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URGENT CARE ASSOCIATION

COLLEGE OF URGENT CARE MEDICINE

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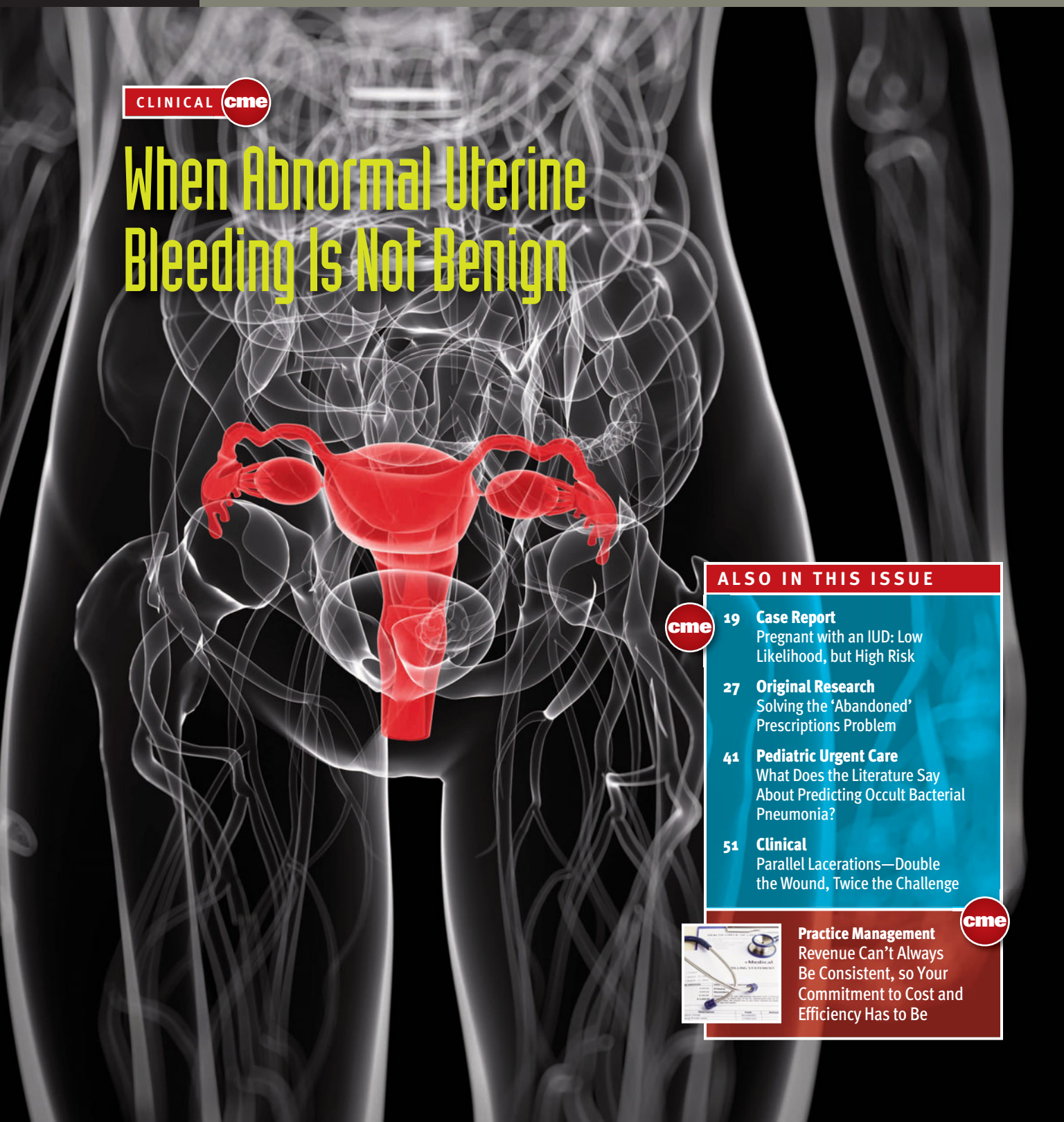

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There's Something Rotten in Urgent Care Reimbursements

ERIC ELLIS, MD

Something is amiss in how smaller urgent care operators are reimbursed these days. This, likely, is not news to you and I'm sure my situation is not unique, but in the process of having opened a group of urgent care centers around Sacramento, CA over the past few years, I've been shocked about just how bad things are.

When we opened our first center, I used a management company to help with the setup; I just figured they had done a bad job negotiating contracts. But as the terms of agreements have ended and I've looked to renegotiate our deals, I have just been floored by the lack of good-faith negotiations on the part of payers. We are paid well below current Medicare rates by most of the private insurers and, to make matters worse, they have no plans to offer any cost-of-living or Consumer Price Index (CPI) increases.

Just as you might, I run my two clinics almost like mini emergency departments. We are capable of seeing higher-acuity patients than virtually any primary care office, and certainly than any retail clinic. We reduce displaced fractures and dislocated joints, evaluate abdominal pain and chest pain, give intravenous medications, drain peritonsillar abscesses, treat rapid atrial fibrillation, fix complex lacerations, and so much more.

All of this amounts to keeping a lot of patients out of the ED—not only saving the patients hours and hours of wait time, but also saving the party responsible for the bill thousands and thousands of dollars. Based on our data, a visit to our urgent care centers is usually 5 to 10 times less expensive than a trip to the ED for similar treatment.

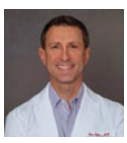
And yet, we have basically been told by multiple major insurers that we would receive no increase whatsoever in our new contracts—and that our patients (who are quite loyal and satisfied, as evidenced by the Google reviews we've received) would just have to drive 20 to 30 minutes to another clinic if we chose to not remain in-network.

This is highly frustrating in and of itself. However, the most appalling facet isn't the frozen rates, but the fact that at least one large California health system is simultaneously being reimbursed by these *same* insurance companies at 300% to 650% over what we are paid for the *same* billing codes. That's right. They provide the same services, the same level of care, and use the same exact codes and receive over 3 times the compensation.

Unfortunately, this problem extends well beyond just my business. It's even greater than individual urgent care operators and even the entire UC industry. This issue is an existential threat to the medical ecosystem itself.

In effect, insurance companies are incentivizing low-value care. And in doing so, remarkably, the payers who are orchestrating these changes are acting directly against their own economic interests.

If common sense cannot prevail we will continue to have fewer and fewer primary care physicians pursuing urgent care businesses, and existing urgent cares will close or scale back on the clinical services provided out of necessity. This will leave patients no choice but to go to the ED where the payers will be met with much larger bills for



Eric Ellis, MD is the owner of Lincoln Urgent Care and Granite Bay Urgent Care in the Sacramento (CA) area.

the same care. So, by declining to reimburse urgent care providers fairly due to cost concerns the insurers will ultimately pay even higher costs in the end.

"We have to do something.... We've come too far in urgent care to allow this injustice we face together with our patients to proceed quietly unchecked."

I sought answers from the California Medical Association (CMA) and learned that at least one insurer is known to have a "zero sum total policy." Under this policy, they have established a ceiling for reimbursements under which if someone is paid more, then someone else must be paid less.

The unifying complaint we hear from our patients is that they cannot find a primary care doctor, or, if they're fortunate enough have one, get an appointment to actually see them. A number have also complained that their doctor has switched to a concierge practice.

Mostly, they ask us if we can be their primary care doctor.

The bottom line is that if reimbursements cannot even come near matching CPI for independent physicians, our fate is sealed and our centers are doomed to fail.

In addition to seeking insights from the CMA, I've expressed these concerns to two members of the California State Legislature in the hope of raising awareness of just how difficult things are these days when trying to operate urgent care centers—businesses that have potential to save millions of dollars in healthcare spending.

I don't know yet if these efforts will bear fruit, but we have to do something. I urge you to reach out to your representatives and state medical associations and ask your patients to do the same. We've come too far in urgent care to allow this injustice we face together with our patients to proceed quietly unchecked. ■

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[1] Brown, H. *Improving the Diagnosis of Vulvovaginitis.* Population Health Management. Vol. 23, suppl 1, 2020

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CLINICAL

IN THE MAY ISSUE OF *JUCM*

Urgent care providers rely on evidence to guide their decisions whenever possible. Sometimes situations are so out of the ordinary or new that there simply isn't adequate evidence to follow, however. We found ourselves in that situations as the COVID-19 pandemic unfolded, obviously. That was only the start of the challenge, though; even as evidence related to management of SARS-CoV-2 accumulated, new wrinkles presented regularly. The most recent is coinfection involving COVID and other viral agents, including respiratory syncytial virus. One practice saw an especially interesting case that we're pleased to be able to share with you in the May issue of *JUCM*.

DEPARTMENTS

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EDITOR-IN-CHIEF
Joshua W. Russell, MD, MSc, FCUCM, FACEP
editor@jucm.com

EXECUTIVE EDITOR
Harris Fleming
hfleming@jucm.com

SENIOR EDITOR, PRACTICE MANAGEMENT
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Ivan Koay, MBChB, FRNZCUC, MD

CONTRIBUTING EDITOR, REVENUE CYCLE MANAGEMENT
Monte Sandler

SENIOR ART DIRECTOR
Tom DePrenda
tdeprenda@jucm.com

BRAVEHEART PUBLISHING

11 E Sundial Circle, PO Box 5156, Carefree, AZ 85377

PUBLISHER AND ADVERTISING SALES
Stuart Williams
swilliams@jucm.com • (480) 245-6400

CLASSIFIED AND RECRUITMENT ADVERTISING
Carissa Riggs
carissa.riggs@communitybrands.com • (860) 926-3498

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

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Abnormal uterine bleeding (AUB) may be one of the most common gynecological conditions presenting to urgent care, but that doesn't mean assessing its source is straightforward. And while the etiology is most likely to be benign, missing those that are more ominous could be catastrophic.

As with all diagnostic processes, employing the most appropriate tools is just the first step. Ultrasound is certainly one of those tools, as detailed in this month's cover article, How Useful Is Ultrasound in Abnormal Uterine Bleeding? (page 13). We thank **Andrew Alaya, MD, MSc**, of Bronovo Hospital, The Hague, Netherlands, for addressing it here.

Ultrasound also figures prominently in Point-of-Care Ultrasound Diagnosis of Ruptured Ectopic Pregnancy in an Urgent Care Setting (page 19). In the rare situations where a pregnancy occurs in the presence of an intrauterine device, risk of ectopic pregnancy increases. What you do next matters, so we appreciate authors **Benjamin Mati MD** and **Richard Rutherford, MD** sharing their insights. Drs. Mati and Rutherford are colleagues in the Venture County Medical Center Department of Emergency Medicine; Dr. Mati also works in the Department of Critical Care Medicine there.

Regardless of what diagnostic process is employed, a universal truth is that timely initiation of treatment increases the likelihood of positive outcomes. When that treatment includes a prescription medication, timely access matters. What happens when a patient gets a prescription after community pharmacies have closed, though? The issue of prescription abandonment inspired the project at the center of Evaluating Abandonment of Urgent Care Prescriptions Sent to an Automated Drug Dispenser vs a Community Pharmacy: A Retrospective Cohort Study (page 27), by **Emilie M. Collongette, PharmD, BCMTMS**, **Sara Panella, PharmD, BCPS**, **Michael A. DeCoske, PharmD, BCPS**, and **Ernesto Sanz Martinez, MD**.

The authors are all affiliated with Baptist Health South Florida. Dr. Collongette is ambulatory pharmacy clinical specialist, primary care, at BHSF Clinical Pharmacy Enterprise; Dr. Panella is clinical manager of pharmacy ambulatory care, population health, and transitions of care services; Dr. DeCoske is assistant vice president of ambulatory pharmacy services; Dr. Martinez is chief medical officer for the North Urgent Care Clinics and clinical assistant professor of Family Medicine at the University of Miami Miller School of Medicine.

As always, treatment of younger patients carries its own rewards and challenges, regardless of the diagnosis. Unfortunately, not that many studies have been designed to identify signs and symptoms that could help predict occult bacterial pneumonia in children. **Alyssa Whited, PA-C** and **Christina Gardner, PA-C** of the Carilion Clinic did a deep dive to find the most relevant papers and presented their findings in A Consolidation of Signs of Symptoms of Pediatric Pneumonia (page 41).

A dearth of research isn't a problem when faced with lacerations, typically. In some presentations, rather, the challenge is that multiple lacerations occurred in close proximity to each other. Repairing one without inflicting further damage to the other can be difficult. Reading Repairing Parallel Lacerations in the Urgent Care Center (page 51) could be a good way to assess your own readiness to manage this dilemma. As an emergency physician at Newberry County Memorial Hospital, Newberry, SC, and the creator/owner of The Laceration Course lecture series, author **Patrick O'Malley, MD** may be the ideal person so tackle this subject.

On the "other" side of urgent care, urgent care operators can never afford to lose focus on running an efficient business. Running an urgent care center is an expensive proposition, and revenue can fluctuate widely from one season to the next. Read Tightening the Belt: Rethinking Costs and Efficiency in Urgent Care (page 23) by **Alan A. Ayers, MBA, MAcc**, to learn more about maintaining a balanced approach regardless of the time of year. Mr. Ayers is president of Experity Consulting and is senior editor, practice management of *The Journal of Urgent Care Medicine*.

Of course, how urgent care providers are reimbursed for their services is beyond our control, and sometimes it may seem like things just don't add up the way they should. That realization struck a nerve with **Eric Ellis, MD**, owner of Lincoln and Granite Bay Urgent Cares in the Sacramento (CA) area. He didn't just sit back and complain, though; rather, he shared his thoughts with state legislators and others—and in Urgent Care Perspectives (page 1).

As you know, *JUCM* brings you expert commentary on billing, coding, and many related topics in our monthly Revenue Cycle Management column. This month, **Monte Sandler** offers advice on avoiding common mistakes that leave nearly 30% of medical bills prone to errors. Identifying (and Resolving) Common Billing Pitfalls starts on page 55.

Finally, as always, we appreciate **Ivan Koay MBChB, MRCS, FRNZCUC, MD** highlighting the most urgent care-relevant details of articles published in other medical journals. Abstracts in Urgent Care starts on page 35. Dr. Koay is an urgent care physician and medical lead, Ealing Urgent Care Centre, London Northwest University Healthcare Trust, UK; and head of faculty na hÉireann Royal New Zealand College of Urgent Care. ■

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One Year Later

LOU ELLEN HORWITZ, MA

Last year at the Urgent Care Convention, we hosted a panel discussion to examine the nagging sense that "acuity degradation" was happening in Urgent Care. For those of you new to the term, this is how we talk about the concern that the patients we see are leaning more toward lower-acuity levels and away from higher-acuity levels. There was a sense amongst providers that patients we used to take care of—with fractures, belly pain and eye injuries, to name a few—were no longer being seen in Urgent Care.

During that discussion we saw data that confirmed this. Over the past decade there's been a slow but steady decline in procedures overall, visits that included an x-ray, fracture care, and lacerations. For you nonproviders reading, all of that also equals a slow decline in E/M codes.

It's not the direction we wanted to be heading.

We also talked about the "why." Downward reimbursement pressures do not support ongoing investments in specialized training, and narrow margins require us to find good providers at manageable wages, which has led us to hiring newer graduates who need that specialized training. And it's not just providers—new medical assistant graduates need additional training to support providers seeing higher-acuity patients, and the radiologic technologist (RT) shortage isn't helping, either.

That panel wasn't all doom and gloom, however, because we realized what's happening in time to turn the trend around. Since then, "acuity degradation" has been under discussion, led primarily by the College of Urgent Care Medicine, the Clinical Consortium, the Clinical Response Committee, and an Advancing the Specialty Task Force. (I encourage you to connect with the College to learn more about their work and their plans.)

The first work needed was setting a baseline. We have Certification requirements for Urgent Care centers that define what services should be provided, but we had never defined—for ourselves—what the specialty of Urgent Care medicine ought to be. Now we have. Many, many, many Urgent Care providers were consulted and surveyed, and arguments ensued and ideas went back and forth and it was quite a melee for a few months—but through our collaborations we found the answers.

What that work has led to so far is a continued transformation of our educational content to focus on retraining in higher-acuity clinical work. It's led to collaborations with our existing educational partners and a hunt for new partners. And it's led us to develop extensive programming specifically for medical assistants for the first time.

This month there's a new UC Medical Assistant Bootcamp program launching from UCA and Hippo Education that will help you onboard new medical assistants so they are better prepared to support your providers. We've also partnered with Control the Dose to provide two training programs in Limited Scope X-ray—primarily for medical assistants but available to anyone. Both programs are available at a discount to members. We're continuing to work on programs for advancing the skills of new Urgent Care providers as well and look forward to sharing more in the months to come.

Interestingly, launching the Limited Scope X-ray program has led to a new wave of regulatory work. There's an almost endless variety in state-to-state licensure requirements for who can take an x-ray and what kind. We're working on that. You can download a spreadsheet and a White Paper in the Learning Center on our website to get the full scope of the project.

We are also, at long last, pleased to share that we have engaged McDermott+ as our national lobbying firm. Last month our Advocacy Committee met with McDermott+ to finalize our strategies and the work has begun in earnest. Keep an eye on the Advocacy section of our website to learn more about what's happening, how we hope to get it done, and what you should be doing now to help us or get prepared for what's to come.

Here's a hint that should not be a surprise: It's important to get your center Certified. Our Advocacy goals are the same as UCA's Core Purpose: to ensure the advancement and long-term success of Urgent Care. Lots more to come, so stay with us! ■

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

CONTINUING MEDICAL EDUCATION

Release Date: April 1, 2023
Expiration Date: March 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

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CONTINUING MEDICAL EDUCATION

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How Useful Is Ultrasound in Abnormal Uterine Bleeding? (page 13)

1. **What proportion of women will experience abnormal uterine bleeding (AUB) in their lifetime?**
   a. About one quarter
   b. About one third
   c. About one half
   d. About two thirds

2. **Which of the following is considered current, preferred terminology to describe the nature of AUB?**
   a. Dysfunctional uterine bleeding
   b. Heavy menstrual bleeding
   c. Menorrhagia
   d. All of the above

3. **Endometrial polyps occur:**
   a. In 10% of women with AUB
   b. In 26% of women with AUB
   c. In 42% of women with AUB
   d. In 50% of women with AUB

Point-of-Care Ultrasound Diagnosis of Ruptured Ectopic Pregnancy in an Urgent Care Setting (page 19)

1. **Ectopic pregnancies:**
   a. Have a prevalence of 1% to 2% but cause about 2.7% of pregnancy-related deaths
   b. Have a prevalence of 2.7% but cause about 1% to 2% of pregnancy-related deaths
   c. Have a prevalence of 2.7% but cause about 6% of pregnancy-related deaths
   d. Have a prevalence of 1% to 2% but cause about 6% of pregnancy-related deaths

2. **When pregnancy occurs in the presence of an IUD, the risk for an ectopic pregnancy:**
   a. Is unaffected compared with pregnancies that occur without the presence of an IUD
   b. Increases to 6%
   c. Increases to 32%
   d. Increases to 53%

3. **A simple transabdominal POCUS protocol to assess for the presence of ruptured ectopic pregnancy consists of, in order:**
   a. Evaluate for free fluid in the pelvis; evaluate for IUP; and evaluate for free fluid in the RUQ/LUQ
   b. Evaluate for free fluid in the RUQ/LUQ; evaluate for IUP; evaluate for free fluid in the pelvis
   c. Evaluate for IUP; evaluate for free fluid in the pelvis; evaluate for free fluid in the RUQ/LUQ
   d. Evaluate for free fluid in the pelvis; evaluate for free fluid in the RUQ/LUQ; evaluate for IUP

Tightening the Belt: Rethinking Costs and Efficiency in Urgent Care (page 23)

1. **Historically, urgent care has been a business that:**
   a. Breaks even for 9 months of the year but then sees a windfall during flu season
   b. Follows a bell-curve shape, typically—a slow first quarter, highest revenue in the second and third quarters, then waning in the fourth quarter
   c. Is largely consistent throughout the year
   d. Rises and falls seasonally, depending on the region of the country

2. **Labor is the greatest expense of an urgent care center, constituting:**
   a. 33% of operating costs
   b. 47% of operating costs
   c. 68% of operating costs
   d. 85% of operating costs

3. **During the COVID-19 pandemic, urgent care providers were able to see:**
   a. Only three to four patients per hour
   b. Approximately five patients per hour
   c. Eight to 10 patients per hour
   d. Up to 14 patients per hour

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How Useful Is Ultrasound in Abnormal Uterine Bleeding?

Urgent message: Ultrasound can provide essential data in the evaluation and urgent care of abnormal uterine bleeding, by facilitating a rapid diagnosis and immediate and appropriate decisions regarding management.

Andrew Alaya, MD, MSc

Citation: Alaya A. How useful is ultrasound in abnormal uterine bleeding? *J Urgent Care Med.* 2023;17(7):13-18.

Key words: abnormal uterine bleeding, AUB polyp, adenomyosis, leiomyoma, uterine malignancy

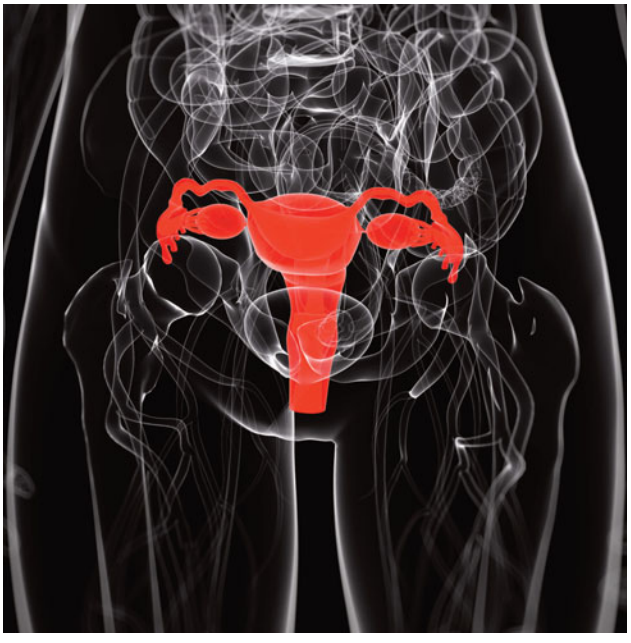
Abstract

Abnormal uterine bleeding (AUB) is one of the most common gynecological conditions presenting at urgent care clinics. AUB before and after menopause is caused mainly by benign conditions such as endometrial polyps, intracavitary fibroids, hormonal disturbances, or endometrial hyperplasia. Up to one-third of women experience AUB in their life. AUB occurs most commonly at menarche and perimenopause and can negatively affect aspects of a woman's physical, emotional, sexual, and professional quality of life.

The International Federation of Gynecology and Obstetrics (FIGO) uses the acronym PALM-COEIN to stratify anatomically localizable pathology (PALM) from those not distinguishable (COEIN). The majority of the underlying pathology is benign; however, care must be taken to exclude malignancy such as endometrial or cervical cancer.

Ultrasound is the primary diagnostic imaging tool to investigate AUB and is ideal for investigating and classifying AUB with the FIGO classification. The skill and the experience of the ultrasound operator is of utmost importance for a proper and accurate evaluation.

Ultrasound in urgent care medicine can facilitate rapid diagnosis and immediate and appropriate decisions regarding management—hence, reassuring patients of the findings and reducing unnecessary hospital visits and related costs.



Introduction

Abnormal uterine bleeding (AUB) is one of the most common gynecological conditions presenting at urgent care clinics. As it is, most published studies focus on the diagnosis of malignancy. However, AUB in women before and after menopause is caused mainly by benign conditions such as endometrial polyps, in-

Author affiliations: Andrew Alaya, MD, MSc, Bronovo Hospital, The Hague, Netherlands. The author has no relevant financial relationships with any commercial interests.

tracavitary fibroids, hormonal disturbances, or endometrial hyperplasia.[1]

"The prevalence of AUB among reproductive-aged women is difficult to estimate because many women do not seek treatment for their symptoms."

AUB is defined by changes in the menstruation cycle involving the abnormal frequency, regularity, duration, and volume of flow outside of pregnancy.

A "normal" menstrual cycle has a frequency of 24 to 38 days, with each period lasting 7 to 9 days and involving 5 to 80 mL of blood loss. However, up to one-third of women will experience AUB in their lifetime, most often at menarche and perimenopause.[1] It can negatively affect physical, emotional, sexual, and professional aspects of the lives of women.

Terms such as *oligomenorrhea*, *menorrhagia*, and *dysfunctional uterine bleeding* are no longer used in favor of simple terms to describe the nature of the abnormal uterine bleeding, such as *heavy menstrual bleeding*, *intermenstrual bleeding*, and *postmenopausal bleeding*.

AUB can be divided into two categories: acute and chronic AUB. Acute AUB is one that causes excessive bleeding that requires immediate intervention to prevent further blood loss. It can also occur on its own or superimposed on chronic AUB. In this case irregular menstrual bleeding has occurred in the previous 6 months.[2]

The management of AUB varies depending on the patient's age, chronicity, severity of bleeding, comorbidities, medications, and whether or not the patient is pregnant. To make a diagnosis of the underlying pathology and treat the patient appropriately, one has to know the menstrual cycle and history of that patient.

This article focuses on the physiology of menstruation, presents evidence-based information on the causes of AUB in women, and how ultrasound can be useful in determining the cause of the problem.

Basic Physiology

The menstrual cycle and ovulation constitute a complex hormonal feedback mechanism regulated by the hypothalamus, the pituitary, and the ovary.

The first half of the menstrual cycle is known as the follicular phase. In this phase, the hypothalamus secretes gonadotropin-releasing hormone (GnRH) which stimulates the pituitary to release both luteinizing hormone (LH) and follicle-stimulating hormone (FSH). These two hormones influence the ovary. Firstly, a dominant follicle matures and secondly it secretes estrogen. Estrogen stimulates the endometrium and the stroma to grow and proliferate causing the endometrium to thicken.

In about 36 hours, estrogen levels reach a threshold level and a surge in LH occurs, causing a rupture of the dominate follicle leading to ovulation.

This is the beginning of the second half of the menstrual cycle, known as the luteal phase.

Under the influence of LH, the ruptured dominant follicle cyst rapidly evolves into the corpus luteum, which secretes progesterone. During this time, a pregnancy can occur. If no pregnancy occurs, after 14 days, the corpus luteum involutes and progesterone levels drop. When this happens, prostaglandin is released. Prostaglandin causes vasospasm of the arteries feeding the endometrium leading to enzymatic breakdown of the functionalis layer of the endometrium. This breakdown leads to blood loss and sloughing, which make up menstruation.

Any derangement of the structure of the uterus, such as fibroids, polyps, adenomyosis, malignancy, and hyperplasia or derangements to the clotting pathways such as coagulopathies and iatrogenically or disruption of the hypothalamic-pituitary-ovarian axis can affect menstruation and lead to abnormal uterine bleeding.[3]

Epidemiology

The prevalence of AUB among reproductive-aged women is difficult to estimate because many women do not seek treatment for their symptoms. However, internationally this is estimated to be anywhere from 3% to 30%, with higher incidence occurring around menarche and perimenopause. Many studies are limited to heavy menstrual bleeding. When considering irregular and intermenstrual bleeding the prevalence rises to 35% or more.[3]

AUB is the fourth most-common reason for referral from urgent care clinics to gynecological services, resulting in a loss of more than $2,000 per patient per year due to work absence and home management cost.[4]

Etiology

The International Federation of Gynecology and Obstetrics (FIGO) classified the underlying etiologies of AUB in the acronym PALM-COEIN.

PALM describes AUB based on structural factors, with

each letter of the acronym indicating one of the etiologies of bleeding:

P: uterine polyp
A: adenomyosis
L: leiomyoma
M: precursor and malignant lesions of the uterus body

One or more etiologies from the above list can contribute to the patient's AUB. At the same time, some of these etiologies, such as endocervical polyp, endometrial polyp, or leiomyomas, may be asymptomatic and not the primary cause of the patient's AUB.

The second portion of the acronym, *COEIN*, describes AUB based on nonstructural factors. Each letter of the acronym indicates one of the following etiologies of bleeding:

C: coagulopathies
O: ovulatory dysfunction
E: endometrial dysfunction
I: iatrogenic
N: not yet classified

COEIN classifications are nonstructural factors that are not measurable or visible by ultrasound. For this reason, they are not covered in this article.

Ultrasound and Palm

The underlying causes of AUB in PALM are usually benign pathologies, though these warrant investigation to exclude other, more sinister underlying pathology. Ultrasound can provide rapid, accurate diagnosis with minimum invasiveness and cause for hospital visits, which are often expensive and time-consuming.

P: Polyp

Endometrial polyps are an overgrowth of endometrial glands and stroma that protrude out of the endometrium. They can be sessile or pedunculated excrescences of endometrial tissue. They may be found as a single lesion or multiple lesions, filling the entire endometrial cavity.

Endometrial polyps may be seen in all ages. However, they are most common between 40 and 50 years of age. Their exact etiology is unknown. Polyps are associated with abnormal estrogen levels and other endometrial aromatase activity and genetic factors.

Ten percent of asymptomatic premenopausal women have been shown to have endometrial polyps, compared with 50% of premenopausal women with AUB. Premenopausal women are less likely to have a malignant endometrial polyp compared with postmenopausal women.[4]

Polyps are considered benign and not regarded as a major risk for developing a carcinoma, although 0% to 13% have a risk of malignancy transformation.[5]

Malignancy in an endometrial polyp is associated with the patient's age and menopausal status.[6] The risk of malignancy in asymptomatic postmenopausal women is 1.5%; the risk increases to 4.5% in symptomatic postmenopausal women.[5]

Endometrial abnormalities, including the development of polyps, are associated with chronic tamoxifen therapy and occur in 20% to 35% of women.[7]

Although the risk of malignancy is small, polyps are often removed by hysteroscopic resection in both symptomatic and asymptomatic women. Hysteroscopic resection is not without risk. A study over a 2.5-year period showed that small endometrial polyps frequently regressed, whereas larger polyps were more likely to persist and were associated with the development of abnormal bleeding.[8]

On transvaginal ultrasound (TVU), polyps may have a varied appearance. They have nonspecific thickened endometrium, a focal echogenic area within the endometrium or occasionally present as a mass in the endometrial cavity surrounded by fluid. They generally have a homogeneous texture without disruption of the myometrial-endometrial interface.

Using Doppler ultrasound, it may be possible to see the pedicle that supplies blood to the polyp. The pedicle is the polyp's feeding vessel. The use of 3D TVU can clearly visualize a polyp in the endometrium.

Polyp visualization will confirm the diagnosis, and further tests such as saline infusion sonohysterography (SIS) and hysteroscopy will not be necessary.[1] Occasionally, problems may arise in distinguishing between larger polyps and submucous fibroids. As ultrasound is operator-dependent, experience is an essential element to distinguish between the two.

"Adenomyosis may be focal or diffuse and may coexist with fibroids, which can make it challenging to ascertain a differential diagnosis."

A: Adenomyosis

Adenomyosis is the presence of ectopic endometrial glands and stroma in the myometrium. Adenomyosis is found in women of reproductive age, most often in

those having more than one child (multiparous).

Adenomyosis is thought to occur when uterine curettage, caesarean birth, termination of pregnancy, and multiple parity occur, due to a disruption of the endomyometrial junction allowing infolding of the endometrium with myometrial invasion.[9]

"For some women, newer medical options may offer genuine effective relief for both AUB and other symptoms associated with leiomyoma."

Adenomyosis usually affects the inner third of the endometrium and rarely affects the cervix.

Adenomyosis is also associated with exposure of estrogen and tamoxifen with increasing age.[9]

At cellular level, adenomyosis may occur due to damage of the endomyometrial junction caused by matrix metalloproteinases, cyclo-oxygenase enzymes, vascular endothelial growth factor, and stem cell progenitors. The use of biomarkers has been explored in research settings for diagnosis of adenomyosis; however, no biomarkers have yet been adapted for clinical use.[10]

It is still unclear how adenomyosis is related to AUB. Adenomyosis may be both focal or diffuse and may coexist with fibroids, which can make it challenging to ascertain a differential diagnosis. Histological confirmation of adenomyosis may differ from 5% to 70%.[7]

The modality of choice for the diagnosis of adenomyosis is TVU. On TVU, adenomyosis may appear nodular with circumscribed aggregates or diffuse with foci scattered throughout the myometrium with hypoechoeic areas, heterogeneous myometrial echotexture, asymmetric uterine enlargement, and subendometrial cysts.

3DTVU may improve the sensitivity when the junctional zone is poorly defined. Ultrasound is dependent on the skill of the operator and the presentation of the patient's anatomy, which play a very important role in diagnosis. MRI is also useful in diagnosis of adenomyosis and has slightly higher accuracy than TVU.[11]

L: Leiomyoma

Leiomyoma, also known as fibroids or myoma, represent the most common tumor in women. By the age of 50, almost 70% of White women and more than 80% of Black women will have developed at least one fibroid.

Most women have no symptoms. Others may have discomfort and pressure symptoms, typically urinary.

With large fibroids, compression of the renal tract and pelvic vasculature may occur, leading to renal function impairment and venous thromboembolism. Fibroids are associated with subfertility, miscarriage, preterm labor, and obstruction of labor.[12]

Many women who present to urgent care with AUB are associated with iron-deficiency anemia. Thirty percent of patients with leiomyoma will require treatment because of the presence of symptoms, including AUB.[13] Treatment can be use of medication or a surgical approach. Surgical treatment should be considered when clinical treatment does not help.[14]

The path and type of treatment approach depend on the number, location, and size of the leiomyoma and the desire for conception. For those women whose everyday life is disrupted by the symptoms caused by leiomyomas, hysterectomy remains a leading indicator for treatment. For others, newer medical options may offer genuine effective relief for both AUB and other symptoms associated with leiomyoma.[15] In the U.S., it is estimated that the annual direct treatment costs and indirect costs from lost working hours as a result of leiomyomas is $4.1 to $9.4 billion and $1.55 to $17.2 billion, respectively.[16]

The mechanisms of AUB and leiomyomas are not completely understood. The prevalence of leiomyomas is high in women with AUB, while other women may have entirely normal bleeding patterns.

It is theorized that leiomyoma increases the endometrial surface area, leading it to become fragile, and the engorged vasculature in the perimyoma area results in increased flow along these enlarged vessels which may overcome platelet action.[17] Other studies have sought to associate leiomyomas and the complex cellular and molecular changes in angiogenesis, alteration in vascoactive substrates, and growth factors, as well as alteration on coagulation.[18]

Currently, it is believed that leiomyomas have a field change within the uterine cavity rather than limited to regions overlying the leiomyoma(s) which may have an impact on endometrial receptivity, implantation and AUB.[19]

Due to their smooth muscle and varying degree of connective tissue, leiomyomas appear on ultrasound as a well-defined, heterogeneous, or hypoechoeic mass. The mass may have cystic areas if the leiomyoma is degenerating. In postmenopausal women, leiomyomas are often seen having calcifications.

Ultrasound is the modality of choice for diagnosing fibroids and their calcifications with regards to size,

number, and location. TVU has 100% sensitivity and 94% specificity in the diagnosis of leiomyomas.[12] FIGO has developed a subclassification of leiomyomas according to their size, number, and location in the uterus (**Table 1**).

It may be difficult to differentiate between endometrial polyps and submucosal leiomyomas. This can be avoided by performing the ultrasound examination in the proliferative phase rather than in the secretory phase of the menstrual cycle. In cases when the leiomyomas are large, a transabdominal ultrasound examination should be performed to ascertain the exact size and location of the mass.

Table 1. FIGO Classification System of Leiomyoma Location in the Uterus

Submucosal	0	Pedunculated intracavitary
	1	<50% intramural
	2	>50% intramural
Other	3	Contacts endometrium; 100% intramural
	4	Intramural
	5	Subserosal >50% intramural
	6	Subserosal <50% intramural
	7	Subserosal pendunculated
	8	Other (eg, cervical, parasitic)

M: Malignancy

One of the most common gynecological malignancies in the Western world is endometrial cancer. Historically, endometrial cancer has rarely occurred in premenopausal women. However, increase in obesity and metabolic syndrome led to a marked increase in an endocrine-driven subset of endometrial malignancy. More than 90% of uterine cancers occur in the endometrium.[20]

Endometrial cancer is the fourth most common cancer in women in the U.S. In 2021, an estimated 66,570 women were diagnosed with uterine endometrial cancer, causing 12,940 deaths in the U.S.[21] Ninety percent of women with endometrial cancer have AUB. At the same time, it is good to realize that AUB is a common symptom of many benign diseases, and only 1% to 2% of premenopausal women and 9% of postmenopausal women have indicated the presence of endometrial cancer.[22,23]

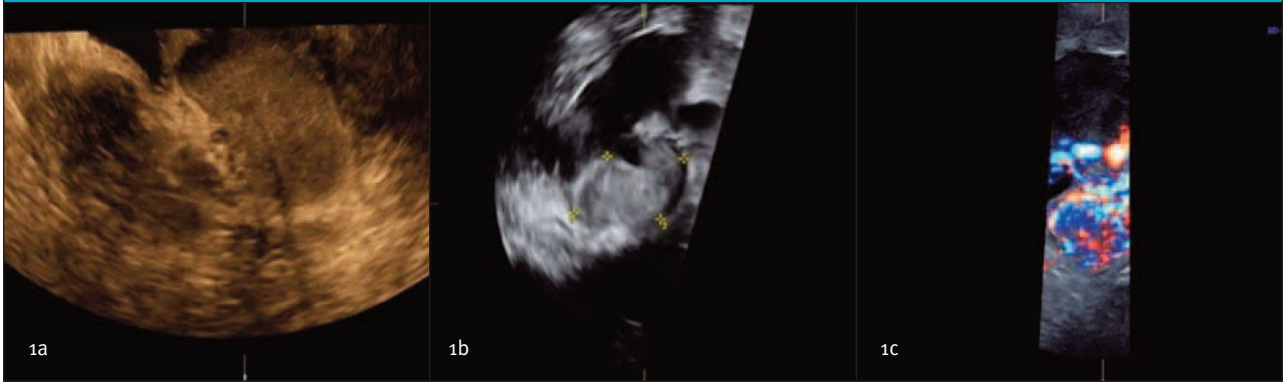
About 5% of women seeking help in primary care medicine have postmenopausal bleeding (PMB). The majority of these women have benign findings, and the cause is usually genital tract atrophy. However, 9% will have primary or secondary malignancy. Eighty percent of these women will have endometrial cancer. The risk of having endometrial cancer with PMB increases with age. At the age of 50 it is 1%; by age 80 it increases to 25%.[24]

TVU is the first modality of choice to investigate women with PMB. A cutoff of 8 mm or above for endometrial thickness is considered to be abnormal, with further tests such as hysteroscopy and endometrial biopsy required to rule out endometrium cancer. Endometrium thickness of <2 is associated with endometrial atrophy.[25] Ten percent of the pretest women with PMB will have their probability reduced to 1% following normal TVU. Fluid in the endometrium cavity is consider of no significance.[24]

Cervical cancer may be considered when there is persistent intermenstrual bleeding. This is especially important for women who do not undergo screening of Papanicolaou (PAP) test or human papillomavirus (HPV) test.

The second most frequent gynecological malignancy

Figure 1. Ultrasound images of cervical cancer, a) Longitudinal image revealing cervical cancer, b) 3D TVU showing the size of the cervical cancer, c) 3D TVU color Doppler demonstrating the high blood flow in the cervical cancer.



worldwide is cervical cancer.[26] Effective ultrasound depends on the experience of well-trained operators for accurate diagnosis. Ultrasound may provide highly accurate information on detecting tumor presence and evaluation of local tumor extent.[27] This can be done by TVU (see **Figure 1a**). Using 3D TVU, one can measure the volume of a tumour quite accurately[28] (see **Figure 1b**). 3D TVU colour Doppler may be used to demonstrate the high vascularization of the cervix tumour (see **Figure 1c**).

Another cause of AUB may be uterine sarcoma. Ultrasound is not the ideal modality for the diagnosis of uterine sarcoma. Although it is said that uterine sarcomas are rare, one woman per 340 in the U.S. is reported to have leiomyosarcoma unexpectedly diagnosed following surgery for anticipated "benign" leiomyomas.[29]

Age is associated with increased risk of developing leiomyosarcoma. In women under the age of 30 years, risk is estimated to be less than one in 500, compared with one in 98 among women in the age range of 75-79 years.[29]

Other risk factors for uterine leiomyosarcoma include the long-term use of tamoxifen, previous pelvic radiation therapy, and rare inherited disorders such as hereditary leiomyomatosis and renal cell carcinoma (HLRCC).[30] Contrary to the belief that a rapidly enlarged uterus would raise suspicion of malignancy, this is no longer held to be true. Benign fibroids may grow rapidly, and sarcomas grow slowly.[31]

Conclusion

AUB is one of the common presentations among women visiting urgent care. Most of the underlying pathology is benign, but care must be taken to exclude malignancy such as endometrial or cervical cancer. Ultrasound (TA, TV, DTV and 3DTV) is the primary diagnostic tool to investigate AUB and is ideal for investigating the FIGO classification of AUB, the PALM-COEIN. Skills and experience of the ultrasound operator are of utmost importance.

Ultrasound in urgent care medicine can facilitate rapid diagnosis and management, hence, reassuring the patients of the findings and reducing unnecessary hospital visits and costs. By determining or eliminating the cause the of AUB, the patient can be adequately counseled and referral to the appropriate specialist. ■

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Manuscript submitted April 16, 2022; accepted August 17, 2022.

Case Report

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Point-of-Care Ultrasound Diagnosis of Ruptured Ectopic Pregnancy in an Urgent Care Setting

Urgent message: Though use of point-of-care ultrasound in the evaluation of first trimester pregnancy complaints is not as common in the urgent care setting as it is in th ED, its use can expedite diagnosis and, potentially, lifesaving treatment.

Benjamin Mati, MD and Richard Rutherford, MD

Citation: Mati B, Rutherford R. Point-of-care ultrasound diagnosis of ruptured ectopic pregnancy in an urgent care setting. *J Urgent Care Med.* 2023;17(7):19-21.

Abstract

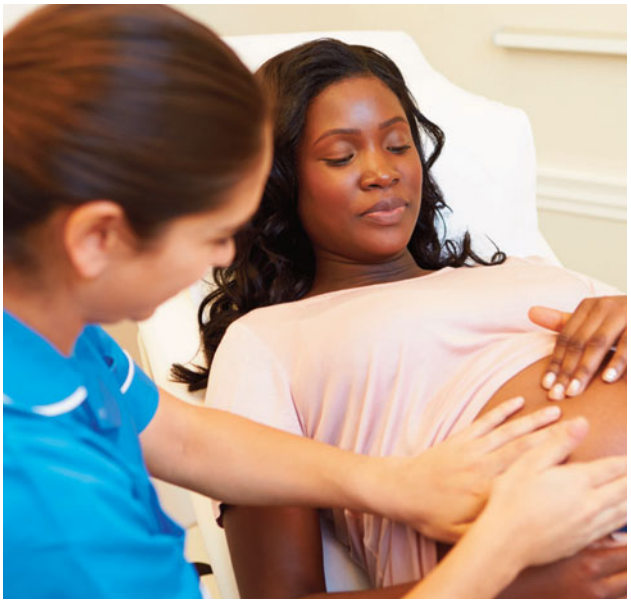
Pregnancy while using an intrauterine device is rare, but when it occurs the risk of ectopic pregnancy is increased. Rupture of ectopic pregnancy is associated with high morbidity and mortality that can be mitigated with prompt diagnosis and treatment. Point-of-care ultrasound expedites diagnosis and treatment, and improves outcomes in ruptured ectopic pregnancy.

Introduction

Ruptured ectopic pregnancy is a rare diagnosis but it is associated with high morbidity and mortality.[1] Prompt diagnosis leads to expedited treatment, which is associated with better outcomes.[2] Point-of-care-ultrasound (POCUS) use in the evaluation of first trimester pregnancy complaints is considered standard of care in emergency departments.[3,4,5] However, its adoption is not as widespread in the urgent care setting. This case highlights how POCUS use in the urgent care setting potentially saved the life of a pregnant woman with a ruptured ectopic pregnancy.

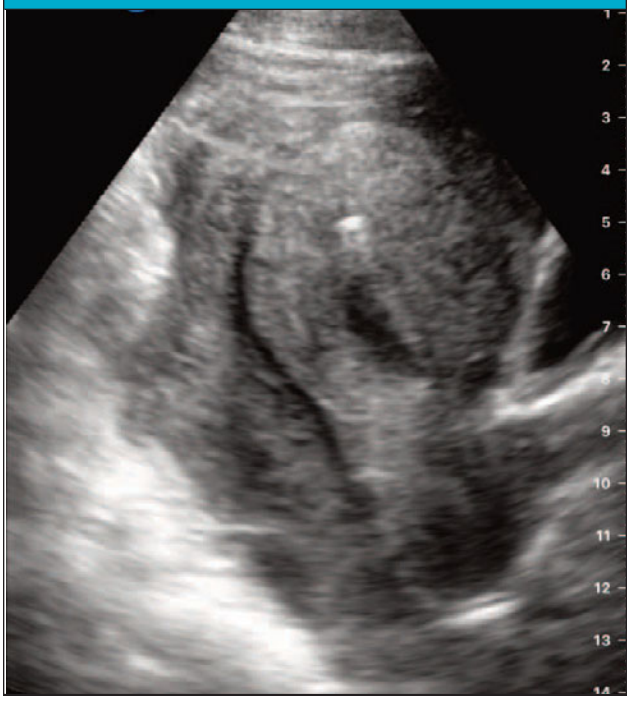
Case Presentation

A 21-year-old G2P1 female presented to urgent care with complaints of abdominal cramping and pain. She reported starting her menstrual cycle the day prior and having associated pelvic cramping, nausea, and vomiting that were progressively worsening. She reported an intrauterine device (IUD) placed about a year prior. She also reported a negative home pregnancy test 3 days ago. She came to the urgent care for symptomatic relief. However, upon standing to walk to the restroom to provide a urine sample



Author affiliations: Benjamin Mati, MD, Ventura County Medical Center, Department of Emergency Medicine, Department of Critical Care Medicine. **Richard Rutherford, MD,** Ventura County Medical Center Department of Emergency Medicine. The authors have no relevant financial relationships with any commercial interests.

Figure 1. POCUS abdominal performed with a handheld ultrasound (Butterfly iQ+ probe with iPhone 12).



in the urgent care, she had a syncopal episode.

She was found to be diaphoretic but awake, alert and oriented. Her heart rate was 132, blood pressure 85/56 then 100/66, oxygen saturation 98% on room air. She had mild tenderness to palpation of the abdomen. She was adamant that she did not want EMS called and did not want to be brought to the emergency department. She reported that she often feels lightheaded during her menstrual cycles and this was not far from how she usually felt.

Upon re-evaluation, a POCUS abdominal protocol was performed with a handheld ultrasound (Butterfly iQ+ probe with iPhone 12) while nursing placed an intravenous (IV) catheter, collected labs, and started IV fluids. (See **Figure 1**.) POCUS showed no intrauterine pregnancy. A thickened myometrium with a small amount of free fluid and a large amount of mixed echogenic material concerning for blood was found in the pelvis. A hyperechoic structure was identified within the uterus, consistent with an IUD. There was free fluid in the right upper quadrant (RUQ) and in the left upper quadrant (LUQ). Her right ovary was difficult to identify, though an abnormal-appearing cystic structure was noted outside of the uterus.

The differential diagnosis at this point included ruptured ovarian cyst, ruptured ectopic pregnancy, tubo-ovarian abscess, acute appendicitis, diverticulitis, and ruptured abdominal aorta. Although she had an IUD and reported a recent negative pregnancy, the POCUS was concerning for an abnormal-appearing adnexal structure and pelvic free fluid.

We reassessed her vital signs, which showed a slightly improved blood pressure but persistent tachycardia. On further conversation, with the information provided by the POCUS, she was amenable to transport to the ED. An ambulance was called immediately, and arrived prior to any labs returning. She was unable to provide urine for a point-of-care pregnancy test.

While en route to the ED, she became hypotensive. She arrived in hemorrhagic shock and experienced two more syncopal episodes with mean arterial pressures dropping below 50. In the ED, a transfusion protocol was started, and she ultimately received 5 units of packed red blood cells and was started on pressors.

A bedside ultrasound confirmed the findings of the urgentologist. In consultation with obstetrics, she was brought directly to the operating theater, where a right tubal ruptured ectopic pregnancy and over 2L of hemoperitoneum were identified. She underwent a successful right salpingectomy and the IUD was left in the uterus. She was discharged 2 days later and subsequently had the IUD removed by her outpatient provider.

Discussion

Hemorrhage from ruptured ectopic pregnancy is among the most common causes of first trimester mortality in North America.[1,6] During the COVID-19 pandemic, an increased rate of ruptured ectopic pregnancies has been noted.[7,8] Timely and accurate diagnosis is critical to providing definitive treatment, often emergent surgery.

Since these patients are often young and healthy, vital sign abnormalities can be late manifestations of shock. It is important to avoid cognitive biases such as anchoring or premature closure; routinely incorporating the use of symptom-based POCUS protocols into patient evaluations can help protect against such biases.

In this particular case, the identification of free fluid in the pelvis pushed ruptured ectopic pregnancy to the top of the differential diagnosis. This noninvasive, affordable, and easily learned intervention allowed the clinician to arrive at the correct, life-threatening diagnosis much sooner than would have been possible with a traditional diagnostic approach.

Ectopic pregnancies have a prevalence of 1%-2% and cause about 2.7% of pregnancy-related deaths.[2,6,9,10] In acute care settings, abdominal pain and vaginal bleeding should raise concern for ectopic pregnancy.[6,11]Although

up to half of women diagnosed with an ectopic pregnancy have no identifiable risk factors, some potential risk factors include fallopian tube pathology, pelvic inflammatory disease, previous ectopic, and pregnancy while an IUD is in place.[2]

The most common long-acting, reversible contraceptive method used worldwide,[12] IUDs provide up to a 99% effective prevention rate.[2] However, when pregnancy occurs with an IUD, the risk for an ectopic pregnancy is significantly increased, up to 53%.[2]

POCUS is a cornerstone of efficient, effective diagnosis of first trimester pathology, is standard of care for symptomatic pregnant patients in the ED[3,4,13] and is becoming more common in UC, as well.[14] POCUS decreases time to diagnosis, time to obstetrics consult, and time to definitive management for ruptured ectopic pregnancy when compared with ultrasound conducted by a radiologist or ultrasound technician.[6-11,15-17] POCUS has also been found to enable nonsurgical treatments to be offered more frequently; for example, in cases of early detection of cervical pregnancy, methotrexate may be offered.[18]

POCUS Findings

Stone, et al demonstrated a simple transabdominal POCUS protocol to assess for the presence of ruptured ectopic: 1.) evaluate for IUP, 2.) evaluate for free fluid in the pelvis and 3.) evaluate for free fluid in the RUQ/LUQ.[16] A full bladder assists with visualization of IUP and pelvic free fluid, but should not cause delay of evaluation. The presence of an intrauterine yolk sac seen as a hyperechoic ring within an anechoic fluid collection is the first definitive evidence of an IUP. This can generally be seen on transabdominal ultrasound at around 6 weeks of gestation.[11] Most ectopic pregnancies are tubal and can be seen as an extra-uterine yolk sac or embryo.[11] The incidence of heterotopic pregnancy outside of assisted fertilization is very rare.[11] Outside of these relatively uncommon risk factors, the presence of an intrauterine pregnancy makes an ectopic pregnancy unlikely.[11,17]

In women presenting with a positive pregnancy test and symptoms of pelvic pain and/or bleeding, a POCUS showing lack of an IUP and the presence of free fluid in the pelvis and/or RUQ is strongly suggestive of ruptured ectopic pregnancy.[19]

Conclusion

This case illustrates the importance of avoiding premature closure and anchoring bias. It also highlights the value of POCUS use in UC, specifically in evaluation of first trimester pregnancy presentations and protection against cognitive biases. Relying too heavily on initial pieces of information (presence of IUD and report of a negative home pregnancy test) would have limited the differential in this case, delayed the diagnosis and endangered the patient. Without POCUS, evidence of a ruptured ectopic would have been significantly delayed, preventing prompt transfer for definitive management.

The patient described in this case report consented to its publication.

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Tightening the Belt: Rethinking Costs and Efficiency in Urgent Care

Urgent message: Urgent care operators must be mindful of costs and labor efficiency to navigate the challenges of rising and falling revenue in what's been a highly seasonal business.

Alan A. Ayers, MBA, MAcc

For much of 2020 and 2021, the COVID-19 pandemic drove both uncertainty and higher volumes (and thus profits) to urgent care centers. With the 2022-2023 flu season behind us, it's back to "business as usual" and operators are expressing an increased interest in improving efficiency and managing operating costs.

So, what do urgent care operators need to consider?

Reducing expenses and rethinking resource-hungry strategies adopted during the pandemic is essential in the coming months.

Volume-Driven Business

Urgent care has always been considered a volume-driven business because once there's sufficient visits to cover a "skeletal" staffing model, each additional visit accrues to the bottom line.

In this sense, labor in an urgent care center is a fixed cost because without a provider, the center cannot serve patients. As with any fixed cost, profitability is increased as labor expense is spread across more patients.

Due to these basic economic factors, urgent care centers have always emphasized volume. In fact, one key performance indicator (KPI) that drives site selection, scheduling, and financials is patients per hour per provider.

Historically, urgent care has been a business that breaks even for 9 months of the year but then sees a windfall during flu season, when volume increases dramatically. This is why sustained COVID volume was so profitable for urgent care—COVID had added a second, year-round flu, in essence.

But what happens when this pattern isn't followed? The last quarter of 2022 saw an abbreviated "quadremic" crisis of flu, COVID, strep, and RSV that ended abruptly compared to previous years. The impact was regionalized, with the greatest volume seen in states like Texas and Utah that have disproportionally large pediatric populations.

This is a reminder that flu season is not a guarantee. Many operators are still overstaffed from pandemic levels. With volumes levelling, finances will likely be tight this year, so finding ways to maximize efficiency—

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

"Flu season" can hit any time between October and April, quickly filling excess capacity in urgent care centers and delivering outsized seasonal profits. But there's no guarantee of the occurrence, duration, strength or timing of flu. That's why urgent care needs to evolve beyond financial dependence on a yearly phenomenon.

especially during the slower months—is essential to the survival of any urgent care business.

Managing Labor Costs

Labor, particularly provider labor, by far is the greatest expense of an urgent care center; generally, we assume it constitutes about 85% of operating costs. But without a skeletal staff of at least one provider and someone to support the front desk, an urgent care cannot operate. Creatively managing your workforce and finding new ways to maximize efficiency are powerful tools to increase your profitability.

Maximize Patients Per Hour Per Employee

In any business, revenue equals volume times rate. Since reimbursement rates are set by payers, assuming optimized coding and collections practices, this leaves operators with only one major lever to manipulate—volume. So, when managing your labor costs, your approach needs to be volume-driven and guided by data.

Focus on the KPI of patients per hour per employee. Improving this metric is key to increasing your volume while not overspending on additional staff.

The efficiency of employees varies by position (see **Table 1**). While four patients per hour per provider (ie, one patient every 15 minutes) is a good rule of thumb, some operators would argue it's "too slow" (ie, the number should be six) while other providers will argue it's "too fast," resulting in quality or safety issues (and that somewhere between two and three is a better number).

Attainable patient-per-hour efficiencies are affected by many factors, including patient demand in a trade area, patient acuity, scope of services offered, pacing vs ebb-and-flow of patient arrivals, use of standing orders, provider urgent care job experience and confidence, and the use of lean processes, support staff, automation, and technology.

Urgent care centers were so profitable during the pandemic because many providers were able to see eight to 10 patients per hour. However, this isn't sustainable when demand is low, and your urgent care shouldn't be using flu season extremes to guide year-round decisions.

Many operators get stuck in a mindset that the staffing model is set and consistent from site to site. This typically entails one receptionist, one medical assistant, and one provider…regardless of volume. Add that the front desk or medical assistant is also a radiologic technician and "fixed" labor costs per hour raise the bar on needed patient visits to break even.

These operators don't think that a center seeing less than 20 patients per day can function with 1:1 staffing, meaning one provider and one cross-trained medical assistant/front desk person. When you have a rigid staffing model that disregards volume, your staff becomes idle and your center loses money each hour.

Because offering seasonal employment is highly impractical given credentialing and training requirements, what happens if a center schedules staff for "average" volume but then sees a sudden influx of patients? The answer is simple: Your staff works harder and patients wait.

That's where technology that enables patients to join the waitlist and wait comfortably from home comes into play.

Such queuing and registration systems pace arrivals to provider productivity, reducing stress and average wait and resulting in a better patient and provider experience. Wait times expand or contract based on provider productivity, and patients receive text message updates as their check-in time approaches.

An urgent care operator should continually focus on increasing the efficiency of existing staff by eliminating waste. "Waste" constitutes non-value-added activities that consume time. Shift administrative tasks like registration data entry to patients, utilize standing orders to test patients for flu, COVID, or strep before the provider exam, and simplify provider documentation to enable your team to handle more patients per hour. By doing so, you'll avoid the need to hire more people. Remember, adding additional staff drops the efficiency of your entire team.

Rethink Your Staffing Model

Aligning an urgent care center's staffing model with patient demand plays a major role in managing labor-related costs. Maintaining a high "headcount" of full-time employees is expensive. To save money without sacrificing the quality care your center offers, a smarter

Table 1. Efficiency of Employees by Position

	Providers	Medical assistants (MAs)	Front desk staff
Patients per hour	4 (1 every 15 min)	2 (1 every 30 min)	4
Patients per 12-hour shift	50	25	50

approach is needed.

When there's insufficient volume to justify a dedicated, full-time role, cross-training is one strategy.

Nurse practitioners (NPs) and MAs can function as basic or limited-scope x-ray operators in many states. MAs can work the front desk in slower locations.

To take this a step further, ensure each of your staff members practices at the top of their licensure and/or training. In urgent care, this means utilizing NPs or physician assistants over more costly MDs and DOs, or hiring an MA with a limited-license x-ray certificate instead of a fully licensed radiology tech.

Operators also need to take a serious look at benefits. Offering personal time off requires your center to have backup coverage when employees take it, in turn creating redundancy, excess capacity, and double the benefits costs. Instead, consider swapping or flipping the schedule for providers who work 3.5 days per week so they can have contiguous days off for travel or whatever they please.

For health benefits, limit coverage to spouses who don't have benefits from their job. Consider offering a high-deductible health plan with discounts for healthy habits like preventative testing and tobacco abstinence.

Finally, realistically examine the staffing needs of your center. Your volume isn't always at peak levels. So don't stay locked into a rigid schedule. Instead, have a list of flexi- or traveling staff members or PRN providers ready. Then, when your regular staff becomes too busy, you can call in reinforcements.

Add Additional Services

What happens when the efficiency of your staff is maximized to patient demand, but you still have excess capacity? Adding additional services is one avenue for increasing profitable revenue in urgent care. Keep in mind, however, not all services result in profit. Though you may generate more revenue, if that revenue isn't profitable, it doesn't meet your goals.

Enhancing revenue from existing visits is low-hanging fruit. For example, assume the front desk is verifying coverage, entering data correctly, and collecting copays on every visit. Where deductibles apply, consider a credit-card preauthorization service. Ensure visits are being coded appropriately and optimize EMR usage to capture codes appropriately. Doing so generates more revenue from reimbursement without any additional cost. Increasing the clinically appropriate use of lab services and x-ray, such as for diagnostics, can also be effective.

Finally, adding convenience services like medication dispensing can capture more revenue from each patient who visits your center.

Many operators fall into the trap of ignoring new opportunities. Don't forget your patients need a wide range of healthcare services. Is your urgent care center able to add them?

Orthopedic specialty services are the number-one referral from urgent care centers. Rather than sending orthopedic patients to another local facility, consider bringing in an orthopedist one day a week with a management services organization arrangement. Doing so lets you keep the follow-up visit, and its revenue in your center.

When revenue from flu season-related services isn't coming in, adding new services and optimizing existing processes can help buffer your bottom line.

Urgent care centers face an "incremental labor problem." If optimized provider and staff efficiency is four patients per hour, or 50 patients per 12-hour shift, a center that sees 50 patients per day will necessarily be more profitable than one seeing 72 patients. That's because when a second provider is added, the efficiency of both providers falls. In this example, 72 patients per 12 hours per two providers is only 3 patients an hour, or 75% less productivity than the optimized single provider. So, while we say urgent care is volume-driven, the constraint is the capacity of the staffing model.

"Cut out unneeded spending where possible and focus on funneling your dollars back into your center in ways that improve your services and create growth opportunities."

Managing Operating Expenses

While generating profitable revenue is never a bad thing, urgent care operators also need to take a hard look at cutting their expenses as we move into 2023.

The COVID pandemic and its related effects led many centers to increase spending. Some of this spending is inflation-driven—particularly of wages and supply costs—but others are surplus. Now, even with revenues slowing down, those centers may have not scaled back their spending accordingly.

Reducing operating expenses is essential for centers struggling to weather the "drought" months outside of flu season. In practice, this can take many forms.

Supply Inventory Management

Saving on non-labor operating costs begins with managing your supply inventory and acquisition. Centers may use the same supplier for years without researching offers from competitors. To ensure your center is getting the best price, always solicit bids from several suppliers (Medline, McKesson, Henry Schein, et al).

Moreover, be mindful of your ordering habits. Order less frequently to take advantage of the lower shipping costs of larger orders.

Does your center have an abundance of supplies sitting unused in the cabinetry of patient rooms? If so, have you noticed the staff doesn't get the supplies they need from those cabinets, but rather, the central supply closet?

Sitting inventory is money you're wasting when you could use the capital to help cover operating expenses. In fact, one recommendation is to just eliminate cabinetry that's a magnet for unused supplies.

Next, aim to reduce formulary SKUs to the essentials, eliminating duplicate items that serve the same purpose, and switching from branded to generic or private-label products.

Focusing again on the issue of volume, reduce your inventory levels and order frequency to match the demand your center sees. Without massive surges of COVID (and especially outside of flu season), you don't need to hoard supplies.

It's time to re-examine how much supply inventory your center goes through over time and pace your orders accordingly.

Lowering Occupancy Expenses

The amount paid for your space is unavoidable in that it's typically locked in by your lease. However, you can save money by taking a few steps.

First, consider renegotiating your lease renewals at the updated market rate. Real estate prices are changing all the time. If your initial lease contained TI (tenant improvement) that's been fully amortized, or if "escalators" resulted in annual rent increases in excess of actual market rent, then you should try to negotiate a renewal lease reduction. Do your research and don't pay more than you should.

Many landlords are also unfamiliar with the ebb-and-flow nature of urgent care volumes. With this in mind, operators may want to ask for flexibility in rent payments during slow periods to ease some pressure.

Occupancy expenses don't just cover rent. Operators should also consider the third-party services they spend money on. For example, does every center need daily professional cleaning? Or could a center with less traffic assign MAs to clean during the day and bring in professional cleaners once a week?

The same is true when considering services like printer and copier maintenance, window washing, document shredding, and bottled water delivery to name a few. Often, a cheaper alternative is available.

Try cutting down the number of printers/copiers at your center, handling documents electronically rather than printing and faxing, having staff clean the windows, purchasing shredding machines, or installing water filters for staff to refill their bottles. This might not be glamorous, but for many centers, it's low-hanging fruit.

Conclusion

In today's world of tight margins and fluctuating revenue, tightening your belt is simply part of running a successful urgent care. Cut out unneeded spending where possible and focus on funneling your dollars back into your center in ways that improve your services and create growth opportunities.

Focusing (or refocusing) on the basics will allow your center to thrive in the face of economic uncertainty as our industry continues adapting to the post-COVID world. ■

Original Research

Evaluating Abandonment of Urgent Care Prescriptions Sent to an Automated Drug Dispenser vs a Community Pharmacy: A Retrospective Cohort Study

Urgent message: Urgent care visits focus on acute clinical conditions, with an emphasis on timely administration of medications. Patients discharged outside the typical service hours of a community pharmacy may not have access to a 24-hour pharmacy and have to return home without their prescription medication, creating additional barriers to prescription adherence.

Emilie M. Collongette, PharmD, BCMTMS; Sara Panella, PharmD, BCPS; Michael A. DeCoske, PharmD, BCPS; and Ernesto Sanz Martinez, MD

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Key words: prescription, automated dispensing, point-of-care dispensing

Abstract

Introduction: This study sought to determine the rate of prescription abandonment of urgent care (UC) prescriptions sent to an automated drug dispenser vs a community pharmacy. Automated drug dispensers, located on-site within the UCs provide point-of-care (POC) dispensing throughout the UC's hours of operation. Patients who do not have access to POC UC automated drug dispensers and are discharged outside the typical service hours of a community pharmacy may have to return home without their prescription medication, creating additional barriers in ensuring prescription adherence.

Methods: A retrospective chart review was conducted of patients discharged from a high-volume single-center UC from January 1–June 30, 2021. Patients were randomized 1:1 based on dispensing site selec-

Author affiliations: Emilie M. Collongette, PharmD, BCMTMS, Baptist Health South Florida Clinical Pharmacy Enterprise. **Sara Panella, PharmD, BCPS,** Baptist Health South Florida Clinical Pharmacy Enterprise. **Michael A. DeCoske, PharmD, BCPS,** Baptist Health South Florida Clinical Pharmacy Enterprise. **Ernesto Sanz Martinez, MD,** Baptist Health South Florida; University of Miami Miller School of Medicine.

tion: automated on-site drug dispenser or community pharmacy. Eligible prescriptions were based on the automated drug dispenser formulary.

Results: A total of 350 charts were reviewed; half reflected patients with prescriptions sent to the automated drug dispenser (amounting to 334 prescriptions), and half sent to a community pharmacy (324 prescriptions). Prescription abandonment occurred in six prescriptions (2%) sent to the automated drug dispensers compared with 74 prescriptions (23%) sent to a community pharmacy ($p<0.001$). The occurrence of an additional acute care visit within 30 day of urgent care discharge was two times greater among patients with prescription abandonment (18% vs 9%, $p=0.05$).

Conclusion: In patients discharged from the UC, the use of the automated drug dispenser led to a significant reduction in the rate of prescription abandonment. Presenting patients with the opportunity for POC pharmaceutical dispensing increases the likelihood of same-day prescription pick up.

Introduction

Prescriptions received electronically, via fax, telephone or hand-delivered to a dispensing pharmacy that are not retrieved by a patient are considered abandoned.[1,2] Factors potentially contributing to prescription abandonment include: perception of medication as unnecessary, medication-related concerns, cost, pharmacy wait times, and lack of time.[3,4] Prescription abandonment often leads to suboptimal patient outcomes and preventable healthcare spending.[5] A 2018 study found the rate of prescription abandonment among emergency department (ED) prescriptions to be 11.5%.[6]

Urgent care (UC) and ED visits focus on acute clinical conditions, with an emphasis on timely administration of medications. Timely initiation and maintenance of therapy allows for optimal patient outcomes and therapeutic effects. Patients may be limited in their ability to fill prescriptions at a community pharmacy when discharged from the UC given visits are often unplanned and may occur outside of normal business hours. The automated drug dispenser provides point-of-care dispensing throughout the UC's hours of operation. Patients discharged outside the typical service hours of a community pharmacy may not have access to a 24-hour pharmacy and have to return home without their prescription medication, creating additional barriers in ensuring prescription adherence.

Automated drug dispensers are designed to provide prescription medications at the point-of-care. Prescription fulfillment can follow either a pharmacist or prescriber dispensing model.

Prescriber dispensing models must comply with and are subject to state rules and regulations. Following the prescriber dispensing model, automated drug dispensers are prestocked with a set formulary of medications. The prescription bottles are stocked based on medication, strength, and quantity. Patient-specific directions for use will be printed at the time of dispensing.

Patients are presented with the choice to have their prescriptions filled at the automated drug dispenser during the consultation. If the automated drug dispenser is selected, the prescription is electronically sent to the dispenser and the patient can retrieve their prescribed medications at discharge. Prescribed medications must be dispensed in a container which bears the following information in compliance with federal regulation: prescribing practitioner's name, patient's name, date dispensed, name and strength of medication, and directions for use.

Prior studies evaluating the use of an automated drug dispenser in the ED have shown a reduction in the rate of prescriptions abandonment.[7] Limited evidence is available regarding abandonment of UC prescriptions. The primary objective of this study was to evaluate the rate of prescription abandonment of UC prescriptions sent to an automated drug dispenser vs a community pharmacy.

Methods

All methods were approved by the Baptist Health South Florida Institutional Review Board quality committee. The primary outcome, prescription abandonment, was defined as prescriptions not retrieved within 14 days of the written date. The secondary outcomes analyzed prescription dispensing site based on the time of UC discharge and the occurrence of an acute care visit (UC, ED, observation, or admission) within 30 days of UC discharge.

Study Characteristics

This is a retrospective cohort study that examined abandonment of UC prescriptions sent to an automated drug dispenser vs a community pharmacy. Medical records of patients discharged from a high-volume single-center UC were screened to a set of inclusion and exclusion criteria from January 1 to June 30, 2021.

Inclusion criteria consists of the following: adults

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Table 1. Medications Available to be Filled by the Automated Drug Dispenser

Medication	Strength	Quantity	Medication	Strength	Quantity
Acetaminophen	500 mg tab	50	Fluticasone	50 mcg/spray	1
Albuterol sulfate	0.083% inh sol	75	Ibuprofen	600 mg tab	30
Albuterol sulfate	90 mcg/inh	1	Ibuprofen	800 mg tab	30
Amoxicillin	500 mg cap	30	Meclizine	25 mg tab	21
Amoxicillin/clavulanate	875/125 mg tab	20	Methylprednisolone	4 mg tab	21
Azithromycin	250 mg tab	6	Metronidazole	500 mg tab	30
Benzonatate	100 mg cap	15	Mupirocin	2% top oint.	22
Cefuroxime	500 mg tab	20	Naproxen	500 mg tab	30
Cephalexin	500 mg cap	30	Nitrofurantoin	100 mg cap	14
Cetirizine	10 mg tab	30	Ofloxacin	0.3% otic sol.	5
Ciprofloxacin	500 mg tab	6	Ondansetron	4 mg ODT tab	10
Ciprofloxacin	500 mg tab	20	Oseltamivir	75 mg cap	10
Clindamycin	300 mg cap	30	Pantoprazole	40 mg tab	14
Cyclobenzaprine	10 mg tab	15	Phenazopyridine	200 mg tab	6
Dicyclomine	20 mg tab	15	Prednisone	20 mg tab	15
Doxycyclinehyclate	100 mg tab	20	Sulfamethoxazole/ trimethoprim	800/160 mg tab	14
Erythromycin	0.5% oint.	3.5	Tobramycin	0.3% opht sol.	5
Famotidine	20 mg tab	30	Triamcinolone	0.1% cream	15
Fluconazole	150 mg tab	1	Valacyclovir	1 gm tab	21

18 years or older with at least one discharge prescription included in the automated drug dispenser formulary (**Table 1**).

Exclusion criteria consists of the following: a patient's discharge prescriptions were sent to multiple dispensing locations, or the community pharmacy external fill history was not available. Medical records were stratified into two cohorts based on dispensing site selection: automated drug dispenser and community pharmacy. All patient identifiers were removed, and participants were given identification numbers. Randomization was used to identify 175 participants from each cohort. The data reviewed included participant's demographics, visit documentation, prescription details, external fill history, and additional acute care visit encounters. Data were stored electronically on a password-secured drive.

Prescriptions were considered abandoned if they were not retrieved within 14 days of the written date. A report of prescriptions sent to the automated drug dispenser was generated to determine the dispensing outcome. A feature integrated into the electronic health record provided external fill history data for participating community pharmacies. The date of prescription pick-up, if applicable, was available for both dispensing sites.

The primary objective was to determine if the rate of prescription abandonment differed among UC prescriptions sent to an automated drug dispenser vs a community pharmacy.

The secondary objectives were to analyze trends in dispensing site selection based on the time of UC discharge and the occurrence of acute care visits (UC, ED, observation, or admission) within 30 days of UC discharge among patients who retrieved their prescriptions vs those who abandoned their prescriptions.

Statistical Analysis

It was determined that a sample size of 350 patients was needed to detect a difference between the groups. Fisher's exact was utilized to assess if demographic data corresponded to a significant difference between both groups. Chi square test was used to determine the statistical difference between categorical variable (rate of prescription abandonment, time to prescription pick-up, occurrence of readmission). P-values are reported. Descriptive statistics were also used to evaluate trends in the data collected. Graphs were created for visualization.

Results

Three hundred-fifty patient charts were reviewed—175 patients with prescriptions sent to the automated drug dispenser and 175 sent to a community pharmacy. Baseline characteristics are outlined in **Table 2**.

A total of 334 prescriptions were sent to the automated drug dispenser vs 324 prescriptions that were sent to a community pharmacy.

Table 2. Baseline Characteristics of Patients with UC Prescriptions Sent to the Automated Drug Dispenser and Community Pharmacy

	Automated Drug Dispenser	Community Pharmacy
Gender		
Female	97 (55%)	116 (66%)
Male	78 (45%)	59 (34%)
Avg. age (years)	41 (18-81)	43 (19-83)
Race		
Asian	3 (1.7%)	—
Black	5 (2.8%)	5 (2.7%)
White	15 (8.6%)	14 (8%)
White Hispanic	119 (68%)	130 (74.3%)
Other/Unknown	33 (18.9%)	33 (15%)
Total number of prescriptions	334	324

Of the prescriptions sent to the automated drug dispenser, six prescriptions (2%) were abandoned compared with 74 prescriptions (23%) sent to a community pharmacy (p <0.001) (**Figure 1a** and **1b**). Same-day pick-up occurred for 328 prescriptions (98%) sent to the automated drug dispenser vs 202 prescriptions (62%) of the prescriptions sent to a community pharmacy (p<0.001).

The prescriptions abandoned at the automated drug dispenser were: famotidine 20 mg oral tablet, fluticasone 50 mcg/inh nasal spray, ibuprofen 600 mg oral tablet, mupirocin 2% topical ointment, naproxen 500 mg oral tablet, and ondansetron 4 mg oral disintegrating tablet.

The most common prescriptions abandoned at a community pharmacy were: ibuprofen 600 mg tablets (16%), fluticasone 50 mcg/inh nasal spray (12%), albuterol 90 mcg inhaler (7%), and azithromycin 250 mg tablet (7%).

The most commonly prescribed medication among both groups was ibuprofen 600 mg tablets (**Table 3**).

Prescription dispensing site selection was analyzed based on the time of UC discharge (**Figure 2**). Between the hours of 12:00 AM and 7:59 AM, eight patients selected the automated drug dispenser and 12 patients a community pharmacy. Between 8:00 AM and 3:59 PM, 88 patients selected the automated drug dispenser and 81 patients a community pharmacy. Between 4:00 PM and 11:59 PM, 79 patients selected the automated drug dispenser and 82 patients a community pharmacy. The majority of patients (94%) were discharged between 8:00 AM and 11:59 PM. There were 59 unique community pharmacies selected by the 175 patients reviewed; of those, three community pharmacies received 41% of the prescriptions.

The occurrence of an acute care visit within 30 days of discharge was compared based on prescription pick-up status, independent of the dispensing site. Out of the 350 patient charts reviewed, 300 patients retrieved their prescriptions, and 50 patients abandoned their prescriptions. Twenty-seven of the 300 patients (9%) who retrieved their prescriptions from either the automated drug dispenser or a community pharmacy had at least one additional acute care within 30 days of UC discharge compared with nine of the 50 patients (18%) who abandoned their prescriptions (p=0.05) (**Figure 3A** and **3B**).

Discussion

The goal of this study was to determine if the rate of prescription abandonment differed among UC prescriptions sent to an automated drug dispenser vs a community pharmacy.

A total of 658 prescriptions were reviewed. Prescriptions included were based on the automated drug dispenser formulary (**Table 3**) to allow for a direct comparison. Only those patients who sent all discharge prescriptions to the same dispensing site were included to eliminate any potential differences among dispensing site selection and study outcomes.

The rate of prescription abandonment was significantly lower for prescriptions sent to the automated drug dispenser. Only six prescriptions (2%) were abandoned, compared with 74 prescriptions (23%) sent to a community pharmacy (p<0.0001).

When analyzing the rate of prescription abandonment among the prescriptions solely available behind-the-counter, the rate of prescription abandonment continued to be significantly lower among those sent to the automated drug dispenser 0.89% (three) compared to 13% (42) sent with a community pharmacy (p<0.001). Therefore, the data show that inclusion of over-the-counter prescriptions did not sway the results of the study.

The use of the automated drug dispenser in our study was shown to decrease the rate of prescription abandonment and the time to prescription pick-up.

The rate of same day pick-up was significantly greater among prescriptions sent to the automated drug dispenser (98% vs 62%, p<0.001). Subanalysis of the study results to review antimicrobial therapies was also performed, and found that 100% of antibiotics prescriptions sent to the automated drug dispenser were retrieved same-day compared with 54% of the

Figure 1a. Automated Drug Dispenser Prescription Status (n=334)

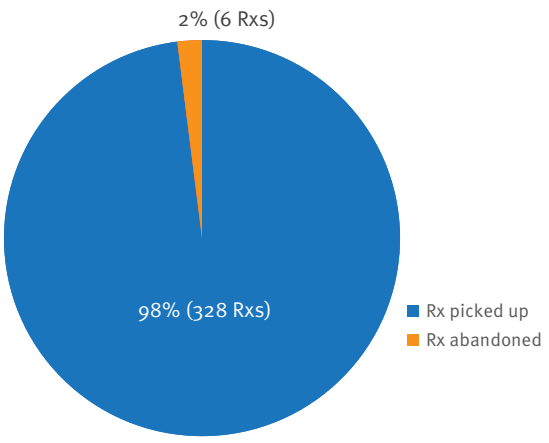


Figure 1b. Community Pharmacy Prescription Status (n=328)

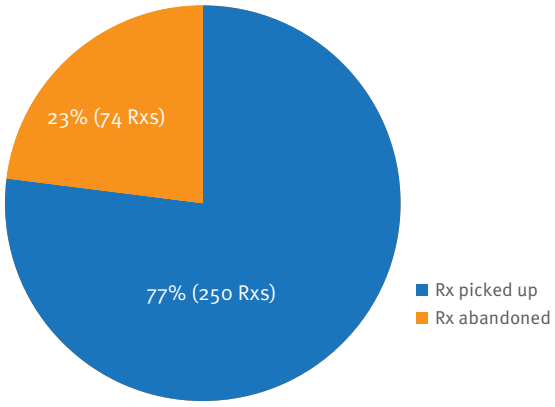
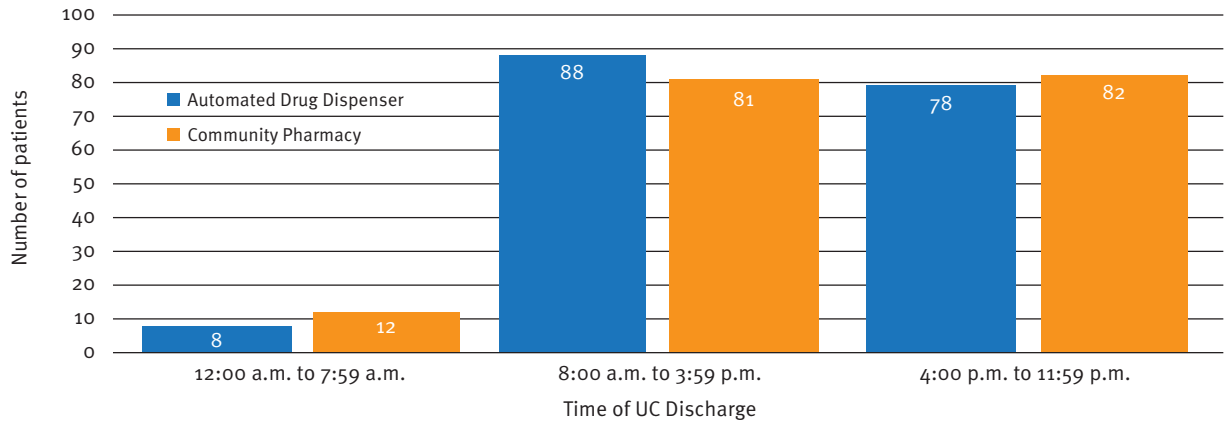


Figure 2. Patient's Selection of Prescription Dispensing Site Based on Time of Discharge (n=350)



antibiotic prescriptions sent to a community pharmacy ($p<0.001$). Furthermore, 25% of antibiotic prescriptions sent to a community pharmacy were retrieved next-day, 4% within 2 to 7 days of written date, and 17% were abandoned. The rate of same-day pick-up for antibiotic prescriptions was significantly greater in the prescriptions sent to the automated drug dispenser vs a community pharmacy, demonstrating the positive impact the use of automated dispenser can have on time-sensitive prescriptions.

Prescription dispensing site-selection was analyzed based on the time of UC discharge. There was no significant correlation noted between time of UC discharge and dispensing site selection. Of the 59 community pharmacies, the three most common community pharmacies were located within 1.5 miles of the UC and received 133 prescriptions (41%). The hours of operations for these pharmacies were 24 hours, 7:00 AM–12:00 AM, and 8:00 AM to 8:00 PM. The difference in pharmacy operation hours reflected by the three most commonly selected pharmacies presents an additional factor patients must consider when selecting a community pharmacy vs the automated drug dispenser.

Between the hours of 12:00 AM and 7:59 AM, eight patients selected the automated drug dispenser and 12 patients a community pharmacy.

None of the prescriptions sent to the automated drug dispenser were abandoned, whereas 23% of the prescriptions sent to a community pharmacy were abandoned ($p<0.001$). The significant reduction of prescription abandonment associated with the use of automated drug dispenser in patients discharged between the hours of 12:00 AM and 7:59 AM should be

Table 3. Most Prescribed UC Discharge Medications*

Automated Drug Dispenser	Community Pharmacy
Ibuprofen 600 mg tablet (9%) Fluticasone 50 mcg/inh nasal spray (8%) Amoxicillin-clavulanate 875 mg-125 mg (7%) Cyclobenzaprine 10 mg tablet (7%) Benzonatate 100 mg capsule (7%) Cephalexin 500 mg capsule (6%) Azithromycin 250 mg tablet (5%) Ibuprofen 600 mg tablet (12%)	Azithromycin 250 mg tablet (9%) Fluticasone 50 mcg/inh nasal spray (7%) Benzonatate 100 mg capsule (8%) Cyclobenzaprine 10 mg tablet (7%) Medrol Dose Pack 4 mg tablet (6%) Albuterol 90mcg inhaler (6%)

*Based on prescription dispensing site.

Figure 3a. Acute Care Visits Among Patients Who Abandoned Their Prescriptions (n=50)

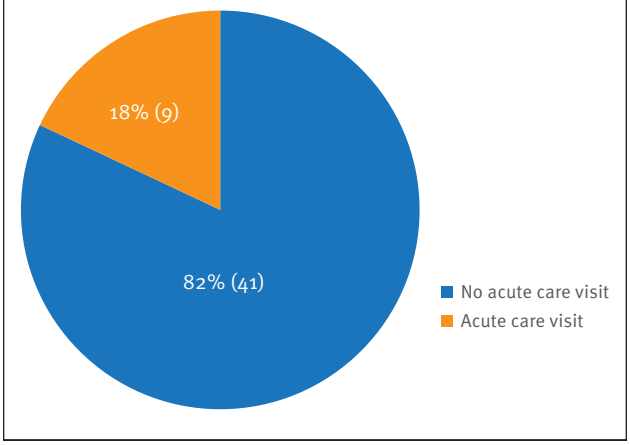
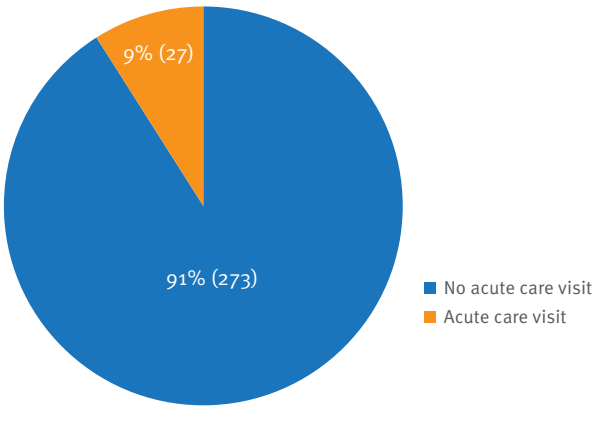


Figure 3b. Acute Care Visits Among Patients Who Retrieved Their Prescriptions (n=300)



taken into consideration by providers when presenting the opportunity for point-of-care dispensing. Furthermore, only three of the community pharmacies that received prescriptions between 12:00 AM and 7:59 AM were open at the time of UC discharge, illustrating pharmacy operating hours may be a barrier to prescription pick-up.

In addition, our study looked to assess the rate of an additional acute care visit within 30 days of UC discharge within the health system.

The occurrence of an additional acute care visit was two times greater among patients with prescription abandonment (18%) compared with patients who retrieved their prescription (9%) (**Figure 3A** and **3B**). The rate of an acute care visit within 30 days of UC discharge between patients with prescription abandonment and pick-up was not statistically significant. Of the patients with prescription abandonment and an additional acute care visit, 67% had the same or a related diagnosis code to that of their original UC visit.

The Agency for Healthcare Research and Quality (AHRQ) reported that in 2018, there were 3.8 million adult hospital readmissions within 30 days, with an average readmission rate of 14%.[8] The readmission rate among our study participants with prescription abandonment was higher than the reported 2018 average. Therefore, UC stakeholders may consider the correlation between prescription abandonment and readmission rates as an aim to promote the use of the automated drug dispenser to help reduce additional acute care visits, given its significant reduction in prescription abandonment.

Limitations

The study demonstrated that the use of the automated drug dispenser led to a lower rate of UC prescription abandonment, but did have limitations. As a single-center study, the results may not be generalizable. The study population was representative of the area's demographics, which may differ from other geograph-

ical regions. Community pharmacy data were limited to those pharmacies participating in the sharing of fill and claims data. The cost of prescriptions was not compared between dispensing sites. The rate of prescription abandonment did not account for prescriptions purchased over the counter. The occurrence of additional acute care visits was limited to those within the health system. Further surveying of patient-specific factors in selecting a dispensing site will provide further insight for UC stakeholders. Replication of this project on a larger or continued scale would be helpful in confirming these findings.

Conclusion

The results of the study support the use of automated drug dispensers in the UC setting to reduce the rate of prescription abandonment. The availability of point-of-care dispensing decreases the time from UC discharge to prescription pick-up and increases the likelihood for same-day prescription pick up. These findings also supported the position that the availability of automated drug dispensers can lead to lower readmission rates.

Studies such as ours improve outcomes by promoting patient-centered care and providing evidence-based data to further guide UC service lines. Adopting the use of an automated drug dispenser requires ongoing evaluation of its formulary and implementation by stakeholders of the UC team. ■

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ABSTRACTS IN URGENT CARE

- Responsible Antibiotic Use in SSTIs
- Assessing for and Managing Head Lice Infestation
- Safe Discharge of Chest Pain Patients
- Digital Rectal Exam in Trauma Evaluation
- Tele-Exam in Pediatric Urgent Care
- Reducing Admissions for Croup
- Molnupiravir to Treat COVID-19 in Vaccinated Adults

IVAN KOAY, MBCHB, FRNZCUC, MD

Clinician Training to Optimize Antibiotic Choice and Duration for Uncomplicated Skin/Soft Tissue Infections

Take-home point: Maintenance of certification (MOC) project participation was associated with improvement in evidence-based practice and was sustained after the intervention period.

Citation: Wiltrakis S, Jaggi P, Lu L, et al. Optimizing antibiotic treatment of skin infections in pediatric emergency and urgent care centers. *Pediatrics*. 2022 Oct 1;150(4): e2021053197.

Relevance: Antibiotic stewardship remains one of the key measures of quality within the urgent care industry. Ensuring evidence-based practice is fundamental for patient safety.

Study summary: This was a quality improvement (QI) project aimed at improving outpatient antibiotic prescribing practices for purulent and nonpurulent skin and soft-tissue infections (SSTIs) in a large healthcare system in Atlanta, GA. Clinical practice guidelines for management of SSTIs were developed and updated by an interdisciplinary team to reflect latest professional society recommendations for antibiotic treatments of purulent and nonpurulent SSTIs. The SSTI guidelines were shared with all emergency and urgent care providers via in-person meetings, email, and in a department-wide newsletter. The authors compared the performance of MOC QI project participants to providers who did not participate. MOC participants received monthly emails with guideline reminders and scorecards containing individual and group performance.

The authors identified 9,306 SSTIs (5,507 ED visits [59.2%] and 3,799 UC visits [40.8%]). MOC participants achieved significantly higher compliance with published antibiotic recommendations than non-MOC participants.

Editor's comments: The authors did not achieve their intended goal of 80% optimal antibiotic choice. Only 27% of all eligible physicians participated in the MOC group. Some of the planned expansion of the project was curtailed by the COVID-19 pandemic. This study supports existing data suggesting that regular reminders of appropriate prescribing can significantly impact clinician behavior. ■

Ivan Koay MBChB, MRCS, FRNZCUC, MD is an Urgent Care Physician and Medical Lead Ealing Urgent Care Centre, London Northwest University Healthcare Trust, UK; Head of Faculty na hÉireann Royal New Zealand College of Urgent Care.

Mitigating Risk for Head Lice Outbreaks

Take-home point: Accurate diagnosis of head lice infestation and prescribing appropriate treatments (pediculicides and alternative therapies), as well as providing information for families, schools, and other community agencies is critical for mitigating outbreaks.

Citation: Nolt D, Moore S, Yan A, et al. AAP Committee on Infectious Diseases, Committee on Practice and Ambulatory Medicine, Section on Dermatology. Head lice. *Pediatrics*. 2022;150(4): e2022059282

Relevance: Communicating to patients that head lice infestation is not a sign of poor hygiene can help mitigate patient anxiety, given the stigmatizing nature of its occurrence.

Study summary: This was a clinical report from the American Academy of Pediatrics (AAP) clarifying current diagnosis and treatment protocols for head lice infestation.

"The use of digital rectal exams in trauma patients has minimal, if any, value in assessing for clinically relevant injuries."

To summarize, identification of nits, nymphs, or adult lice with the naked eye establishes the diagnosis. In most cases, transmission occurs by direct contact with the hair of an infested individual—the most common scenario being head-to-head contact.

Topical agents for head lice treatment are regarded as safe to use in pregnant and lactating women. Unless resistance to these products has been proven in the community, pyrethroids are the recommended first-line therapy for active infestations. Topical ivermectin lotion and spinosad (in patients >6 months of age) or malathion 0.5% (in patients >6 years of age) should be used in areas where resistance to permethrin and pyrethrins has been demonstrated.

Screening for nits alone is not an adequate way of predicting which children or adolescents are affected, and has not been proven to have a significant effect on incidence in schools.

Children should not be restricted from school attendance because of head lice, given the low risk of contagion within classrooms. No-nit policies in classrooms are hazardous, as they increase stigma associated with this condition.

Editor's comments: The guidance in this report does not indicate a definitive standard of care. Variations, considering individual circumstances, may be appropriate. ■

What's the Magic Number for High-Sensitivity Troponin Assays?

Take-home point: Patients with high-sensitivity troponin (HST) values between 3 ng/L and the 99th percentile after 6 hours of chest pain have a very low rate of clinically relevant adverse cardiac events and non-ST elevation myocardial infarction (NSTEMI).

Citation: Bhat R, Nguyen M, Blue O, et al. High sensitivity troponin—six hours is the magic number. *Am J Emerg Med*. 2022;61:52-55.

Relevance: Safe discharge of patients with chest pain without requiring further unnecessary investigations is the ongoing conundrum for urgent care practitioners. As more UC centers gain access to HST testing, understanding timing of testing to safely and adequately exclude ACS becomes increasingly important.

Study summary: This was a multicenter retrospective study conducted among four EDs in Washington, DC. The aim of the study was to determine the risk of clinically relevant adverse cardiac events (CRACE) among patients with HST levels between 3 ng/L and the 99th percentile upper reference limit at 6 hours from symptom onset. ED patients were included if they were admitted for a primary diagnosis of chest pain and had an initial HST between 3 ng/L and the 99th percentile upper reference limit. The primary outcome was a clinically relevant adverse cardiac event during admission, defined as death, cardiac or respiratory arrest, ST elevation myocardial infarction (STEMI), or life-threatening arrhythmia. Secondary outcomes included non-ST elevation myocardial infarction (NSTEMI).

The authors included 1,187 patients admitted to the hospital for chest pain with initial HST above the limit of detection (3 ng/L) but below the gender-specific 99th percentile upper reference limit (34 ng/L for women and 53 ng/L for men). They found no instances of CRACE events in the 429 patients who were admitted solely for acute chest pain with initial HST under the 99th percentile upper reference limit at 6 h from symptom onset.

Thirty clinically relevant adverse cardiac events (2.5%) were identified; all occurred in patients who had another compelling reason for their admission. Of 36x patients who developed NSTEMI during their admission, 29 were admitted primarily for chest pain. Twenty-six of the 29 patients had elevated HST above the reference level at 6 hours.

Editor's comments: Not all patients with ACS suffer chest pain. It is possible that not all patients with ACS were included in the analysis. Conversely, the differential for chest pain certainly includes other life-threatening entities beyond chest pain.

It seems clear that with a single HST below 99th percentile for gender collected >6h after symptom onset, from this study among others, that the short-term risk of CRACE is well below the ACEP clinical policy guideline of 2% acceptable miss rate for ACS. ■

Do Trauma Patients Require Digital Rectal Examinations as Part of Their Assessment?

Take-home point: The use of digital rectal exams (DRE) in trauma patients has minimal, if any, value in assessing for clinically relevant injuries. DRE was not found to influence the management of injuries in this study.

Citation: Beeton G, Alter N, Zagales R, et al. The benefits and clinical application of the digital rectal exam in trauma populations: Towards enhancing patient safety and quality outcomes. *Am J Emerg Med*. 2023;63:132–137.

Relevance: Teachings around trauma evaluation are steeped in dogma. While recent scientific literature has questioned much of this dogma, Advanced Trauma Life Support (ATLS) recommends broad use of DRE in trauma patients following a primary assessment of traumatic injuries.

Study summary: This systematic review assessed the validity, clinical relevance, and diagnostic value of DRE in adult and pediatric trauma populations. Literature searches for relevant articles were conducted utilizing PubMed, Google Scholar, EMBASE, ProQuest, and CINAHL databases. The Population, Intervention, Comparator, and Outcomes (PICO) tool was used. PICO question 1: In adult and pediatric trauma patients, what is the sensitivity of DRE for detecting spinal cord, gastrointestinal, and urethral injuries? PICO 2: In adult and pediatric trauma patients, does performing a DRE change the management of spinal cord, gastrointestinal or urethral injuries?

The authors screened 3,810 initial articles and focused their review on nine relevant articles. They found that the DRE had very poor test characteristics for all injuries examined. Sensitivity for detecting spinal cord injury was 0% to 50% and sensitivity for gastrointestinal injury was 0% to 51%. DRE performed even more poorly in the pediatric population and had false negative rates of 66% to 100%, including failure to accurately identify all urethral and gastrointestinal injury in one study. The authors conclude that there is no clinical utility, as the test has poor reliability and does not affect management.

Editor's comments: The authors noted a dearth of literature regarding the topic, with none of the nine articles reviewed being RCTs. However, in the typical patient presenting with trauma to a UC center, there appears to be no use for screening DRE. Given the invasiveness of this exam and need for chaperone presence, it's difficult to imagine an appropriate scenario for its application in the setting of UC trauma evaluation. ■

Are Remote Physical Examinations Reliable in Pediatric Telemedicine?

Take-home point: Measurements from remote physical examination via use of a novel mobile medical device were comparable with those from in-person physical examination in children >2 years of age.

Citation: Wagner R, Lima T, Tavares da Silva M, et al. Assessment of pediatric telemedicine using remote physical examinations with a mobile medical device: a nonrandomized controlled trial. *JAMA Network Open*. 2023;6(2):e2252570.

"There are high numbers of children admitted to hospitals with croup who have limited or no further interventions while hospitalized."

Relevance: Advances in medical technology have made telemedicine an increasingly viable alternative, or at minimum an adjunct, to in-person examination. This is especially promising for optimizing healthcare access.

Study summary: This was a prospective multicenter single-arm nonrandomized controlled trial conducted to assess the ability of a mobile device to accurately perform remote physical examinations as part of a telemedicine consultation process coordinated by two Brazilian pediatric EDs. The mobile device used in this study (TytoPro) was designed for physical examination during teleconsultation and allows for remote evaluation of ears, throat, skin, heart, and lungs. For the study, patients were examined via both a synchronous telehealth and a conventional in-person physical exam. The physical exams were conducted by different pediatricians.

The authors enrolled 690 patients. They found that the device could be used for reliable otoscopy (otoscope), skin examination (integrated camera), body temperature measurement (integrated thermometer), and throat and oral examination (tongue depressor). The authors found a concordance of 89% between device-aided telehealth exam and conventional physical exam. The most common issues were with accurate digital auscultation of heart and lungs in active and crying children.

Editor's comments: Especially in the pediatric population, ear pain is among the most common complaints. This device offers promise for being able to assess otalgia via telemedicine, which has been difficult due to limitations of existing technologies. ■

Reducing Hospital Admissions for Croup

Take-home point: Croup quality improvement interventions were associated with a significant decrease in hospital admissions without increasing revisits.

Citation: Hester G, Nickle A, Watson D, et al. Use of a clinical guideline and order set to reduce hospital admissions for croup. *Pediatrics*. 2022;150:e2021053507.

Relevance: Other than initial treatment with corticosteroids, most croup management consists of supportive

"This well-designed trial suggests that, when reaching for an antiviral agent in higher-risk outpatients with early COVID-19, molnupiravir is of dubious value."

care. There are high numbers of children admitted to hospitals with the condition who have limited or no further interventions while hospitalized. Better guidance on necessity, or lack thereof, for most cases of croup may reduce unnecessary hospitalizations.

Study summary: This was a quality improvement initiative conducted at a tertiary pediatric healthcare organization in the midwestern U.S. The croup workgroup addressed croup management with a single group of clustered interventions including clinician education, development, and integration of clinical guidelines and croup-specific order sets. Education provided to ED and hospitalist providers included didactics plus discussion sessions (ED providers) or newsletters (hospitalists) reviewing key literature.

The main intervention was implementation of an evidence-based clinical guideline and order set for croup embedded in the electronic health record (EHR).

The guideline encouraged early initiation of systemic steroids and recommended up to a 2-hour period of ED observation after each treatment with nebulized epinephrine. Admission was considered advisable after three total doses of nebulized epinephrine.

The authors included 2,906 croup encounters (2,123 baseline and 783 postimplementation) in their analysis. They found the admission rate was significantly lower in the postintervention period (5.5% vs 10.2% pre-implementation). Among patients who received two or fewer doses of nebulized epinephrine during their ED encounter, the admission rate was even more significantly lower in the postintervention period (1.7% vs 6.3%). There was no significant change in ED revisits.

Editor's comments: The study was interrupted by the COVID-19 pandemic. Respiratory symptoms may not be the only driver of admission, and the study did not consider reasons for admission such as caregiver preference.

Only 1.7% of patients receiving two or more nebulizer treatments were admitted without concerning outcomes. This suggests that among the more mild–moderate cases of croup, such as those seen in UC, admission seems to confer no significant benefit. ■

COVID-19 Abstract
Efficacy of Molnupiravir to Treat COVID-19 Infection in Vaccinated Adults

Take-home point: Molnupiravir did not reduce the frequency of COVID-19-associated hospitalizations or death among high-risk vaccinated adults in the community.

Citation: Butler C, Hobbs F, Gbinigie O, et al. Molnupiravir plus usual care versus usual care alone as early treatment for adults with COVID-19 at increased risk of adverse outcomes (PANORAMIC): an open-label, platform-adaptive randomized controlled trial *Lancet*. 2023;401(10373):281-293.

Relevance: COVID-19 mortality continues. It is worthwhile to track emerging data to determine which therapies can mitigate ongoing loss of life.

Study summary: This was a national, multicenter, primary care, open-label, multigroup, prospective, platform adaptive trial of early treatments for COVID-19 in the UK. Participants were patients aged 50 years or older who had COVID-19 symptoms that had started within the previous 5 days and had had a positive nucleic acid or rapid antigen test within the previous 7 days.

Participants were randomly assigned in a 1:1 fashion to receive molnupiravir plus usual care or usual care alone. Patients in the molnupiravir group were administered 800 mg molnupiravir orally twice daily for 5 days. Prescription of monoclonal antibodies and antiviral agents other than molnupiravir during usual care was also permitted.

The outcomes evaluated were all-cause mortality nonelective hospital admission, and death within 28 days of randomization. Participants were followed through an online daily diary for 28 days after randomization.

The study enrolled 25,783 participants. The authors found that the early addition of molnupiravir to usual care did not reduce hospital admissions or death. Participants in the molnupiravir-plus-usual-care group recovered faster than those in the usual care group. The molnupiravir group also had a higher rate of early sustained recovery and fewer general practitioner consultations, which did not reach statistical significance. There was a significant reduction in viral detection and viral load in the molnupiravir group from day 4 onwards.

Editor's comments: The open-label design introduces the possibility of placebo effects. Further study is warranted, but this well-designed trial suggests that, when reaching for an antiviral agent in higher-risk outpatients with early COVID-19, molnupiravir is of dubious value. ■

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PIONEERING DIAGNOSTICS

A Consolidation of Signs of Symptoms of Pediatric Pneumonia

Urgent message: Relatively few studies have sought to determine the signs and symptoms that help to predict occult bacterial pneumonia in children. Awareness may assist the urgent care provider in proceeding more quickly to a correct diagnosis.

Alyssa Whited, PA-C and Christina Gardner, PA-C

Case Presentation

A 5-year-old male with no significant past medical history presented to urgent care with his father, with a chief complaint of fever for the past 2 days (Tmax 104°F), controlled with acetaminophen. ROS positive for increased irritability when febrile, minimal clear rhinorrhea, pharyngitis, two episodes of non-bloody emesis, and intermittent abdominal pain on deep inspiration. Patient is still eating, drinking, urinating, and defecating normally. Denied cough, shortness of breath, wheezing, ear pain, ear drainage.

Exam

Vital signs

- Pulse: 136 beats/minute
- Temperature: 101°F (38.3°C)
- SpO_2: 97% on room air

The patient is pleasant, cooperative, and talking in complete sentences. Minimal generalized abdominal pain is elicited on deep palpation, but the abdomen is soft, nondistended, without guarding and rigidity. Posterior pharynx is slightly erythematous, without exudates or petechiae. Lungs are clear to auscultation bilaterally. Exam of TMs are normal bilaterally.

Urgent care work-up

- Rapid COVID: negative
- Rapid flu: negative
- Rapid strep: negative
- PCR COVID: negative

- Throat culture: negative for growth
- Urine analysis: WNL

The patient's diagnosis was presumed viral illness as no bacterial etiology had been found during the visit. He was discharged home with instructions for symptomatic management, strict return precautions, and instructions to monitor for new symptoms and to return to UC or go to the emergency room if symptoms worsened.

Author affiliations: Alyssa Whited, PA-C, Carilion Clinic. **Christina Gardner, PA-C,** Carilion Clinic.

Case Continuation

Patient presented to the local ED 3 days later. The only changes in his condition were a decrease in appetite, a rash on the left palm noticed the day before that had since resolved, and intermittent pain on the dorsum of both feet and low back.

An ultrasound was ordered to visualize the appendix but was unable to visualize. CT scan of abdomen/pelvis was then obtained. Appendix was read as normal, but the CT scan revealed a left lower lobe consolidation. Bacterial pneumonia was confirmed with chest x-ray.

Diagnosis: Bacterial community-acquired pneumonia.

Discussion

In the United States, the highest rates of pediatric pneumonia occur in children aged 1 year to 5 years of age; outpatient visit rates range from 16.9 to 22.4 per 1,000 population.[1]

Many studies have attempted to determine the signs and symptoms that, when present in conjunction with signs and symptoms of lower respiratory tract infection, have the highest likelihood of predicting bacterial pediatric pneumonia; however, significantly fewer studies have tried to determine the signs and symptoms that help to predict occult bacterial pneumonia.

Occult CAP is defined as radiographically confirmed pneumonia that is present without signs of respiratory distress or lower respiratory tract involvement (such as tachypnea or the presence of any adventitious sound on lung auscultation).[2] While the prevalence of occult pediatric CAP decreased after the invention of the heptavalent pneumococcal vaccine, the incidence of occult pneumonia in pediatric patients who are febrile but do not have physical exam findings of pneumonia is around 5%.[2]

Symptoms of pneumonia

One of the most critical tools in diagnosing pediatric bacterial pneumonia is the patient's history of present illness. One systematic review found that the presence of chest pain and symptom duration of longer than 3 days were the only historical factors that increased the likelihood of pediatric CAP.[1] Other factors, including cough, difficulty breathing, vomiting, and diarrhea, were not shown to have an increased likelihood of pediatric CAP; this was true across all pediatric age groups.[1]

Another prospective observational study that looked only at pediatric patients with suspected occult pneumonia found the rate of occult pneumonia to be similar to the rate of pneumonia suspected due to auscultatory findings or signs of respiratory distress.[2]

There was no one symptom that showed a significant increased likelihood of occult pediatric CAP.[2] However, most patients in this study who were found to have occult pediatric CAP did have symptoms of an upper respiratory infection.[2]

These researchers also found that duration of fever greater than 1 day in conjunction with worsening cough did increase the likelihood of pneumonia.[2] Subsequently, patients who present without a cough and with a fever duration of less than 1 day were at low risk for pneumonia, and the researchers discouraged chest radiography in these patients.[2] This is supported by a retrospective cross-sectional study which found that prolonged cough and fever increased the likelihood of occult pediatric CAP.[3]

Signs of pneumonia (exam)

While the patient's history is crucial in determining the likelihood of pneumonia, findings during the physical exam also play a vital role in accurate diagnosis. A systematic review found that the presence of hypoxemia and increased work of breathing (ie, grunting, nasal flaring, or chest retractions/indrawing), especially in conjunction with cough and fever, were helpful in predicting pneumonia.[1] It is worth noting that the degree of hypoxia did not correlate to an increased likelihood of pneumonia, as most patients who were diagnosed with pneumonia experienced only mild hypoxemia (96% or less).[1]

Presence of fever and tachypnea were not found to increase the likelihood of pneumonia, but their absence did decrease the likelihood of pediatric CAP.[1]

Surprisingly, the presence of abnormal sounds on lung auscultation has equivocal results across different studies. Some research shows that the presence of abnormal lung sounds (including crackles, rales, wheeze, rhonchi, and diminished breath sounds) did not correlate with an increased risk of pneumonia.[1]

Other studies show that in febrile patients, the presence of rales or decreased breath sounds had an increased likelihood of pediatric CAP, and the presence of wheezing decreased the likelihood of pediatric CAP.[3] It is possible that the variation in results between the studies is due to both the subjective nature of this finding and compliance difficulty in young patients.[1]

Treatment

Amoxicillin is used as the first-line antibiotic in pediatric patients who are otherwise healthy, are of school age, and have mild-to-moderate typical bacterial CAP.[4] If

pathogen, a macrolide antibiotic is considered first-line.[4] When discussing duration of treatment, a 10-day course is the most studied regimen, but it is possible that a shorter duration of treatment (7 days or less) could be used for those with mild pneumonia.[4] Children who are being treated on an outpatient basis should show improvement within 48–72 hours.[4]

When to advance to inpatient treatment

Treatment guidelines recommend the hospitalization of pediatric patients with pneumonia in the following circumstances: oxygen saturation <90%, infants younger than 3-6 months of age, pneumonia suspected or confirmed to be caused by pathogens with increased virulence, and where outpatient treatment compliance may not be feasible.[4]

Case Resolution

The patient described at the outset of was treated on an outpatient basis with PO, weight-based amoxicillin for 10 days. Patient followed up with his pediatrician 3 days after his ED visit; fever resolved after 24–48 hours after treatment began. At the time of visit with the pediatrician, all symptoms had resolved.

Take-Home Points

- No one sign or symptom can be used to determine the presence of pediatric pneumonia. Rather, the entire clinical picture as a whole must be taken into account.
- Chest pain, prolonged fever, and prolonged cough may all be symptoms that indicate increased likelihood of pediatric CAP.
- Hypoxemia and increased work of breathing may be signs that indicate increased likelihood of pediatric CAP. Adventitious sounds on lung auscultation are not a reliable way to predict pneumonia as results vary across studies.
- Amoxicillin is used as the first-line treatment for typical pediatric CAP, and macrolides are used as first-line treatment for atypical pediatric CAP. ■

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INSIGHTS IN IMAGES

CLINICAL CHALLENGE: CASE 1

In each issue, *JUCM* will challenge your diagnostic acumen with a glimpse of x-rays, electrocardiograms, and photographs of conditions that real urgent care patients have presented with.

If you would like to submit a case for consideration, please e-mail the relevant materials and presenting information to editor@jucm.com.

A 12-Year-Old Boy with a Crush Injury

Figure 1.

The patient is a 12-year-old boy who presents with pain after his foot became wedged in an escalator at the mall.

The image on the left was taken upon presentation; the one on the right is from a 2-week follow-up. Review each and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.


Figure 2.

Differential Diagnosis

- Occult second metatarsal fracture
- Peroneal tendon injuries
- Sesamoiditis
- Plantar fascia ruptures

Diagnosis

Initial imaging is unremarkable. However, the second image reveals focal periostitis at distal second metatarsal consistent with occult fracture.

Learnings/What to Look for

- The first metatarsal is most commonly fractured in children less than 4 years old, while the fifth metatarsal is the most commonly fractured in adults
- Third metatarsal fractures rarely occur in isolation; 68% are associated with fracture of second or fourth metatarsal
- Crush-type and direct-blow injuries are infrequently associated with pediatric foot fractures. The more common mechanism of metacarpal fracture is from a fall or foot inversion
- Direct blow injuries may be more associated with occult osseous injuries from compressive forces of adjacent bones against one another or by traction forces during an avulsion injury

Pearls for Urgent Care Management

- In the absence of Lisfranc injury, nondisplaced fractures of the first through fourth metatarsal can be managed initially with splinting and non-weightbearing, followed by application of a short leg cast and continued non-weightbearing
- In the absence of obvious findings on initial radiograph, patients should receive instructions to follow-up with orthopedics or sports medicine to evaluate for occult fractures if there is not significant improvement in pain and swelling in one week.

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

A 7-Year-Old Male with Lesions on His Knees


Figure 1.

A mother brings her 7-year-old son to your urgent care center because she's concerned about asymptomatic lesions that have developed on his knees over the past couple of weeks. On examination, you observe smooth, crusted and scaly, erythematous and whitish papules and nodules on both knees. There was no history of recent trauma. The patient had a history of dermatomyositis.

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

Figure 1.

Differential Diagnosis

- Epidermoid cyst
- Calcinosis cutis
- Cutaneous tuberculosis
- Furunculosis

Diagnosis

The correct diagnosis is calcinosis cutis, or cutaneous calcification—the deposition of insoluble calcium salts in the skin and subcutaneous tissue due to local dysregulation of calcium metabolism. In children, there is a male predilection with an earlier age of onset. Dystrophic calcification is typically seen in autoimmune connective tissue diseases, most commonly in juvenile dermatomyositis (DM) and the CREST form of systemic sclerosis, and usually arises in damaged skin in which local calcium metabolism is altered, allowing intracellular crystallization in the setting of normal serum calcium and phosphorus levels

Learnings/What to Look for

- The skin lesions are typically crusted, firm and jagged nodules from chalk-like calcium that can extrude through the skin, which may be painful or susceptible to secondary infection
- Approximately 50%-70% of children with juvenile DM will develop calcinosis cutis or some form of cutaneous calcification, in contrast to 10%-20% of patients with adult DM
- The most frequently affected sites in DM are the elbows, knees, buttocks, and shoulders
- In the CREST form of systemic sclerosis, the hands and upper extremities, often over bony prominences and tendons, are most commonly affected

Pearls for Urgent Care Management

- In the case of a child, advise the caregiver that the patient should minimize cold exposure and situations that may result in local trauma
- Depending on the size and severity of the lesions, diltiazem, bisphosphonates, probenecid, aluminum hydroxide, warfarin, ceftriaxone, and intravenous immunoglobulin have been found to be successful in treating calcinosis cutis
- Surgical excision and carbon dioxide laser can also be used

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

CLINICAL CHALLENGE: CASE 3

A 61-Year-Old Female with History of Hypertension and New Palpitations and Shortness of Breath

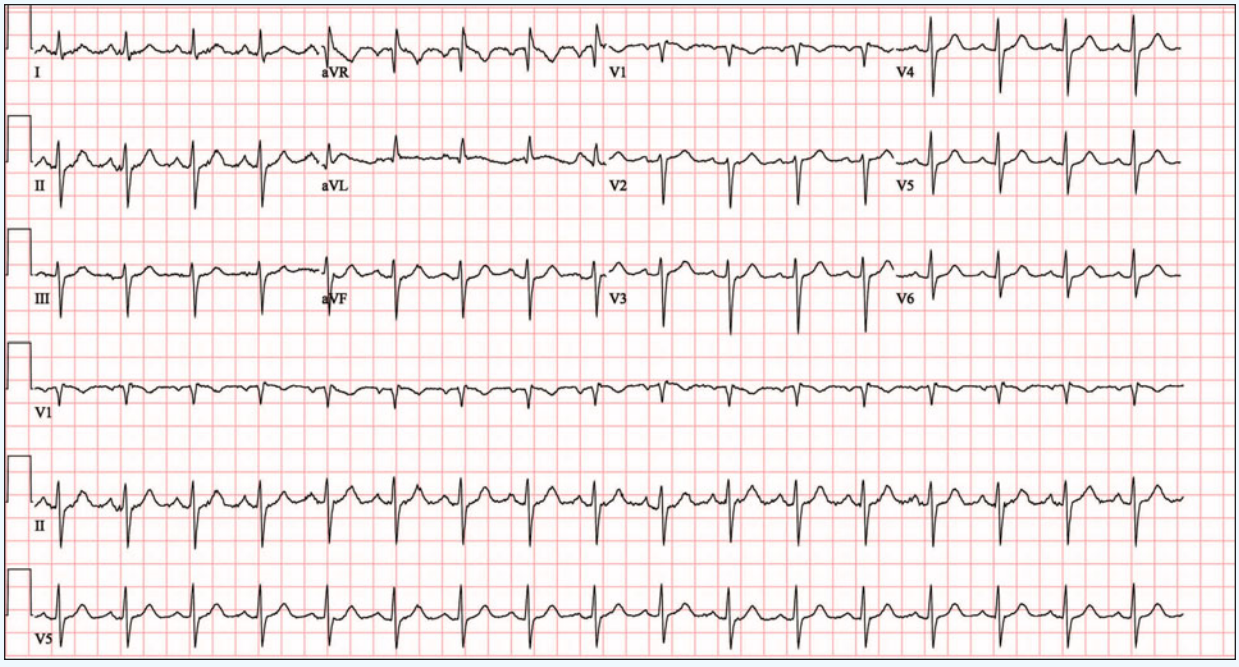

Figure 1. Initial ECG.

A 61-year-old female with a past medical history of hypertension presents to urgent care with palpitations and shortness of breath for 3 days. She also reports cough and fever, and denies nausea or vomiting.

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

(Case presented by Catie Reynolds, MD, McGovern Medical School at UTHealth Houston, Department of Emergency Medicine.)

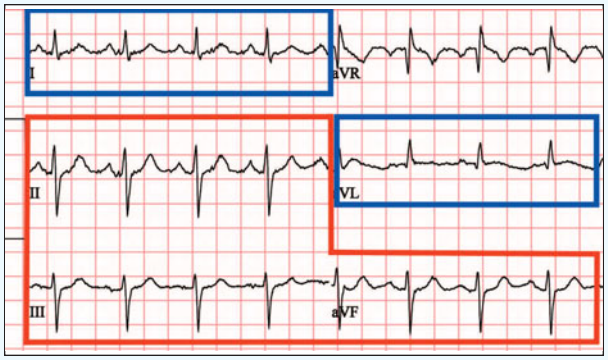

Figure 2: Left axis deviation. QRS complexes in leads II, III, and aVF are negative with rS complexes (shown in red boxes). QRS complexes in leads I and aVL are positive with qR complexes (shown in the blue boxes).

Differential Diagnosis

- Left ventricular hypertrophy (LVH)
- Left bundle branch block (LBBB)
- Left anterior fascicular block (LAFB)
- Pre-excitation
- Inferior myocardial infarction (MI)

Diagnosis

This patient was diagnosed with LAFB. The ECG shows a sinus tachycardia with a rate of 102 bpm. There is a left axis deviation (to learn how this was visualized quickly, see **Figure 2**) with normal PR/QT intervals. There are no overt signs of ischemia.

The His-Purkinje system is responsible for electrical conduction through the ventricles. During normal depolarization, a rapid electrical impulse travels through the ventricles and then splits into the right and left bundles. The left bundle branch is further subdivided into the anterior and posterior fascicles (**Figure 3**). Disruption of both fascicles produces an LABB, but each can be affected individually as well, producing either an LAFB or LPFB.

When the left anterior fascicle is disrupted, current runs through the posterior fascicle to depolarize the left ventricle in a leftward and upward direction. This creates a left axis deviation. Alternatively, an LPFB causes the left ventricle to depolarize in a rightward and downward direction, producing a right axis deviation.

In evaluating this patient's ECG, we can see that there are no other causes of a left axis deviation. In the absence of LVH, LBBB, pre-excitation, or inferior q waves, the cause of the leftward axis deviation is LAFB.

Criteria for LAFB includes:

1. Left axis deviation (usually -45° to -90°)
2. Small q waves with large R waves in I and aVL (qR complexes)
3. Small r waves with large S waves in II, III, and aVF (rS complexes)

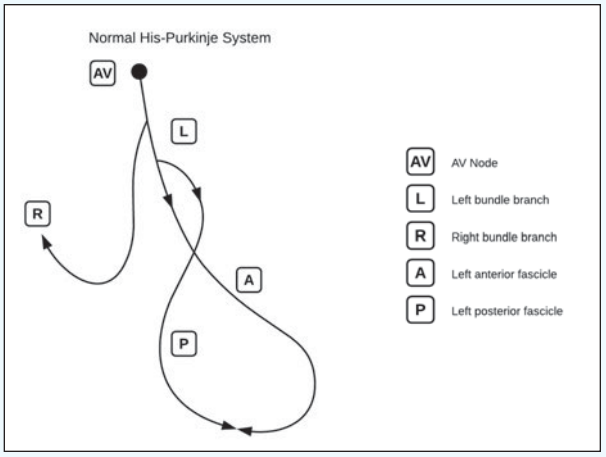

Figure 3: His-Purkinje system. (Illustration courtesy of Benjamin Cooper, MD, MEd, FACEP)

4. Normal or slightly prolonged QRS (80-110 ms)[1]

In isolation, LAFB is not clinically significant. When the LAFB is seen in combination with other conduction system disease (ie, a right bundle branch block or first-degree atrioventricular block), it may signal intermittent complete heart block, especially in a symptomatic patient.

Learnings/What to Look for

- When assessing an ECG with left axis deviation, run through the differential including LVH, LBB, LAFB, pre-excitation, and inferior MI. This will help to identify cases of LAFB
- Consider the clinical context of the patient with conduction system disease

Pearls for Urgent Care Management

- Asymptomatic patients with LAFB do not require additional workup or treatment
- For patients with LAFB with another conduction delay, consider the patient's presentation and symptoms. If the patient is symptomatic with syncope or presyncope, consider transfer for telemetry monitoring, echocardiography, and possible electrophysiologic evaluation

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

ECG STAMPEDE

Repairing Parallel Lacerations in the Urgent Care Center

Urgent message: Parallel lacerations or those that simply occur in close proximity pose a unique challenge for the urgent care clinician. Repairing either wound without inflicting further trauma on the other(s) requires both skill and familiarity with performing the appropriate technique.

Patrick O'Malley, MD

The Problem

Lacerations in close proximity pose a unique challenge for the urgent care clinician. This situation is often encountered in the unfortunate setting of patients engaged in "cutting" behaviors. Narrow spans of tissue (tissue bridges) between lacerations have a limited blood supply. During repair, these bridges can sustain further injury from both repeated violation by the suture needle and from the tension of the suture.

The Solution

A simple technique commonly referred to as an "extended" or "modified" horizontal mattress can allow for success with approximation in this situation. With this technique, the clinician utilizes tissue forceps to grasp, manipulate, and stabilize the tissue. The initial entry into the tissue is then followed by passing the needle and thread through the dermal layer of adjacent tissue bridges until all lacerations have been crossed. As with any horizontal mattress technique, the needle and thread are oriented back in the opposite direction, passing through the same tissue planes.

The tension in the thread can then be adjusted and the tissue can be manipulated into approximation. Lastly, the suture is tied off in standard fashion, bringing the tissue edges into close proximity. (See **Figure 1**.)

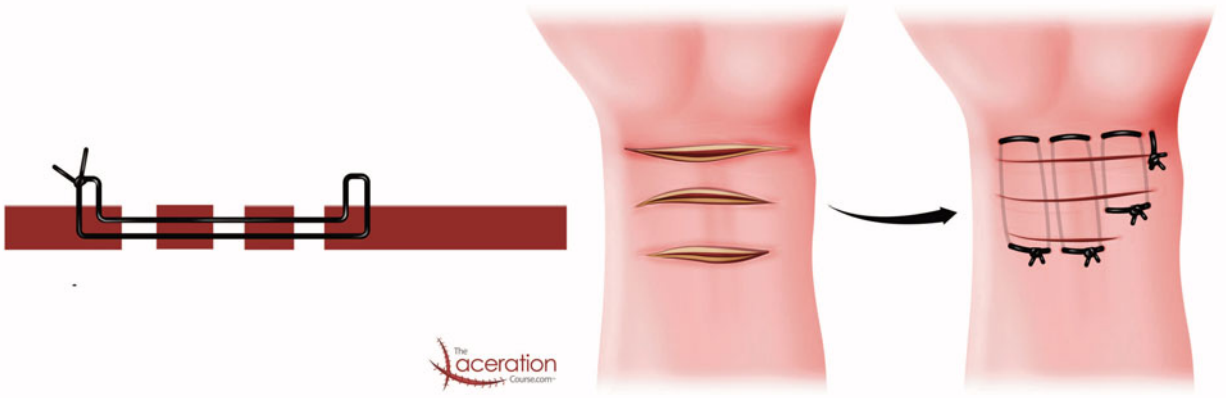
Other Applications

This technique can prove useful in a variety of situations beyond parallel lacerations. If tissue is macerated (or even avulsed) and in close proximity to another laceration, this technique can be used to help approximate the various wound margins.

Figure 2a depicts a patient with a tractor-related foot injury and is an example where this technique would prove particularly useful. The proximal aspect of the wound had some macerated tissue with lacerations in close proximity, where the tissue would not support

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

Figure 1. Parallel Laceration Repair



Source: The Laceration Course (https://www.thelacerationcourse.com/).

Figure 2a. Parallel lacerations caused by contact with a tractor.

Figure 2b. Follow-up: Wound healing, with hyperpigmentation.

individual sutures. Employing this technique allows for the tissue to be approximated while avoiding further trauma from the suture needle.

Figure 2b reveals appropriate wound healing (although with some hyperpigmentation). ■

Additional Reading

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Identifying (and Resolving) Common Billing Pitfalls

MONTE SANDLER

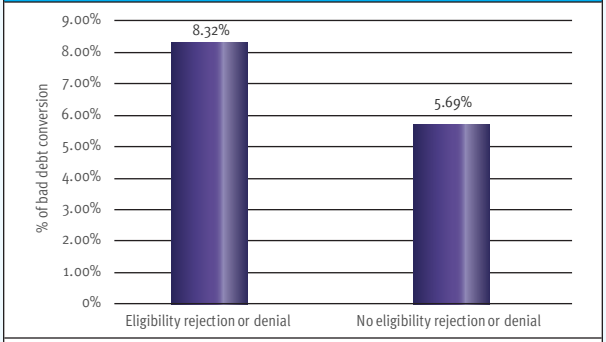
Denials and rejections are inevitable in medical billing and can have drastic repercussions on the overall profit of an urgent care practice. Studies show almost 30% of medical bills are prone to errors. Avoid these common mistakes to improve the return on your investment.

Eligibility Errors

Avoidable eligibility errors are the biggest issue in urgent care billing. Over one-third of total visits with a rejection or denial are due to a lack of proper registration and/or eligibility verification. Many clinics utilize real-time eligibility (RTE) at a high rate but fail to identify potential issues within the responses.

Eligibility errors are largely simple and avoidable but are costly. According to Medical Group Management Association (MGMA), the cost to rework the average denial or rejection is $25. Additionally, visits that incur a front-end rejection or denial are 46% more likely to result in bad debt.

Figure 1. Bad Debt Conversion



Data source: Proprietary data, Experity.

Monte Sandler is Chief Operating Officer of Experity.

Don't assume active coverage equals a clean eligibility response. Many eligibility rejections or denials are received even after receiving an "active coverage" RTE response. For example, patients with active Medicaid coverage may be covered by a Managed Medicaid plan, which should be the plan used during registration as opposed to the state Medicaid plan. See **Figure 1** for a comparison of bad debt conversion with eligibility rejection or denial vs claims where there is no eligibility rejection or denial.

In this example, the RTE response indicates the patient is active with Mississippi Medicaid. However, the patient actually has a United Healthcare Community Plan, which is a Managed Medicaid plan in Mississippi.

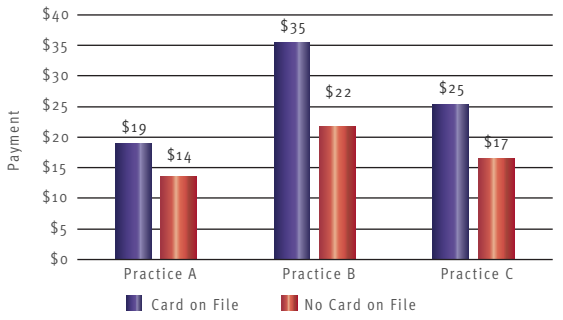
RTE response (facsimile):				
Verify RTE	MS MEDICAID	Check Eligibility	Active Only	
Insurance		Time of Check	Status	
MS MEDICAID		12/3/2022 8:31:13 AM	Accepted	Coverage Details

Train your front desk to identify Managed Medicare and Medicaid plans in your area. Medicare patients are instructed by the Centers for Medicare & Medicaid Services (CMS) to present both their traditional Medicare card and their Managed Medicare card, which can cause confusion. Go beyond asking the standard *Has anything changed?* question. Best practice is to ask for the insurance card and run RTE at every visit.

As of April 1, 2023, states will be able to start processing Medicaid redeterminations and disenrolling residents who no longer qualify. They will have 14 months to review the eligibility of their beneficiaries. As part of the COVID-19 relief package passed in March 2020, states were barred from terminating members from Medicaid during the public health emergency (PHE) in exchange for additional federal matching funds.

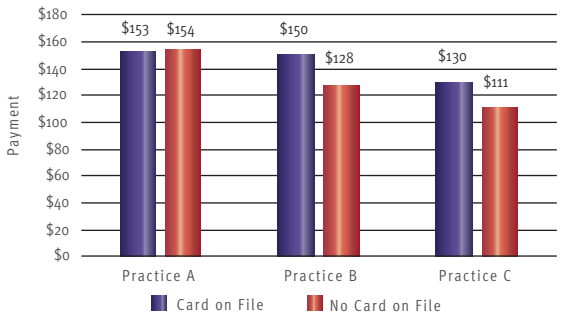
Roughly 15 million people could be dropped from Medicaid when the continuous enrollment requirement ends, according to an analysis the Department of Health and Human Services released in August 2022.

Figure 2. Patient Payments per Visit



Data source: Proprietary data, Experity.

Figure 3. Total Net Reimbursement per Visit



Data source: Proprietary data, Experity.

Not Collecting Patient Responsibility

Patient balances accounted for 30% of the total amount owed to urgent care operators in 2021, but represent nearly all the bad debt. This number was higher in years prior to COVID-19, but will increase once the PHE ends on May 11, 2023.

Ensure copayments are collected, review existing balances, and implement or enhance your credit card on file (COF) protocol.

Figure 2 and **Figure 3** represent a total of 488,000 fully adjudicated visits from 2021 where BCBS was the primary provider.

In March 2022, the national credit reporting agencies (CRAs) Equifax, Experian, and TransUnion announced joint measures that would result in nearly 70% of paid medical debt tradelines being removed from consumers' reports. This includes three major components:

1. Effective July 1, 2022, the CRAs will no longer include on consumers' credit reports any medical debt that has been paid in full after being sent to collections.
2. Effective July 1, 2022, unpaid medical bills cannot be reported until they are at least 365 days past the date of first delinquency.
3. As of March 30, 2023, the CRAs will no longer include on consumer reports any medical debts with an original balance less than or equal to $500.

Analysis shows that 95% of urgent care patient balances are less than $500. These new rules remove the incentive for patients to pay their balances once they leave the office, as there are no repercussions

Incorrect Coding

Improper coding impacts clean claims, causes denials or rejections, and results in costly rework. Once a claim is denied by an insurance plan, it takes up to five times the work to get payment.

Proper and thorough coding will increase clean claim rate and potentially improve net reimbursement per visit (NRPV) by allocating the correct E/M levels. Consider utilizing a differential diagnosis when appropriate. This may support the complexity of the problem addressed and is a tool to document the provider's thought process.

Other common coding errors are the use of unspecified diagnosis codes and not using modifiers for laterality. While an unspecified diagnosis is not necessarily wrong, it may indicate a documentation deficiency. Unspecified diagnoses indicate the medical record did not have enough information to provide a specific ICD-10-CM code.

As an example, ICD-10-CM S99.919A is for an unspecified injury of unspecified ankle, initial encounter. This code indicates the provider did not document the type of injury or which ankle was injured and may cause a claim delay for review of medical records.

Configuration of Payer Contracts

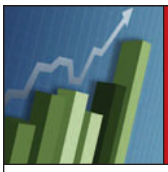
Billing is often performed without proper consideration to payer contracts. Be aware of all carveouts on your case-rate contracts. Regularly check to ensure payer processing and payments are in line with your contract.

Avoid supervisor billing except when the contract explicitly allows for it. Most payers credential non-physician practitioners (NPPs). When they do, the rendering provider (NPP) should always go on the claim. Failure to comply with this guideline can result in crippling penalties.

In recent years, a practice agreed to a settlement of $4.2 million with the Department of Justice (DOJ) for billing services under a physician while he was traveling internationally. Services were actually performed by NPPs. Another practice paid the DOJ $22.5 million to settle False Claims Act allegations for billing services performed by noncredentialed providers under a credentialed provider.

For private payers, practices run the risk of losing their contract and/or having their payments recouped by the insurance plan.

A side effect of adopting good front-end practices is improved patient satisfaction and brand loyalty. ■



DEVELOPING DATA

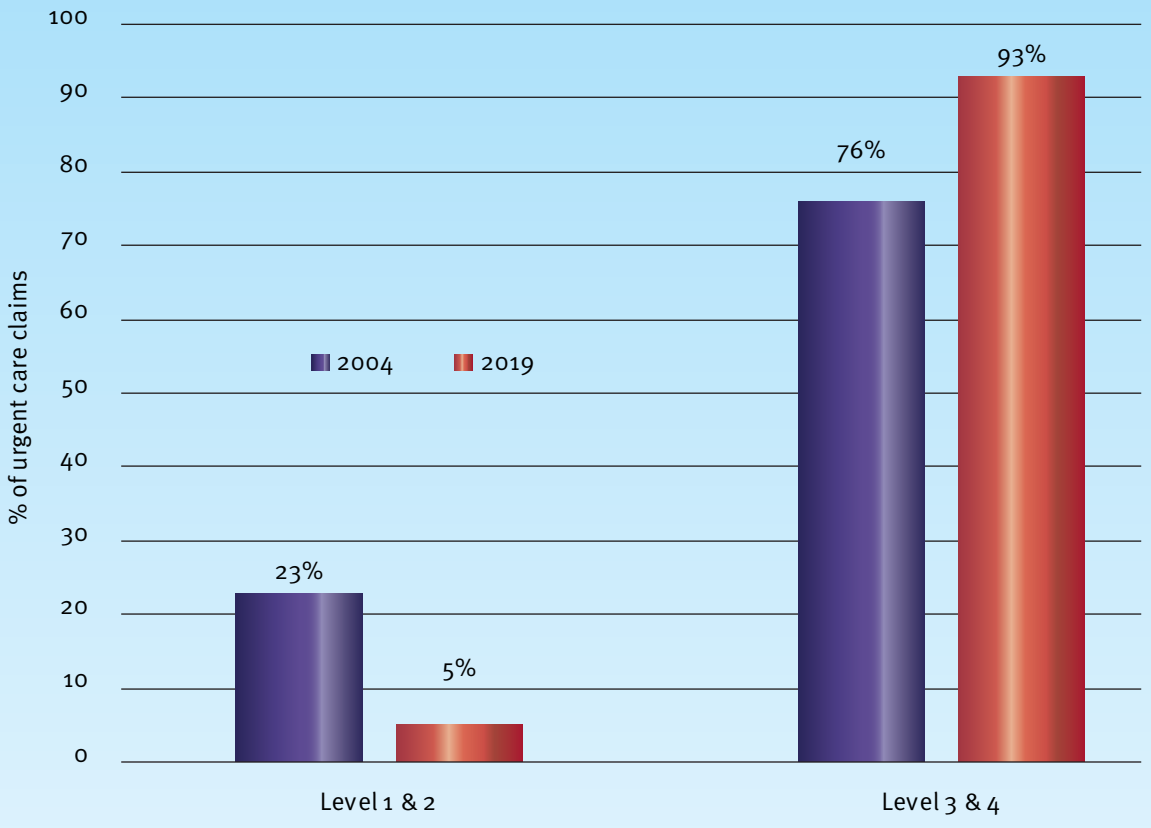
Pre-Pandemic, Acuity of Urgent Care Cases Was Trending Up

There's been a bit of discussion in the urgent care industry (including in *JUCM* articles of late) concerning a perceived degradation of acuity in urgent care practice. The worry is that in the service of getting a maximum number of patients in and out the door quickly, some patients with more than minimally complicated complaints are advised to visit the closest emergency room when they could just as safely (and more cost-effectively) be treated in urgent care.

Certainly that could be happening, but data released just this February through the Peterson-KFF Health System Tracker paints a brighter picture. Leading up to the COVID-19 pandemic, the trend was actually for urgent care providers to treat more patients presenting with relatively more complicated complaints than they did 15 years prior (level 1 and 2 claims vs level 3 and 4 claims).

How much, if at all, that has changed since the pandemic has yet to be quantified, but the graph below illustrates clearly that the evolution of urgent care has favored practicing to the upper end of the provider's training—which further illustrates that if you did it then, you can do it again.

LEVELS OF URGENT CARE CLAIMS, 2004 VS 2019



Data source: Peterson-KFF Health System Tracker. Available at: https://www.healthsystemtracker.org/brief/outpatient-visits-are-increasingly-billed-at-higher-levels-implications-for-health-costs/. Accessed March 8, 2023.

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