idea can be communicated effectively in a few sentences or less. He further posits that all human understanding actually is based in analogy.

In other words, we must always find a familiar comparator when trying to understand a foreign concept.

This process can unfold in two ways. We can either be provided with an analogy by an outside source or we can come up with one on our own. Again, this is often an unconscious endeavor, but it's what produced the "A-ha!" moments we all have experienced during our schooling as we tried to wrap our minds around nuanced concepts in organic chemistry or immunology. Think back to someone you considered an outstanding professor during your training. Chances are they provided useful analogies quite often rather than forcing you to develop your own independently. This is why *Shortcut* is such an apt title for Pollack's deep dive into metaphor and analogy; the title is a metaphor in its own right.

Analogies provide shortcuts towards understanding obscure and/or complicated ideas. They allow the teacher

to take the student from confusion to comprehension quickly and without necessitating excessive mental effort on the part of the learner. And this is exactly the communication tool we need in UC. Rather than taking 5 to 10 minutes of our valuable time and energy giving an elaborate mechanistic explanation of the pathophysiology of how a DVT forms—one that will also usually leave the patient more confused than enlightened—we'd be wise to try comparing it to a clogged drain and anticoagulation to Dräno instead. By extension, a pulmonary embolism could be compared to a clog that's moved from blocking the drain to blocking a pump, for instance.

Analogies are additionally perfectly suited for application in UC practice because we deal with a fairly limited number of complaints and scenarios repeatedly. We can all easily think of at least three or four conversations we have with patients on every shift. Given this reality, with minimal extra effort, we can practice honing our analogies for the most common situations we encounter and essentially create scripts which we may then access whenever these conversations arise.

In using scripted analogies frequently, we can save our mental energy for the numerous other cognitive demands of the job while simultaneously teaching our patients more efficiently and effectively by avoiding an overly scientific discourse that they'll quickly forget. Everyone wins. We see patients more quickly. Patients understand their condition better. And this better understanding, in turn, leads to better satisfaction ratings.<sup>2,3</sup>

The obvious next step in implementation is considering how we can develop analogies that serve our patients well. In his book, Pollack deconstructs the mechanics of analogy, stating that there are five components necessary for effectiveness:

1. **An analogy should use something familiar to explain the unfamiliar.** Think about the most universal human experiences when choosing an analogy. For example, analogies referencing a weather forecast are better than analogies referring to gambling to illustrate probabilistic reasoning. Analogies involving dysfunction or maintenance of a car are better choices than those involving farm equipment.
2. **An analogy should highlight similarities and obscure differences.** Analogies are generally structured in an "X is like Y" format. This formula is so common in human communication that we can safely adopt it wholesale without worry of seeming distractingly conspicuous. That being said, the more intuitively apparent the similarity, the more engaged the listener will be.
3. **An analogy should identify useful abstractions.** In other words, analogies are more memorable when

they clarify something that is relevant to your audience. Again, this is generally the case if you're explaining a patient's current ailment.

4. **An analogy should tell a coherent story.** Just as coherent stories through analogy shed light and enhance understanding, outlandish and incoherent analogies can be distracting and counterproductive.
5. **An analogy should resonate emotionally.** Feelings are highly tied to memory. Like Maya Angelou said, "People will forget what you said...but people will never forget how you made them feel." Analogies that conjure positive emotions will enhance the "stickiness" of what you convey. Conversely, an unsettling analogy comparing something to child abuse or other violence, for example, would detract from its efficacy.

If this is a foreign way of thinking creatively for you, it may seem like finding the right analogy for certain situations presents an overwhelming challenge. Certainly, like trying anything new, it would be unrealistic to expect expert level performance as a beginner. But creating analogies is a cognitive skill that can be developed and honed with practice like doing crossword puzzles or playing chess.

Additionally, we are all surrounded by colleagues who deal with the same clinical scenarios and conversations we face. Rather than trying to reinvent the wheel by developing our own analogy, another strategy for building a codex of analogy scripts is to simply ask your fellow clinicians which analogies they've used and found effective. (In fact, I've long dreamed of the existence of a shared online medical analogy database organized by disease states and patient FAQs. If someone more tech-savvy than I is inspired and would be motivated to run with this idea, I believe creating such a Wiki-style resource would be a great service to our patients and fellow clinicians alike).

I brought this conviction towards the power of analogy to the exam room when I spoke with Sophie that afternoon. After listening attentively to her concerns for a few minutes, my suspicions were supported. She wasn't unintelligent. She was concerned about her child and no one had ever explained the differences between viral and bacterial infections to her in a way she understood. After praising her attentiveness to the health of her children, I shared that we were on the same team. We both wanted what was best for her son. This diffused the slight adversarial tension that was palpable when I entered the room.

Then I launched into the analogy: "An infection in our body is like an infestation in a garden. Sometimes the infestation is caused by bugs and other times it's caused by weeds. We use chemicals to treat the infestation only if they're going to kill the pests we have so that we can pro-

tect our garden from getting destroyed. But if we pick the wrong chemical, it will not only damage our garden because we are putting a toxic substance in the soil, but it will also fail to do anything for the actual pests causing the problem." I had her attention.

I continued, "Imagine that bacteria are like bugs and viruses are like weeds. Then antibiotics are like insecticides, so they don't kill the weeds. And like insecticides can damage the soil, antibiotics can damage the body by causing things like diarrhea and rashes. Some can even affect how our brains and nerves work. This would be ok if they were killing the pests that are the cause of the problem, but different antibiotics are designed for the different pests. Our training and medical science allow me to know with near certainty most of the time what type of 'pest' patients are dealing with. And your son is dealing with a 'weed' situation and not a 'bug' situation." Her posture eased and she began to nod as I concluded the metaphor.

"Thankfully, when it comes to almost all viruses, our body's immune system works better than any drug. You can imagine that our bodies are making our own internal weed killer. It just needs a little time to fully kick in and take care of the infestation."

We both left the room content after a less than 10-minute interaction. Sophie was satisfied to leave the visit without an antibiotic prescription, feeling reassured it was best for her son, and I was satisfied because I accomplished what I knew to be the best outcome for the situation without conflict. Before I'd made a conscious effort to incorporate and rely on analogy as an essential communication tool, I used to detest this sort of visit.

If you can relate, try using more analogies in your practice. Sure, your patients will appreciate it, but equally important, you'll be able to find enjoyment in the repetitive conversations you dread most. Think of it like a remodel for your career. ■

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Joshua W. Russell, MD, MSc, FCUCM, FACEP  
Editor-in-Chief, *JUCM*, *The Journal of Urgent Care Medicine*  
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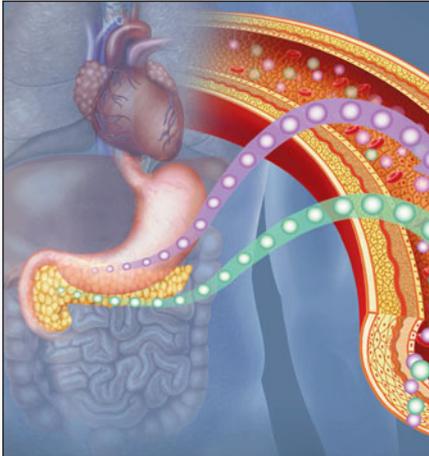


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**CLINICAL**

## 17 HbA1c as Screening/Diagnosis for Early or Asymptomatic Diabetes in the Urgent Care Facility

It's shocking and dangerous how many patients with diabetes simply don't know they have it. The advent of testing kits suitable for use in the urgent care setting could be lifesaving for patients who frequent urgent care in lieu of a traditional primary care relationship.

*Jay H. Shubrook, DO; Jane M. Caldwell, PhD; and Lindsey E. Fish, MD*

**URGENT CARE PERSPECTIVES**

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High blood pressure is a common incidental finding in urgent care. It's essential to consider more than the reading before prescribing medication or recommending significant lifestyle changes to the patient, however.

*Joanne P. Parker, MD*

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*E. Casey Anders, Chinedum Nkemakolam, MA, and Lindsay Tjiattas-Saleski, DO*

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*Jessica M. Crandall, DNP, ARNP-FNP-BC and Misty Schwartz, PhD, RN*

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For some children, their best chance to see a medical professional occurs at school. When that applies to a lot of kids, could there be an opportunity for UC operators to provide a much-needed service while expanding their visibility?

*Alan Ayers, MBA, MAcc*

**IN THE OCTOBER ISSUE OF JUCM**

For as common as "pink eye" is, it can be challenging to distinguish viral from bacterial conjunctivitis—and, therefore, to initiate treatment promptly and with confidence. Often, there's pressure to prescribe antibiotics from parents who are eager for a quick resolution and return to school for their children. The October issue of *JUCM* will feature a thorough discussion of getting the diagnosis and treatment right as expeditiously as possible.

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One of the most ominous aspects of the high prevalence of diabetes in the United States is the fact that so many people who have it *don't know they have it* and, therefore, aren't doing anything to manage their condition. With diabetes accounting for more than 3% of all deaths and representing nearly a quarter of healthcare spending, collectively we cannot afford to lose any ground in the fight against it.

Proactive screening could facilitate early intervention and reduce risk-related sequelae. As it happens, the emergence of new technologies and the trend of many patients relying on urgent care as de facto primary care make this an ideal time to explore what role UC can play in addressing the diabetes crisis. This issue's cover article, HbA<sub>1c</sub> as Screening/Diagnosis for Early or Asymptomatic Diabetes in the Urgent Care Facility (page 17) by **Jay H. Shubrook, DO**; **Jane M. Caldwell, PhD**; and **Lindsey E. Fish, MD** does just that.

Dr. Shubrook is professor and interim chair of the Department of Clinical Sciences and Community Health, as well as a diabetologist at Touro University California College of Osteopathic Medicine. Dr. Caldwell is with Medavera, Inc. Dr. Fish is affiliated with Peña Urgent Care Clinic, Denver Health and Hospital and the University of Colorado School of Medicine. She also serves as editor, images for *JUCM*.

Another common condition that sometimes gets discovered first in the urgent care center is hypertension. Given the often high-stress nature of urgent care encounters for the patient, a reading above what the guidelines would call *normal* doesn't necessarily indicate medication or significant lifestyle changes are needed. On the other hand, chalking it up to pain or anxiety and leaving it at that could be dangerous for the patient. So, we appreciate the efforts of **Joanne P. Parker, MD** in offering A Case-Based Exploration on How We Address High Blood Pressure Concerns in Urgent Care (page 13). Dr. Parker is associate medical director, Legacy GoHealth Urgent Care (Primary Care Service Line).

On the other side of the spectrum in terms of incidence—in 2023, anyway—is rupture of the pectoralis major muscle. It's actually becoming more common as (especially male) fitness buffs lean more toward building muscle mass. As such, the lessons to be gleaned from Myotendinous Rupture of Pectoralis Major: A Case Report (page 21), by **E. Casey Anders, OMSIII**, **Chinedum Nkemakolam, OMSIII**, and **Lindsay Tjiattas-Saleski, DO** could come in handy down the road. The authors are all acquainted through Edward Via College of Osteopathic Medicine (VCOM)-Carolinas, where Dr. Tjiattas-Saleski is associate dean for Clinical Affairs and

faculty for Family Medicine and Emergency Medicine.

It's all well and good to zero in on the correct diagnosis on the patient's initial visit to the urgent care center. Even something relatively straightforward like acute otitis media (AOM) becomes a challenge when adherence lags. We're not just talking about patients' following the provider's direction, either. The providers themselves need to be reminded in whatever way resonates with them just what the prevailing recommendations are. That's the take-home from Improving Adherence to Clinical Practice Guidelines for the Treatment of Acute Otitis Media in Pediatric Patients (page 25) by **Jessica M. Crandall, DNP, ARNP-FNP-BC**, a nurse practitioner with Greater Regional Health in Creston, IA and **Misty Schwartz, PhD, RN**, assistant professor, College of Nursing, Creighton University in Omaha, NE.

Whether it's AOM or something more out of the ordinary, sick children need medical attention. In some communities, though, the place they're most likely to get it might be at school. Given that the resources available to the school nurse fall short of what would be available in an urgent care center, there are times that just won't cut it. Some urgent care operators recognize this both as an unmet need in the community and a great opportunity to expand their business. **Alan A. Ayers, MBA, MAcc** covers one such company in Innovation and Sustainability: Urgent Care Run, School-Based Health Centers Improve Community Health (page 35). Mr. Ayers is president, Experity Networks and senior editor, practice management, for *JUCM*.

Sometimes it's figuring out how to draw more business to existing centers that's needed most. In Is It Time to Revisit Your Urgent Care Marketing Tactics? (page 50), **Heather Real** reminds us that a patient's relationship with an urgent care center starts before they have a need to be seen by a provider. Are you reaching them as early as possible? Ms. Real is senior consultant, Experity Consulting.

Finally, in Abstracts in Urgent Care (page 39), **Ivan Koay MBChB, MRCS, FRNZCUC, MD** draws out the most urgent care-relevant pieces of information from new literature, published elsewhere, on antibiotics for pediatric urinary tract infections; possible links between influenza and myocardial infarction; and long COVID-19 symptoms, 2 years on. Dr. Koay is an urgent care physician and medical lead, Kings College Hospital Urgent Treatment Centre, London; convenor, Ireland and UK faculty of the Royal New Zealand College of Urgent Care Independent Assessor European Reference Network, Andalusian Agency for Healthcare Quality. ■



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# The Fights We Can Win

■ LOU ELLEN HORWITZ, MA

There's been a lot of deep thinking around here lately. The questions we've been pondering have been with us for a long time, but often the answers don't fully emerge when we want them to. They emerge when the moment is right. And sometimes, it takes new questions, or the same questions asked in a different way at a slightly different time or by a different person, for the answers to open up. It seems the universe finally speaks when it is darn good and ready.

One of the questions was, *Who does what?* across UCA, the College of Urgent Care Medicine (CUCM), and the Urgent Care Foundation (UCF). Everyone involved in any of these organizations is passionate about the current and future states of Urgent Care, and those states are multifactorial. If we could, we'd all work on everything, but a lack of focus can make it extremely difficult to make progress.

Focus has its own challenges, however. Choosing to focus on a few things means giving up focus on several other things—and when you are passionate, giving up those other things is also extremely difficult. There's nothing that's *not* important to us in Urgent Care.

The good news we've discovered is that “giving up” on something actually means trusting someone else to handle their part. And these three entities have learned to trust each other. It's not giving up; it's giving *to*. This trust enables each of us—UCA, CUCM, and UCF—to truly focus on our unique roles in creating the world we all believe can come to pass.

What we've also discovered is that we are committed to taking on some pretty hard work together. Our core purposes are not easy. Our visions are not small. And we know this is the right direction because what you, our members, do is not easy or small, either. It's difficult and it's incredibly impactful on the local, national, and increasingly global level.

For a long time, it seems, we have looked at the large

mountains in front of us, and the hostiles standing in front of us, and the support we have around us, and asked, *Is this really a fight we can win?* Urgent Care's lobbying spend vs the lobbying spend of the commercial payer community is not a remotely fair fight. The AMA and ABMS are entrenched behemoths compared to us. So, when we have looked at running up that mountain we've asked whether we should be throwing our limited resources and energy and focus and reputations at problems that seem so insurmountable and odds that seem so daunting.

It's taken me too long to fully realize that the size of the mountain and the pocketbooks of the hostiles don't matter. What matters is that all of you are fighting these battles already because you do not have a choice, and consequently neither do we. We—UCA, CUCM, and UCF—don't just get to fight the fights we can win. Eventual victories would make us look good, but that's not why we are here. We are here to fight the fights that need fighting—win or lose.

Our boards of directors and trustees are fully committed to this. We are going to make positive change happen for Urgent Care even if we all die trying and the next generation has to pick up the swords. We're not going to ever stop, because we know you aren't either.

We've spent a lot of time working out what that fight looks like—who has what role—and how we continue to support your day-to-day improvement (“advancement”) while we take to the largest battlefields. We've drilled down on how our armies support and reinforce each other and how we soften beaches that other waves of work won't get to for many years, and I am so grateful to all of the volunteer leaders and other members who have helped with this work. This column is way too short to lay it all out, but we will be sharing soon in longer formats.

While you wait, check out our newest White Paper, written by Communications Director Samantha Wulff, “The Essential Nature of Urgent Care in the Healthcare Ecosystem Post-COVID-19.” It's available at <https://urgentcareassociation.org/wp-content/uploads/2023-Urgent-Care-Industry-White-Paper.pdf>. Keep your swords sharp. ■



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



# CONTINUING MEDICAL EDUCATION

**Release Date:** September 1, 2023  
**Expiration Date:** August 31, 2024

## Target Audience

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

## Learning Objectives

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

## 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 the Institute for

Medical and Nursing Education (IMNE) and the Institute of Urgent Care Medicine. IMNE is accredited by the ACCME to provide continuing medical education for physicians. The IMNE designates this journal-based CME activity for a maximum of 3 *AMA PRA Category 1 Credits*<sup>™</sup>.

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## CONTINUING MEDICAL EDUCATION

JUCM CME subscribers can submit responses for CME credit at [www.UrgentCareCME.com](http://www.UrgentCareCME.com). Quiz questions are featured below for your convenience. This issue is approved for up to 3 AMA PRA Category 1 Credits™. Credits may be claimed for 1 year from the date of this issue.

### HbA1c as Screening/Diagnosis for Early or Asymptomatic Diabetes in the Urgent Care Facility (page 17)

1. It is estimated that what percentage of young adults (18 to 44 years of age) have prediabetes?

- a. 9%
- b. 16%
- c. 24%
- d. 30%

2. According to data from the American Diabetes Association, what percentage of U.S. adults with diabetes are not aware of having, or do not report having, diabetes?

- a. 2.8%
- b. 7.2%
- c. 11.6%
- d. 21.4%

3. Which of the following factors may falsely elevate HbA1c?

- a. Aplastic anemias
- b. Hyperbilirubinemia
- c. Iron deficiency anemias
- d. All of the above

### Myotendinous Rupture of Pectoralis Major: A Case Report (page 21)

1. After a tear in the pectoralis major, there is notable loss of motion and strength during:

- a. Internal rotation
- b. External rotation
- c. Medial rotation
- d. Adduction

2. Diagnosis of myotendinous rupture of pectoralis major is made clinically and confirmed by radiological imaging, ideally:

- a. X-ray
- b. MRI
- c. CT scan
- d. Ultrasound

3. Nonsurgical treatment of myotendinous rupture of pectoralis major (rest, ice, analgesics, and immobilization for 3 weeks prior to physical therapy) is recommended for:

- a. Pediatric patients
- b. Elderly patients
- c. Patients who are athletic
- d. Patients who are relatively sedentary and less active

### Innovation and Sustainability: Urgent Care-Run, School-Based Health Centers Improve Community Health (page 35)

1. The benefits of school-based health centers (SBHCs) are well-established. However, significant barriers to entry include:

- a. Upfront and ongoing costs of opening
- b. Gaining approval from public school boards
- c. Adapting or building facilities
- d. All of the above

2. Under the Health Insurance Portability and Accountability Act (HIPAA), the following are granted access to student medical or financial information on an as-needed basis:

- a. Elected Board of Education members
- b. School/facility administrators
- c. Classroom staff (eg, teachers, aides) following up on the wellbeing of a child
- d. None of the above

3. The SBHC model caters primarily to communities where:

- a. The majority of the population is covered by private insurance
- b. Medicaid plans are prominent
- c. Access to quality healthcare is limited
- d. Public dollar-per-student spending is higher than the national average



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1. Abbott ID NOW™ Influenza A&B 2 Clinical Assertion Data Held on File 2. CFR – Code of Federal Regulations Title 21. U.S. Food & Drug Administration. Updated March 28, 2023. Accessed June 29, 2023. <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=866.3328.3>. Abbott. ID NOW™ Strep A 2 Clinical Assertion Data Held on File 4. Chartrand, C. et al. Diagnostic Accuracy of Rapid Antigen Detection Tests for Respiratory Syncytial Virus Infection: Systematic Review and Meta-analysis. J Clin Microbiol. December 2015 vol. 53 no. 12 3738-3749

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# A Case-Based Exploration on How We Address High Blood Pressure Concerns in Urgent Care

**Urgent message:** High blood pressure is a common incidental finding in urgent care. Distinguishing patients who may need treatment from those who should be advised to follow up for further evaluation is well within the urgent care provider's field of expertise.

Joanne P. Parker, MD

Patients often present to urgent care with concerns about their blood pressure readings. Additionally, high blood pressure (BP) is frequently a very incidental finding among patients presenting to UC for other concerns. In my practice, I see primary care patients as part of a service line offered through our UC center. From this vantage point, I see a wide range in how high blood pressure is managed by the UC providers I work side-by-side with. This article will address some of the common scenarios I've observed involving patients with elevated BP readings and review the most recent guidelines and evidence-based approaches to such cases.

## Case 1

A 35-year-old with stable hypertension on lisinopril/HCTZ 10/12.5 mg daily just moved to the area. They have an appointment to establish care with a primary care physician in 2 months. On presentation, their blood pressure is 118/70. They are requesting a refill because they only have 1 week of medication left. How would you respond to this request?

- A. Turn them away because "this isn't the purpose of urgent care."
- B. See them but insist on an electrolyte and renal function panel before refilling the medication. Tell the patient the following day's provider will review



- the labs and consider a refill if they're normal.
- C. Offer for them to see your Urgent Care's Primary Care service line provider next week.
- D. Refill their medication for 90 days.

The correct answer is D. It is appropriate in this setting to refill the patient's medication. Checking electrolytes and/or renal function is not indicated in asymptomatic adults.<sup>1</sup> While this is not technically "urgent," it is exactly the kind of care we can and should provide when patients are in the lurch—trying to do the right thing for their health, and unable to see another provider. They have an upcoming primary care appointment already arranged; they simply need medication to cover

Author affiliations: Joanne P. Parker, MD is Associate Medical Director, Legacy GoHealth Urgent Care (Primary Care Service Line).

them until that time. The additional benefit to helping them with this very reasonable request is that they are likely to remember your kindness with gratitude and keep your clinic in mind for the next time they have an urgent need.

### Case 2

A 74-year-old presents after cutting their finger on a piece of broken glass in the kitchen. They are very anxious about needing stitches and needles in general. Their blood pressure is 192/105 and they have never been diagnosed with hypertension. They have a regular primary doctor and their blood pressure has been normal as recently as their last routine visit 2 weeks ago. What should you do about this patient's blood pressure?

- A. Send them directly to the emergency department. They have a high risk of stroke in the next 24 hours.
- B. Address the laceration but ignore the BP because that is best left to discuss with their primary doctor.
- C. Prescribe the patient an oral antihypertensive right away and refer them to their PCP for follow-up.
- D. Repeat the BP measurement after repairing the laceration. If the BP remains elevated, ask them to follow up with their PCP in the next few weeks.

The correct answer is D. Their BP is almost certainly elevated due to the catecholamine surge associated with their high level of anxiety. Additionally, the short-term risk for patients with asymptomatic high BP readings is fairly low.<sup>2</sup> Starting elderly patients on BP-lowering medications without established hypertension can lead to orthostatic hypotension, gait instability, and falls. In the short-term, an asymptotically elevated BP is generally a safer situation. High BP is rarely an emergency, but a BP that is so low as to cause symptoms is immediately dangerous, especially in older adults.

### Case 3

A 56-year-old woman comes in after rolling her ankle. You note on chart review that her BP is elevated every time she's in urgent care. She doesn't have a PCP. She's a daily smoker and admits to occasionally using cocaine. Her BP is 174/105 at the time of this visit. How should you address this patient's elevated blood pressure?

- A. Address her ankle sprain and tell her she should really stop smoking and using drugs and that she should find a PCP.
- B. Give her 30 days of amlodipine 5 mg daily and tell her to find a PCP.
- C. Ignore her blood pressure entirely and focus only on the ankle injury.

- D. Discuss what barriers she may have to regular care. Ask if she is willing and able to see a PCP that works out of your UC center. Offer support with a substance treatment referral if she is willing.

The correct answer is D. Her pressure is high but it's not so urgent that it needs to be treated today. Outcomes of immediate vs delayed hypertension treatment are similar over subsequent months.<sup>3</sup> This patient has a complex social situation and several risk factors for long-term negative health outcomes that make it unlikely for them to fill or continue any blood pressure prescription given today. Additionally, controlling hypertension for a month without any follow-up plan is unlikely to change her long-term outcomes. It's best to be compassionate and offer what you can, and hearing a healthcare provider call out high-risk health behaviors can be surprisingly impactful at times.

### Case 4

An 86-year-old man is brought in by his adult child for confusion. His BP at home was 210/150. His child is not sure if he takes his medications as directed. How should you respond to this patient's high BP?

- A. Tell them to go to the ED immediately.
- B. Get a urinalysis to see if he's confused because of a UTI. If indicated, prescribe an antibiotic because the 2+ leukocyte esterase (LE) is the likely cause of his confusion. Tell them to call his primary doctor tomorrow about his blood pressure.
- C. Repeat a full set of vital signs and perform a thorough general and neurological exam while your staff calls 911.

The correct answer is C. This may be a hypertensive emergency (eg, posterior reversible encephalopathy syndrome, or PRES) and his confusion may represent evidence of end organ damage.<sup>4</sup> Sending such a patient away without an evaluation is an exceptionally risky practice. This evaluation can be (and is best) kept brief. Acute confusion has a broad differential, but almost all conditions on this list require ED-level care.

A full set of vital signs, general screening, and cardiac and neurologic exams should be performed at a minimum. It's also reasonable to consider an EKG, but many paramedics will also likely perform one by protocol and this should not delay transport of such patients.

It may seem more expedient to simply send such patients directly to the ED once they walk in, but this patient very well may decompensate during a car ride over to the hospital. Worse yet, they may not heed the advice at all and decide not to go to the ED, choosing instead to try another UC down the road.

### Remember the Fundamentals

The fundamentals can't be overlooked when it comes to BP. I've seen frequent confusion and deviations from best practice when it comes to accurate measurement of blood pressure and making an appropriate diagnosis of hypertension.

With that in mind, let's briefly review how to accurately measure blood pressure. Ensure:

- at least 30 minutes have passed since eating, drinking, or smoking
- at least 5 minutes of sitting still
- a correctly sized cuff
- the patient's feet are flat on the floor (ie, not dangling off the exam table), legs uncrossed, arm at heart level
- no talking during measurement

If you reflect on these parameters, you'll probably realize that many of the BP measurements we take in UC are not ideal and should not be used in support of a diagnosis of essential hypertension.

Additionally, as discussed above, the diagnosis of essential hypertension requires:

- three elevated BP measurements (ie, >140/90), taken at least 2 weeks apart
- accurate reading (see above)
- no other reason for high readings (eg, anxiety, sleep apnea, stimulant use, nicotine use)<sup>5</sup>

In other words, you will probably not make a new diagnosis of hypertension in UC very often, if ever. Patients with high readings should be advised to get a home blood pressure cuff and measure a few times a week at different times of day and record the values so they can discuss them with their PCP at their next visit.<sup>6</sup>

What about when the patient is really worried about their high BP readings? This happens quite often, and reassurance and education are almost always the best approach here. Reassurance can consist of assuring patients that the likelihood of immediate danger and the short-term risks of un-/undertreated hypertension are quite low. However, the longer-term risks (most notably for stroke) aren't.

The good news for patients is that with healthy lifestyle changes many patients can avoid or get off medications to control their blood pressure. These can include some simple changes such as:

- Dietary improvements – Low-carbohydrate diets have proven more effective than low-fat diets for reducing cardiovascular disease risk.<sup>7</sup>
- Regular exercise – This doesn't mean just "cardio." In fact, growing evidence supports high-intensity

training with resistance as a likely more potent intervention for cardiovascular protection.<sup>8</sup>

- In addition to reminders about "diet and exercise," these additional factors can also contribute to improvement of hypertension:<sup>9,10</sup>
  - Healthy sleep and treatment of underlying sleep apnea
  - Quitting smoking
  - Reducing caffeine and eliminating stimulant use
  - Reducing overall levels of stress

Educating worried patients about the things that they can do to control their high BP gives them a sense of agency. It also allows for a redirection of their nervous energy toward healthy lifestyle choices rather than helplessness or perseveration about the numbers they see on their home cuff. I like to use the analogy that elevated BP readings are like seeing an undesirably high number on the bathroom scale when we weigh ourselves. Yes, it's concerning. And, no, it's not an emergency. Worrying about the numbers doesn't accomplish much, but using the numbers as a source of motivation to live a healthier life can make a world of difference.

In summary, high blood pressure readings warrant our attention, but rarely much in the way of immediate medical intervention. Without evidence of end-organ injury (eg, chest pain, confusion, visual disturbance), hypertension is not an emergency. Our role in urgent care is to understand the underlying situation and respond appropriately while taking the opportunity to briefly counsel the patient about the significance of the high blood pressure and what they can do about it. ■

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# HbA1c as Screening/Diagnosis for Early or Asymptomatic Diabetes in the Urgent Care Facility

**Urgent message:** The use of all-inclusive kits with compact, table-top analyzers provides a rapid quantification of HbA1c levels in patients. The use of these tests for in-house screening has the potential to increase the diagnosis of early or asymptomatic diabetes in young adults and underserved or overlooked populations.

JAY H. SHUBROOK, DO; JANE M. CALDWELL, PHD; and LINDSEY E. FISH, MD

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**Key words:** urgent care, diabetes, HbA1c

## Abstract

Proactive screening for diabetes promotes early intervention, mitigates progression, and reduces the long-term consequences, expenses, and complications of the disease. The CLIA-waived HbA1c protocol can be performed by relatively untrained operators without prior patient fasting with a simple fingerstick for blood. Alternative screening methods such as non-CLIA-waived HbA1c, plasma glucose, or oral glucose tolerance are time-consuming and uncomfortable, and may require several return visits and fasting.

Numerous studies have found HbA1c to be as effective as plasma glucose for screening. There is a growing trend for adults in the United States, especially younger adults, to rely on UC facilities for chronic conditions. UC is the logical place for point-of-care (POC) screening by HbA1c.



## Introduction

Diabetes is a major contributor to morbidity and mortality in the United States. Accounting for greater than 3% of all deaths in 2017, it is the seventh-leading cause of death in America.<sup>1</sup> When left untreated, diabetes can lead to vascular and heart disease, kidney failure, limb amputation, and blindness.<sup>2</sup> New research now links diabetes to major depressive disorder.<sup>3</sup>

**Author affiliations:** Jay H Shubrook, DO, Touro University College of Osteopathic Medicine. Dr. Shubrook has served as a consultant for Abbott and Bayer and on an advisory board for Astra Zeneca, Eli Lilly, Nevro, and NovoNordisk. Jane M. Caldwell, PhD, Medavera, Inc. Dr. Caldwell has no relevant financial relationships with any commercial interests. Lindsey E. Fish MD, Peña Urgent Care Clinic, Denver Health and Hospital; University of Colorado School of Medicine. Dr. Fish has no relevant financial relationships with any commercial interests.

The economic and social costs of treatment are high, as well. The total economic cost attributed to diabetes in the United States was \$327 billion in 2017, representing 24% of all healthcare dollars.<sup>4</sup>

Reduced quality of life, absenteeism from work, and loss of loved ones by premature death impact not just the affected individuals, but their families, friends, and employers. In addition, diabetes and its complications further burden an already taxed healthcare system.

Early detection of diabetes in adults with defined risk factors is the key to prevention and early treatment among asymptomatic or prediabetic individuals.

The prevalence of prediabetes and diabetes has increased among adults in the United States, especially in younger populations. It is estimated that 24% of young adults between 18 and 44 years of age have prediabetes.<sup>5</sup> This group has the greatest increase in relative diabetes prevalence and the most to gain from early screening and diagnosis.<sup>6</sup>

A meta-analysis of U.S. children and adolescents found that 25% of these youth were eligible for diabetes screening.<sup>7</sup> HbA1c was cited as a useful nonfasting test in children as it also points to other cardiometabolic risk factors which could be reduced by proactive lifestyle interventions at this early age.

### The Shift to Urgent Care

Urgent care centers have become the first level of medical care for a growing number of insured and uninsured Americans.<sup>8</sup> Originally expected to provide only episodic acute care,<sup>8</sup> urgent care has become the “new normal” healthcare site for many chronic conditions due to the rising need for accessible, rapid, and affordable healthcare. The Urgent Care Association estimates that more than 18% of all primary care visits and nearly 10% of all outpatient physician visits occur in urgent care centers.<sup>9</sup>

Healthcare has been historically difficult for patients to navigate. Many UC providers are now affiliated with primary care facilities, which can streamline referrals.

In a 2019 health statistics report, the Centers for Disease Control and Prevention<sup>10</sup> revealed that 32% of women and 26% of men in the U.S. had one or more visits to an urgent care center or retail health clinic (RHC) in a 12-month interval. Use of these “convenience” facilities decreased as age increased, pointing to use by younger adults.

UC and RHC use also increased with increasing education levels. The CDC report recommended UC and RHC as providers of preventive care services such as vaccinations. UC facilities could adjust and respond to this trend from acute to chronic care by providing

further preventive care services such as diabetes screening and referral of chronic conditions to primary care.

### The Need for Point-of-Care Screening

There are no definitive early signs or symptoms that can reliably diagnose type 2 diabetes. Early diagnosis requires a systematic screening program for at-risk patients. Research has shown that 8.5 million adults aged 18 years or older who met laboratory criteria for diabetes were not aware of or did not report having diabetes.<sup>11</sup> This represents 3.4% of all U.S. adults and 23% of U.S. adults with diabetes.<sup>11</sup> (See **Table 1**.)

Previously undiagnosed diabetes and impaired glucose tolerance are common in patients with an acute myocardial infarction. In one study, approximately 25% of patients experiencing acute myocardial infarction were found to also have type 2 diabetes.<sup>12</sup> One third of newly diagnosed diabetes patients find they already have a complication due to the disease.<sup>12</sup> The likelihood of screening was higher with POC systematic screening than with use of an off-site lab test for screening.<sup>13</sup> POC screening also was more likely to find prediabetes (53% vs 32% for POC and off-site lab, respectively.<sup>13</sup>) Nearly three quarters of the people who presented to the hospital with hyperglycemia but did not have known diabetes would have had the identification of chronic hyperglycemia with a HbA1c test.<sup>14</sup>

### Comparison of Diabetes Screening Methods

For diabetes, in contrast to other diseases, there is no distinction between screening and diagnostic testing.<sup>15</sup> Therefore, the same tests are used for both purposes. Glycated hemoglobin, or hemoglobin A1c (HbA1c), was first noted in patients with diabetes by Rahbar in 1969. With recent advances including the proper instrumentation and kits, the HbA1c protocol can be performed by relatively untrained operators without prior patient fasting with a simple fingerstick for blood. The measurement of this deviant hemoglobin has become common practice for monitoring the progression and control of patients with known diabetes as it quantitates average blood glucose levels over several months.

The plasma glucose (PG) test is a one-point measurement which quantifies the patient’s plasma glucose concentration at the time of collection only. Because this concentration can fluctuate due to many factors, PG can miss patients who are below the cutoff range for positive diagnosis at that particular time. HbA1c is an average measurement of glycated hemoglobin over time. For comparison, PG is a point measurement while HbA1c is the slope of a line drawn through many points over time.

<b>Table 1. Estimated Crude Prevalence of Diagnosed Diabetes, Undiagnosed Diabetes, and Total Diabetes Among Adults Aged 18 Years or Older, United States, 2017–2020</b>			
<b>Characteristic</b>	<b>Diagnosed diabetes percentage (95% CI)</b>	<b>Undiagnosed diabetes percentage (95% CI)</b>	<b>Total diabetes percentage (95% CI)</b>
<b>Total</b>	11.3 (10.3–12.5)	3.4 (2.7–4.2)	14.7 (13.2–16.4)
<b>Age (years)</b>			
<b>18–44</b>	3.0 (2.4–3.7)	1.9 (1.3–2.7)	4.8 (4.0–5.9)
<b>45–64</b>	14.5 (12.2–17.0)	4.5 (3.3–6.0)	18.9 (16.1–22.1)
<b>≥65</b>	24.4 (22.1–27.0)	4.7 (3.0–7.4)	29.2 (26.4–32.1)
<b>Sex</b>			
<b>Men</b>	12.6 (11.1–14.3)	2.8 (2.0–3.9)	15.4 (13.5–17.5)
<b>Women</b>	10.2 (8.8–11.7)	3.9 (2.7–5.5)	14.1 (11.8–16.7)
<b>Race-Ethnicity</b>			
<b>White, non-Hispanic</b>	11.0 (9.4–12.8)	2.7 (1.7–4.2)	13.6 (11.4–16.2)
<b>Black, non-Hispanic</b>	12.7 (10.7–15.0)	4.7 (3.3–6.5)	17.4 (15.2–19.8)
<b>Asian, non-Hispanic</b>	11.3 (9.7–13.1)	5.4 (3.5–8.3)	16.7 (14.0–19.8)
<b>Hispanic</b>	11.1 (9.5–13.0)	4.4 (3.3–5.8)	15.5 (13.8–17.3)
CI, confidence interval. Time period 2017–2020 covers January 2017 through March 2020 only. Diagnosed diabetes was based on self-report. Undiagnosed diabetes was based on fasting plasma glucose and A1c levels among people self-reporting no diabetes.			
Adapted from: Centers for Disease Control and Prevention. Prevalence of both diagnosed and undiagnosed diabetes. Available at: <a href="https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-undiagnosed-diabetes.html">https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-undiagnosed-diabetes.html</a> . Accessed August 4, 2023.			

The HbA1c is unique in that it does not require the person to fast and now can be done during the same appointment by venipuncture or POC fingerstick.

An older diabetes screening method, oral glucose tolerance (OGT), is costly, invasive, and inconvenient for patients. Healthcare providers risk losing patients who can't or won't overcome these hurdles to follow-up appointments.

### Advantages of HbA1c Screening

POC HbA1c instrumentation became available in the 1990s.<sup>16</sup> Results are generally available within 10 minutes and require a finger prick for whole blood, similar to the test for the glucometer. Prior fasting by the patient is not required, so the test can be administered spontaneously and does not require a return visit. The FDA has CLIA-waived most POC HbA1c testing, deeming the procedure so simple that there is little risk of error. No specific training is required for test operators who are exempt from other CLIA inspections and requirements.<sup>16</sup>

### Cost Advantages of POC testing

Several studies indicate that POC HbA1c testing results in cost savings for both the patient and the greater healthcare system. While the single unit cost of POC HbA1c can be higher<sup>17</sup> than other screenings, when factoring in the cost of additional visits for asynchronous testing it is less costly to use HbA1c in the long-

term.<sup>18</sup> A recent study published in *The Journal of Urgent Care Medicine* used HbA1c as a screening method in UC facilities. At-risk individuals were identified with an Early Diabetes Detection Pathway (EDDP) protocol.<sup>8</sup> When combined with EDDP, HbA1c was found to be an efficient, rapid, and low-cost method to screen previously undiagnosed prediabetes and diabetes patients.

### Limitations

Racial and ethnicity factors need to be considered during screening. It is known that some Asian populations have hemoglobin variants and other conditions that affect red cell turnover.<sup>20</sup>

Nonglycemic factors may also affect the measurement of HbA1c.<sup>2</sup> Acute blood loss, chronic liver disease, hemolytic anemias, antiretroviral treatments, pregnancy, and vitamins E and C can falsely lower HbA1c.

Factors which may falsely elevate HbA1c are aplastic anemias, hyperbilirubinemia, hypertriglyceridemia, iron deficiency anemias, renal failure, and splenectomy.

Malnutrition can either lower or elevate HbA1c levels.

Healthcare providers should be aware of these confounding factors and consult a checklist to evaluate and consider their potential impact when a positive test occurs. POC HbA1c screening errs on the side of false positives. A referral could suggest other confirming tests such as plasma glucose if these factors are present.

The cost of false positives to the medical community

and patients is low compared with the cost of missing a diagnosis in an asymptomatic patient. Some researchers recommend using both glucose and HbA1c as complementary screening protocols to reduce the risk of false positives and improve and hasten diagnoses.<sup>1</sup>

One study characterized HbA1c performance and compared it to fasting plasma glucose (FPG) among 3,540 Chinese, Malay, and Indian patients.<sup>20</sup> HbA1c screening identified 95% of the individuals with diabetes; the remaining 5% had impaired glucose tolerance. The authors recommended HbA1c as an alternative to FPG screening among the ethnic communities tested. Furthermore, they recommended lowering the testing concentrations to a combination of HbA1c  $\geq 6.1\%$  and FPG  $\geq 5.6$  mmol/L to improve identification of prediabetes and diabetes in that population.<sup>20</sup>

According to the U.S. Preventive Task Force Services (USPTFS)<sup>20</sup> and the American Diabetes Association,<sup>21</sup> the HbA1c test should be performed using a method that is certified by the NGSP and standardized or traceable to the Diabetes Control and Complications Trial (DDCT) reference assay. It states, "Point-of-care A1C assays have not been prospectively studied for the diagnosis of diabetes and are not recommended for diabetes diagnosis; if used, they should be confirmed with a validated measure. POC HbA1c may be more generally applied for assessment of glycemic control in the clinic."<sup>22</sup>

### Insurance Reimbursement for HbA1c Screening

Both HbA1c and PG tests are reimbursed by Medicare and other insurers for patients with known diabetes.<sup>1</sup> However, as of this writing, HbA1c is not covered by Medicare for screening of at-risk asymptomatic patients. The USPSTF has given HbA1c screening a grade B for routine screening of asymptomatic patients and implies that it is duplicative to glucose in this use.<sup>1</sup> Health plans need to recognize the utility of HbA1c and provide coverage for this test.

The results of a study looking at differences in HbA1c screening among U.S. adults indicated that despite having health insurance, people of color (such as Hispanic and African American) were less likely to have their HbA1c monitored by their healthcare provider.<sup>23</sup> Further studies were advised to assess the impact of these racial disparities.

### Conclusions

- Rapid POC HbA1c screening has been shown to increase detection of diabetes and prediabetes.
- HbA1c screening at POC is more cost-effective in the long-term for the patient and the healthcare system.

- Urgent care, dental office, and community health service screenings can all provide early detection and improve health outcomes for patients and their communities. ■

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# Myotendinous Rupture of Pectoralis Major: A Case Report

**Urgent message:** Nonspecific presentation and time lapsed between injury and presenting to urgent care can delay diagnosis and initiation of proper management in patients ultimately diagnosed with myotendinous rupture of pectoralis major, a relatively rare injury that is becoming more common.

E. CASEY ANDERS, CHINEDUM NKEMAKOLAM, MA, and LINDSAY TJIATTAS-SALESKI, DO

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## Abstract

Rupture of the pectoralis major muscle is a rare injury, but its incidence is becoming more common due to the increasing popularity of strength training and contact sports. The pectoralis major muscle is responsible for adduction, flexion, and internal rotation of the humerus. It commonly ruptures when there is additional force or tension placed on a muscle that is already extended, externally rotated, and eccentrically contracted; this is a movement typically seen during a bench press. Prompt diagnosis is reported to improve patient outcomes when surgery is completed within the first 8 weeks.

## Case Report

A 39-year-old male presented with right shoulder pain that occurred during a workout 2 days prior. At the time of injury, he reported being on his last repetition of a bench press series with 345 pounds on the bar when he described what felt like “a braided rope being torn fiber by fiber” localized to the shoulder area. This sensation caused him to initially drop the bar, but there was no lasting pain. He later noticed weakness and



found his right shoulder and upper arm to be swollen and bruised (**Figure 1**). At presentation, he was documented to have bruising on the right arm and chest wall, tenderness, edema, and decreased range of motion with external rotation and extension. The arm was neurovascularly intact and his pain level was rated at 7/10.

The patient reported no previous injury to this area. He has an extensive surgical history including a right knee meniscus repair in 2017, hemilaminectomy and microdiscectomy in 2018, gangrenous appendix

**Author affiliations:** E. Casey Anders, OMS III, VCOM-Carolinas. Chinedum Nkemakolam, OMS III, VCOM-Carolinas. Lindsay Tjiattas-Saleski, DO, VCOM-Carolinas. The authors have no relevant financial relationships with any commercial interests.

**Figure 1. Photograph of anterior arm and chest wall after initial injury.**



removal in 2019, and L3-L4 fusion with prosthetic disc in 2020. His maintenance medications included gabapentin 600 mg BID, tramadol 50 mg, cyclobenzaprine 10 mg, indomethacin 50 mg BID, and acetaminophen OTC PRN. He has no pertinent past medical history. He smokes cigars daily and denies use of alcohol or illicit drugs.

### Differential Diagnosis

Due to the location and physical presentation of the injury, a rupture of the biceps tendon, proximal humerus fracture, rotator cuff tendon tear, and shoulder dislocation should all be considered at the time of diagnosis.

### Outcome

An MRI of the chest without contrast revealed a full thickness rupture of the right pectoralis major (**Figure 2**).

The patient was discharged home with a right pectoralis major muscle rupture diagnosis, instructed to follow up with his PCP, and referred to orthopedics.

He underwent surgical repair 22 days after initial injury.

### Discussion

The pectoralis major is a large, superficial muscle lying in the anterior thoracic cage. It has two heads: a sternal head originating at the sternum and first six costal cartilages, and a clavicular head originating from the clavicle.<sup>1</sup> The muscle fibers converge onto their insertion point at the greater tubercle of the humerus via the pectoral tendon. The muscle has variation in fiber lengths, allowing it to flex, adduct, and internally rotate the humerus.<sup>2</sup> Prior to insertion, the sternal head fibers

pass underneath the clavicular head, causing them to become maximally stretched when the arm is abducted, externally rotated, and extended.<sup>3</sup> This leaves the sternal head in a vulnerable position during motions like the bench press. Most ruptures affect the distal portion of the muscle, either at the musculotendinous junction (24% to 29%) or at the insertion site on the humerus (59% to 65%), and commonly result from direct injury or extreme muscle tension.<sup>2,3</sup> In 2015, there were less than 400 documented cases, with 76% of them occurring after 1990.<sup>2,4</sup>

Patients generally report a tight pulling sensation or audible sound with sudden pain and weakness at the time of injury.<sup>1</sup> They present with bruising, swelling, and cosmetic defects to the axilla, anterior chest, and upper arm on the injured side.<sup>2,5</sup> After a tear, there is notable loss of motion and strength during internal rotation.<sup>2</sup> Pain can be intense, but then generally subsides. Inspection of the chest wall may show unilateral bulging of the muscle or a dropped nipple, both signifying a medially retracted pectoralis major.<sup>2</sup> Comparison of axillary folds should be performed by having the patient adduct their arms with their hands resting on their iliac crests. This will show hollowing or loss of the axillary fold.<sup>2</sup> These exam findings should add a pectoralis major muscle tear to the differential, along with proximal biceps tendon injury, acromioclavicular joint separation, sternoclavicular joint dislocation, or rotator cuff tendon tear.

### Diagnosis

Diagnosis is made clinically. Extent of the injury is confirmed with radiological imaging.<sup>6</sup> A standard radiograph can exclude other contributing pathologies but is limited in evaluation of a pectoralis muscle injury specifically and is generally not recommended. MRI, the gold standard for diagnosis, can confirm a muscle tear, classify the type, assess the grade, and determine location of the injury.<sup>1,7</sup> MRI was found to have a sensitivity of 73.9% and specificity of 72.2% for avulsion injuries, and a sensitivity of 75% and specificity of 79.3% for musculotendinous injuries on military populations.<sup>8</sup> The accuracy of MRI decreases with chronic tear evaluation.<sup>9</sup>

### Treatment

A pectoralis major tear can be treated surgically or conservatively.

Nonsurgical treatment consists of rest, ice, analgesics, and immobilization for 3 weeks prior to physical therapy.<sup>1,4</sup> This is recommended for sedentary, less active

patients or proximal muscle belly tear injuries.<sup>11</sup>

Surgical treatment, especially when completed within the first 8 weeks, has a significantly better outcome than delayed surgical treatment or conservative treatment alone.<sup>4</sup> There is no reported difference in patient outcome based on type of surgical repair.<sup>12</sup> Surgery is typically recommended for young, active patients in the context of both acute and chronic ruptures.

Postoperative rehabilitation should focus on restoring range of motion and re-establishing strength and stability to the muscle. High weight, low repetition exercises involving the pectoralis major are discouraged.<sup>2</sup> Consensus on rehabilitation protocols is lacking in current literature, but it was found that patients wait about 4 weeks postsurgery before beginning rehabilitation exercises.<sup>5</sup> This study also found that 90% of surgically repaired injuries returned to sport 6 months postsurgery. Of those able to return, 74% performed at the same level prior to injury.<sup>5</sup>

### Conclusion

This case report presents a confirmed case of a myotendinous tear of the sternal head of the right pectoralis major muscle. This injury seldom occurs, has a nonspecific physical presentation, and can present several days after initial injury, which can lead to a delay in the initiation of proper management. Obtaining a proper imaging study, such as an MRI, is a useful tool to confirm the diagnosis and determine the extent of muscle damage. Among the treatment options, prompt surgical intervention has been shown to result in the best patient outcomes. ■

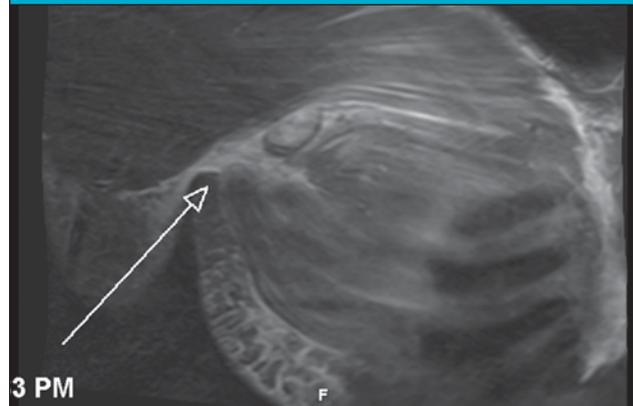
**Ethics statement:** The patient consented to the submission of this case report to the journal.

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**Figure 2. MRI chest without contrast, coronal view. Note the arrow indicating the region of fluid accumulation near the attachment of the right pectoralis major.**



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### TAKE-HOME POINTS

- Diagnosis of myotendinous rupture of pectoralis major is made clinically. Extent of the injury is confirmed with radiological imaging, however.
  - Standard radiograph can exclude other contributing pathologies but is limited in evaluation of a pectoralis muscle injury specifically. MRI is the gold standard for diagnosis and can confirm a muscle tear, classify the type, assess the grade, and determine location of the injury.
- Nonsurgical treatment consists of rest, ice, analgesics, and immobilization for 3 weeks prior to physical therapy and is recommended for sedentary, less active patients or proximal muscle belly tear injuries.
- Surgical treatment, especially when completed within the first 8 weeks, has a significantly better outcome than delayed surgical treatment or conservative treatment alone. Typically, surgery is recommended for young, active patients in the context of both acute and chronic ruptures.
- Postoperative rehabilitation should focus on restoring range of motion and re-establishing strength and stability to the muscle. Ninety percent of surgically repaired injuries returned to sport 6 months postsurgery, though only 74% of those able to return to their sport performed at the same level prior to injury.

## [re•li•a•bil•i•ty] *Defined*

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# Improving Adherence to Clinical Practice Guidelines for the Treatment of Acute Otitis Media in Pediatric Patients

**Urgent message:** The management of acute otitis media is a common problem throughout healthcare. Many national provider organizations have emphasized the significance of proper diagnosis and treatment is essential for a full, uncomplicated recovery.

Jessica M. Crandall, DNP, ARNP-FNP-BC and Misty Schwartz, PhD, RN

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**Keywords:** acute otitis media, pediatrics, antibiotic stewardship, quality improvement

## Abstract

**Background:** The management of acute otitis media (AOM) in pediatric patients has been a growing issue in many healthcare settings. AOM is the second most common pediatric diagnosis seen in outpatient clinics. It is noted that approximately 80% of children will have a diagnosis of AOM at least once in their lifetime. AOM contributes to increased healthcare costs in the United States. The American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and the American Academy of Otolaryngology (AAO) all note that the management of AOM is a significant problem throughout the United States. The AAP notes that children 2 years of age and older should refrain from antibiotic use for 48 to 72 hours pending assessment and symptoms. The main clinical problem addressed throughout this project is clinic providers not following clinical practice guidelines as they were unaware of them, leading to inappropriate management of AOM.



**Objectives:** The main objectives of this quality improvement (QI) project were to provide clinicians with an up-to-date evidenced-based algorithm and education on diagnosis, treatment, and management for AOM for children between the age of 2 and 18 years.

**Methods:** All providers were educated via an emailed PowerPoint with the current algorithm and modifications, significance of clinical problem, watch and wait

**Author affiliations:** Jessica M. Crandall, DNP, ARNP-FNP-BC, Greater Regional Health, Creston, IA. Misty Schwartz, PhD, RN, College of Nursing, Creighton University, Omaha, NE.

component, and current recommendations. Parents/caregivers were educated with flyers in the exam rooms along with handouts at discharge. EPIC electronic medical records (EMR) were used to collect pre- and post-intervention data. The percentage of providers utilizing the current clinical practice algorithm was calculated pre- and postintervention.

**Results:** There was a 35-point increase in adherence to the clinical practice guideline algorithm. There was an 18% decrease in antibiotic prescriptions overall with a 12% increase in the appropriate first-line antibiotic therapy with amoxicillin. Providers noted that the education and algorithms helped them better manage patients with ear complaints.

**Conclusion:** The importance of proper management of AOM by following clinical practice guidelines is noted throughout this project. Education played a key role in the success of this project and sustainability will be achieved through continuous education at these locations and eventually to other clinics throughout the network.

## Background

Acute otitis media (AOM) is defined as an infection of the middle ear. AOM is the second most common pediatric diagnosis seen in family practice, urgent care, and emergency departments.<sup>1</sup> This infection is most seen between the ages of 6 to 24 months but can occur at any age. Approximately 23% of children 1 year of age and under will experience at least one episode of AOM and 60% of children will experience one or more episodes of AOM by the age of 3 years.<sup>2</sup>

Approximately 80% of children will have a diagnosis of AOM at least once in their lifetime.<sup>1</sup> AOM can lead to conductive hearing loss, speech and language delays, and side effects from increased antibiotic use.<sup>3</sup> Improper diagnosis and treatment can lead to complications such as tympanic membrane perforation, hearing loss, mastoiditis, and antibiotic resistance.<sup>3</sup>

Common complaints leading to AOM are unilateral or bilateral ear pain/tugging, fever, and fussiness.<sup>4</sup> Most guidelines support earlier treatment with antibiotics for a bilateral AOM diagnosis vs a unilateral AOM diagnosis.<sup>2</sup> The prognosis for patients diagnosed with AOM is excellent; however, proper diagnosis and treatment are essential in the prevention of complications such as tympanic membrane perforation, labyrinthitis, mastoiditis, meningitis, brain abscess, petrositis, hearing loss, and lateral and cavernous sinus thrombosis.<sup>1</sup>

The American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), and the American Academy of Otolaryngology (AAO) all affirm that the management of AOM is a significant problem throughout the United States.<sup>2</sup> It is recommended that children 2 years of age and older refrain from antibiotic use for 48 to 72 hours pending assessment and symptoms. Approximately 60% of symptoms related to AOM will completely resolve without the use of antibiotics within about 24 hours, while approximately 80% will resolve on their own without treatment within 3 days.<sup>5</sup>

Clinical guidelines are created to help combat AOM complications consistently while achieving the best patient outcomes and decreasing the economic burden on healthcare costs.<sup>2</sup> A summary of the best practice guidelines includes proper diagnosis of AOM based on the presentation of moderate to severe bulging of the tympanic membrane (TM), new onset of otorrhea without the presence of acute otitis externa, ear holding, tugging, rubbing in nonverbal children, and extreme erythema of the TM.<sup>2</sup>

Initial treatment with analgesics along with antibiotics should be reserved for patients with bilateral or unilateral severe AOM, in children 6 months of age and older. Children 24 months and older without severe signs or symptoms such as mild otalgia for less than 48 hours and temperature less than 102.2°F should be initially offered observation with close follow-up rather than antibiotics.<sup>2</sup>

Amoxicillin should be the first line as long as the child does not have an allergy. If the child has had amoxicillin in the past 30 days, an antibiotic with Beta-lactamase coverage should be utilized.<sup>3</sup> Patients should be reassessed if the caregiver reports a lack of improvement or worsening of symptoms within 48 to 72 hours of implementation of the antibiotics. Prophylactic antibiotics should not be prescribed to patients with frequent episodes of AOM.<sup>3</sup>

The AAFP states that approximately 87% of patients seeking care for AOM get an antibiotic. Clinical guidelines have helped decrease unnecessary prescriptions by up to 12% and increase the accuracy of antibiotic choice by up to 58%.<sup>5</sup> Clinical practice guidelines were created by the AAP and AAFP to provide clinicians with evidence-based recommendations for the management of AOM.<sup>4</sup> Treatment to reduce pain such as acetaminophen and ibuprofen should be discussed with parents regardless of AOM diagnosis.

High-dose amoxicillin (Amoxil) should be initiated upon diagnosis of AOM. The “watch-and-wait” method should also be utilized with patients greater than 2

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years of age who present with mild symptoms and reliable follow-up. It was noted that 66% of patients who completed the watch-and-wait method recovered without the use of antibiotics.<sup>1</sup>

The management of AOM is a common problem throughout healthcare settings in the United States. It leads to increased healthcare costs, more frequent antibiotic use, and increased morbidity. The AAO, AAFP, and AAP all state that AOM is one of the most common, recurring medical problems in childhood which leads to the most frequent office visits when compared to other complaints such as cough and sore throat.<sup>2</sup> The purpose of this quality improvement (QI) project was to provide clinicians at a rural Iowa urgent care (UC)/emergency department (ED) with a revised up-to-date, evidence-based clinical practice algorithm and education on the diagnosis, treatment, and management for AOM for pediatric patients between the ages of 2 and 18 years.

### Design and Methods

The three overarching goals of this QI project were to implement an algorithm for the management of AOM based on clinical practice guidelines, to include a watch-and-wait component, and increase adherence to those guidelines through educational interventions. Kurt Lewin's change theory along with the PDSA method was utilized throughout this project to ensure the sustainability of implemented interventions. The initial focus of this project standardized the use of the clinical practice guideline algorithm for the management of AOM in patients 2 to 18 years of age. The interventions included developing the updated algorithm with watch-and-wait component, educating the providers on the proposed algorithm, exam room flyers, and patient/caregiver handouts. Pre- and post-chart audits were completed for data collection. All nine providers in the UC and ED participated. The proposed outcome of this project was to increase adherence of providers that correctly utilize the proposed clinical practice algorithm for the management of AOM by 50%.

### Setting and Population

The setting was a rural UC with an attached ED in a Midwest community. The UC is open 7 days a week, 361 days a year. The hours of operation for the clinic are 7:30 AM–7:30 PM Monday through Friday and 8 AM–2 PM on Saturday and Sunday. The ED is open 24 hours a day, 7 days a week, 365 days a year. The UC and ED are staffed with both physicians and nurse practitioners (NP).

There was a total of six full-time providers and three

per diem providers that included both NPs and physicians that rotate throughout the two departments. Providers work varied shifts between 12 to 72 hours continuously and on site, depending on the department. Other key stakeholders for this project included the DNP supervisors, the UC and ED medical director, the members of the antibiotic stewardship program, and the project leader.

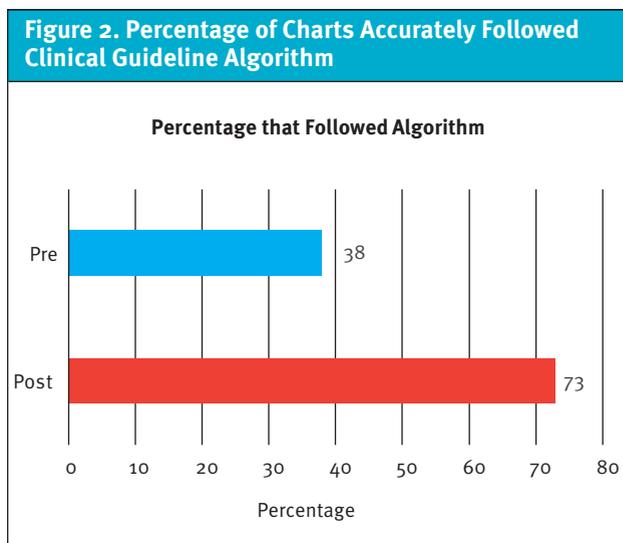
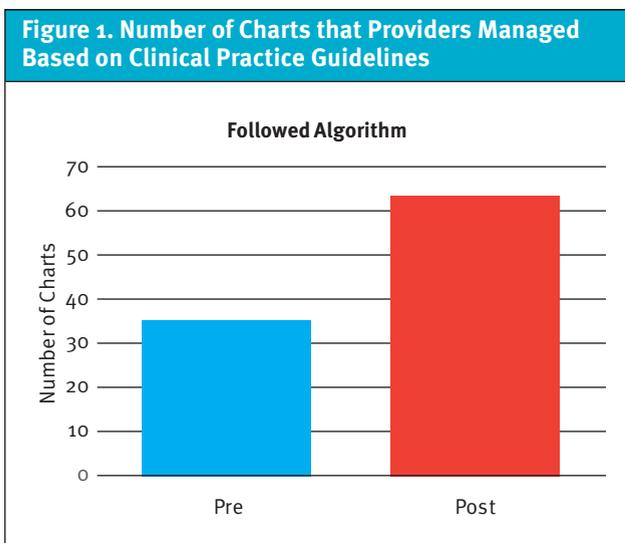
The algorithm developed and utilized was based on clinical practice guidelines from the AAP and UpToDate (see Appendix A and B). The education was provided in the form of a PowerPoint presentation to providers. Educational posters were posted in each exam room. Patient education handouts developed by the Centers for Disease Control and Prevention were provided at the discharge of each visit. The posters and handouts explain management of AOM in plain language.<sup>6</sup>

### Educational Interventions

The developed algorithm, based on current clinical practice guidelines, was the focus of the PowerPoint education. An email of the PowerPoint presentation was distributed to all the providers in the UC/ED explaining the purpose of the project and contained the updated clinical practice guideline algorithm along with a description of the recommended management of AOM. Flyers for exam rooms and discharge handouts were also provided within the educational presentation and were all based on AAP along with CDC recommendations. The algorithm is in an easy-to-follow flow sheet form. It begins by ensuring the child is greater or equal to 24 months of age. From there, the severity of the symptoms is outlined; if symptoms are deemed non-severe (ie, no TM perforation, fever greater than 102°F, severe pain, or bulging of TM), the algorithm guides the provider to offer watch-and-wait with close follow-up. If there are severe symptoms, the algorithm guides the provider to the treatment management algorithm that was present at the UC/ED.

### Data Collection

This project utilized pre- and postimplementation chart audits. Data collection was implemented with the use of the EPIC electronic medical record (EMR) query system. Patient data were coded and entered in an Excel spreadsheet. The charts were coded based on the number reviewed and did not include any patient identifying information. Within the spreadsheet the code using "Y" for *yes* and "N" for *no* signified if the algorithm was utilized with each patient chart to assess the percentage of patients with a diagnosis of AOM who



were treated per current clinical guidelines. The pre-intervention chart audit from August through October 2021 resulted in 177 charts, with 60 meeting the inclusion criteria. Data gathered included age; documentation of diagnosis of bilateral or unilateral AOM H66.001, .002, .003, H65.111, 112, 113, H60.502; length of time with symptoms; type of symptoms such as fever, otalgia, pulling/rubbing ears, presence of fluid behind TM; plan for patient such as antibiotic prescribed, analgesic prescribed, antibiotic and for how long; and clinical judgment noted in the chart such as medication allergies or recent treatment. Exclusion criteria included patients with pressure equalizer (PE) tubes, patients under the age of 24 months and over the age of 18, and patients who had additional diagnosis during the visit such as acute sinusitis, streptococcal pharyngitis, urinary tract infection, soft tissue or skin infection, and acute conjunctivitis. The additional 117 pre-intervention charts were eliminated due to exclusion criteria such as age or additional diagnosis such as otitis externa, respiratory infections, or sinusitis.

Following initial pre-intervention chart audit, the PowerPoint presentation, exam room signs, and patient/caregiver education were implemented. Follow-up emails and/or personal interviews were sent to providers for feedback and question responses as needed. The chart audit postimplementation occurred over 8 weeks following the educational interventions from the months of August through October 2022. This audit included 153 charts, with 91 charts being included. Queries using the EPIC EMR were done similarly as in the pre-intervention audit. The same inclusion/exclusion criteria were applied to the postimplementation audit.

**Protection of Human Subjects**

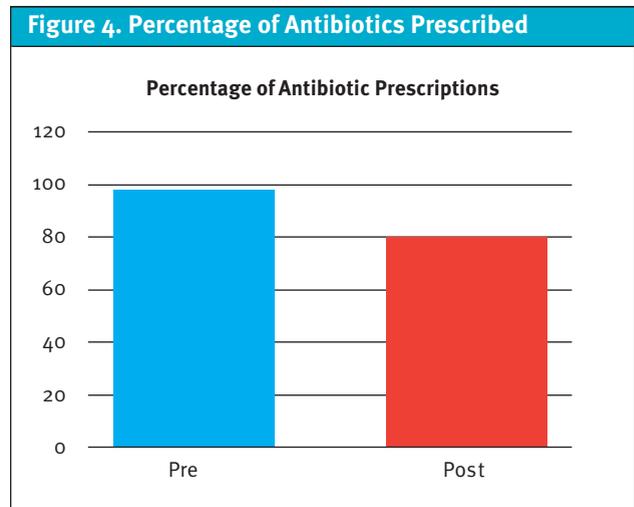
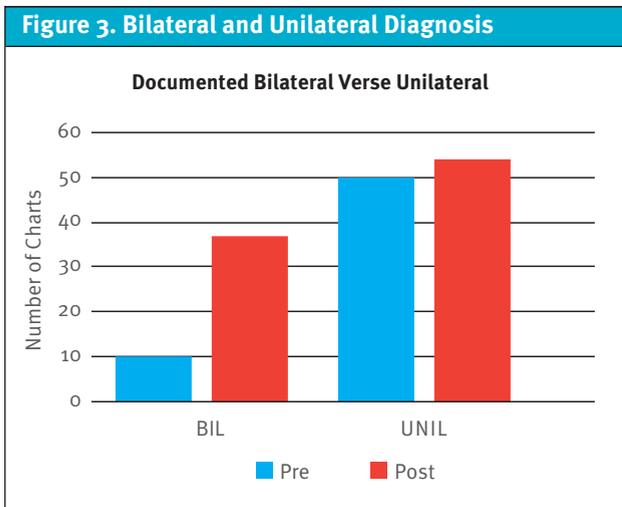
This project posed no risk to human subjects and was reviewed and deemed QI by the Institutional Review Board at Creighton University. The project was approved by the Healthcare Management and Information System at the UC/ED. The provider and patient names were kept anonymous during the data collection and all data were stored on a secure server until it was transferred to the Excel spreadsheet where all the patient and provider information was de-identified.

**Results**

Data revealed an absolute 35-point increase from pre- to postintervention. Pre-intervention data revealed that only 38% (n=23) of the time patients were managed based on clinical practice guidelines, while 62% (n=37) of the time they were not. Postintervention data showed that 73% (n=66) of the time patients were managed based on clinical practice guidelines, while only 27% (n=25) of the time they were not (Figures 1 and 2).

The pre-intervention data showed 83% of patients being diagnosed with AOM were unilateral, while 17% were bilateral. Of those with pre-intervention unilateral diagnosis, 100% of the patients received antibiotics, while 90% of patients diagnosed with bilateral AOM received antibiotics. The postintervention data revealed a total of 60% unilateral AOM diagnosis; 40% were bilateral. Of those unilateral diagnoses, 89% were given antibiotics, indicating a decrease of 11% in antibiotic prescriptions. Of those bilateral, 65% were given antibiotics also showing a 25% decrease in prescriptions (Figure 3).

Antibiotics were prescribed 98% of the time in the



pre-intervention data. This decreased to 80% in the postintervention data (Figure 4). The most common antibiotics utilized pre-intervention data were amoxicillin at 57%, amoxicillin and clavulanate (Augmentin) at 20%, cefdinir (Omnicef) at 19%, doxycycline at 2%, and ciprofloxacin and dexamethasone at 2%. The most common antibiotics postintervention data were amox-

icillin at 69%, amoxicillin and clavulanate at 8%, cefdinir at 14%, and azithromycin at 6% (Table 1).

When it came to clinical judgment, pre-intervention data showed 3% of patient symptoms documented as severe, 2% documented as viral, 10% had allergies to first-line medications, and 27% utilized the wrong antibiotic based on the clinical practice algorithm; 0% uti-



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Table 1. Most Common Antibiotics Utilized Pre- and Postintervention		
	Number of antibiotics pre-intervention	Number of antibiotics postintervention
Amoxicillin	34	51
Amoxicillin and clavulanate	12	6
Cefdinir	11	11
Azithromycin	0	5
Doxycycline	1	0
Ciprofloxacin and dexamethasone	1	0

lized watch-and-wait. Postintervention data revealed 20% were documented as severe, 6% viral, 6% had allergies to first-line medications, 15% of charts utilized watch-and-wait, and only 4% utilized the wrong antibiotic based on the clinical practice algorithm (Table 2).

### Discussion

The purpose of this project was to improve provider adherence to the newly modified evidence-based clinical practice algorithm for the management of AOM in patients ages 2 to 18 years of age. Clinical practice guidelines were present at the UC/ED; however, they were not being utilized. The watch-and-wait component of the algorithm was created and presented to the providers to allow for standardization and quick, easy access to the algorithm for the management of AOM.

#### First Objective: Providing the Algorithm and Clinician Education

There were three primary objectives for this project. The first was providing clinicians with an up-to-date, evidenced-based algorithm and education on diagnosis, treatment, and management of AOM for pediatric patients. This objective was achieved by reviewing the available knowledge and recommendations from multiple professional organizations. It was found that the clinical practice guidelines at the UC/ED were up to date with first-line antibiotic recommendations; however, this did not include the watch-and-wait component.

The literature supports the use of up-to-date clinical practice guidelines to aid in recommended diagnosis and management of AOM and the reduction of antibiotic usage. Clinical practice guidelines created by the AAP should be followed when treating patients with ear complaints with special attention to delaying antibiotic prescriptions by utilizing the watch-and-wait recommendation.<sup>7</sup> Watching and waiting helps eliminate the side effects of possible unnecessary antibiotic use and results in similar outcomes when compared to a placebo.<sup>8</sup> The education and modified algorithm aided

in the overall increased adherence to the clinical practice guidelines. The pre-intervention audit revealed only 38% of providers were utilizing the clinical practice algorithm but after the interventions, there was a 35-point increase when comparing pre-intervention and postintervention data. The literature outlines the importance of following recommendations and data analysis from this project also revealed an 18% decrease in antibiotic prescriptions which supports the use of the algorithm.<sup>7</sup>

#### Second Objective: Implementation of Watch-and-Wait

The second objective was the implementation of the watch-and-wait component for an evidenced-based algorithm for the management of AOM for patients between the age of 2 and 18 years. This objective was achieved through the creation and implementation of the watch-and-wait section of the algorithm. Chart audits were completed to determine if the revised evidence-based clinical practice algorithm and educational module improved adherence rates for the management of AOM in patients in an 8-week timeframe. Antibiotic resistance along with inappropriate antibiotic prescribing is an important health issue which most providers view as more of an outpatient provider issue.<sup>9</sup> A trend of prescribing outside of current clinical recommendations was recognized by outpatient providers at this UC/ED. Pre-intervention data revealed that providers were diagnosing AOM in their patients properly, but not utilizing the clinical practice guideline algorithm correctly or consistently. Postintervention data revealed a 35-point increase in adherence to the clinical practice guideline algorithm which led to better management of pediatric patients with ear complaints.

The watch-and-wait component was added to the current AOM management algorithm and should be utilized in any patient over the age of 24 months with nonsevere symptoms. This method is supported by the AAP and allows for a watchful waiting period of 48 to 72 hours prior to initiating antibiotics for AOM.<sup>4</sup> The

Table 2. Number of Times the Provider Made a Clinical Decision		
	Number of charts pre-intervention	Number of charts postintervention
Severe	2	19
Viral	1	6
Allergy to ATB	6	6
Watch and wait	0	6
Wrong ATB	16	4

pre-intervention data showed that no patients were managed with the watch-and-wait method. The post-intervention data showed that 7% (n=6) were managed with the watch-and-wait method. The literature supports the initiation of this method as it decreases unnecessary antibiotic use.

The algorithm was also reviewed for current antibiotic recommendations and was found to be accurate in that area. The first-line antibiotic recommendation for the treatment of AOM is high-dose amoxicillin for 5 to 10 days.<sup>11</sup> To help combat antibiotic resistance and promote antibiotic stewardship, it is imperative to follow all clinical practice guideline recommendations, which includes first-line antibiotic choice<sup>2</sup>. The pre-intervention data revealed that only 27% of the charts were managed with the first-line antibiotic choice, while the postintervention revealed that 96% of the charts were managed with the first-line antibiotic.

### Third Objective: Education Around Application of the Algorithm

The third and final objective was education around the application of the algorithm. Provider and parent education was essential to the success of this project. Inappropriate antibiotic usage could be decreased by more than 45% if providers accurately diagnosed patients by recognizing differences between viral and bacterial infections, providing patient education, and improving access to decision-making tools.<sup>10</sup> Education presented to all providers in this UC/ED allowed for increased knowledge on examination, diagnosis, and treatment for patients with ear complaints.

Anecdotally, providers noted that the easy-to-follow algorithm, with additional education, helped them better manage patients, along with increasing their confidence in educating caregivers. They did not feel pressured to prescribe antibiotics when not appropriate and felt most parents/caregivers were satisfied with the management at the time of the visit.

This objective was achieved by analyzing the data and determining that there was increased utilization of the

algorithm and overall improved outcomes such as increased use of the watch-and-wait recommendation, decreased antibiotic use, and the correct antibiotic prescribed 96% of the time. Education included appropriate first-line antibiotic choice along with duration when an antibiotic was deemed necessary. Current clinical practice guidelines recommend a 10-day course of antibiotics for the treatment of AOM although shorter duration of antibiotics can be effective for the management of AOM.<sup>12</sup> Pending further studies, this medication duration could change the current clinical practice guidelines.

### Limitations

This study was limited to UC/ED providers at this location. The primary care and ear, nose, and throat clinic staff were not included. Reports through EPIC for specific ICD codes for AOM and charts that did not have those codes but still had AOM as a specific diagnosis may have been missed in the query. The timing of data collection was also a limitation; the project was conducted between the months of August and October, which historically have lower numbers of illnesses including AOM. If the study were done between the months of November through February, the number of charts retrieved would most likely have been larger. Lastly, knowing whether the educational posters in the exam rooms were beneficial to the caregivers/patients was not measured; therefore, the only way of knowing if that intervention was effective was from informal feedback from the providers.

### Sustainability

It is essential for providers to remain up to date on current clinical practice guidelines for the management of AOM to provide the patient with the best possible care. This project showed a 35-point increase in adherence to clinical practice guidelines. Continued monthly and bi-monthly education to both providers and nurses will take place in the clinical setting. Next steps include presenting the current algorithm along with the watch-and-wait component to the primary care, pediatric, and ear,

nose, and throat clinic providers within this network. Education via advertisements and social media pages will continue to be presented to the public to inform them of the current guidelines and management of AOM.

**Conclusion**

Proper management of AOM and the importance of following clinical practice guidelines were priorities throughout this project. Clinic providers at this UC/ED were not following current clinical practice guidelines for the management of AOM as they were unaware of the most recent updates, which led to inappropriate management of AOM. The modification of the evidence-based clinical practice guidelines adding an easy-to-follow watch-and-wait component and education to providers in this UC/ED played an essential role in the success of this project. There was a 35-point increase in adherence to clinical practice guidelines along with an 18% decrease in antibiotic prescriptions following the interventions. Sustainability will be achieved through continuous education to staff, providers, and the community. ■

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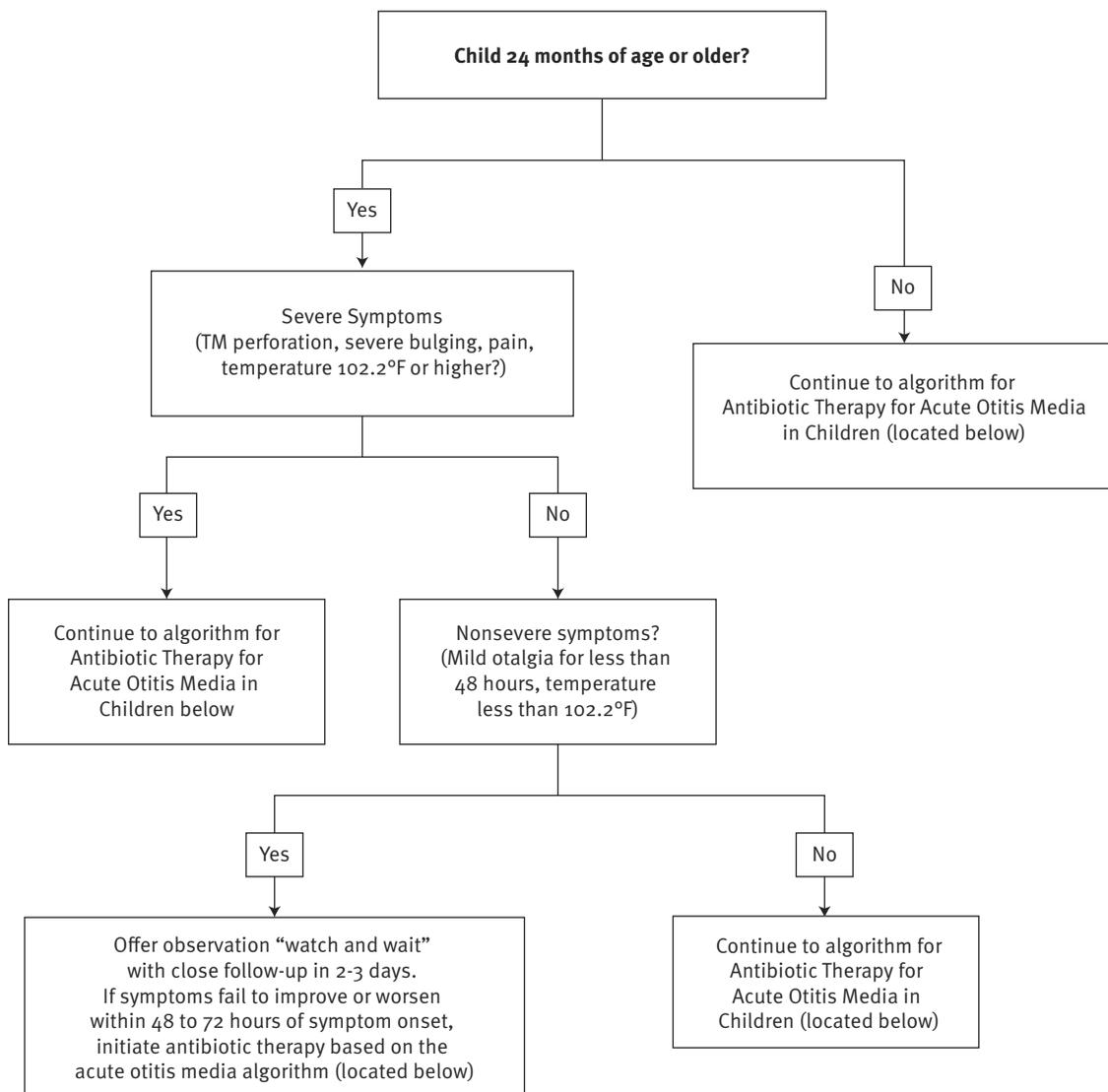
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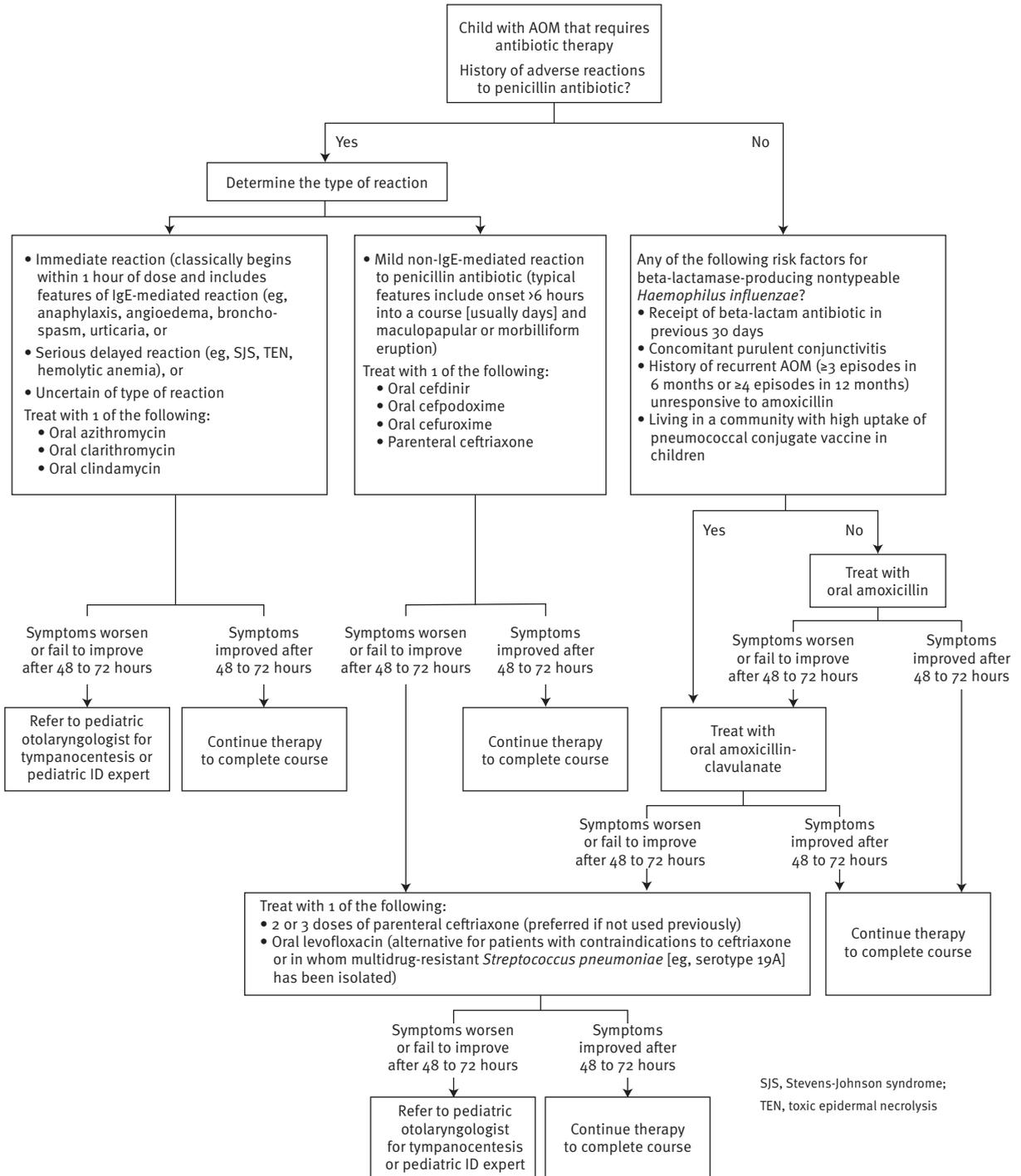
*Manuscript submitted December 14, 2022; accepted June 28, 2023.*



**Appendix A**  
**Criteria for Watch-and-Wait Method in Children with Acute Otitis Media**  
 For use in children 24 months and above; if <24 months continue to algorithm for Antibiotic Therapy for Acute Otitis Media in Children below



**Appendix B**  
**Antibiotic Therapy for Acute Otitis Media in Children**





# Innovation and Sustainability: Urgent Care-Run, School-Based Health Centers Improve Community Health

**Urgent message:** By leveraging grant funding, community-facing services, and a collaborative model with school districts, QUICKmed Urgent Care operates a successful school-based health center model. This innovative approach addresses healthcare gaps in underserved areas and augments the operator's core business.

Alan A. Ayers, MBA, MAcc

QUICKmed Urgent Care, based in Youngstown, OH, is a prominent provider in the state's Northeast region. Its 12 traditional urgent care centers are an important resource for the communities it serves—areas where access to healthcare is limited and health resources are stretched thin.

Recognizing the importance of reaching an underserved population and ready to expand its business, QUICKmed partnered with Youngstown City Schools to open its first YOUcare clinic. The school-based health center (SBHC) operates 5 days a week and serves students and staff. Notably, this innovative model has earned the operator \$1.8 million in fresh grant funding to expand its SBHC program and further bolster community health access.

As urgent care operators face competitive, saturated markets, new retail sites are increasingly difficult to find. Moving into schools presents an interesting opportunity for expansion outside the realm of what is considered "conventional" urgent care.

## The Novel YOUcare Approach

Staffed by nurse practitioners, school nurses, and medical assistants, QUICKmed's YOUcare clinics offer wellness visits, sick child visits, physicals, vaccines, specialty



referrals, and prescriptions alongside traditional urgent care services. At the beginning of the school year, parents provide consent and authorization to treat if their child needs care and they cannot be reached. This allows for rapid treatment without administrative delays. The clinic collects the child's insurance information for future billing.

QUICKmed also operates a robust occupational medicine and workers compensation business for school

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

**Table 1. Demographics of YOUcare Clinics in Ohio\***

District, School, and City	% of Covered Lives on Medicaid	% Households Led by Single Mothers	Average Household Income	Population per Primary Care Physician (PCP)
<b>National Average</b>	19%	6%	\$70,011	1,109
<b>Youngstown City School District</b>				
Chaney Middle School, Youngstown, OH	39%	13%	\$40,597	17,402
Chaney High School, Youngstown, OH	38%	13%	\$41,117	16,109
East Middle School, Youngstown, OH	62%	22%	\$29,207	4,697
East High School, Youngstown, OH	56%	20%	\$20,830	5,498
<b>Liberty Local School District</b>	36%	7%	\$55,075	833
Liberty Junior and Senior High School, Youngstown, OH				
<b>South Euclid Lyndhurst School District</b>	15%	7%	\$70,477	1,660
Charles F. Brush High School Lyndhurst, OH				
<b>Salem City School District</b>	18%	3%	\$49,913	711
Salem Senior High School Salem, OH				
<b>Trumbull Career and Technical Center School District</b>	35%	9%	\$39,846	2,306
Trumbull Career & Technical Center Warren, OH				

\*Demographics per National Urgent Care Realty AnalyticsSource: YOUcare Manufacturing-Based Health Clinics in Ohio. QUICKmed. Available at: <https://www.quickmedclinic.com/youcare-clinic>. Accessed August 2, 2023.

employees through the on-site clinics. Finally, QUICKmed’s in-house, Commission on Office Laboratory Accreditation (COLA)-certified complex laboratory allows it to augment visits with lab testing for viral illnesses including influenza, strep, and COVID-19, as well as STDs/STIs when necessary. A courier takes the samples from the SBHC to a nearby urgent care location for same-day results, providing faster answers than a reference lab.

Notably, QUICKmed utilizes the same EMR and billing software in its community urgent cares and YOUcare clinics. This seamless integration promotes continuity of care, improving quality whether the child receives treatment at the in-school clinic or a community location.

To assure patient privacy under HIPAA, neither the Board of Education nor any administrator or staff of the school district has access to student medical or financial information.

**Battling Funding Challenges**

While the benefits of SBHCs are well-established, the upfront and ongoing costs of opening these clinics are significant barriers to entry. One way to solve this challenge is through grant funding. QUICKmed took a pio-

neering approach, creating and nurturing a successful operating model over several years. This has enabled it to become the only for-profit entity—and only urgent care—to receive SBHC funding. The Ohio Department of Health and the Ohio Department of Education awarded QUICKmed \$1.8 million in grant funding through the American Rescue Plan Act of 2021 as well as the Governor’s Emergency Education Relief Fund.

Indeed, capital expenditure offset is an essential component of sustainability for the SBHC model—both in the initial stages and ongoing. Operators can seek expenditure relief in several ways, including grant funding, outside private investment, or billing the school district directly in anticipation of the ongoing operational expense of running the clinic.

As operations begin, reimbursement through insurance billing also becomes paramount. The SBHC model caters primarily to communities where Medicaid plans are prominent. Historically, successful SBHC locations serve a population of at least 500 students covered by Medicaid.<sup>1</sup> Identifying the most promising locations before opening leads to more robust revenue and clinic utilization and is essential for success. In Ohio, for instance, 41% of school-aged children are covered by Medicaid—even if their parents are not. But in school

districts covered by a YOUclinic, that figure soars to between 50% and 65% of children.

Finally, a successful SBHC needs to maintain low operational expenses. Saving money on a lease is a straightforward measure that is incredibly effective but requires buy-in from the school district. QUICKmed signs lease agreements with partner school districts for \$1 per month. This removes a crucial line item responsible for eating a sizable portion of a conventional clinic's budget. Importantly, beyond additional liability insurance, this does not incur significant expenses for the district. With a lean staffing model, typically starting with a single NP and MA and growing in tandem with the clinic's utilization, SBHCs can further lower operational costs. However, seeking additional grant funding is often necessary to help offset the continued costs of running or expanding the clinic.

### Buy-In and Collaboration

The SBHC model is nontraditional. The model itself relies on innovative thinking. Before a clinic can open its doors, the operator needs buy-in from the school district's administrators. Both parties' expectations for the purpose and benefits of the clinic must align, with increased access to healthcare for underserved populations being first and foremost. As SBHCs often demand resources from school districts whose budgets are already stretched thin, a significant degree of trust and collaboration is necessary on both sides for this model to succeed. Successful partnerships are built on accessible, transparent communication between all parties—especially as leadership roles within the district or urgent care change.

### Increasing Utilization Through Expanded Services

Depending on the size of a district, an SBHC may not be fiscally viable with the revenue generated from students alone. So some operators, including QUICKmed, supplement their revenue with community-facing services.

For instance, Crestview Local School District, a key YOUcare location, has no physicians within its 38-mile coverage area. As such, the district's YOUcare clinic is open to the community, providing much-needed healthcare access for both students and adults.

QUICKmed also added behavioral health services via telemedicine in 2022 to further expand its impact. However, it's worth noting that an exclusive telehealth model isn't often feasible for SBHCs. For one, children can't provide a reliable history or describe their symptoms. This creates a risk of missed diagnoses and makes it harder for providers to correctly manage care. Mean-

while, school nurses are already overwhelmed by student needs and administrative work and don't have time to facilitate telehealth visits alongside their daily tasks. The inability to perform physical exams and rapid lab testing are further strikes against telemedicine. This reinforces the value of an on-site clinic to serve students and staff.

Expanding services to staff, including occupational medicine and urgent care, is another way to augment revenue. Increasing clinic utilization in this way increases provider productivity, which is typically lower in SBHCs than in conventional clinics.

Further expanding care, QUICKmed also operates an RV that provides dental services on-site for certain school districts participating in the YOUcare program. Dental services are available to students and their families and are both preventive—eg, sealants, and fluoride treatments—and restorative, including fillings and crowns. The RV bills Medicaid, Medicare, and private insurance.

### Beneficial Situation for All

Schools face some of the most complex public health challenges of any community organization. SBHCs are a novel solution that efficiently addresses the challenges school districts face while simultaneously benefiting both the operator and the community.

Increasing care in underserved areas brings episodic and preventative care to those who may not otherwise receive it. Meanwhile, the clinic operator opens a new stream of revenue to complement its community locations while positively impacting its reputation. School districts experience less absenteeism thanks to reduced illness spread. Children benefit from rapid and accessible treatment for illness and injury as well as public health services like STI testing and behavioral health treatment.

Though operating SBHCs is not without challenges, this innovative model is a viable solution for urgent care operators seeking to simultaneously increase their community impact in underserved areas and expand their business. ■

### References

1. Sprigg SM, Wolgin F, Chubinski J, Keller K. School-based health centers: a funder's view of effective grant making. *Health Aff (Millwood)*. 2017;36(4):768-722.

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## ABSTRACTS IN URGENT CARE

- Course of Antibiotics for Pediatric UTI
- Link Between Influenza and Myocardial Infarction
- Make the Most of Patient's Wait Times

■ IVAN KOAY, MBChB, FRNZCUC, MD

- Cognitive Functional Therapy for Lower Back Pain
- Ultrasound for Diagnosing Pediatric Distal Forearm Fractures
- Long COVID-19 Symptoms – 2 Years On

### How Long Should We Prescribe Antibiotics for Pediatric UTI?

**Take-Home Point:** Children receiving 5 days of antibiotics for urinary tract infection (UTI) had a higher rate of treatment failure than children receiving 10-day courses. However, absolute treatment failure rates were low in both groups.

**Citation:** Zaoutis T, Shaikh N, Fisher B, et. al. Short-course therapy for urinary tract infections in children: the SCOUT randomized clinical trial. *JAMA Pediatr.* 2023 Jun 26; e231979.

**Relevance:** There have been recent studies and guideline changes supporting shorter courses of antibiotic treatment as noninferior to standard treatment for pneumonia and skin infections in children. Currently, however, similarly compelling noninferiority studies in pediatric UTI are lacking.

**Study Summary:** This was a multicenter, randomized, double-blind, placebo-controlled, noninferiority trial evaluating short-course (5 days) vs standard-course (10 days) oral antibiotic therapy for children exhibiting clinical improvement after the first 5 days of treatment in the U.S. Children 2 months to 10 years of age who were diagnosed with UTI were prescribed one of five frequently used antibiotics (amoxicillin-clavulanate, cefixime, cefdinir, cephalexin, or trimethoprim-sulfamethoxazole). Participants were randomized (1:1) to receive either an additional 5 days of the prescribed antibiotic (standard-course therapy) or 5 days of matching placebo (short-course therapy). To evaluate clinical outcomes, two in-person visits were performed between days 11-14 and 24-30. A symptom questionnaire was administered during each of these visits.



**Ivan Koay MBChB, MRCS, FRNZCUC, MD** is an urgent care physician and medical lead, Kings College Hospital Urgent Treatment Centre, London; Convenor Ireland and UK Faculty of the Royal New Zealand College of Urgent Care; and Independent Assessor European Reference Network, Andalusian Agency for Healthcare Quality.

Six hundred and-ninety three were randomized and enrolled in this study. Two of 328 children assigned to standard-course therapy (0.6%) and 14/336 children assigned to short-course therapy (4.2%) suffered treatment failure, defined as symptomatic UTI before first follow-up visit. Children receiving short-course therapy were more likely to have asymptomatic bacteriuria and a positive urine culture before the first follow-up visit as well. The number needed to treat (NNT) for standard-course therapy to prevent one recurrent UTI was 28.

**Editor's Comments:** Compliance data were not reported in this study, particularly over the initial 5-day period. It was additionally an unexpected finding that adverse events were no different between groups. Nevertheless, this well-designed study shows that treatment failure in outpatient treatment of children with UTI is relatively uncommon, with an NNT=28 to prevent one treatment failure. It is likely that further studies are necessary before treatment guidelines are changed, however, especially given similar rates of adverse events in the longer treatment duration group. ■

### Is There a Link Between Influenza and Myocardial Infarction?

**Take-Home Point:** This retrospective, population study supports that influenza vaccination can reduce the risk of coronary events in older adults.

**Citation:** Streeter A, Rodgers L, Hamilton F, et. al. Influenza vaccination reduced myocardial infarctions in United Kingdom older adults: a prior event rate ratio study. *J Clin Epidemiol.* 2022 Nov;151:122-131.

**Relevance:** There have been suggestions influenza may increase the risk of myocardial infarction (MI) through suspected increase in systemic inflammatory response. Prior studies have supported increased overall mortality after influenza infection. This study focuses on the role of

vaccination in reducing the risk of cardiac events around the time of influenza infection.

**Study Summary:** This retrospective data extraction study used data from the United Kingdom Clinical Practice Research Datalink’s Gold database for general practices linked to hospital episode statistics and mortality data from the Office of National Statistics. The data were analyzed over a 15-year period from 1997-2011. Patients were assigned to an “exposed” group if they had received the influenza immunization and the control group if they had not been vaccinated. The primary outcome was hospital admission for MI, defined by ICD-10 codes. Several statistical tools were used to mitigate confounding.

The authors found influenza vaccination was effective in reducing influenza, although the incidence of influenza remained stable (3%-4%) annually. There were reduced rates of MI among those after receiving influenza vaccination. Interestingly, the authors found that the influenza vaccine demonstrated a greater effectiveness against MIs than against influenza itself, across all years and for most years individually. In their subgroup analysis, they found no significant effect on the influenza outcomes detected due to the interaction between age and vaccination status.

**Editor’s Comments:** The data collected were reliant on input from various healthcare providers and subject to potential variability in coding. Additionally, the standard limitations exist for retrospective epidemiologic studies. However, this offers additional motivating rationale to offer older adults who decline influenza vaccination. ■

**How Can We Make the Most of Patients’ Wait Times in the UC Center?**

**Take-Home Point:** Value can be added to patient care by engaging, empowering, and educating the patient while waiting for care.

**Citation:** Mohammed A, Lockey S. Engaging, empowering and educating the waiting patient. *Emerg Med J.* 2023;40:525–527.

**Relevance:** In most busy urgent care centers, there will inevitably be a waiting period for patients. This study proposes a concept of care that transforms the waiting patient from a passive recipient of care to an active participant.

**Study Summary:** This was a proposed paper with new concepts for using patients’ wait time to better effect, transforming what is traditionally viewed as onerous and wasted time into a more productive experience for patient

benefit. The authors proposed this could be achieved through three steps: engaging, empowering, and educating the waiting patient.

The authors suggest patient engagement be accomplished by converting patients from passive recipients of care to active contributors in their own health. This could be achieved by providing information that would prevent important health needs from being ignored. Patient preferences can also be elicited if they are able to consult with family and friends waiting with them. Empowering the patient is proposed through enabling them to submit their history while waiting. This could create a clinician-friendly, formatted version of their presentation which would become part of the medical record. Additionally, this could confer the added benefit of improved patient flow and lower risk for clinician burnout by reducing the time taken for documentation. Finally, educational information relevant to the patient’s condition could be provided directly to patients’ smartphones while they are waiting.

**Editor’s Comments:** The proposals in the paper are of the author’s opinion and are not supported by any evidence. In the era of artificial intelligence, such technical innovations are well within reach. A looming pragmatic question remains: How would such changes be received by clinicians and patients? For example, many providers may bristle at the notion of a patient entering their own history. Patients may be resistant to completing additional forms. ■

**Cognitive Functional Therapy for the Treatment of Lower Back Pain**

**Take-Home Point:** Cognitive functional therapy (CFT) resulted in large and clinically important effects in both the short- and long-term outcomes for patients with chronic, disabling back pain.

**Citation:** Kent P, Haines T, O’Sullivan P, et al. Cognitive functional therapy with or without movement sensor biofeedback versus usual care for chronic, disabling low back pain (RESTORE): a randomised, controlled, three-arm, parallel group, phase 3, clinical trial. *Lancet.* 2023 Jun 3;401(10391):1866-1877.

**Relevance:** Most cases of acute low back pain improve quickly over days to weeks, but up to 20%-30% of patients will progress to a state of chronic pain. This study investigates the role of CFT in treating patients with chronic low back pain and improving their quality of life and function.

**Study Summary:** This randomized, controlled, three-arm parallel group clinical trial was conducted through 20 primary

care physiotherapy clinics in Australia. CFT is a patient-centered approach that facilitates patients to self-manage by targeting pain-related cognitions, emotions, and behaviors that contribute to pain and disability. Participants were randomly assigned (1:1:1) to one of three intervention groups: usual care; CFT only; or CFT plus biofeedback. The primary outcome was pain-related physical activity limitation at 13 weeks measured by patient self-report using the Roland Morris Disability tool. Economic impacts were measured using quality-adjusted life-years (QALY).

Four hundred ninety-two patients were enrolled. One hundred sixty-four patients were randomly assigned to the CFT-only arm, 163 patients were assigned to the CFT plus biofeedback arm, and 165 to usual care. The authors found that the CFT-only and CFT-plus-biofeedback groups both had statistically significant and clinically important effects for the primary outcome of pain-related activity limitation at 13 weeks, compared with usual care. Those effects were sustained until the 52-week final follow-up, as well. Both interventions were cost-effective and resulted in larger QALY improvements compared to usual care.

**Editor's Comments:** Participants were not blinded to the interventions, and their results were self-reported, which could potentially lead to bias. No race/ethnicity data were collected or considered, which may limit generalizability. Chronic back pain is a leading cause of disability worldwide. CFT is a low-risk option that can be offered to patients. It's likely access to CFT treatment will be regionally variable and subject to socioeconomic effects. ■

### Ultrasound for Diagnosing Pediatric Distal Forearm Fractures

**Take-Home Point:** Ultrasonography was noninferior to radiography in the outcome of physical function with no between-group differences in the occurrence of adverse events.

**Citation:** Snelling P, Jones P, Bade D, et. al. Ultrasonography or radiography for suspected pediatric distal forearm fractures. *N Engl J Med.* 2023; 388:2049-2057.

**Relevance:** Use of ultrasonography, both in the effort to reduce radiation exposure in children and as a solution to the shortage of radiology technicians, may be a viable option for UC providers' evaluation of many pathologies, including musculoskeletal injuries in the pediatric population.

**Study Summary:** This was a multicenter, open label, non-inferiority randomized controlled trial in Queensland, Australia. Pediatric patients 5-15 years of age who presented

to the ED with an isolated, acute, clinically nondeformed, distal forearm injury with a suspicion for fracture were eligible. Randomization was done in a 1:1 ratio. Participants in the ultrasonography group underwent point-of-care ultrasonography (US) performed by a trained and credentialed ED practitioner. The primary outcome was physical function of the arm at 4 weeks, as measured with the use of the Pediatric Upper Extremity Short Patient-Reported Outcomes Measurement Information System (PROMIS) tool.

Two hundred seventy patients were enrolled. The authors found ultrasonography was noninferior to radiography at the 4-week follow-up. The primary outcome did not appear to be influenced by the probe frequency or the practitioner who performed the US. There were no significant between-group differences in the frequency of adverse events or unplanned returns to the ED. The authors noted that initial US reduced the number of participants who would have undergone radiography at their initial emergency department presentation, particularly among participants whose injuries were diagnosed as no fracture or a buckle fracture. Importantly, no clinically important fractures were missed.

**Editor's Comments:** The follow-up period for the study was short, potentially allowing long-term sequelae to be missed in some patients. The study was also restricted to a narrow age range as the PROMIS tool is not validated outside this age group. Method of suspected fracture treatment was not standardized, and this study did not evaluate for the effects of various forms of immobilization. While this is promising, US is a highly provider/user-dependent modality, and use for evaluation of bony injuries would require providers to undergo specific training and for US technology to be much more widely available in UC centers. ■

### COVID-19

#### Long COVID-19 Symptoms – 2 Years On

**Take-Home Point:** Approximately 18% of unvaccinated individuals infected with SARS-CoV-2 were still reporting symptoms 24 months after infection.

**Citation:** Ballouz T, Menges D, Anagnostopoulos A, et al. Recovery and symptom trajectories up to two years after SARS-CoV-2 infection: population based, longitudinal cohort study. *BMJ.* 2023;381: e074425.

**Relevance:** Long COVID is a poorly understood phenomenon. As the virus has become less virulent, concerns over long COVID have become increasingly dominant for patients with COVID-19. A solid understanding of likely disease trajectory is important for UC providers who will likely continue to see patients with COVID-19 for the foreseeable future.

**Study Summary:** This analysis was based on the Zurich SARS-CoV-2 Cohort (ISRCTN14990068), an ongoing, population-based, prospective study of individuals with confirmed SARS-CoV-2 infection. Participants were recruited through the Department of Health of the canton of Zurich, which is notified of all diagnosed SARS-CoV-2 cases through mandatory reporting. Baseline questionnaire at enrollment included questions on socio-demographics, self-reported preexisting comorbidities (eg, hypertension, diabetes status, cardiovascular disease, respiratory disease, etc.), health status before infection, and details about the acute infection, including treatment and hospitalization. Follow-up questionnaires that included questions relating to symptoms and physical and mental health were completed at 2 weeks and months 1, 3, 6, 9, 12, 18, and 24 after infection.

Seven hundred seventy-six participants completed the 24-month follow-up questionnaire out of an initial 1,106 who initially agreed to enroll for the study. These were matched with 628 uninfected controls. The authors found 55.3% reported returning to their normal health status in less than a month after infection, and 17.6% reported recovery within 1 to 3 months. The percentage of symptomatic patients

declined at each time interval. Approximately 18% reported COVID-19 related symptoms at 24 months. Patients were at higher risk of prolonged COVID symptoms if they were older and had pre-morbid fatigue or other chronic health conditions. Altered smell and taste, cognitive changes, dyspnea, and fatigue were the most common long-term symptoms.

**Editor's Comments:** This study was conducted only on patients who were not vaccinated for COVID. As >70% of Americans have been vaccinated, the relevance of these findings for counseling patients who present to UC with a new COVID-19 infection in 2023 is uncertain. Additionally, many patients presenting currently have had prior SARS-CoV-2 infections, which further distinguishes current COVID-19 patients from the Swiss patients in this study. Survey data and high loss to follow-up are additional limitations of this study. It seems the takeaway is that long COVID exists and those with chronic health conditions seem more likely to be affected. Additionally, the data from this study do suggest that patients with long COVID can expect sustained improvement in their symptoms over time, but an unfortunate minority may not fully return to their pre-morbid baseline. ■



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## A 69-Year-Old with Neck Pain After a Car Crash

Figure 1.



A 69-year-old man presents with “neck pain” after a motor vehicle accident. Lateral and oblique views of the lower cervical spine are ordered.

Figure 2.



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



### Differential Diagnosis

- Cervical lateral mass fracture separation
- Osteoarthritis
- Perched facet joint
- Synovial cysts of the facet joints

### Diagnosis

The correct diagnosis is perched facet joint, a vertebral facet joint whose inferior articular process appears to sit “perched” on the ipsilateral superior articular process of the vertebra below. The oblique view shows a lack of overlap of the c6 and c7 facets and anterolisthesis of c6 on c7. A step-off is noted along the posterior cervical line at c6 and widened interspinous space posteriorly. Additionally, the x-rays reveal significant degenerative changes with multilevel disc space narrowing, end plate spurring, and loss of height of c5 and c6 (likely chronic).

### Learnings/What to Look for

- Any further anterior subluxation of the perched facet joint will result in dislocation, with one facet “jumping” over the other and becoming locked in this position



- Complications include spinal cord injury, especially with bilateral involvement or, in the setting of canal stenosis, vertebral artery injury, including dissection, thrombosis, and stroke
- Diagnosis can be confirmed with radiographs, CT scan or MRI

### Pearls for Urgent Care Management

- Treatment usually involves closed or open reduction followed by surgical stabilization

### Resources

- Sambhaji CJ. Perched facet joint. *Radiopaedia*. Available at: <https://radiopaedia.org/cases/5948>. Accessed August 2, 2023.
- Chieng R. Perched facet joint. *Radiopaedia*. Available at: <https://radiopaedia.org/articles/5940>. Accessed August 2, 2023.
- Forsthoefel C, Moore DW. Cervical facet dislocations & fractures. *Ortho Bullets*. Available at: <https://www.orthobullets.com/spine/2064/cervical-facet-dislocations-and-fractures>. Accessed August 2, 2023.

Acknowledgement: Images and case provided by Experity Teleradiology ([www.experityhealth.com/teleradiology](http://www.experityhealth.com/teleradiology)).



## A 49-Year-Old Female with a 4-Week-Old Lesion on Her Toe



A 49-year-old woman presents with a lesion that developed over her right toe over the past 4 weeks. It is painless, but has begun to bleed. On examination, a smooth, pink, friable, eroded nodule is seen on the nail bed.

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



### Differential Diagnosis

- Amelanotic melanoma
- Cutaneous squamous cell carcinoma
- Nodular basal cell carcinoma
- Subungual fibroma

### Diagnosis

The correct diagnosis is amelanotic melanoma, a clinical subtype of cutaneous melanoma with little to no pigment on visual inspection. Amelanotic melanomas account for 2% to 10% of all melanoma cases. Any subtype of melanoma can present as amelanotic; however, nodular melanomas and unclassified melanomas (including desmoplastic and subungual melanomas) are most commonly reported.

### Learnings/What to Look for

- Diagnosis is difficult as the appearance is more consistent with a mole, fibroma, hypertrophic scar, basal cell carcinoma, or squamous cell carcinoma
- Risk factors for amelanotic melanoma include exposure to UV rays, moles, fair skin, blond or red hair, older age, family or personal history of melanoma, and high amount of moles
- While no survival difference between pigmented and amelanotic melanomas exists, amelanotic melanomas tend to be associated with a worse overall survival rate than the pigmented counterpart, likely due to delay in diagnosis

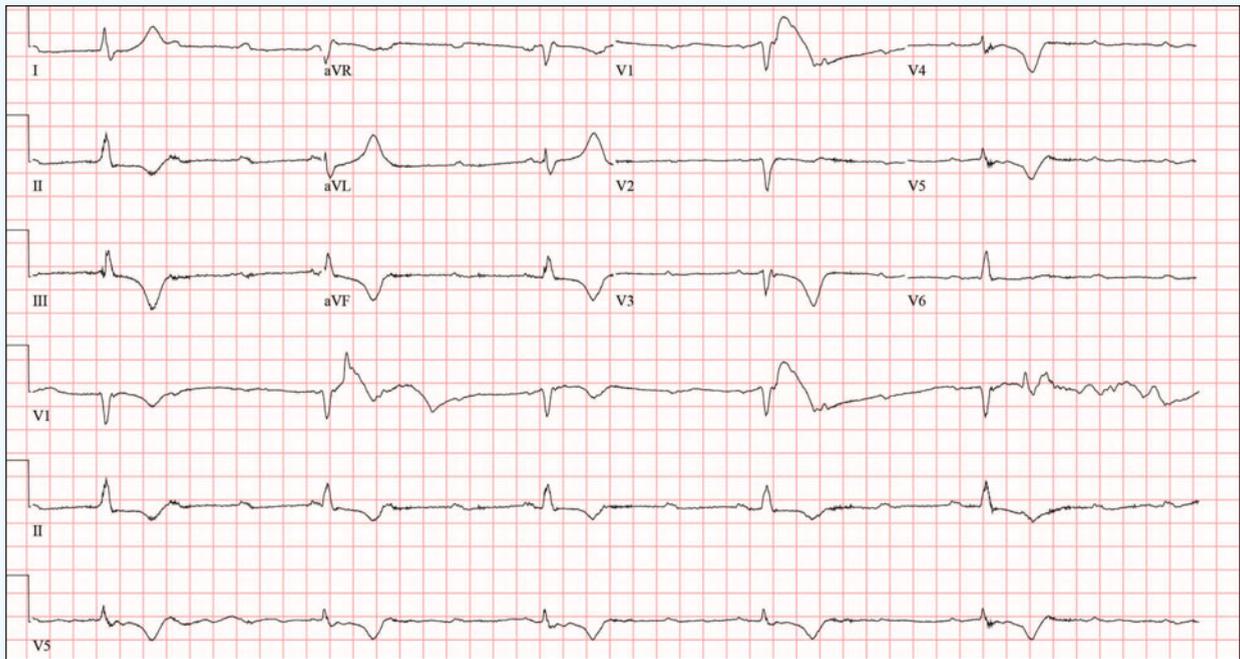
### Pearls for Urgent Care Management

- Referral to dermatology is warranted for further treatment considerations, including surgical excision

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



# A 75-Year-Old Female with Dizziness and a Slow Heartbeat

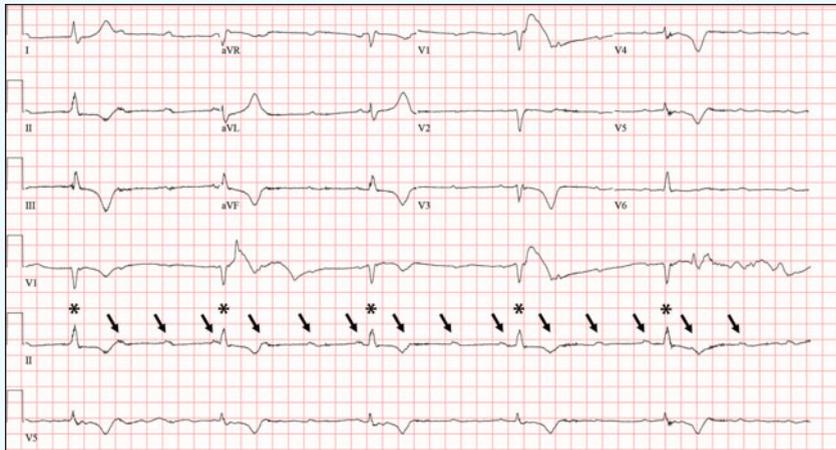


**Figure 1.** Initial ECG

The patient is a 75-year-old female who presents with dizziness and a slow heartbeat. She has a history of hypertension.

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

(Case presented by Jonathan Giordano, DO, MS, MEd, McGovern Medical School at UTHealth Houston, Department of Emergency Medicine.)



**Figure 2.** Arrows over the p-waves show the atrial rate. Stars over the QRS complexes highlight the ventricular rate. Note the dissociation between the p-waves and QRS complexes.

### Differential Diagnosis

- First-degree heart block
- Second-degree type 1 heart block
- Second-degree type 2 heart block
- Third-degree (complete) heart block
- Hyperkalemia
- Sinus bradycardia

### Diagnosis

The patient was diagnosed with a third-degree (complete) heart block. The ECG reveals a complete heart block with atrioventricular dissociation. There is an atrial rate of approximately 100 beats per minute and a ventricular rate of 30 beats per minute. There are no ST-elevations or depressions. T-wave inversions are noted in the precordium as well as in the inferior leads.

Complete heart block (CHB) is characterized by atrioventricular dissociation as atrial impulses fail to conduct to the ventricles. Due to this failure, the atria and ventricles act independently of each other. Systemic perfusion is maintained by an escape rhythm originating from either the junction or the ventricles.

Causes of CHB include myocardial infarction, AV nodal blocking drugs, or idiopathic degeneration of the conduction system. CHB caused by inferior myocardial infarctions tends to lead to junctional escape rhythms, while CHB caused by anterior myocardial infarctions causes slower ventricular escape rhythms.

If the block is the result of a diseased AV node, a junctional focus (escape rhythm) emerges and produces a rate typically between 40 and 60 beats per minute. This is characterized by a narrow QRS complex on ECG. However, when infra-Hisian (below the bundle of His) conduction disease exists as the cause, the escape focus is ventricular in

origin, producing a slower, less reliable rhythm—characterized by a wide QRS complex on ECG. If no escape rhythm is present, the patient will not be able to perfuse, and will subsequently arrest due to cardiac standstill.

CHB is life-threatening, and it is typical for patients with this condition to experience severe bradycardia and hypotension. A pacemaker is the necessary treatment for CHB.

Additional examples may be found in the ECG Stampede glossary ([www.ecgstampede.com/glossary](http://www.ecgstampede.com/glossary)).

### Learnings/What to Look for

- CHB is a life-threatening event and prompt recognition, investigation into the underlying cause, and treatment are imperative
- A careful medication review should be completed for AV nodal blocking agents
- Consider thyroid studies if no other clear cause is identified
- Insults to the conduction system at the AV node are more likely to respond to atropine than infra-Hisian etiologies
- Hyperkalemia could be a mimic for CHB, and should be considered in patients with bradycardia, particularly if there is a wide-QRS complex

### Pearls for Urgent Care Management and Considerations for Transfer

- Transcutaneous pacing pads should be placed, with emergent transfer to a higher level of care facility
- If unstable, transcutaneous pacing should be initiated

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

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# Is It Time to Revisit Your Urgent Care Marketing Tactics?

■ HEATHER REAL

In the journey of an urgent care visit, where does the patient story begin? Is it when the patient walks through the door, or did it start when the patient was still at home Googling “urgent care near me” on their phone?

It is likely neither of these. The patient journey to your urgent care actually begins before they even have a sniffle, fever, or injury; their journey began the first time they saw your urgent care sign while going about their regular day, moving between home, work, school, groceries, activities, and errands. Every time they pass by and see your bright sign and the lights on, they are reminded you and your staff are there, ready to take care of them when they need you. They may check your website for your hours or, better yet, an online queueing and registration option, but they likely knew *where* they wanted to go before they opened their browser.

In today’s digital world, driven by “likes,” clicks, and ratings, the most powerful piece of marketing is still likely going to be your street-visible signage and positive word-of-mouth. This doesn’t mean we should dump the digital; rather, diversify your strategy across digital, community, and print marketing.

Over the last 3 years, a lot of urgent cares essentially shifted to a “mostly COVID” operating model, managing hundreds of tests per day. The patient’s journey to their medical destination also shifted. Prepandemic, patients would generally utilize the urgent care most familiar to them, nearby with hours and services that consistently met their needs and where they’ve had previous positive patient experiences. During the pandemic, patient choice may have been driven by “time slot” availability that coincided with their needs for a test, soonest available and/or



Heather Real is Senior Consultant with Experity Consulting.

### Beating the Google AdWords Competition

Competition in Google AdWords for popular pay-per-click keywords such as “urgent care near me” has become more expensive and less productive. The supply/demand economics is that the number of patients searching for these terms has decreased while the number of urgent cares bidding on the terms has increased.

According to Ira Pasternack, founder of Web for Doctors, urgent care operators can respond by:

- Setting a maximum bid for searching on a phrase, preserving your budget while competitors overpay when supply/demand for those words becomes unbalanced.
- Improve your Google Ads “quality score” by synchronizing your website copy and landing pages with the keywords you’re targeting.
- Target valuable phrases beyond the obvious “urgent care near me” that are less expensive while still relevant to patient search behavior. For example, “urgent care in <Columbus, Ohio>,” “urgent care with <x-ray>,” or “<sprained ankle treatment> near me.”

Source: Pasternack P. The cost of searching ‘urgent care near me.’ LinkedIn. Available at: [https://www.linkedin.com/posts/irapasternack\\_urgentcare-googleads-roi-activity-7090481922048462848-33C8/](https://www.linkedin.com/posts/irapasternack_urgentcare-googleads-roi-activity-7090481922048462848-33C8/). Accessed August 7, 2023.

shortest published wait times, which center provides test results faster, or even, where they can use a patient portal for test results rather than wait by the phone.

In response to this changing consumer behavior, many urgent care businesses launched or optimized online patient queueing systems to match the flow of patients to provider capacity and thus reduce on-site wait times. With the addition of other functionality like self-registration, our own patients became one of the most effective re-

sources in enhancing workflows and efficiencies during these high-volume periods.

By maintaining these functions and encouraging utilization, we can retain some control over the patient flow to our centers. Looking forward to a potentially “normal” cold and flu season, patients and staff will appreciate the wait time transparency, as patients will prefer to wait in the comfort of their own home, rather than in overcrowded waiting rooms.

Now that you have a queuing system, are you making your next available appointment times visible to search engines? Integration between Google and your center’s queuing system will provide real-time wait times in Google search results, enabling someone looking for your urgent care to grab the next available slot while still on the Google page.

In addition to reducing staff time on data entry, having patients complete their own registration is likely to reduce errors that can delay insurance payments. Promoting this functionality and the “pick your time” experience will resonate with patients as the waiting rooms fill up this fall.

Prior to the pandemic, as an industry we promoted “grassroots” marketing. Not only was mass media advertising cost prohibitive to a single center operator in a 6- to 8-million-person market like Chicago or Houston, but such also provided “face-to-face” interactions to build trust and spur positive word of mouth. The pandemic, however, shut those venues down and forced nearly all marketing to go digital. The need for widespread, efficient, and convenient COVID-19 testing certainly boosted patient awareness and utilization of urgent care as a place of service. As urgent care poured more money into Google AdWords for “COVID test near me,” increased demand resulted in a cost increase for these pay-per-click services, yet yielded a diminished return due to the inflated utilization.

Rather than leaning into the highly competitive web marketing wars, maybe now is the perfect time to revive those community-based efforts that had previously been the strongest channels for winning patient loyalty. While emerging technologies improve the patient experience and overall center operations, urgent care businesses have historically thrived on hyper-local, grassroots marketing. By blending what we’ve learned from our digital efforts *and* what we’ve taught our patients along the way, we can bring a fresh, multifaceted approach to our marketing strategies.

The best way to promote your business is by meeting the patients where they are. Connecting with organizations that are grounded in your community will go a long way in gaining local loyalty. In many communities, this means partnering with school districts and athletic departments, as well as supporting other community events such as 5K

**Table 1. Grassroots Marketing Tactics in Urgent Care**

- Primary care/specialist/retail health referrals
- Chambers of Commerce
- Community organizations
- Community events
- Apartment complexes
- Hotels/motels and convention/visitors bureaus
- Parks/recreation facilities
- Health clubs
- Churches/religious congregations
- Local schools (PTA, athletic boosters, school RN associations)
- College campuses
- Ethnic societies/advocacy organizations

runs, health and safety fairs, church and Chamber of Commerce events, and more. Promoting school, sports, and camp physicals is a great way to bring new patients to your center during the typically slower summer months and, hopefully, bring those patients back later in the season when they get sick or injured. (See **Table 1.**) Get out and meet the school nurses and athletic directors in your community. When parents and kids “try” you with a good experience, positive word-of-mouth will follow. That kind of advertisement can’t be bought and is the most influential in bringing new patients to your door.

It’s important to remember where that patient journey begins: before they need you and the services you offer. The combination of grassroots and digital marketing efforts through social media can be a highly effective way to reach a lot of patients with very little spend. Thinking beyond those “health-ful” tips that get posted to Facebook once a week/month/quarter and service offerings, you might use social media to engage people outside of urgent care needs and offerings. You can use social media to initiate interactive activities like community-wide scavenger hunts, trivia contests, or fundraising events for a family or non-profit in need. Introduce your staff, highlight when patients and staff go above and beyond in service, as well as expressions of gratitude. These are great ways to deepen your roots in the community and gain patient loyalty.

As you prepare for whatever this year’s cold-and-flu season brings, think about all the ways you can diversify your marketing efforts to reach more patients and raise awareness of your services. Leverage the tools you are already using to extend the patient experience beyond your front doors and before the urgent care is needed. ■

## MARKET PLACE

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This offering would be ideal for an experienced physician to work shifts in one or all 3 locations and also be the medical director, or for a physician who desires to be the medical director for all 3 and staff with the current providers.

Contact William Kotsch [wkotsch@gmail.com](mailto:wkotsch@gmail.com) for more information.

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# In-Office Dispensing: The Good, the Bad, and the Unlikely

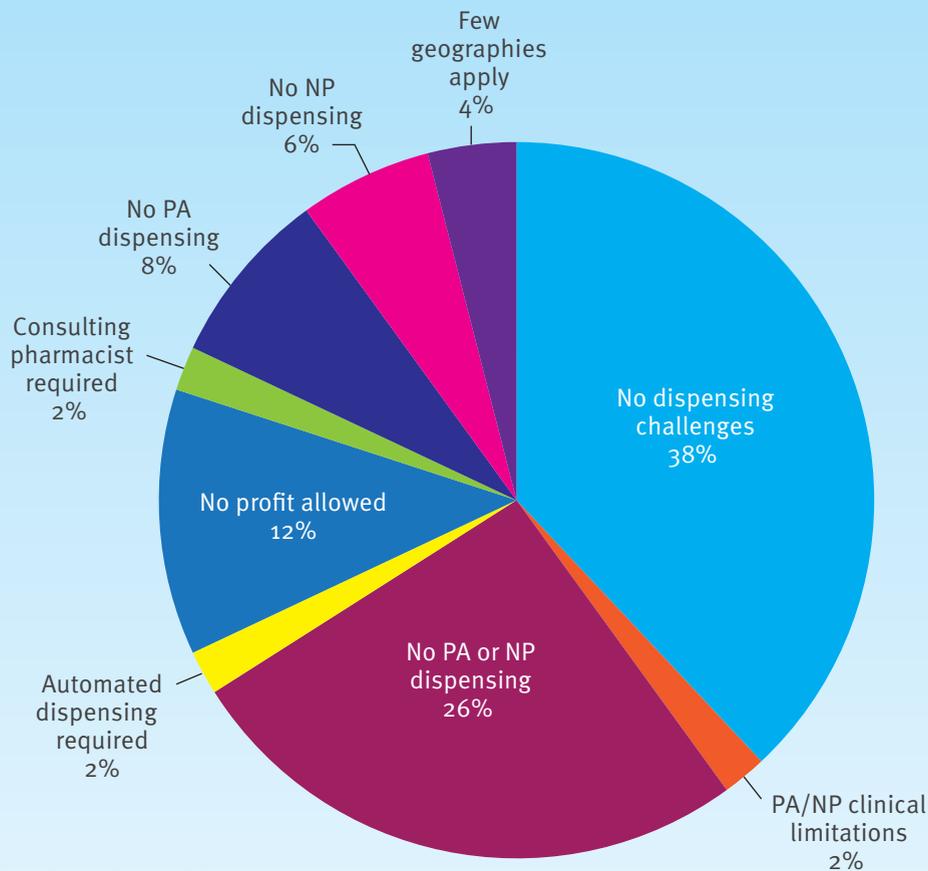
In paper (so to speak), in-office prescribing in the urgent care center would seem to be a no-brainer for all concerned: patients could avoid the time-consuming hassles of navigating the retail drugstore morass and head straight home with their medication, and providers could be assured that their patients got the right medication in a timely manner and could be the responsible parties to answer any questions they may have—all while collecting a modest profit.

That's the ideal, anyway. As is often the case, the reality is that a whole lot of red tape makes it literally impossible

in some states and just too challenging to deal with in many others.

One issue is that 44% of states impose limitations on nurse practitioners and physician assistants (or both) and, as you undoubtedly know, NPs and PAs are flying solo in many UCCs. And even though 80% of states allow physicians to dispense noncontrolled substances in-office at a profit, 12% prohibit dispensing-for-profit and 4% only allow on-site prescribing in rural geographies. See the graph below for further detail. ■

DISPENSING CHALLENGES BROKEN DOWN BY STATE



Data source: Proprietary data and state websites.



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