

# JUCM<sup>®</sup>

THE JOURNAL OF **URGENT CARE** MEDICINE<sup>®</sup>

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**UCA** URGENT CARE  
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 COLLEGE OF  
URGENT CARE  
MEDICINE

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The Official Publication of the UCA and CUCM

FOCUS ON PEDIATRIC URGENT CARE

## Little Patients, Big Challenges. Are You Up for Them?

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**Practice Management**  
Hiring Independent Contractors  
Can Save You Money on Payroll—  
Unless You Do It Wrong and It  
Winds Up Costing You Big Time **cme**

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# Opportunity is Knocking. Do you hear it?

*It is not the strongest species that survive, nor the most intelligent, but the most responsive to change. – Charles Darwin*



Imagine, if you will for a moment, that you're a dinosaur. Specifically, a late cretaceous era one—any species you like. I tend to envision myself a triceratops. It's about 66 million years ago (give or take an epoch or two) and animals like you have dominated the world for over 100 million years—not that you've been keeping track. New species of dinosaurs slowly arise while others disappear. Change comes gradually. Until one fateful day, seemingly like any other, you're just minding your own business when you notice a ball of fire from space suddenly slicing through the sky. It smashes into the Yucatan Peninsula in what would (much) later be Mexico. A cloud of smoke as high as the sky bursts upward. And suddenly, in a moment, the world as you've known it has changed forever.

Now think about the experience of working in urgent care in 2020. Feels about the same, doesn't it?

You may recall from your undergraduate biology course the terms *gradualism* and *punctuated equilibrium*. These are the two ways in which biologists describe evolution unfolding. When the world is relatively stable, the process of natural selection leads to slow, progressive changes over many generations. This is gradualism. However, sometimes the world suddenly changes and in a dramatic fashion. When this occurs, evolution picks up the pace.

The phrase "survival of the fittest" is universally attributed to Charles Darwin, but he was only borrowing the line. It was actually Herbert Spencer, a much less remembered Victorian era British scientist and philosopher, who coined the phrase nearly a decade before it appeared in Darwin's *On the Origin of Species*. However, Spencer's most indelible mark on modern thinking was arguably the notion that the principles of evolution could be applied outside of the natural world to human systems—a concept that, in a tragically ironic twist of fate, came to be referred to as *social Darwinism*.

Spencer described how the ability to adapt was essential to survive changes in culture and economic environments, as well.

Spencer described how the ability to adapt was essential to survive changes in culture and economic environments, as well.



This is the fundamental tenant of all nonbiological forms of "Darwinism." Most recently, "digital Darwinism" has been coined as the evolution of consumer behavior when society and technology evolve faster than businesses' ability to adapt. Importantly, unlike any given living organism whose fate is sealed at birth with the genetic material it inherited from its parents, businesses can adapt, change, and reinvent themselves in response to the changing world.

This is called "pivoting" in corporate-speak. In order to survive this period of rapid change, virtually all companies are being forced to pivot. This is perhaps most true for healthcare delivery businesses and urgent care, specifically.

Even during the last few months, many of our centers have seen dramatic changes in volume month-to-month based on Coronavirus activity in our individual communities. And the urgent care centers who've fared the best have largely been those who've embraced telemedicine services and rolled out rapid COVID-19 testing programs.

In other words, those who have embraced the "new normal" have benefited from these new niches opened by the changes. UCs who've focused on waiting for things to return to the way they were, unfortunately, have fared less well.

I'd like to suggest reframing the COVID-19 pandemic from disaster to opportunity. For the dinosaurs, the Yucatan meteorite may have been a disaster, but for early mammals, it was an opportunity. It's simply a matter of perspective. For the more adaptable species, this represented a chance to expand in number and range because of the many new niches created by the extinction of the less adaptable. Urgent care is facing similar disruption currently and, fortunately, we have the ability to

## EDITOR-IN-CHIEF

decide if we are going to be mammals or dinosaurs.

Furthermore, while the Mexican meteor strike caused the most recent mass extinction event, it was by no means the only, or even most significant, period of rapid species loss this planet has seen. And as is the case in the natural world, these sort of disruption events, while occurring at unpredictable times, predictably occur over and over. It is therefore worthwhile to see the broader value in honing the skill of adaptability itself beyond survival through our current state of upheaval. Disruption, in an as-yet unknown form, will occur repeatedly, and likely with increasing frequency in our exponentially changing world.

So, as we pivot from the core urgent care services to offerings like telemedicine and workplace and preoperative COVID testing, it's also worth remembering what we've learned about

the logistics of rapid adaption. If urgent care is to survive as a paradigm for healthcare delivery, we need to continue to embrace change as opportunity rather than disaster, and be willing to evolve. This is, and will continue to be, difficult. Change always is. But the alternative is extinction. ■



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Editor-in-Chief, *JUCM*, *The Journal of Urgent Care Medicine*  
Email: editor@jucm.com • Twitter: @UCPracticeTips

### We want to hear from you!

Every issue of *JUCM* is packed with information for urgent care professionals, written by urgent care professionals. And we're happy to deliver it to you. But we'd like to make this a two-way conversation. So, if you read something here you find especially interesting, helpful, or thought-provoking, let us know. If there's a topic you'd like us to consider (or that you'd like to write about yourself), let us know. And by all means if you think we've missed the mark on something, let us know that as well. Feel free to write to us any time at [editor@jucm.com](mailto:editor@jucm.com). We look forward to hearing from you.



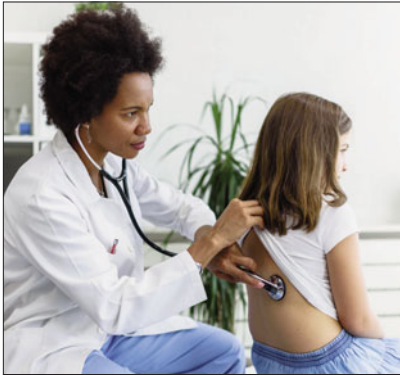
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ORIGINAL RESEARCH

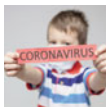
## 24 Preparedness for Emergencies in Pediatric Urgent Care Settings

The focus on COVID-19 across urgent care is warranted. However, the pandemic doesn't preclude "ordinary" emergencies from taking place. As this study shows, there's a minimum standard urgent care centers should be aware of in order to assure they're prepared to treat children with compromised breathing, possible overdose, and other immediate threats.

*Amanda Montalbano, MD, MPH, FAAP and Brian Lee, PhD*

CLINICAL

### 11 Multisystem Inflammatory Syndrome in Children (MIS-C): Who Should Not Be MISC'ed?

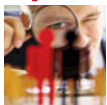


Children are *not* immune to COVID-19. In fact, there's a related, relatively rare but sometimes fatal illness that is unique to children. One of the challenges is that its symptoms pop up in previously healthy children.

*Katie Jerzewski, MD; Roshni Patel, MD; and Joshua Rocker MD*

PRACTICE MANAGEMENT

### 17 The Hazards of Independent Contractor/Employee Misclassification

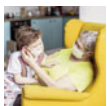


The difference between an independent contractor and an employee is much more than just a matter of semantics. Your rights and obligations (and theirs, as well) differ dramatically from one classification to the next.

*Alan Ayers, MBA, MAcc*

ORIGINAL RESEARCH

### 24 High Prevalence of Asymptomatic COVID-19 in the Pediatric Population



One of the reasons it first seemed as if children can't get COVID-19 is that many who do have it are asymptomatic. That's a problem in that a) it delays treatment and b) those kids can infect others they come in

contact with every day. This study takes a major step forward in assessing how prevalent this phenomenon may be.

*Katharine Miao, MD; Frank Illuzzi, MD; and Alexander C. Hwang*

CASE REPORT

### 33 A New-Onset, Suspicious Skin Lesion



Sometimes, "likely" can be a dangerous word—especially when it dissuades an urgent care provider from considering less likely etiologies. Keeping an open mind and a wide differential is essential

*Haley Harrington; Ross L. Pearlman, MD; and Robert T. Brodell, MD*

CLINICAL

### 36 A POCUS-Based Approach to Acute Renal Colic in the Urgent Care Center



The diagnostic utility of ultrasound is a key advantage when assessing patients you might otherwise need to refer. Renal colic is a prime example.

*Chelsea M. Burgin, MD, FAAFP; James Frederick W. Pike, MSIV; and John Eicken, MD, EdM*

COMING UP IN JUCM

Data from *JUCM*, the Urgent Care Association, and any other organization that tracks such things bear out—consistently—that "sore throat" is as common as complaints get in the urgent care center. Not all sore throats are created equal, however. And certainly not all can be correctly diagnosed as streptococcal pharyngitis. When delayed diagnosis and treatment could have potentially catastrophic outcomes, nuance matters. Read about common and uncommon etiologies of the ubiquitous sore throat, and the potential consequences of getting the diagnosis wrong, in the November issue of *JUCM*.

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## JUCM CONTRIBUTORS

As if battling a novel virus that has killed millions of people all over the world wasn't enough, researchers have come to realize there's an associated illness that strikes—and kills—children. Multisystem inflammatory syndrome in children (MIS-C) took a little while to be recognized. In fact, the assumption as COVID-19 cases were mounting was that children were less likely to be affected, and less likely to have serious consequences if they did get sick. Not the case.

So, we're grateful to **Katie Jerzewski, MD; Roshni Patel, MD;** and **Joshua Rocker MD** for taking the initiative to craft an article that addresses this very topic from a uniquely urgent care perspective. Multisystem Inflammatory Syndrome in Children (MIS-C): Who Should Not Be MISC'ed? starts on page 11.

Drs. Jerzewski, Patel, and Rocker all practice at Cohen Children's Medical Center in New Hyde Park, NY.

Again, it's accepted that that the virus affects children differently than it does adults. One of the more dangerous ways in which that's true: Children who are infected are more likely to be asymptomatic—so, are also more likely to be unrecognized and go unquarantined. The mystery is, how widespread a problem is that likely to be? **Katharine Miao, MD, FACEP;** **Frank Illuzzi, MD, CPE, FACEP;** and **Alexander Hwang** mounted a research project to find out—and we're proud to publish their results in High Prevalence of Asymptomatic COVID-19 in the Pediatric Population (page 21). You might be surprised by what you read.

Dr. Miao is regional medical director for SummitCityMD, where Dr. Illuzzi is executive vice president, quality & medical education and Mr. Hwang is a research associate

We're very pleased to bring you two original research pieces in this issue. The second also focuses on the care of younger patients, but has nothing to do with the pandemic. Rather, it can serve as a reminder of the true nature of urgent care: to be prepared for any eventuality at all times. Preparedness for Emergencies in Pediatric Urgent Care Settings (page 24) by **Amanda Montalbano, MD, MPH, FAAP** and **Brian Lee, PhD**, amounts to an assessment of how ready—or not unready—surveyed urgent care centers are to treat children who could just as easily (or, in some cases, more appropriately) present to the emergency room.

Dr. Montalbano practices in the Division of Urgent Care, Children's Mercy Kansas City and is associate professor of pediatrics at the University of Missouri-Kansas City School of Medicine. Dr. Lee is in the division of Health Services Research at Children's Mercy Kansas City.

None of this is to say that there's no peril in the more likely cases to present to urgent care. In fact, the likeliest of presentations can have unlikely roots. That description applies

to this month's case report, A New-Onset, Suspicious Skin Lesion (page 33), third-year medical student **Haley Harrington** of Louisiana State University Health Sciences Center; dermatology Resident Ross L. Pearlman of the University of Mississippi Medical Center; and **Robert T Brodell, MD**, professor and chairperson of the University of Mississippi Medical Center.

Rounding out our clinical content this month is an original article about use of point-of-care ultrasound when acute renal colic is suspected. POCUS has not been used widely in urgent care, historically, but as the technology evolves its popularity and utility are growing. You may recall we devoted much of our June issue to this topic, thanks to the efforts of **Chelsea M. Burgin, MD, FAAFP** and a team of co-authors. Dr. Burgin is back at it again, this time working with **James Frederick W. Pike, MSIV** and **John Eicken, MD, EdM** on an article entitled A POCUS-Based Approach to Acute Renal Colic in the Urgent Care Center (page 36).

Dr. Burgin is the medical director of MD360 Boiling Springs and the Director of MD360 Ultrasound, Prisma Health and Assistant Clinical Professor, University of South Carolina School of Medicine Greenville; Mr. Pike is a fourth-year medical student there. Dr. Eicken is associate division chief, Emergency Medicine Ultrasound; director, advanced emergency medicine ultrasonography Fellows; and GME director, emergency medicine ultrasound as well as clinical assistant professor at the University of South Carolina School of Medicine Greenville.

Another thing that's changing in urgent care is the very nature of the workforce. Many team members are probably *employees* in the traditional sense. But others might be considered *contractors*. If you're asking *What's the difference—and why should I care?*, then The Hazards of Independent Contractor/Employee Misclassification (page 17) is essential reading. Thanks to **Alan A. Ayers, MBA, MAcc** for addressing this important topic. Mr. Ayers is chief executive officer of Velocity Urgent Care and senior editor, Practice Management for JUCM.

In this issue's Revenue Cycle Management feature (page 48), **Monte Sandler** brings us a timely update on coding for flu vaccinations. If you think you don't need to read this because your operation did a good job with this task last year, you're going to be missing revenue. Mr. Sandler is vice president, revenue cycle management at Experity.

Finally, we have a wealth of literature reviews to share with you in Abstracts in Urgent Care (page 28). In addition to the "usual" array, this month presented by **Avijit Barai, MBBS, MRCS, MSc (Critical Care), PgCertCPU, FRNZCUC**, we have several entries related to presentations at the 2020 Pediatric Urgent Care Conference, written by **David Mathison, MD, MBA**.

# UCA 2020

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# Define. Foster. Curate. Connect.

■ LOU ELLEN HORWITZ, MA

Pandemics have a way of helping you figure out what's really important. COVID-19 has created a crucible of performance and opportunity assessment like no other. It has turned all of our "what if" musings into harsh reality and shown us what we're made of, what we're great at, and where we fall short.

What we've learned at UCA has been uncomfortable, and maybe you've felt the same as your centers have struggled to adapt. As we go through this journey together, I want to be transparent about UCA's learnings in the hope that it will inspire you to be part of where they are taking us—because we want to be part of where you're going.

## Learning #1 – All Things to All People

Our industry has evolved to be incredibly diverse. We have hospital-owned, privately owned, investor-backed, single-site, and 300+site organizations and everything in between. We have physicians, physician assistants, nurse practitioners, managers, billers, owners, medical assistants, rad techs, marketers, business developers, investors and vendors. We have U.S.-based, international, rural, suburban, urban, pediatrics-only, after hours-only, occupational medicine, and hybrid primary care/urgent care centers, not counting our external stakeholders.

In trying to serve all of the industry and everyone who's interested in us well, we've struggled to be fantastic at anything. In trying to be something for everyone, we've struggled to have a clear identity. Good has been the enemy of great. And though it's been very difficult to discover this about ourselves, we see it now and are already making some changes to do better.

## Learning #2 – Flying Under the Radar

Urgent care's original DNA included strains of existence on the fringes and in the in-betweens. We started as an "alternative." Primary care was too hard to get into with services that were too limited, and the ED was no place for nonemergencies. There

was nothing in-between for "urgencies"—so we were born.

Patients loved us, but as it turned out, not *everyone* was thrilled about what we were doing. To avoid being pounded by the proverbial 800-pound gorillas of family and emergency medicine and the regulatory bodies who saw us as an opportunity, we chose to fly under the radar and make friends where we could but not make too much noise so we didn't become a target.

UCA's approach to programs and even advocacy has, somewhat unconsciously, been a reflection of that. We've not been too noisy about who should and shouldn't be calling themselves an urgent care; about what good urgent care looks like; and about defining our identity and what we stand for.

That worked well for a long time for urgent care and UCA—until we discovered that we wanted to be heard. Until we discovered that we wanted to attract attention. Until we discovered that we needed to be clear about and proud of our identity and why we're here in order to be heard. And though it's been very difficult to discover this too, we see it now and can ignore it no longer.

These two realizations have reached deep and wide into what we at UCA do, how we do it, and even how we think about it. It's made us realize we needed more urgent care experience on our staff, so we made changes. It's made us realize we have some products and programs that are no longer relevant enough, so we are unwinding them. It's made us realize our role in serving you is going to be different going forward, so we are doing a lot of listening to understand what that means.

COVID-19 hit UCA hard. Cancelling the 2020 Convention took almost 50% of our typical annual revenue with it, without much chance of recouping it this year given the challenging situations you are in and the uncertainty everyone feels. EXCEPT...via growing our membership. And that benefits us all.

If you are reading this and aren't a member, please come and join us officially. By the time you read this we will have announced some new benefits and we are working on more. We are going to be a better partner for you than ever before—and we need you. We hope you find you need us, as well.

If you are a member, thank you deeply from me, the staff, the board, and all of our affiliates plus your fellow members. Together we are stronger. More to come. Tell your friends. ■



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



# CONTINUING MEDICAL EDUCATION

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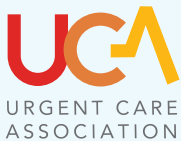
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This continuing medical education (CME) program is intended for urgent care physicians, primary-care physicians, resident physicians, nurse-practitioners, and physician assistants currently practicing, or seeking proficiency in, urgent care medicine.

## Learning Objectives

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

## Accreditation Statement



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

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## Planning Committee

- **Joshua W. Russell, MD, MSc, FACEP**  
*Member reported no financial interest relevant to this activity.*
- **Michael B. Weinstock, MD**  
*Member reported no financial interest relevant to this activity.*
- **Alan A. Ayers, MBA, MAcc**  
*Member reported no financial interest relevant to this activity.*

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## Multisystem Inflammatory Syndrome in Children (MIS-C): Who Should Not Be 'MIS-Ced' (page 11)

### 1. The most common symptom associated with MIS-C is:

- a. Conjunctivitis
- b. Gastrointestinal complaints
- c. Headache
- d. Fever
- e. Oral mucous membrane inflammation

### 2. Which of the following statements about MIS-C patients is true?

- a. Skin desquamation is the most common exam finding
- b. All patients need to be admitted and administered dexamethasone
- c. The current yearly influenza vaccine prevents Kawasaki disease and MIS-C
- d. MIS-C symptoms may be similar to other viral syndromes

### 3. Which of the following is not among the criteria to meet a diagnosis of classic Kawasaki disease?

- a. Coronary artery thrombosis
- b. Conjunctivitis
- c. Fever for  $\geq 5$  days
- d. Strawberry tongue
- e. Cracked lips

## The Hazards of Independent Contractor/Employee Misclassification (page 17)

### 1. Which of the following is not among the considerations in the "economic reality test" to determine whether there is an employer/employee relationship?

- a. The putative employer can hire or fire the employee
- b. The worker is supervised and has a controlled work schedule
- c. The putative employer maintains employment records
- d. The worker reports to the employer's workplace at an appointed time

### 2. Penalties for misclassification depend on:

- a. Whether the misclassification was intentional or unintentional
- b. Whether the worker in question is a clinician
- c. The number of hours the misclassified worker has spent working for the employer in a given period of time
- d. All of the above

### 3. "Triggers" that might spark an audit by government agencies include:

- a. An independent contractor filing a compensation or disability claim
- b. An independent contractor filing for unemployment compensation
- c. An employee whistleblower reporting misclassification
- d. All of the above

## A New-Onset, Suspicious Skin Lesion (page 33)

### 1. Which of the following is considered the most effective tick-removal technique?

- a. The card-detachment technique
- b. The freezing technique—application of liquid nitrogen for approximately 20 seconds
- c. The lassoing technique
- d. The tweezer removal technique

### 2. Risk of infection greatly increases as time of tick attachment surpasses:

- a. 2 hours
- b. 8 hours
- c. 12 hours
- d. 72 hours

### 3. The most commonly reported tick-borne rickettsial disease in the United States is:

- a. Ehrlichiosis
- b. Anaplasmosis
- c. Rocky Mountain spotted fever
- d. Tularemia

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# Multisystem Inflammatory Syndrome in Children (MIS-C): Who Should Not Be MIS-C'ed?

**Urgent message:** The belief that children are not affected as often or as severely as adults was one of the few comforts for the public at the outset of the COVID-19 pandemic. All that changed with the revelation that a related condition, multisystem inflammatory disorder, seems to target them directly. Undoubtedly some of those children will present to urgent care centers.

KATIE JERZEWSKI, MD; ROSHNI PATEL, MD; and JOSHUA ROCKER, MD

Citation: Jerzewski K, Patel R, Rocker J. Multisystem inflammatory syndrome in children (MIS-C): who should not be MIS-C'd? *J Urgent Care Med.* 2020;15(1):11-14.

## Overview

The novel coronavirus, or SARS-CoV-2, first appeared in the Wuhan province of China in the winter of 2019. Due to the virus's ability to spread from an asymptomatic carrier to the next new host and Wuhan being a pivotal commercial center, it spread quickly across the globe. Asymptomatic carrier rates have ranged from 1.6% to 56.5%, depending on clinical setting and testing availability.<sup>1</sup> In adults, common symptoms include fever, cough, body aches, lack of smell and taste, dyspnea, and/or fatigue.<sup>2</sup> During the initial New York City outbreak, 12.2% of hospitalized patients required intubation for acute respiratory distress syndrome (ARDS).<sup>2</sup> In this New York cohort, outcomes for intubated patients were poor. The mortality rate increased with age and was significantly greater in those older than 65-years-old with comorbidities.<sup>3</sup>

Children, however, have been relatively spared from the ARDS-like syndrome contributing to high mortality in adults. During the initial phase of the pandemic in the



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United States, when testing was reserved for symptomatic patients, only 2% of confirmed COVID-19 cases were among those less than 18-years-old.<sup>5</sup> Infants less than 1-year-old accounted for the largest percentage of hospi-

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talizations within this group, and a recent case series suggested these febrile infants had only mild clinical symptoms, no serious outcomes, and did not require mechanical ventilation or intensive care during hospitalization.<sup>6</sup>

One rare and serious complication of COVID-19 which has been identified in pediatric patients is the multisystem inflammatory syndrome in children (MIS-C). Following are descriptions of a pair of cases involving children who presented with MIS-C.

*Case 1*

A previously healthy, vaccinated 23-month-old female presents with two days of fever and rash. She has had decreased solid food intake, but has been drinking fluids and has good urine output. Her mother had tested positive for SARS-CoV-2 four weeks ago, but never required hospitalization. On exam, the patient is crying with tears and has no focal findings. Her vital signs are all within normal limits. She is discharged home with a diagnosis of viral illness. She returns two days later with continued fevers and rash and now has red eyes and swollen hands and feet. Her temperature is 39.2°C and her vitals are otherwise unremarkable. Her exam is notable for bilateral, nonpurulent bulbar conjunctivitis, cracked red lips, and a singular palpable 1.5 cm cervical lymph node.

*Case 2*

A previously healthy 9-year-old boy presents with five days of fever. In the past three days, he has had abdominal pain complicated by several episodes of nonbilious emesis and nonbloody diarrhea. Review of systems is also notable for decreased urine output over the preceding 24 hours. He lives with his grandmother, who was recently admitted to the hospital for COVID-19, but has subsequently recovered. On exam, he is in no acute dis-

tress and has normal perfusion with a nontender abdomen. His vital signs reveal the patient is febrile (38.8°C), tachycardic (135 beats/min), tachypneic (26 breaths/min), and hypotensive (69/32).

Resolution of these cases will be described at the end of this article.

**Clinical Features**

Children and young adults are uniquely susceptible to inflammatory and vasculitic complications of SARS-CoV-2. The severity of the inflammation extends over a wide spectrum. Patients may present with erythematous, violaceous, or purpuric macules on their digits, labeled “COVID toes,” that suggest an isolated vasculitis (Figure 1).<sup>7,8</sup> This is a benign entity and a dermatologic hallmark of COVID that does not require any specific treatment when in isolation. However, SARS-CoV-2 can cause MIS-C, the more extensive and systemic syndrome unique to the pediatric population.<sup>9</sup>

MIS-C is a postviral inflammatory process rather than an active infection. SARS-CoV-2 PCR testing is commonly negative and antibody testing is positive at the time of presentation.<sup>5,9</sup> As evident in early reports from other countries, patients present with Kawasaki-like

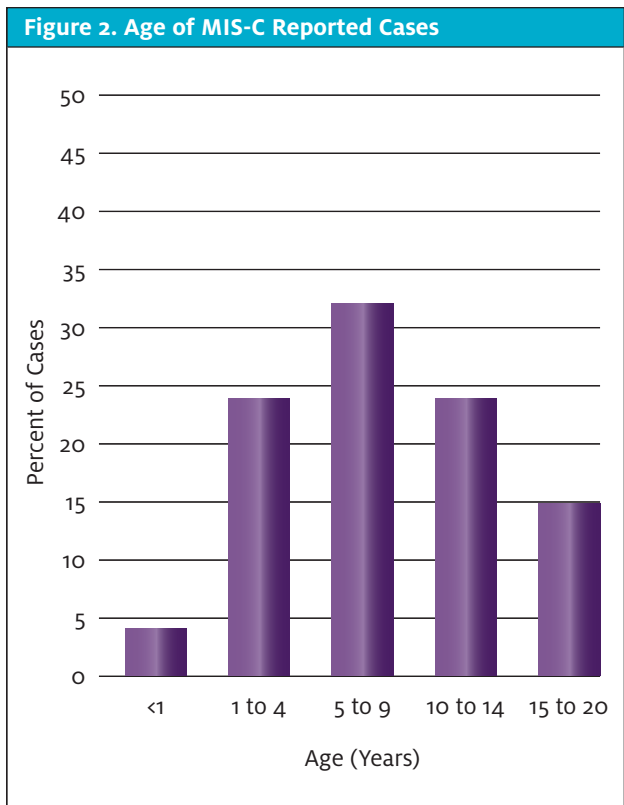


Table 1. Criteria to Meet a Diagnosis of Classic or Atypical Kawasaki Disease <sup>17</sup>	
<b>Classic Kawasaki disease</b> requires fever for $\geq 5$ days and at least four of the following:	<b>Atypical Kawasaki disease</b> does not meet classic criteria and requires at least three of the following:
Conjunctivitis (nonpurulent, limbic-sparing)	Anemia
Rash (vasculitis, but can be any rash)	WBC $\geq 15,000/\text{mm}^3$
Lymphadenopathy (one node $\geq 1.5\text{cm}$ )	Platelets $<100$ or $\geq 450,000/\text{mm}^3$ after day 7
Strawberry tongue and/or cracked lips	Albumin $\leq 3.0\text{g/dL}$
Extremity changes: palmar and sole erythema, hand and feet edema, or peeling skin of the fingers, toes	Elevated alanine aminotransferase
	Sterile pyuria ( $\geq 10$ white blood cells/hpf)
	Abnormal echocardiogram (enlarged/dilated coronary arteries, or $\geq 3$ of the following: perivascular echogenicity, lack of tapering, decreased left ventricular function, mitral valve regurgitation, pericardial effusion)

symptoms yet with greater cardiogenic involvement often requiring vasopressor support.<sup>10,11</sup> MIS-C generated significant media coverage mostly because of its novel clinical presentation, its rapid appearance on the scene, and because it was previously believed that children were not significantly affected by the virus. The CDC has published, as of September 3, 2020, that there have been 792 confirmed cases of MIS-C in the U.S., with 16 deaths. Unlike primary COVID illness, which affected mostly older children, the average age of children with MIS-C is 8 years, but the age distribution is broad and bell shaped (Figure 2). Additionally, more than 70% of reported cases have occurred in children who are Hispanic/Latino or non-Hispanic black.<sup>12</sup>

### Recognition

It is essential to recognize signs of possible MIS-C patients; however, this is difficult because the initial symptoms occur in previously healthy patients<sup>13</sup> and may be similar to other viral syndromes. Recent reports show that all patients present with fever. Common symptoms are gastrointestinal (abdominal pain, diarrhea, or vomiting [53%-100%]), rash (52%-76%), and conjunctivitis (45%-81%). Other concerning symptoms included neurologic (headache, visual changes, irritability, stiff neck [26%-86%]), oral mucous membrane involvement (29%-76%), and skin desquamation (18%-19%). While patients can have a neutrophil-predominant leukopenia, MIS-C patients commonly demonstrate a significant inflammatory response, with high C-reactive protein (median 200-229 mg/L; normal 0.0-8.0 mg/L) and ferritin (610-648 ng/mL; normal 15-200 ng/mL) values. Many patients

also have direct cardiac involvement, made evident by elevated pro-BNP (78%-88% of patients) and troponin (68%-82%) levels.<sup>5,14-17</sup> Patients with abnormal echocardiograms were diagnosed with left ventricular dysfunction (approximately 31%-35%) or coronary artery prominence (41%) or dilatation (22-76%).<sup>15-17</sup>

MIS-C patients appear to be loosely categorized into three nonmutually exclusive categories. They can have fever and signs of inflammation (40%); meet classic or incomplete Kawasaki criteria, depending on their lab results and/or a finding of coronary artery dilatation (Table 1); or develop a toxic shock syndrome-like picture (47%-76%).<sup>15-17</sup>

Long-term outcome data for these patients are limited, and any cardiac or coronary artery consequences will require further studies and analysis over the next months and years. A review of patients hospitalized for MIS-C in the United Kingdom noted 50% of admitted patients required admission to the pediatric critical care unit, with nearly half requiring mechanical ventilation (43%) or inotropic support (47%). A small number of those patients required extracorporeal membrane oxygenation (5%).<sup>15</sup> In New York cohorts, those who required mechanical ventilation were primarily intubated for hemodynamic instability, not respiratory concerns.<sup>13,19</sup> The mean hospital floor stay according to case series in New York City was approximately 4 to 7.1 days.<sup>13,15</sup> Overall fatality rate was very low in a number of published case series (0-2%).<sup>15-17</sup>

While both COVID-19 and MIS-C are still novel processes, frontline clinicians can be reassured that these are relatively rare conditions in the pediatric population.

Children who do require hospitalization can be identified through careful history-taking, examination, and informed lab work. Very ill children can be quickly identified by abnormal vital signs. Pending transfer, initial management should focus on initiation of antipyretics and fluid resuscitation in the urgent care setting.

### Case Resolution 1

This patient meets criteria for classic Kawasaki disease. Given her exposure to SARS-CoV-2 four weeks ago, this presentation is most consistent with MIS-C. Your patient is clinically stable with normal vital signs so she is transferred non-emergently to a nearby pediatric referral center where her lab evaluation reveals a WBC of 19, with a pronounced lymphopenia, CRP of 460 mg/L, ferritin 2071 ng/mL, troponin 13 ng/mL (normal 0.0 - 0.10 ng/mL) and pro-BNP 1958 pg/mL (normal <125 pg/mL). She is diagnosed with MIS-C and admitted to the hospital where she receives IVIG therapy and recovers uneventfully.

### Case Resolution 2

This patient is acutely ill. Although he may appear well, he has tachycardia, tachypnea, and hypotension. You quickly identify this patient as being in shock likely caused by MIS-C. The patient receives a saline bolus and EMS is activated to transfer the patient to the closest hospital. In the ED, his blood pressure does not improve with continued fluid resuscitation. His labs reveal moderate acute kidney injury and significant elevation in all inflammatory markers and cardiac enzymes. His echocardiogram reveals mild dilatation of the coronary arteries and slight decreased function of the left ventricle. He is admitted to the PICU on a norepinephrine infusion with a diagnosis of cardiogenic and distributive shock. His COVID antibody test is IgG positive, demonstrating a recent infection. In the ICU, he receives IVIG, methylprednisolone, and low-dose aspirin as therapy for an ultimate diagnosis of MIS-C. His fever resolves within 24 hours post-IVIG administration, his blood pressure improves, and he is discharged home on hospital day 6 on low-dose aspirin and with outpatient cardiology follow-up. ■

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### Pearls for the Urgent Care Provider

- Consider MIS-C evaluation for any pediatric patient with exposure to SARS-CoV-2 within the last 2-5 weeks and 4 days of fever (temp>38.0°C) without another identifiable source, especially when accompanied by either *GI symptoms, rash, neurologic symptoms, conjunctivitis, or skin desquamation*.
- A baseline evaluation should start with a thorough physical examination, vital signs (including blood pressure recording), and when feasible a complete blood count (CBC), a C-reactive protein (CRP), an erythrocyte sedimentation rate (ESR) and a complete metabolic panel (CMP).
- Children with MIS-C can develop cardiogenic shock and decompensate rapidly so it is important to identify and refer these patients to an ED.

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# The Hazards of Independent Contractor/Employee Misclassification

**Urgent message:** There are serious and costly consequences for misclassifying employees as independent contractors, even if the employee requests or agrees to do so.

ALAN A. AYERS, MBA, MAcc

With COVID-19 fears or childcare issues requiring more people to consider home-based employment—and with many companies already conditioned to having employees working remotely—circumstances may arise in which executive or administrative personnel seek job flexibility beyond what’s currently offered to employees by converting these positions to off-site “independent contractor” status.

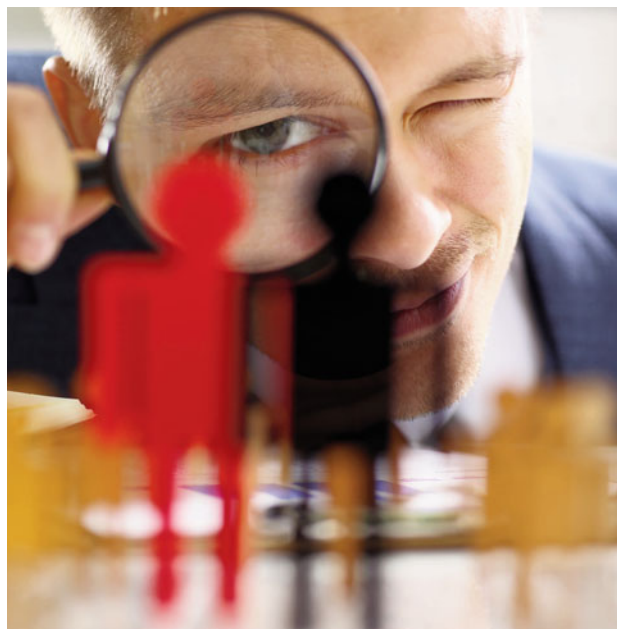
Of course, there is no way that this would be feasible with clinic-based or frontline urgent care personnel—such as receptionists, physicians, nurse practitioners, x-ray technicians, and medical assistants—whose positions require them to be physically present at a site of care. However, an urgent care operator might consider remote workers in areas like billing and accounting, human resources, IT, and other administrative support functions that don’t interact with the public (but do interact with other employees).

This article will look at what constitutes an independent contractor vs an employee, as well as the issues of reclassifying an employee to an independent contractor.

## What’s the Difference Between an Employee and an Independent Contractor?

As early as 1941, the term “independent contractor” was used to describe a person who did work for an employer but wasn’t an employee.<sup>1,2</sup>

For example, courts in the Fifth Circuit use “the economic reality test” to determine whether there’s an employer/employee relationship.<sup>3,4</sup> Courts applying this test consider “whether the putative employer: (1) pos-



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sessed the power to hire and fire the employees; (2) supervised and controlled employee work schedules or conditions of employment; (3) determined the rate and method of payment; and (4) maintained employment records.”<sup>5-7</sup>

Courts have noted that neither the subjective intent of the worker and employer nor the label they use to describe their relationship is determinative on the issue of whether the worker is an employee or an independent contractor.<sup>8,9</sup>

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

Employees are typically much more expensive for employers than independent contractors. The employer is required to withhold federal income tax and FICA taxes on the employee's wages, as well as pay the employer's share of FICA taxes and the FUTA tax, state taxes, and workers compensation premiums. Further, employees may be entitled to unpaid family leave under federal law, health insurance under the Affordable Care Act, and the protection of a numerous discrimination laws. There also may be other state law protections. For example, 13 states and the District of Columbia have enacted laws to require paid sick leave.<sup>10</sup>

*“In addition to penalties imposed by the federal government, states have enacted legislation under which they may pose additional penalties on employers who misclassify employees as independent contractors.”*

These benefits and protections don't apply to independent contractors. As such, there's a strong financial motivation for employers to prefer them. However, that savings is weighed against employer control, employee loyalty, and workforce stability.

The primary reason that employers misclassify employees is indeed money. An employer can eliminate a number of expenses by classifying a worker as an independent contractor instead of an employee. These include the employer's share of Social Security and Medicare taxes; overtime pay; employee benefits, including vacation, holiday, and sick pay; unemployment compensation tax; and workers compensation insurance.<sup>11</sup>

That said, there are severe penalties for misclassifying workers as independent contractors.<sup>12,13</sup>

### **What are the Consequences of Misclassifying a Worker?**

State and federal governments take the issue of misclassification very seriously. There are adverse implications for misclassifying a worker as an independent contractor. The threshold question is whether the misclassification was intentional or not.

#### *Unintentional misclassification*

If the misclassification was unintentional, the employer

is subject to, at a minimum, the following penalties, based on the fact that all payments to misclassified independent contractors have been reclassified as wages:

- \$50 for each Form W-2 that the employer failed to file because of classifying workers as an independent contractor
- Because the employer did not withhold income taxes, it faces penalties of 1.5% of the wages, plus 40% of the FICA taxes (Social Security and Medicare) that weren't withheld from the employee, along with 100% of the matching FICA taxes the employer should have paid
- A Failure to Pay Taxes penalty that's equal to 0.5% of the unpaid tax liability for each month up to 25% of the total tax liability<sup>11</sup>

#### *Intentional misclassification*

If the Internal Revenue Service suspects fraud or intentional misconduct, the agency can impose additional fines and penalties.

For example, the employer may be subject to penalties of 20% of all of the wages paid, plus 100% of the FICA taxes, both the employee's and the employer's share.<sup>14</sup>

In addition, there are criminal penalties of up to \$1,000 per misclassified worker and 1 year in prison that can also be imposed. The individual responsible for withholding taxes could also be held *personally* liable for any uncollected tax.<sup>14</sup>

States are also enacting their own penalties for misclassification. For example, as of July 1, 2020 Virginia law prohibits employers from entering into, enforcing, or threatening to enforce a covenant not to compete with so-called “low wage” employees. This includes, *inter alia*, independent contractors who are paid at an hourly rate less than the median hourly wage for the Commonwealth.<sup>15</sup> In addition, the new statute permits an individual who has not been properly classified as an employee to bring a civil action for damages against the employer if it had knowledge of the individual's misclassification.<sup>15,16</sup>

Likewise, in 2019, California Governor Gavin Newsom signed a new law that imposes a tighter standard for classifying a worker as an independent contractor. This new standard is named “the Dynamex standard,” which codifies and expands a 2018 California Supreme Court decision.<sup>17</sup> The new test, like that of Virginia, presumptively considers all workers to be employees, and allows workers to be classified as independent contractors only if the employer demonstrates that the worker

satisfies each of three conditions:

1. that the worker is free from the control and direction of the hirer in connection with the performance of the work, both under the contract for the performance of the work and in fact
2. that the worker performs work that is outside the usual course of the hiring entity's business
3. that the worker is customarily engaged in an independently established trade, occupation, or business of the same nature as that involved in the work performed<sup>17</sup>

As a result of the new statute and the *Dynamex* standard, many workers in the state will now be classified as employees rather than as independent contractors.<sup>17</sup>

This increased scrutiny from government agencies—such as the IRS, the Department of Labor, and state employment and taxation departments—and a more frequent use of independent contractors has resulted in an increased risk of an audit for worker misclassification.<sup>18</sup> Some common audit triggers include:

- An independent contractor filing a compensation or disability claim
- An independent contractor filing for unemployment compensation
- An employee whistleblower reporting misclassification
- An individual who is under dual classification<sup>19</sup>

### Takeaway

A 2009 study by the Treasury Inspector General estimated that misclassification costs the United States \$54 billion in underpayment of employment taxes and \$15 billion in unpaid FICA and unemployment taxes annually.<sup>20</sup>

Make certain that your urgent care operation has classified its workers correctly—or face significant penalties. ■

(For additional information and context regarding this subject, see *Which Way to Go: The Pros and Cons of 1099 vs W-2 Income for Urgent Care Physicians*, available at: <https://www.jucm.com/which-way-to-go-the-pros-and-cons-of-1099-vs-w-2-income-for-urgent-care-physicians/>.)

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### Take-Home Points

- Urgent care operators may opt to work with independent contractors in order to save money on their share of Social Security and Medicare taxes, potential overtime pay, employee benefits (eg, paid vacation, holidays, and sick days), unemployment tax, and workers comp insurance. Possible drawbacks include having less control over the worker's time, a less stable workforce, and less loyalty.
- Penalties for misclassifying a worker as an independent contractor can be severe, depending on whether the misclassification is deemed to have been intentional or unintentional.
  - Unintentional misclassification may be punishable:
    - by a \$50 fee for each Form W-2 the employer failed to file
    - by having to pay 1.5% of wages, plus 40% of FICA taxes that would have been withheld from the employee's paycheck, plus 100% of the FICA taxes the employer should have paid had the worker been properly classified
    - by having to pay a "Failure to Pay Taxes" penalty equal to 0.5% of the unpaid tax liability for each month, up to 25% of the total tax liability
  - Intentional misclassification may be punishable:
    - by a penalty of 20% of all of the wages paid, plus 100% of the FICA taxes, both the employee's and the employer's share
    - by criminal penalties of up to \$1,000 per misclassified worker and 1 year in prison that can also be imposed
    - the individual responsible for withholding taxes could also be held personally liable for any uncollected tax

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# High Prevalence of Asymptomatic COVID-19 in the Pediatric Population

**Urgent message:** As understanding of COVID-19 in the pediatric age group evolves, it has come to light that children may contract the virus, yet be asymptomatic, more commonly than we initially believed. We have found a high prevalence of asymptomatic pediatric patients testing positive for COVID-19 in our urgent care clinics in the NY metro region.

KATHARINE MIAO, MD; FRANK ILLUZZI, MD; and ALEXANDER C. HWANG

Citation: Miao K, Illuzzi F, Hwang AC. High prevalence of asymptomatic COVID-19 in the pediatric population. *J Urgent Care Med.* 2020;15(1):21-23.

## Importance

SARS-CoV-2 is the novel virus that causes COVID-19. After first being identified in China in December 2019, this disease has erupted into a global pandemic. In an effort to slow down the progression of the disease, many countries have either closed schools or moved toward remote learning.

According to data gathered from Johns Hopkins University and the World Health Organization, the United States bears the burden of nearly 25% of the worldwide infections while local governments, school districts, educators, and parents are attempting to make decisions regarding education in the fall of 2020.

As social distancing will undoubtedly be difficult to achieve in a traditional school setting, many are considering the idea of universal masking to prevent spread of the virus. Some believe that only schoolteachers, staff and older children need to wear masks, as younger children are less likely to contract or transmit this virus. We suggest that a greater understanding of the prevalence of asymptomatic carriers of COVID-19 in children up to age 17 would be helpful to parents, school administrators, and public health officials to make better informed



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decisions regarding the coming school year.

## Objective

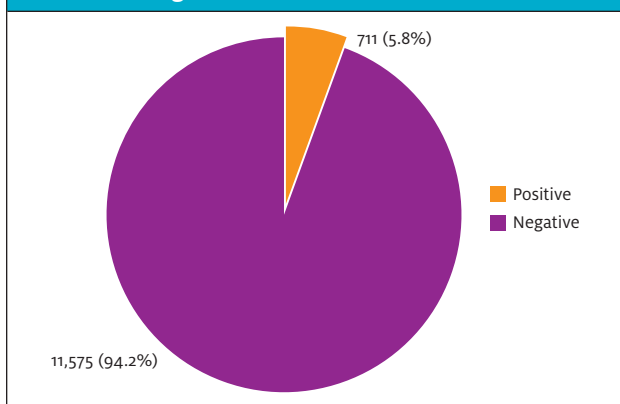
To determine the rate of asymptomatic carrier status in the pediatric population presenting to a large chain of urgent care clinics during the early weeks of the outbreak in the metro New York City area in Spring 2020.

## Data Source

Testing data from CityMD, which operates 125 locations in the metro New York City area.

Author affiliations: Katharine Miao, MD, SummitCityMD; Frank Illuzzi MD, Summit CityMD; Alexander C. Hwang, SummitCityMD. The authors have no relevant financial relationships with any commercial interests.

**Figure 1. Results of COVID-19 Testing on Pediatric Patients During the NY Metro Outbreak**



**Study Selection**

This was a retrospective observational study using anonymized chart review of a pediatric population.

**Methods**

CityMD obtained 367,912 COVID-19 PCR test results from March 9, 2020 to June 22, 2020. Of those tested, 12,286 were between 0 and 17 years of age. All patients were accompanied by a guardian who requested a COVID-19 test at the time of visit. Patients were examined by a clinician wearing an N95 and appropriate personal protective equipment (PPE). Tests were obtained from nasopharyngeal swab specimens, transported in VCM (UTM) medium (green-top) tube, for SARS-CoV-2 RNA (COVID-19), Qualitative NAAT testing. All specimens were submitted to commercial laboratories for processing.

Of the 12,286 tests run in this age cohort, 711 were positive. The positive PCR results were then sorted by age by the in-house data analytics team and stratified

by ICD code. Anonymized charts were then validated to assess for any reports of symptoms which would suggest COVID-19-related illness. As this was a retrospective analysis on anonymized data, an IRB waiver was obtained from Solutions IRB.

**Main Outcome and Measures**

The primary finding revealed that 48.1% of the pediatric patients testing positive for COVID-19 at CityMD clinics during the study period were completely asymptomatic.

**Results**

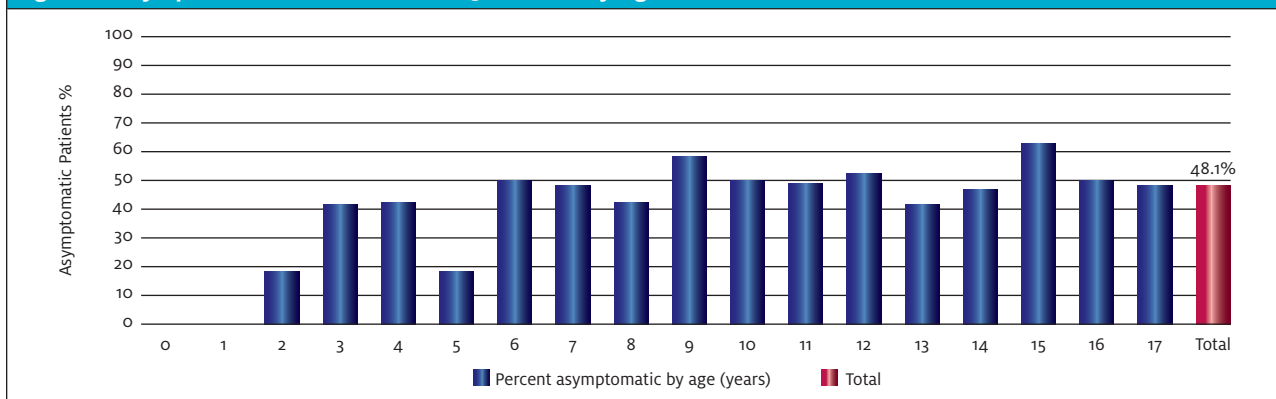
Out of 12,286 patients, there were 711 patients who tested positive for COVID-19. The pediatric positivity rate was 5.8%, compared with a 10.2% positivity rate for the overall population tested at CityMD clinics during the same study period. Among the pediatric patients who were COVID-19 positive, the proportion of asymptomatic carriers was 48.1%, ranging from a low of 0% in the 0-1 age cohort to a high of 63.8% in the 15-year-old age group.

**Conclusion and Relevance**

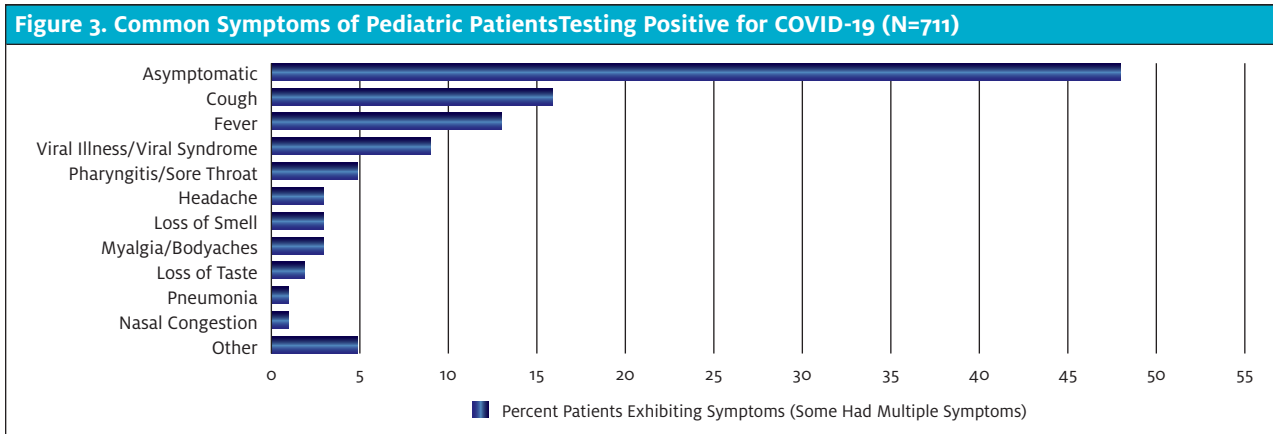
This study was a retrospective analysis and chart review on a cohort of PCR-positive pediatric patients during the peak and the period immediately following the COVID-19 initial outbreak in the metro New York City region. Schools in the New York City suburbs began shutting down on March 8, and the New York City schools closed a week later. Thus, the examined testing period was almost completely during a period of school closure.

Testing for COVID-19 via PCR was initially very limited, due to supply shortages and strict criteria limiting the number of tests performed at the beginning of the outbreak. This circumstance led naturally to a selection bias of those who were ill enough to seek care

**Figure 2. Asymptomatic Pediatric COVID-19 Patients by Age**







and warrant testing. As commercial testing became more available in late April and May 2020, more people were able to obtain tests, and the positivity rate decreased correspondingly. Financial barriers to testing were minimized as there were no copays or deductibles charged to anyone seeking testing, and uninsured patients were tested at no cost to them. Relatively few infants were tested, possibly due to the hesitancy of parents to bring infants to a doctor's office during a pandemic, and/or parents utilizing other options for the care of their infants.

Our findings indicate that the pediatric patients had a lower positivity rate (5.8%) than the overall population (10.2%; see **Figure 1**)

There have been extensive discussions in the scientific community as to whether age-related factors may render children less susceptible to SARS-CoV-2 than adults.<sup>1</sup> However, the lower positivity rate may be due in part to school closures and stricter social distancing for children. We believe there is an urgent need to study further transmissibility of subclinical infections among children.

The proportion of asymptomatic patients was generally consistent across all pediatric age groups. For instance, the 3- and 4-year old age groups had an asymptomatic rate of 41.7% and 43.8%, respectively, which closely mirrors the overall asymptomatic rate of 48.1%. (**Figure 2**). Very young children (0-2 age cohort) exhibited a much lower asymptomatic rate, ranging from 0 to 16.7%, but we believe this may be due to selection bias, as parents may be more likely to bring in a sick infant than a well infant for testing.

The most common symptoms and diagnosis of cough, fever, and viral illness were consistent through all age groups (**Figure 3**). There is a possibility of recall

bias in which parents and children under-report symptoms and/or symptoms are not recorded. Of note, some of the symptoms reported in positive patients were as mild as nasal congestion and are unlikely to warrant much concern in the absence of COVID-19. Loss of smell and loss of taste were also more commonly exhibited among teenagers, and we suspect young children may not be able to articulate such symptoms. This suggests that parents may face practical challenges in determining if their young child is exhibiting symptoms of SARS-CoV-2 before heading to school.

The CDC has noted there is evidence to support transmission in asymptomatic and presymptomatic people.<sup>2,3</sup> Given that our data support that 48.1% of children who contract SARS-CoV-2 are asymptomatic, and transmission rates among children as well as from children to adults are currently unclear, it appears that mitigation strategies targeted at identifying and isolating patients based on symptoms (temperature screening, questionnaires, etc.) may be insufficient to curtail outbreaks. Parents and educators cannot rely solely on exhibition of clinical symptoms (fever, cough, etc.) to determine if children are COVID-free before allowing them to participate in in-person learning at school. More comprehensive strategies such as universal masking, strict social distancing, and batch testing may need to be implemented in order to maintain a safer in-school experience for children and staff. ■

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# Preparedness for Emergencies in Pediatric Urgent Care Settings

**Urgent message:** While standards for pediatric emergency care have been defined for outpatient offices and emergency departments, guidelines have not been published for urgent care centers. This study assesses the presence of equipment, supplies, and medications necessary to manage emergencies in pediatric urgent care centers.

AMANDA MONTALBANO, MD, MPH, FAAP and BRIAN LEE, PhD

*Results from this project were presented in poster format at the Pediatric Urgent Care Conference in Orlando, FL in 2018. No funding was received for this project.*

Citation: Montalbano A, Lee B. Preparedness for emergencies in pediatric urgent care settings. *J Urgent Care Med.* 2020;15(1):24-27.

## Introduction

Preparedness standards for pediatric emergencies have been established for the emergency department and outpatient offices.<sup>1,2</sup> General emergency department preparedness for pediatric emergencies is actively monitored by the National Emergency Medicine Services for Children.<sup>3</sup> While a national assessment of urgent care centers' preparedness for pediatric emergencies suggested an essential equipment, supplies, and medication list based on outpatient offices,<sup>4</sup> there is no national governing body or consensus of what equipment, supplies, and medications are necessary in an urgent care setting.

This project aimed to establish what the current inventory of equipment, supplies, and medications in *specialized pediatric* urgent care centers is across the United States. This information would then be used to inform policy on what essential and suggested equipment, supplies, and medications should be expected in case of pediatric emergency at these sites, with recommendations ultimately shared with the general urgent care community to provide guidance; educate referring and receiving sites of the capabilities of pediatric urgent



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care clinics; and guide triage to the appropriate level of pediatric care.

## Methods

The Organization for Urgent Care Health (OUCH) conducts a national annual survey of specialized freestanding pediatric urgent care centers. This survey is sponsored by both the American Academic of Pediatrics Section of Urgent Care Medicine and the Society of Pediatric Urgent Care to support building a database of administrative, operational, and clinical metrics for pediatric urgent care centers. The OUCH survey distributed in December 2017 contained an addendum to collect information about the equipment, supplies, and

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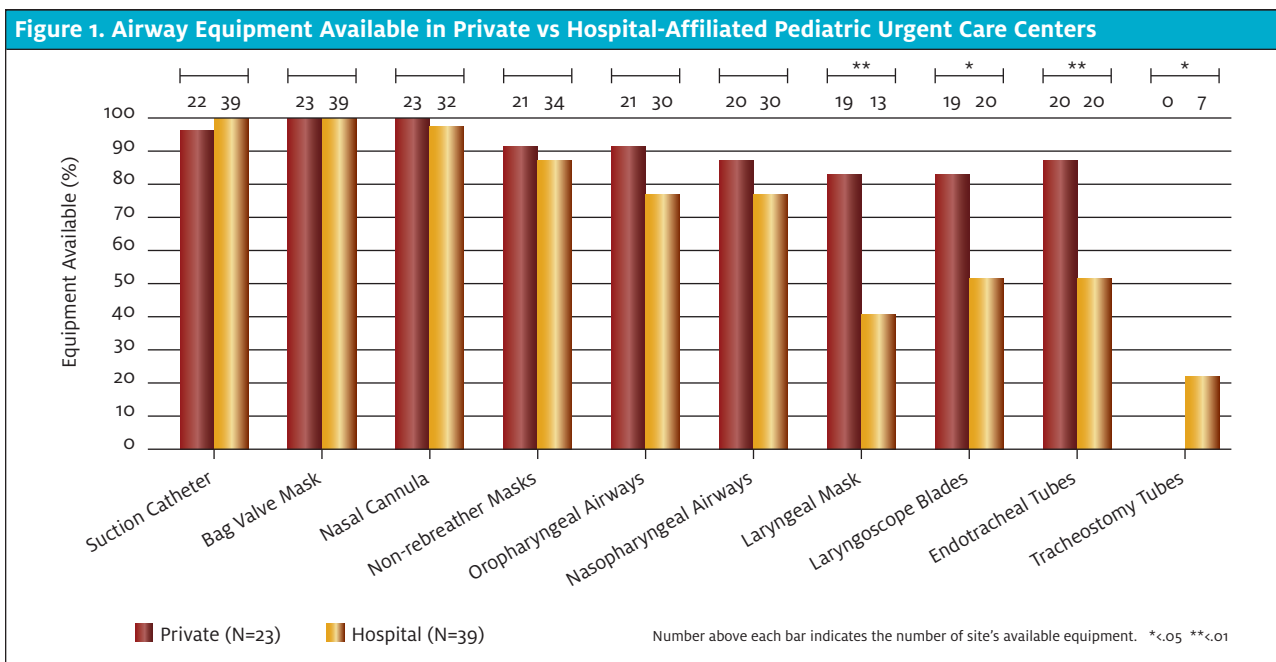
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medications on hand for emergencies at the responding site. The emergency preparedness addendum was adapted with permission from the National Emergency Medicine Services for Children data collection survey of general emergency departments.

This OUCH survey was distributed via email and postal mail to 109 pediatric urgent care centers (estimated to represent about one-third of all freestanding pediatric urgent care sites in the nation). Each invited urgent care center received a color-coded length-based pediatric measurement tape for emergencies in advance of their participation. Data were collected and managed via REDCap, hosted at Children’s Mercy Kansas City.<sup>5</sup> Frequencies and percentages are reported and calculated using Microsoft Excel 2013. Comparison of groups was completed using Fischer’s Exact test with p-value threshold  $<0.05$  (StataCorp. 2017, *Stata Statistical Software: Release 15*. College Station, TX). The project was deemed non-human subjects research by the Institutional Review Board at Children’s Mercy Kansas City.

**Results**

Of the 109 invited pediatric urgent care sites, 67 responded to the OUCH survey (61% response rate). Of the 67 freestanding pediatric urgent care site respondents, 62 (93%) completed the Emergency Preparedness addendum. Respondents included 17 different institutions across 16 states. Almost two-thirds were hospital affiliated (62%),

37% were private organizations, and 1% were part of a managed care organization (which were grouped with “hospital-affiliated”).

*Equipment*

Airway equipment (ie, bag-valve mask required to deliver basic life support) was unanimously present in both hospital-affiliated and private institutions (Figure 1). Ability to perform suction (presence of any size suction catheter) and nasal cannula were almost always present (99%); however, non-rebreather mask was present less than 90% in both care settings. The ability to maintain airway patency with either an oropharyngeal (77% vs 91%;  $p=.187$ ) or nasopharyngeal airway (77% vs 87%;  $p=.508$ ) in hospital or private settings, respectively, did not differ significantly. However, presence of laryngeal mask airway (41% in hospital settings vs 83% in private settings;  $p=.002$ ), endotracheal tube (51% vs 87%  $p=.006$ ), and ability to place advanced airways (any laryngoscope blade [51% vs 83%;  $p=.016$ ]) differed significantly between hospital and private settings. Ability to change out a tracheostomy was not common (0% hospital-affiliated, 22% private settings;  $p=.034$ ).

*Supplies*

While 100% of all respondents have supplies on hand to splint extremities or apply sterile dressings for injuries, only 95% had cervical collars available for potential

Table 1. Medications Available in Pediatric Urgent Care Centers					
Antibiotics		Intubation		Miscellaneous	
Ceftriaxone	87%	Midazolam	81%	Dexamethasone	100%
Ampicillin	24%	Fentanyl	60%	Diphenhydramine	98%
Gentamicin	15%	Diazepam	40%	Epinephrine (1:1000)	98%
Cefotaxime	7%	Lorazepam	27%	Albuterol	89%
Vancomycin	3%	Etomidate	2%	Racemic epinephrine	89%
		Ketamine	2%	(Methyl)prednisone	88%
<b>Antiepileptics</b>		Succinylcholine	2%	Naloxone	76%
Fosphenytoin	13%	Rocuronium	0%	Atropine	74%
Levetiracetam	2%	Propofol	0%	Sodium bicarbonate	68%
Phenytoin	0%			25% dextrose	68%
				Activated charcoal	50%
<b>IV Solutions</b>				Magnesium	13%
Normal saline	80%				
Lactated ringer	23%				

spinal cord injuries. Glucometers were present in 88% of facilities. Only 84% had a small interosseous needle present to deliver resuscitative fluids or vasoactive medications in case of a code event. Just over half (54%) had a cardiorespiratory monitor. While only 34% had a defibrillator with cardioversion; 87% had an automated external defibrillator (not mutually exclusive categories). Quick reference guides like a Pediatric Advanced Life Support card (92%) and pediatric weight/length-based dosing tape (89%) were not unanimously present.

*Medications*

The medications available in the respondent pediatric urgent care sites varied (Table 1). Ceftriaxone was the most common antibiotic available (87%). Antiepileptics (phenytoin [0%], fosphenytoin [13%], and levetiracetam [2%]) were uncommon; however, sedative medications that can also be used as an anticonvulsant (midazolam 81%; diazepam 40%, and lorazepam 27%) were sometimes present. Opioid antagonist medication, naloxone, was available in three-quarters (76%) of pediatric urgent cares. While 40 sites (60%) had airway equipment to place an advanced airway, paralytic intubation medications were rarely present (succinylcholine 2%, rocuronium 0%). Inhaled respiratory medications (albuterol and racemic epinephrine) were present in 89% of sites. The most common medications on hand were dexamethasone (100%), diphenhydramine (98%), and epinephrine (1:1000) (98%).

**Discussion**

Pediatric emergencies can happen in any care setting, and while every office or clinic would ideally be able to diagnose, treat, and manage those emergencies there are competing priorities of cost, quality, and appropriate scope of care. However, scared families may present to the closest available site that is the most convenient, cost-effective, and efficient. The triage of patients to convenient care sites in turn places the onus on the health-care facility to be prepared for a variety of not only illness and injury, but also acuity. Equipment, supplies, and medications for at least the most common pediatric illnesses and injuries should be available at all pediatric urgent care locations.

Studies have shown pediatric airway emergencies initially treated and managed in the non-intensive care setting have decreased success with first intubation attempt and led to poorer clinical outcomes.<sup>6</sup> With private sites having increased ability to place advanced airways, it may be reasonable to assume that the providers at those sites (operating outside a hospital affiliation) have advanced training such as in pediatric emergency medicine or critical care experience.<sup>7</sup> While advanced airway placement abilities may be variable, freestanding sites should have the capability to deliver basic life-saving protocols and every facility should have a bag-valve mask available with infant, pediatric, and adult masks. Whereas almost all sites had nasal cannulas available to deliver oxygen, this modality is more appropriate in



titrating to room air or long-term oxygen delivery at low levels. In an emergency situation, the use of a non-rebreather would be a more appropriate delivery model; yet, this was not as common to have on hand.

As respiratory distress, psychiatric emergencies, and seizures are the most common causes of pediatric emergencies in the outpatient setting,<sup>8</sup> it is also concerning that certain medications were not stocked in all facilities. Beyond the respiratory support equipment like bag-valve masks, inhaled medications like albuterol and racemic epinephrine should be readily available. Another important class of medications not always present was antiepileptics. For children who present in status epilepticus, pediatric urgent care should be able to provide airway clearance, assisted respirations, diagnostic equipment such as a glucometer, and antiepileptic medications.

Beyond the most common presentations of pediatric emergencies, those that are immediately life-threatening if not identified and treated should also be taken into consideration as a high-priority. This study showed most pediatric urgent cares were prepared to treat anaphylaxis as epinephrine, steroids, and antihistamines were almost always on hand. The route of administration was not collected; therefore, it is unknown if all three medications would be able to be given in a non-oral route if the patient were not able to safely swallow.

One barrier to maintaining equipment, supplies, and medications for emergency situations is the limited shelf-life and regulations to keep the items stocked and in working order. Urgent cares frequently operate on a slim financial margin and costly equipment, supplies, and medications that will only be used in rare emergency situations may be a barrier to having them required to be on-site. Solutions to maintain in-date stock of all emergency-use medications, especially for those sites not affiliated with a hospital, need to be explored.

### Adult emergencies

While pediatric emergencies would likely be the most common emergency situations managed in a specialized pediatric urgent care center, any pediatric healthcare facility would be remiss to not be prepared to deliver basic life-saving measures to an adult.<sup>9,10</sup> Commonly reported adult emergency presentations in the pediatric setting include various injuries, cardiac events, and syncope.<sup>10,11</sup> Overdose is a concern in both pediatric and adult patients and just over three-quarters of pediatric urgent cares had naloxone on-hand. It would be advisable, even in a pediatric care facility, to have essential equipment, supplies, and medications on hand for adult emergencies including

adult-sized respiratory masks, cervical collars, automated electronic defibrillator, epinephrine, and naloxone. Established relationships with emergency medical transport services and referring facilities for both adult and pediatric patients should also be in place.<sup>12</sup>

### Limitations

This was the first national survey of emergency readiness in the pediatric urgent care setting. The data here are not representative of “fast-track” zones in an emergency room, urgent care clinics co-located with an emergency department, or after-hours clinics of a pediatric primary care office. The sample size was only 62 centers; however, there was reasonable geographic variability and institution representation of both private and hospital-affiliated sites. The data reflect significant variation in pediatric emergency equipment, supplies, and medications in specialized urgent care centers at the time of the study, which may be in part to the variation in scope of care; however, the young field of pediatric urgent care has matured and become more homogenous in scope of care in the years since.

### Conclusion

OUCH has highlighted the need to standardize scope and standards for pediatric urgent care centers. This data collection was an important step in order to provide an understanding of the scope of care available in specialized pediatric urgent care centers. Moving forward, more efforts to establish emergency preparedness standards and staff training requirements, and to define safe pediatric urgent care, are needed. ■

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# ABSTRACTS IN URGENT CARE

- Ethnic Background Matters in ECG Evaluation
- Lean on Risk Stratification Tools in Chest Pain
- Lasting Effects of Headache in Children
- Trauma and Childhood Migraine
- Comparing 'Fixes' for Distal Radial Fractures in Adolescents
- Casting Options in Distal Radius Fractures in the Elderly

■ AVIJIT BARAI, MBBS, MRCS, MSc (CRITICAL CARE), PgCertCPU, FRNZCUC

## Ethnicity and STEMI Criteria of ECG

**Key point:** The ethnic background of patients should be considered during ECG evaluation of ST-segment-elevation myocardial infarction (STEMI).

**Citation:** ter Haar CC, Kors JA, Peters RJ, et al. Prevalence of ECGs exceeding thresholds for ST-segment-elevation myocardial infarction in apparently healthy individuals: the role of ethnicity. *J Am Heart Assoc.* 2020;9(13):e015477.

**Relevance:** ECG is a simple, noninvasive investigation tool in urgent care centers. Further studies such as echocardiogram and troponin are not usually immediately available in this setting when considering the possibility of STEMI. The current guidelines in the diagnosis and management of STEMI are based mostly on patients of Western European descent. This current study found that there is widespread variation of STEMI criteria in the ECG based on the ethnic background of patients who are not of Western European descent, resulting in clinically relevant under and over-diagnosis of STEMI cases.

**Study summary:** This study reflected 10,783 apparently healthy individuals in the HELIUS (Healthy Life in an Urban Setting) study which was conducted in Amsterdam, the Netherlands. HELIUS is a multiethnic cohort study which included six different ethnic populations (African Surinamese, South Asian Surinamese, Dutch, Moroccan, Turkish, and Ghanaian). The American Heart Association and European Society of Cardiology guidelines were used for the evaluation of ST-segment elevation in the ECG. The study revealed that the application of the AHA and ECS guidelines for STEMI resulted in higher (sub-Saharan African people) and lower (Turkish women) diagnoses

of STEMI among these respective patient populations. The authors suggested careful consideration of the demographic and patient characteristics prior to evaluating the ECG for the diagnosis and management of STEMI. ■

## Unrecognized Myocardial Infarction and Gender Variation

**Key point:** It is more common for women than it is for men to have myocardial infarction without clinical symptoms.

**Citation:** van der Ende MY, Juarez Orozco LE, Waardenburg I, et al. Sex-based differences in unrecognized myocardial infarction. *J Am Heart Assoc.* 2020;9(13):e015519.

**Relevance:** Management of chest pain can be challenging, especially in the urgent care settings with limited access to prompt troponin testing and the cardiology services. A careful consideration of at-risk groups and thorough evaluation of risk-stratification tools may be useful in clinical practice (eg, the HEART score).

**Study summary:** The study was based on the database of the Lifeline Cohort study which was conducted in the Netherlands among 97,203 people for a duration of 5 years. Initial review of participants included physical examination and ECG evaluation. A subsequent assessment of the patients included repeat ECG and cardiac biomarkers. The ECGs were reviewed electronically with designated software and experienced cardiologists. Unrecognized MI was defined as occurring in patients who did not have any features of MI during their initial evaluation and developed ECG features of MI during the subsequent visits without having typical clinical features, such as chest pain. The study showed that the women (30%) had higher incidence of unrecognized MI than men (16%),  $p < 0.001$ . ■



**Avijit Barai, MBBS, MRCS, MSc (Critical Care), PgCertCPU, FRNZCUC** practices emergency medicine in New Zealand. He has special interests in urgent care medicine, emergency medicine, critical care, traumatology, point of care ultrasound (POCUS) and medical education.

## Childhood Headache and Behavioral Health Considerations

**Key point:** There is a significant association among headache, depression, and anxiety among children.

**Citation:** Romano C, Cho SY, Marino S, et al. Primary headache in childhood associated with psychiatric disturbances: an update. *Eur Rev Med Pharmacol Sci.* 2020;24(12):6893-6898.

**Relevance:** Headache in children is a common presentation to urgent care centers. Exploring the association of this common condition with underlying mental conditions may be a useful tool in the management of such cases.

**Study summary:** This is a case-control study which was conducted in Italy between 2011 and 2019. The case group consisted of 475 children with history of primary headache while the control group was comprised of 475 children of identical demographic characteristics with no headache. The study revealed that anxiety and depression had statistically significantly higher prevalence among children with headache than those without headache (27% vs 8.3%, respectively,  $p < 0.001$ ). ■

### Migraine: Could Childhood Trauma Be the Cause?

**Key points:** Childhood trauma has various effects on the patients' physical, mental, and emotional well-being. This study showed that there is a high association between childhood trauma and migraine.

**Citation:** Kascakova N, Furstova J, Hasto J, et al. When a head is about to burst: attachment mediates the relationship between childhood trauma and migraine. *Int J Environ Res Public Health.* 2020;17(2):414.

**Relevance:** Migraine headaches are common reasons for patients to seek care in urgent care centers. A careful history of childhood trauma may help the urgent care clinicians in the identification and management of migraine.

**Study summary:** This was a questionnaire-based survey among 1,800 people that was conducted in 2016 in 14 different geographical areas of the Czech Republic. A validated Childhood Trauma Questionnaire (CTQ) was used to stratify the risk and association of childhood trauma with migraine. The definition of *childhood trauma* included physical abuse, emotional abuse, neglect, and sexual abuse. The authors found a significant direct association between childhood trauma and migraine headache in adulthood (standardized parameter estimates= 0.101, standard error= 0.039,  $p = 0.010$ ). ■

### Management of Distal Radius Fractures Among Adolescents

**Key points:** Different techniques are applied in the management of distal radius fractures among adolescents. When initial conservative management fails, operative management may

be necessary. This study examines the differences between two operative methods.

**Citation:** Li J, Rai S, Tang X, et al. Fixation of delayed distal radial fracture involving metaphyseal diaphyseal junction in adolescents: a comparative study of crossed Kirschner-wiring and non-bridging external fixator. *BMC Musculoskeletal Disorders.* 2020;21(1):1-8.

**Relevance:** Little is known about the long-term outcomes of distal radius fractures among adolescents following their initial management in urgent care. This study gives us some insights about the outcomes following the operative management of such patients.

**Study summary:** In this retrospective observational study, the authors examined adolescent patient outcomes following the operative management of distal radius fractures. The study was conducted in Wuhan, China between 2012 and 2017. The patients were divided into external fixator (EF,  $n = 146$ ) and k-wire (KW,  $n = 117$ ) groups and were followed for more than 12 months following the surgery. The study showed there were no statistically significant differences between the groups in terms of functional outcome ( $p = 0.086$ ). However, the authors suggested that the EF group has benefits over KW due to shorter duration of surgery, less tendon irritation, and better radiological outcome. ■



### Functional Outcome Following Distal Radius Fracture Manipulation in Elderly Patients

**Key points:** Different types of casts are applied following manipulation of distal radius fractures. The type of immobiliza-

tion device and position of the wrist in the cast can affect the functional outcome of distal radius fractures.

**Citation:** Raittio L, Launonen AP, Hevonkorpi T, et al. Two casting methods compared in patients with Colles' fracture: a pragmatic, randomized controlled trial. *PLoS one.* 2020;15(5): e0232153.

**Relevance:** There are various options in the management of distal radius fractures in elderly patients. Conservative management in the below-elbow cast following manipulation is a commonly practiced technique. The outcome of such cases depends on various factors including the type of cast and position of the wrist. The study explores the effect of the type of immobilization and position of the wrist on the functional outcome at 12 months.

**Study summary:** In this pragmatic, multicenter randomized controlled trial, the authors explored the functional outcomes

of distal radius fractures in 105 elderly patients following the conservative management in below-elbow casts. The patients were older than 65 years and were randomized into two groups: functional cast (FC, 0-10 dorsal angulation) and volar flexion and ulnar deviation cast (VFUDC). The RCT was conducted in three hospitals in Finland. The patients were followed up with the patient-reported wrist evaluation score (PRWE) and Quick-DASH scores at 12 months following the injury. The RCT revealed that there were no statistically significant differences between the two types of casts and position of the wrists. However, the FC showed relatively better outcome in terms of PRWE scores (15.5 vs 20.4,  $p=0.24$ ). The authors recommend FC following distal radius fractures due to its clinically significant better results, though it failed to achieve a statistical significance.

Initial splinting in a sugar tong splint in urgent care remains the standard of care for immediate management, but patients can be informed that they may be given a below-elbow cast when following up with an orthopedic specialist. ■

Spotlight on Original Research in Pediatric Urgent Care:

# Excerpts from the 2020 Pediatric Urgent Care Conference (PUCC)

Los Angeles, CA

■ DAVID J. MATHISON, MD, MBA

## Decreasing Length of Stay in the Pediatric Urgent Care with Electronic Discharge Instructions\*

Wooster J, Patel A, Nedved A, Lee B

The aim of this research was to determine if an electronic discharge process could decrease length of stay by an average of 10 minutes per patient. An electronic discharge procedure was implemented through a patient portal at a single freestanding

*“Non-fellowship-trained PUC physicians reported less preparation during residency for procedures such as fracture and joint reductions, regional and digital nerve blocks, and procedural sedation.”*

pediatric urgent care, eliminating the use of hard copy instructions. After implementation, a retrospective manual audit was performed for patients on the 14<sup>th</sup> and 28<sup>th</sup> day of each month from August 2018 to April 2019 and stratified length of stay (LOS) (total and bedded) by means of discharge. The mean total LOS was calculated each month for the depart process type and trends were smoothed by using a 3-month moving average. The LOS measures were compared to patient satisfaction scores



David J. Mathison, MD, MBA is Regional Medical Director, PM Pediatrics and Editor, Pediatrics for JUCM.

from the Patient Experience Survey (NRC) between the months of July 2017 and April 2019. Electronic discharge instructions decreased median LOS from 69 to 57 minutes for patients using the portal. The median LOS for patients receiving hard copy instructions was 66 minutes. The patient experience score increased from 72.3 to 78.4 with use of electronic instructions and a faster discharge. E-depart significantly decreases LOS and is associated with improved patient experience scores.

\*Selected as Best Poster Presentation ■

### Text Messaging as a Delivery Mode for Pediatric Urgent Care Patient Experience Surveys

Montalbano A, Taff K

The primary objective was to improve patient experience survey response rates by utilizing text messaging as a delivery mode. Since parents in the Millennial age group have been the primary respondents to urgent care surveys, the authors hypothesized that text messaging may result in greater survey response rates than have been seen on inpatient units. Three hospital-affiliated pediatric urgent care sites with over 90,000 patient encounters a year introduced texting as a survey delivery mode for 6 months starting July 1, 2019. Compared with the same time period in 2018, the overall response rate decreased in 2019 by 2.8% ( $p=0.003$ ); however, the drop-off rate decreased 11.4% ( $p<0.001$ ) and responses with qualitative comments increased by 9.7% ( $p=0.024$ ). While the introduction of text messaging as a mode for survey delivery did not significantly increase overall response rates in pediatric urgent care, participants that did respond were significantly more likely to complete the survey and provide more comments. Our study found that different modes of survey delivery may achieve different goals of generating patient experience feedback. ■

### Pediatric Urgent Care: Educational Needs of a Growing Field

Pattishall A, Weinberg E, Coco T, Figueroa J, McCracken C, DiStefano M, Jackson C

This study aimed to foster better understanding of how well pediatric urgent care (PUC) training programs prepare trainees to practice PUC, and how PUC providers subsequently obtain CME. One hundred sixty-three physicians completed a needs assessment survey. Those who reported spending more than 25% of their clinical time practicing PUC were included in the analysis.

Non-fellowship-trained PUC physicians reported less preparation during residency for procedures such as fracture and joint reductions, regional and digital nerve blocks, and procedural sedation. They also felt less prepared to handle cases in areas such as dental emergencies and trauma. Pediatric emer-

#### Other studies presented included:

- Learner Presence Does Not Impact Patient Experience Scores in Pediatric Urgent Care  
*Skoglund D*
- Engaging Employees When Time is Money  
*Koss K*
- Pain Assessment in Pediatric Urgent Care  
*Greevy A, Arndt M*
- Scribes – Writing Your Ticket to Success  
*Koss K*
- An Unusual Case of Chest Pain  
*Hebert M*
- Implementing a New EHR: One Company's Experience With a Focus on Productivity and End-User Satisfaction  
*Kelly EA, Rosenfeld J, DiMondo K, Toribio K, Raskas M*

gency medicine fellowship-trained physicians reported less preparation for fracture reductions and regional nerve blocks. While PUC physicians obtain CME through a variety of methods, less than 20% categorized the CME they were obtaining as “PUC-focused.” Few physicians were “very satisfied” with their ability to obtain CME specific to PUC.

These findings highlight gaps in training and educational opportunities for this growing group of practicing pediatricians.

### Fever Without a Source in Unvaccinated Children 3 to 36 Months—What Workup Is Recommended?

Finkel L, Jimenez CO, Byers M, Eilberg W

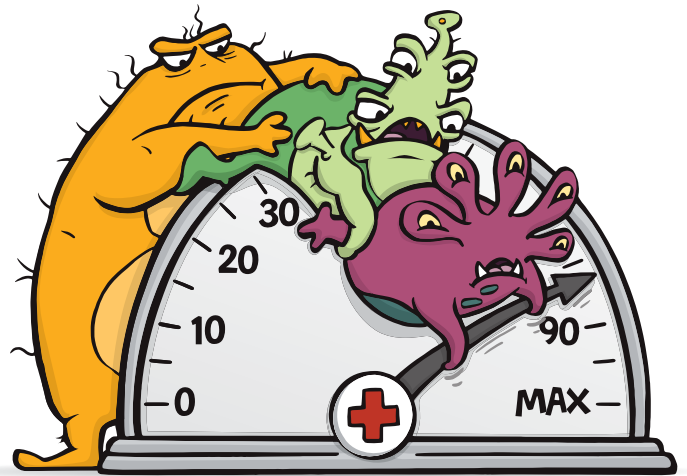
The purpose of this review was to examine the current medical literature for recommendations pertaining to the evaluation of febrile unvaccinated children 3 months to 36 months of age without a clear source of infection. While the widespread use of childhood vaccines for *H influenzae* type B (HIB) and *Streptococcus pneumoniae* (PCV7/13) has resulted in a decrease of occult bacteremia (OB) and serious bacterial infection (SBI) in these vaccinated children, there is not a standard of care for the evaluation and management in unvaccinated children who still benefit from herd immunity.

The authors found no studies specifically examining the rates of OB and SBI in unvaccinated children. Furthermore, no publications were found that provided recommendations for the evaluation of febrile unvaccinated children. At present, the rates of OB/SBI in febrile, well-appearing, unvaccinated children remains unknown.

Further studies are needed to better understand the risk for OB/SBI in unvaccinated children in the post pneumococcal vaccine era. ■

(For information about next year's conference, visit <https://www.pucconference.com>.)

# Take your urgent care to the max.



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## Improve Operational Efficiency

Each test takes just two minutes of hands-on time and one small sample to provide results in an hour. Streamlining your workflow with the BioFire RP EZ Panel has been shown to reduce appointment duration.<sup>2</sup>

## Prescribe the Right Treatment

Nearly 50% of all urgent care prescriptions are for antibiotics, despite most of these prescriptions being for acute respiratory conditions for which antibiotics are not recommended or effective.<sup>3</sup> Comprehensive results from the BioFire RP EZ Panel can help support antibiotic stewardship and have demonstrated an increase in the occurrence of appropriate treatment.<sup>2</sup>

## Reduce Costs of Unnecessary Tests

Pooled sensitivity of rapid antigen Flu A/Flu B tests is only 62.3%, making them less accurate than PCR, which may lead to return visits and additional tests.<sup>4</sup>



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**Syndromic Testing: The Right Test, The First Time.**

# A New-Onset, Suspicious Skin Lesion

**Urgent message:** Patients and providers alike may be inclined to eliminate possible diagnoses based on first impressions. It is essential that the urgent care clinician maintain a wide differential when evaluating patients for new-onset complaints that do not have an obvious cause. Failure to do so may cause delayed diagnoses (and, consequently, delayed treatment).

HALEY HARRINGTON; ROSS L. PEARLMAN, MD; and ROBERT T. BRODELL, MD

## Introduction

Ticks are small—so small that patients often do not feel their bite or sense their presence once it is attached. As such, attached ticks can be mistaken by patients as “new moles.”<sup>1,2</sup> The diseases they carry, including Lyme disease, Rocky Mountain spotted fever, tularemia, and ehrlichiosis, cause significant morbidity and mortality.<sup>3</sup> It is important that physicians recognize and remove ticks promptly to decrease the potential for disease transmission.<sup>4,5</sup> Here, we present a case of a tick mistaken for a growing pigmented lesion.

## Case Presentation

A 46-year-old female presented for a new mole “she just noted” on her back. She reports that the mole had been “growing” over the past few days. There was no itching, burning, or bleeding. On review of systems, she denied constitutional symptoms and arthralgia or myalgia. The patient had no history of recent outdoor exposures or any overseas travel. Her past medical history was significant for hypertension, managed with diet and exercise. No medications. She reported a family history significant for malignant melanoma in her father. The patient denied smoking and reported drinking socially on weekends.

Physical examination revealed a 2 mm brown-black papule on the lower back (Figure 1) without surrounding erythema. No other cutaneous abnormalities were found on full skin exam. Examination of cervical, axil-



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lary, and inguinal lymph nodes was unremarkable. Close macroscopic inspection of the papule revealed thin, spindle-like projections adjacent to the black-brown papule, and a tick was identified.

## Outcome

The insect was grasped with sterile forceps adjacent to the skin at the level of the mouth parts and gently lifted away from the skin and extracted en bloc. This tick was found to be an American Dog tick, *Dermacentor variabilis*.

Author affiliations: **Haley Harrington**, Louisiana State University Health Sciences Center, Shreveport, LA. **Ross L. Pearlman, MD**, University of Mississippi Medical Center, Jackson, MS. **Robert T. Brodell, MD**, University of Mississippi Medical Center, Jackson, MS. Ms. Harrington and Dr. Pearlman have no relevant financial relationships with any commercial interests. Dr. Brodell discloses the following potential conflicts of interest: Multicenter Clinical Trials: Galderma Laboratories, L.P. – Principal Investigator; Novartis Principal Investigator; and GlaxoSmithKline – Principal Investigator. There are no conflicts of interest related to employment, stock ownership, expert testimony, grants, patents filed, received, pending, or in preparation, or royalties.

*lis*, which is a member of the Ixodidae family.

**Discussion**

Patients may mistake a tick for a new skin lesion; as ticks are often hidden by hair or skin folds, other patients may be completely unaware of tick attachment. Ticks inject a variety of chemicals to prevent an inflammatory response, facilitate the blood meal, and allow for a painless bite and disease transmission.

In order for a tick to successfully transmit infection to a human, it must first feed on an animal that is infected, as ticks are the intermediate host in most cases.

After feeding, the bacteria are ingested and travel to the gut of the tick for maturation. Once maturation of the bacteria is complete, systemic infection may occur. The bacteria infect the salivary glands and from there can be transmitted to the next host via a subsequent tick bite.<sup>6</sup>

Risk of infection increases with tick attachment over 72 hours, but transmission can occur in the first 16 hours.<sup>7,8</sup> If a patient presents with a tick, it is important to completely remove the tick to prevent disease transmission.<sup>9,10</sup>

A variety of tick removal approaches have been recommended, including:

- The tweezer removal technique—grasp tick around the mouthparts closest to the skin with tweezers and directly pull away from skin
- The card-detachment technique—entails sliding the tick body between the aperture of the device and lifting from skin for removal
- The lassoing technique—a thin filament is used to surround the tick and tightened around the body

Figure 1. A 6 x 4 mm black papule.

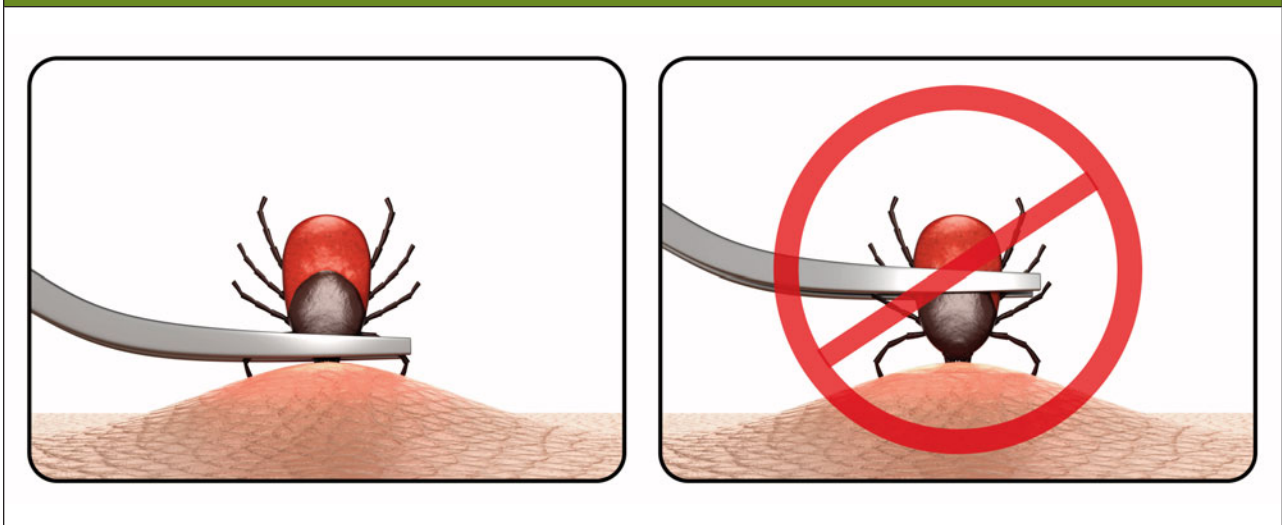


for extraction<sup>9</sup>

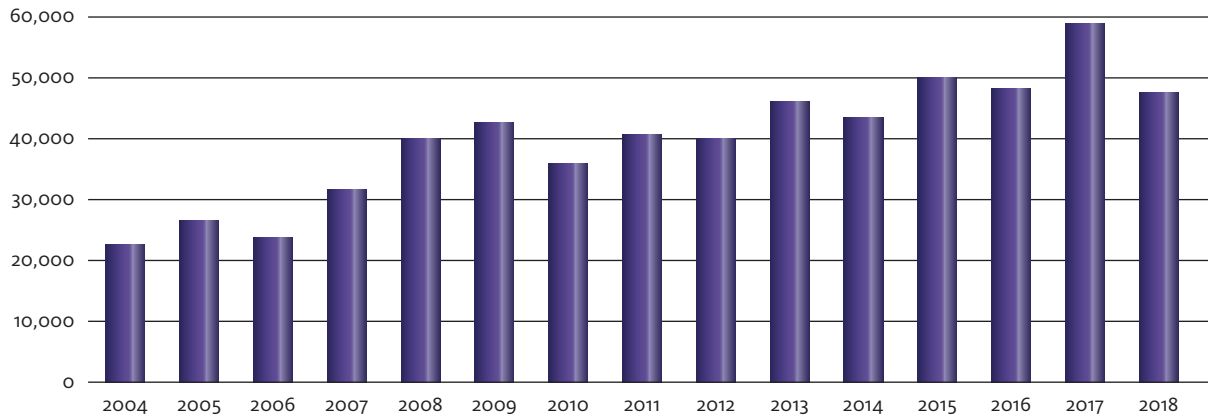
- The freezing technique—application of liquid nitrogen for approximately 20 seconds<sup>11</sup>

The most efficient tick-detachment method is the tweezer removal technique, which ensures complete removal of the organism. Fine tipped forceps should be used to grasp the tick as close as possible to the skin and pulled upwards with a smooth force, taking care not to twist or jerk the tick.<sup>10</sup> (See **Figure 2.**) Ixodid ticks are particularly challenging to remove because their mouthparts are cemented to the skin. Pieces of the tick are easily left behind during this procedure. Residual mouth parts may lead to chronic irritation or tick-bite granuloma.<sup>9</sup>

Figure 2.





**Figure 3. Total Reported Cases of Tickborne Diseases, 2004–2018**

Incidence of tickborne disease varies somewhat from year to year, but the overall trend between 2004 and 2018 was on the rise.  
(Data source: Centers for Disease Control and Prevention. Reported tickborne disease cases. Available at: Accessed September 15, 2020.)

Petroleum jelly, alcohol, or fingernail polish should not be used to aid in removal, as this complicates the process of grasping and removing the tick. Heating the end of the tick with a match or electrodesiccation is not recommended as the heated tick contents expand and inject more material into the host. Furthermore, rotating the tick provides no additional benefit.<sup>12</sup> If unable to successfully remove the tick with forceps, antibiotic prophylaxis may be indicated.<sup>10,13,14</sup>

In North America, the two most common families of ticks are Ixodidae and Argasidae. Ixodidae ticks are hard ticks, while the Argasidae ticks are soft ticks. A few common tick-borne illnesses include Lyme disease, Rocky Mountain spotted fever, tularemia, and ehrlichiosis. *Dermacentor variabilis* specifically serves as a vector of Rocky Mountain spotted fever (RMSF) and tularemia.<sup>3</sup>

RMSF is caused by *Rickettsia rickettsii* and is the most commonly reported tick-borne rickettsial disease in the U.S. It typically presents with mild constitutional symptoms and a maculopapular rash, which may extend to the palms and soles. Symptoms usually resolve within 48 hours of antibiotic treatment.<sup>15</sup>

Tularemia is caused by *Francisella tularensis*, which is most commonly transmitted via tick bite. Symptoms typically manifest within a few days of the tick bite and may include a variety of symptoms involving the lymph nodes, eyes, oropharynx, or respiratory system. Tularemia can be treated with antibiotics in most cases.<sup>16</sup>

*Dermacentor variabilis* is also a common vector of tick paralysis, especially in the Southeast U.S.<sup>3</sup> Tick paralysis presents as ascending paralysis due to neurotoxin

release, which impairs the function of voltage-gated sodium channels. Case studies demonstrate that tick removal leads to resolution of the paralysis within hours.<sup>17</sup> ■

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# A POCUS-Based Approach to Acute Renal Colic in the Urgent Care Center

**Urgent message:** Recent expert opinion has reshaped initial management for suspected acute renal colic. Clinicians often utilize computerized tomography imaging to diagnose acute renal colic; however, there is an increasing role for clinicians to instead use point-of-care ultrasound (POCUS) as the initial imaging modality when acute renal colic is suspected. Renal ultrasound is time and cost effective, radiation-free and completed by the clinician at the bedside.

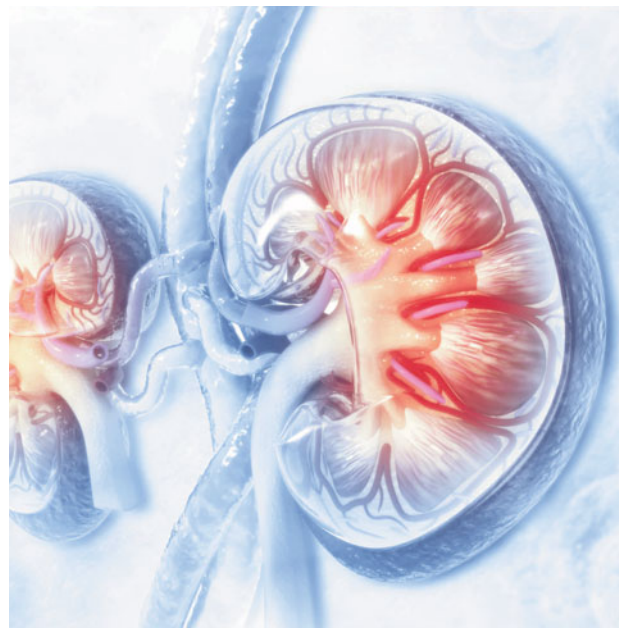
Chelsea M. Burgin, MD, FAAFP; James Frederick W. Pike, MSIV; and John Eicken, MD, EdM

## Introduction

Acute pain from renal colic can be severe and debilitating. The presentation of an active stone causes agony for both the patient and kin. There is often a sense of urgency “to do something” beyond acute symptom management. Patient expectations resulting from Google searches, social media, or perceived standards of care may contribute to a clinician’s decision to order a CT. Although CT offers precise diagnostic detail, it has not been shown to significantly alter management for renal colic.<sup>1-3</sup> In certain patient populations and clinical scenarios, POCUS serves a role as an alternative imaging modality to CT. POCUS has been shown to have a high positive predictive value for renal colic in the presence of hydronephrosis.<sup>4,5</sup> POCUS is time- and cost-effective, completed at the bedside, lacks radiation, and can provide ample information to help direct care.

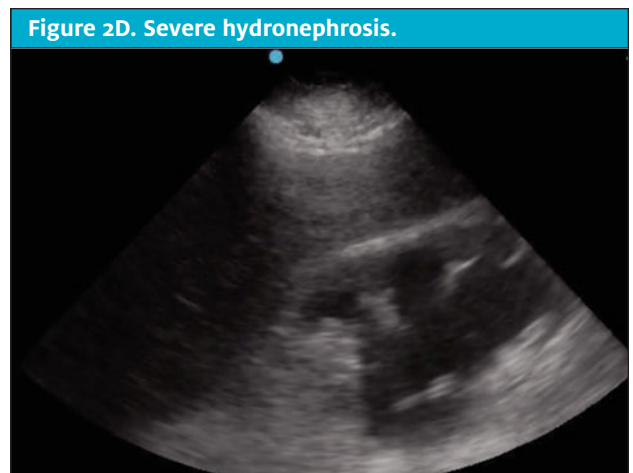
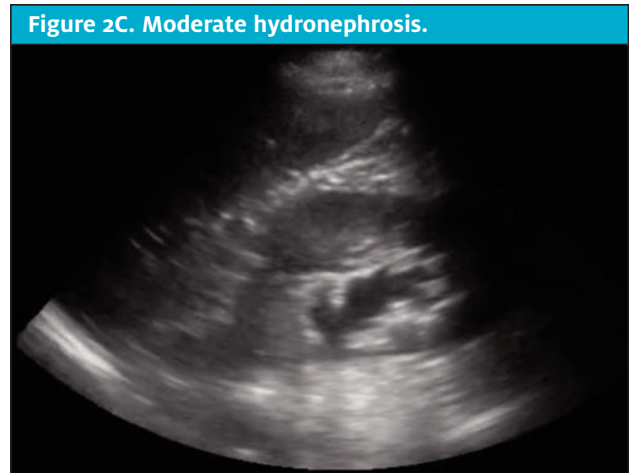
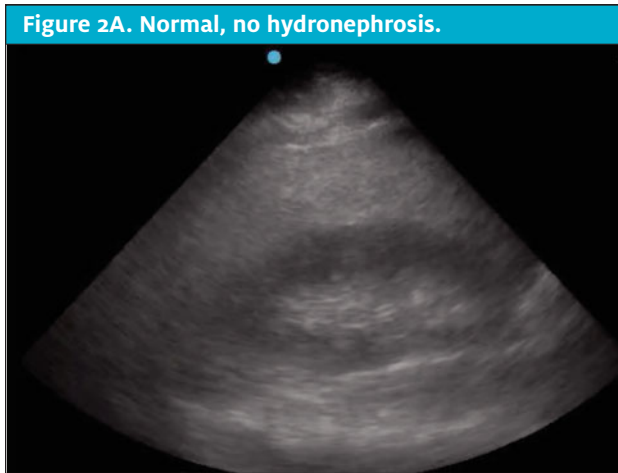
### Clinical Scenario A—Presentation

A 38-year-old female presented to urgent care with waxing and waning right flank pain which radiated to her right groin for 7 days. She denied nausea and vomiting. Past medical history was significant for hypertension. She denied a personal and family history of renal stones. On presentation she was afebrile with a heart rate of 93



and blood pressure 174/102. On physical examination she had appeared to be in mild distress, no visible signs of trauma or rash, speaking comfortably, cardiopulmonary exam unremarkable; there was no abdominal

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tenderness although she had mild right costovertebral angle tenderness. Her urine dip was positive for blood.

*Clinical Scenario B—Presentation*

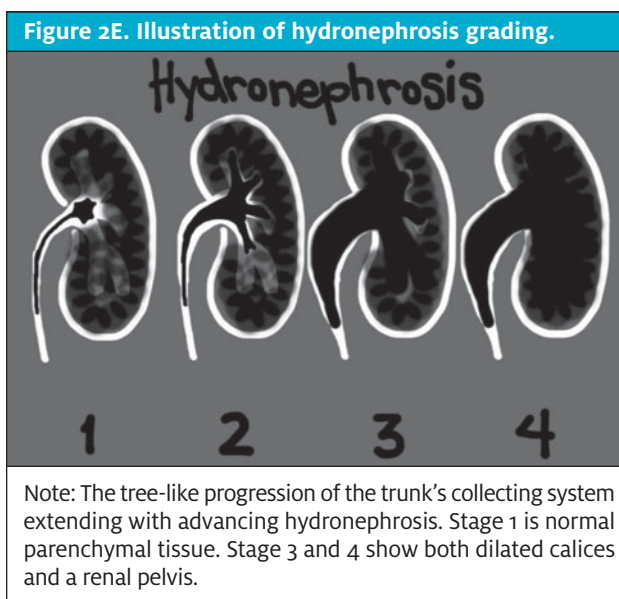
A 57-year-old male presented to urgent care with 6 hours of left flank pain with associated nausea and emesis. He reported a remote personal history of kidney stones. He did not have a primary care provider and had not sought medical care in over a decade. His oral temperature was 99.5° F with a heart rate of 105 and a blood pressure of 148/98. On physical examination he had tenderness in his left lower quadrant. His urine dip was negative for blood.

**Background**

Evaluation for patients with symptoms of acute renal colic commonly involves imaging with CT, ultrasound, or both. As a result of its diagnostic utility, the use of CT

has vastly increased over the last 20 years. From 1996-2007, the use of CT increased 10-fold in patients presenting with suspected acute renal colic.<sup>1</sup>

CT scans come at a high cost to the patient, both financially and through exposure to ionizing radiation.<sup>6,7</sup> Unfortunately, patients with nephrolithiasis frequently have recurrence, leading to repeat imaging over time and further accumulation of radiation.<sup>8</sup> Clinicians should consider the carcinogenic effects of cumulative radiation when making decisions regarding advanced imaging for suspected acute renal colic. Limiting radiation exposure, especially in low-risk patients, is just one compelling reason to seek diagnostic alternatives to CT. Efforts are being made to implement imaging alternatives at a global level. As an effective alternative in low-risk patients, POCUS has been shown to effectively diagnose acute renal colic through the presence of moderate to severe hydronephrosis and can offer direct visu-



alization of a ureteral stone at the ureterovesical junction.<sup>2,9</sup> (See **Figures 2A–2E.**)

### Discussion

Prevalence of kidney stones is increasing. One international article highlighted the linear relationship of obesity and diabetes to renal stone incidence and prevalence.<sup>10</sup> The National Health and Nutrition Evaluation Survey reported nephrolithiasis increasing in prevalence from 3.2% in 1980 to 10.1% in 2014.<sup>11</sup>

Ultrasound as the sole imaging modality for suspected renal colic increased from 2.6% to 6.5% between 2007 and 2015.<sup>12</sup> Despite the increase, it reflects less than one-tenth the use of CT imaging. One study comparing emergency physician POCUS to radiology department ultrasound revealed no statistical difference in the confirmation of renal colic in the presence of moderate to severe hydronephrosis.<sup>13</sup> Adopting renal POCUS for the assessment of hydronephrosis in certain populations with signs and symptoms of acute renal colic has the potential to reduce radiation, reduce expense for both the patient and hospital, increase patient satisfaction, and reduce ED visits. Furthermore, POCUS performed at the bedside during the initial evaluation is particularly relevant when CT imaging is not available.

With the prevalence of kidney stones increasing it is important to equip and prepare UC clinicians for the future. Renal POCUS can help clinicians achieve this goal as it is a noninvasive, brief bedside procedure effective at identifying sonographic signs of acute renal colic.

UC clinicians who possess kidney and bladder POCUS skills can improve medical decision making in suspected renal colic.

As is true for all POCUS applications, it is essential to ensure renal POCUS is being applied within the appropriate context. High-risk individuals in whom renal POCUS should not be the primary imaging modality include those who present with fever, pyuria concerning for infection, increased age with no history of nephrolithiasis, history of single kidney, current pregnancy, or history of kidney transplant. If the clinician has high concern for a more serious alternative diagnosis, then POCUS should not be the sole imaging modality. Finally, it is important to utilize the POCUS findings in a manner that aligns with evidence-based literature.

One multicenter comparative trial analyzed the value of POCUS compared to CT in suspected nephrolithiasis in 2,759 patients not identified as high risk between the ages of 18 and 76. These individuals were randomly assigned to undergo POCUS, ultrasound performed by radiology, or CT abdomen/pelvis. There were no significant differences between ultrasound and CT in the following variables: diagnostic accuracy, patient outcomes, serious or relative adverse events. Additionally, there was no significant difference between the CT and ultrasound groups in regards to the average pain score after seven days, incidence of high-risk diagnoses within 30 days, nor return visits or hospitalizations.<sup>8</sup>

Replacing CT imaging with ultrasound reduces radiation and expedites care in acute renal colic for low risk populations without negatively impacting outcomes. POCUS led to shorter length-of-stay when compared to radiology department performed ultrasound or CT. Time is an important factor to consider within the practice of urgent care medicine.

### *Practice Altering Advanced Imaging Multispecialty Agreement*

In September 2019, nine experts from the specialties of emergency medicine, radiology, and urology gathered together to combine their clinical wisdom with evidence-based medicine to create a set of standard recommendations on imaging for patients who present with acute renal colic. Twenty-nine different scenarios were discussed, with preferred imaging modalities were voted on by each specialist. The end result included multispecialty guidelines to provide a framework for clinicians who evaluate individuals with suspected acute renal colic.<sup>2</sup>

The panel came to the agreement that no further imaging was needed in 13 of the scenarios, ultrasound

Table 1. Categories of Individuals Considered "High Risk" Who Present with Symptoms Concerning for Acute Renal Colic		
High-Risk Individuals	Recommended Imaging	Consensus for Recommendations
Febrile, bacteria/pyuria; individuals with single kidney, kidney transplant or on dialysis	CT	These are high-risk individuals in any age group
Individuals $\leq$ age 18 <sup>2</sup>	Ultrasound	Comprehensive radiology ultrasound or POCUS looking for hydronephrosis
Pregnant women <sup>2</sup>	Ultrasound	Comprehensive radiology ultrasound or POCUS looking for hydronephrosis
Young adult, age 35(+/-), history of stones. Fails initial IV therapy OR (+) LLQ tenderness <sup>2</sup>	CT	Concern for other differential diagnoses such as diverticulitis, ovarian disease, ectopic pregnancy
Age $\geq$ 55 years (+/-), history of stones. (+) LLQ tenderness <sup>2</sup>	CT	Concern for other differential diagnoses such as diverticulitis or abscess, small bowel obstruction
Age $\geq$ 75 years, (+/-), history of stones. <sup>2</sup>	CT	In general, this is a high risk population. Additional differential diagnoses more common in elderly include mesenteric ischemia, AAA, small bowel obstruction

was the best approach to imaging in nine of the cases, and CT was favored in seven of the scenarios.

The scenarios for which CT was considered the modality of choice included older patients ( $\geq$ 75 years), middle-age and older patients with no prior history of nephrolithiasis, patients who failed to respond to initial medical management, or those with atypical presentation without hydronephrosis on ultrasound and individuals with focal abdominal tenderness. This multidisciplinary panel confirmed that CT should be avoided in most patients age 35 or less, patients under 18 years old and in pregnant patients. It was also concluded that CT should be avoided in the middle-aged patient if there is a prior history of kidney stone unless features such as tenderness or lack of response to initial medical therapy were present. In summary, emergency medicine, radiology and urology were in agreement that ultrasound (POCUS or radiology performed) is an appropriate alternative to CT in a number of common clinical scenarios.

#### *Clinical Scenario A—Conclusion*

During her urgent care stay the patient received 1 L of normal saline, intravenous ketorolac, and ondansetron. A renal POCUS was performed and the clinician did not identify any hydronephrosis. Urine culture was obtained. Over the course of her stay, she experienced improvement in pain and nausea with modest improvement of her blood pressure. Given her improvement in addition to being considered "low-risk" she was dis-

charged home with a urine strainer, ketorolac, and lisinopril and a diagnosis of suspected acute renal colic. Four days after the patient's urgent care visit the clinician called the patient to inform her of the negative urine culture and to check on her. Her pain and nausea had completely resolved and she reported doing well. There was inconsistent use of urine strainer, although to her knowledge no stone was excreted. She had an appointment with a new primary care provider the following morning to reevaluate her blood pressure and current medications.

#### *Clinical Scenario B—Conclusion*

At the urgent care center he received 1 L of normal saline, intravenous ketorolac and promethazine. Limited renal POCUS was done and moderate hydronephrosis was seen. However, given his focal tenderness to palpation in the left lower quadrant in addition to his lack of response to initial IV therapy, the provider appropriately obtained CT imaging for further evaluation which later that day revealed the presence of both diverticulitis and a 4.5 mm renal stone in the distal ureter. He was treated outpatient with amoxicillin-clavulanate, promethazine, hydrocodone-acetaminophen, and a liquid diet. Two days after the patient's urgent care visit the clinician called to check on him; the patient reported passing the stone that morning and his abdominal pain was significantly better. He was tolerating clear liquids and ready to advance to a semi solid diet.

## Conclusion

In a patient with a history, physical examination, and/or laboratory results concerning for acute renal colic who is responsive to medical management with the exclusion of high risk individuals, the literature favors avoidance of CT. Moderate or severe hydronephrosis identified on renal POCUS greatly increases the likelihood of acute renal colic when diagnostic uncertainty is present during a patient encounter. Renal POCUS is not a technically difficult skillset to acquire, however, it is a unique skill that requires specific education and should not be clinically utilized prior to credentialing and/or approval which may be required depending upon one's practice environment. Repetitious visualization of the kidneys on POCUS is helpful in learning how to distinguish between the presence and the absence of hydronephrosis. The urgent care clinician can adopt and incorporate renal POCUS into their practice to help low risk individuals avoid the emergency department while simultaneously reducing fragmentation of care, reducing radiation, and increasing diagnostic accuracy at the bedside. ■

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## A 46-Year-Old Woman with Wrist Pain After Hearing a ‘Snap’



### Case

The patient is a 46-year-old female with pain in her wrist. She reports that she heard a “snap” when she put all her body weight on her left hand during an exercise class.

View the images taken and consider what your diagnosis and next steps would be.

## THE RESOLUTION

**Differential Diagnosis**

- Distal radius fracture
- Ulnar styloid fracture
- Scaphoid fracture
- Carpal instability dissociative injury

**Diagnosis**

Findings are concerning for scapholunate carpal instability dissociative injury (CID) suggestive of a full thickness tear.

**Learnings/What to Look for**

- The AP view reveals widening of the scapholunate interval
- The lateral view shows widening of scapholunate angle, normal lunocapitate angle, and slight dorsal rotation of lunate
- Scapholunate angle widened (should be 30° - 60°); this is due to slight dorsal angulation of the lunate

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

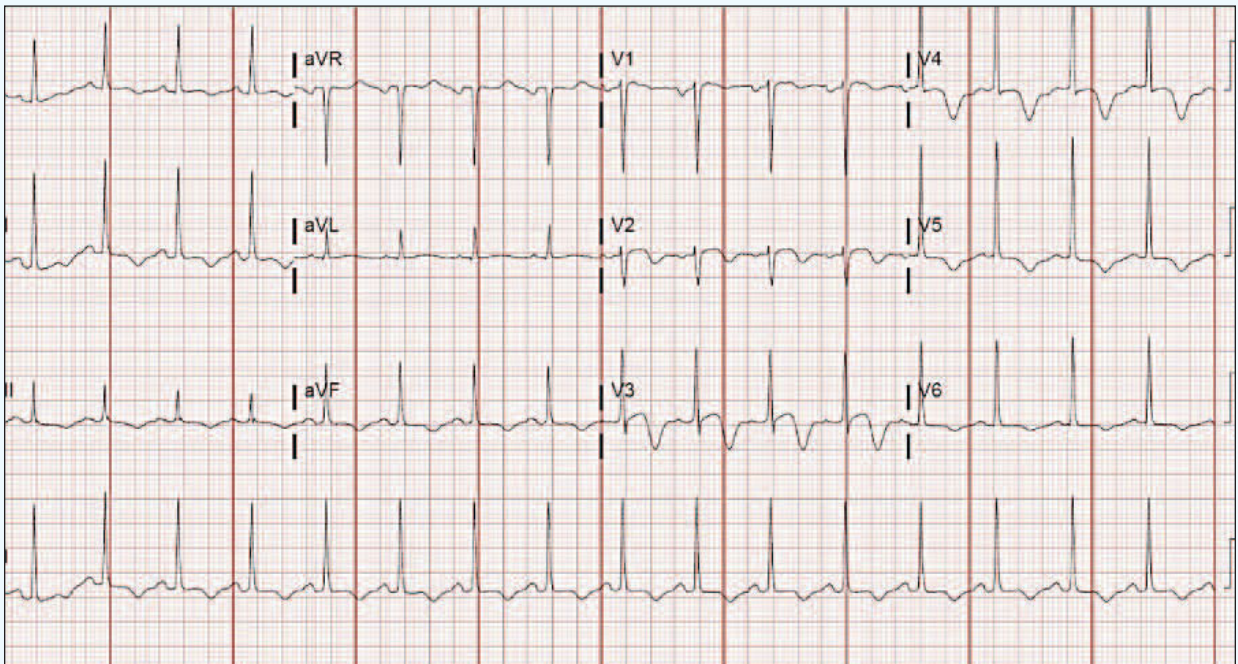
- Treatment of CID may be nonoperative or operative
- Midcarpal instability can often be managed with immobilization and splinting
- Surgery may be necessary with ulnar translation associated with styloid fractures; with midcarpal instability with late diagnosis that failed nonoperative management; and with distal radius malunion

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





## A 60-Year-Old Woman with a 4-Day History of Intermittent Exertional Chest Pain



### Case

The patient is a 60-year-old female with no past medical history who presents with intermittent exertional chest pain for 4 days. She reports the pain is substernal with radiation to her left arm, is associated with nausea and diaphoresis, and is worsened by exertion. The patient says she experiences pain every 4-5 hours, but currently is pain-free.

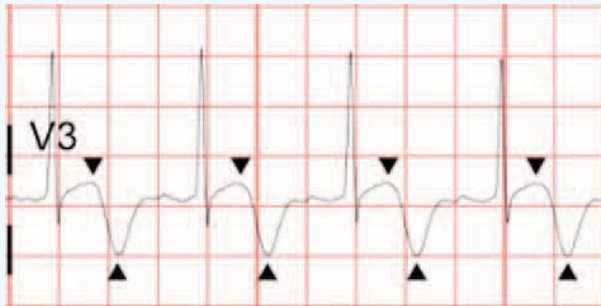
View the ECG taken and consider what your diagnosis and next steps would be. Resolution of the case is described on the next page.

*(Case presented by Catherine Reynolds, The University of Texas Health Science Center at Houston McGovern Medical School.)*

## THE RESOLUTION

**Differential Diagnosis**

- Brugada syndrome
- Left ventricular hypertrophy
- ST-elevation myocardial infarction (STEMI)
- Wellens syndrome
- Hypokalemia

**Diagnosis**

The ECG illustrates a normal sinus rhythm at 98 bpm. The biphasic T waves with terminal negativity in V2 and V3, minimal ST segment elevation, lack of precordial Q waves, and preserved R wave progression (R wave >3 mm in V3) suggest the presence of Wellens syndrome in this patient with a history of angina who is currently denying chest pain.

In the correct clinical context, Wellens syndrome represents an ECG pattern seen in patients with critical stenosis of the proximal left anterior descending artery (LAD). The finding of biphasic T waves (type A) or deeply inverted and symmetric T waves (type B) in the anterior precordial leads (V2 and V3) are seen when patients are chest pain-free. These patients are at risk for sudden occlusion of their proximal LAD, and should be considered for urgent catheterization. The T waves are similar in appearance to those seen upon reperfusion by percutaneous coronary intervention (so-called “reperfusion” T waves), leading some to hypothesize that these patients may have had sudden occlusion followed by spontaneous reperfusion. If the artery re-occludes, the patient will develop symptoms and the ECG will first show “pseudonormalization” of the T wave, where it be-

comes upright and prominent. A persistent re-occlusion will evolve into an anterior ST-elevation myocardial infarction.

The stuttering pain experienced by the patient in our case could have been due to intermittent re-occlusion followed by rapid and spontaneous reperfusion. She was sent to the emergency department where initial testing was negative. The following day, she was taken to the cath lab, where a 99% proximal LAD stenosis was identified and successfully stented.

**Learnings/What to Look for:**

- Biphasic (type A) or deeply inverted (type B) T waves in V2-3, which may extend to V1-6
- Minimal or no elevation of the ST segment
- Lack of precordial Q waves
- Preserved R wave progression
- Recent history of chest pain, but chest-pain-free on evaluation
- May have normal or minimally elevated cardiac enzymes

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

- Patients with Wellens syndrome have an impending anterior wall myocardial infarction and must be transferred for admission for urgent cardiac catheterization
- Stress test should be avoided, as it may precipitate an acute infarction
- If these patients develop another episode of chest pain while awaiting transfer, repeat their ECG and look for an anterior STEMI or “pseudonormalization” of the anterior T waves—this means they are experiencing an acute re-occlusion of the LAD

**Resources**

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## An 8-Year-Old Girl with Lesions on Her Arms



### Case

The patient is an 8-year-old girl with a smattering of brown to black lesions on her arms. They're not painful or causing discomfort, but her mother is concerned because they look darker than the average freckle. Exam reveals small (less than 0.5 mm), round, hyperpigmented macules.

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

## THE RESOLUTION

Figure 2.

**Differential Diagnosis**

- Common acquired nevus
- Ephelides
- Lentigo simplex
- Tinea versicolor

**Diagnosis**

This patient was diagnosed with lentigo simplex— a common benign, hyperpigmented macule located anywhere on the body. These lentigines generally occur early in life (even at birth). They result from a mild increase in the number of normal melanocytes in the epidermis producing increased amounts of melanin.

**Learnings/What to Look for**

- Well-circumscribed, symmetric, homogeneous, light brown to black macules, usually smaller than 5 mm in size, are seen
- Distribution may be anywhere on the trunk, extremities, genitals, and mucous membranes
- Lentigines found on mucous membranes can appear irregular with increased size, irregular borders, and heterogeneous pigmentation
- Lentigo simplex may evolve into junctional nevi but are not thought to evolve into melanoma
- Macules differ from solar lentigines in that they appear earlier in life on non-sun-exposed skin

**Pearls for Urgent Care Management and Considerations or Transfer**

- Lentigo complex is a benign lesion; no treatment is necessary
- Referral to a dermatologist for a baseline exam and subsequent follow-up is warranted

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



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## To Flu or Not to Flu

■ MONTE SANDLER

It's flu season again and this year patients have two viruses to worry about: COVID-19 and influenza. Now is the time patients will come in to get their flu vaccine and (hopefully) take the flu possibility out of the equation.

Vaccinations are usually billed with two CPT codes: one for the vaccine and one for the administration of the vaccine. If the practice did not pay for the vaccine, only the CPT code for the administration of the vaccine is reported. When the vaccines are supplied by a Vaccine for Children Program (VFC), how the administration of the vaccine is reported will vary by state Medicaid carrier.

There are several codes to report the actual vaccine. To determine the correct code, you need to know the manufacturer and the trade name.

For updates on new vaccines that receive FDA approval during the flu season, visit the Centers for Medicare & Medicaid Services' Seasonal Influenza Vaccine Pricing webpage at <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/VaccinesPricing>.

Other items to share with your billing team are the dosage, age group, and National Drug Code (NDC) so the claims can be submitted correctly.

The administration is reported with HCPCS G0008, (Administration of influenza virus vaccine) for Medicare. For other payers, use CPT 90471 for an injection. If administration is by an intranasal or oral route, report CPT 90473. For pediatric patients, if injections include counseling for patients up to and including age 18, see CPT code 90460.

All vaccines are reported with diagnosis code Z23 (Encounter for immunization).

### Avoid These Common Billing Errors

- Do not report CPT 96372 for administration of the vaccine. This code is used to report a diagnostic injection.
- If multiple vaccines are given on the same date, code for each administration. Use add-on codes to report these addi-



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

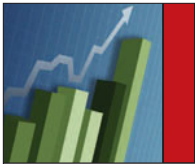
CPT Code	Manufacturer	Trade Name	Medicare Allowable
90653	Seqirus	Fluad	\$59.53
90662	Sanofi Pasteur	Fluzone High-Dose Quadrivalent	\$60.98
90672	MedImmune	FluMist Quadrivalent	\$26.88
90674	Seqirus	Flucelvax Quadrivalent (Preservative Free)	\$29.23
90682	Sanofi Pasteur	Flublok Quadrivalent	\$60.98
90685	Sanofi Pasteur	Fluzone Quadrivalent 0.25 mL (Preservative Free)	\$21.13
	Seqirus	Afluria Quadrivalent 0.25 mL (Preservative Free)	
90686	GlaxoSmithKline	Fluarix Quadrivalent (Preservative Free) Flulaval Quadrivalent (Preservative Free)	\$19.58
	Sanofi Pasteur	Fluzone Quadrivalent (Preservative Free)	
	Seqirus	Afluria Quadrivalent (Preservative Free)	
90687	Sanofi Pasteur	Fluzone Quadrivalent 0.25 mL	\$9.58
	Seqirus	Afluria Quadrivalent 0.25 mL	
90688	Sanofi Pasteur	Fluzone Quadrivalent	\$19.17
	Seqirus	Afluria Quadrivalent	
90694	Seqirus	Fluad Quadrivalent	\$61.00
90756	Seqirus	Flucelvax Quadrivalent	\$27.70

For updates on new vaccines that receive FDA approval during the flu season, visit the Centers for Medicare & Medicaid Services' Seasonal Influenza Vaccine Pricing webpage at <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Part-B-Drugs/McrPartBDrugAvgSalesPrice/VaccinesPricing>.

tional services: 90472, 90474, and 90461.

- When reporting administration codes 90460 and 90461, be sure to document counseling. Also, do not report for patients over 18 years of age.
- Report the correct NDC for each product purchased. This number is unique with segments that identify the labeler or vendor, product, and trade package. It could change during the season.
- If the type of product purchased changes, be sure to verify you are continuing to report the correct CPT code and the correct administration code, if it is performed via a different route.

The Centers for Disease Control and Prevention indicates there is enough vaccine to go around. For more information, go to <https://www.cdc.gov/flu/index.htm>. Stay healthy! ■



# MIS-C: What to Look for—and the Consequences of Missing It

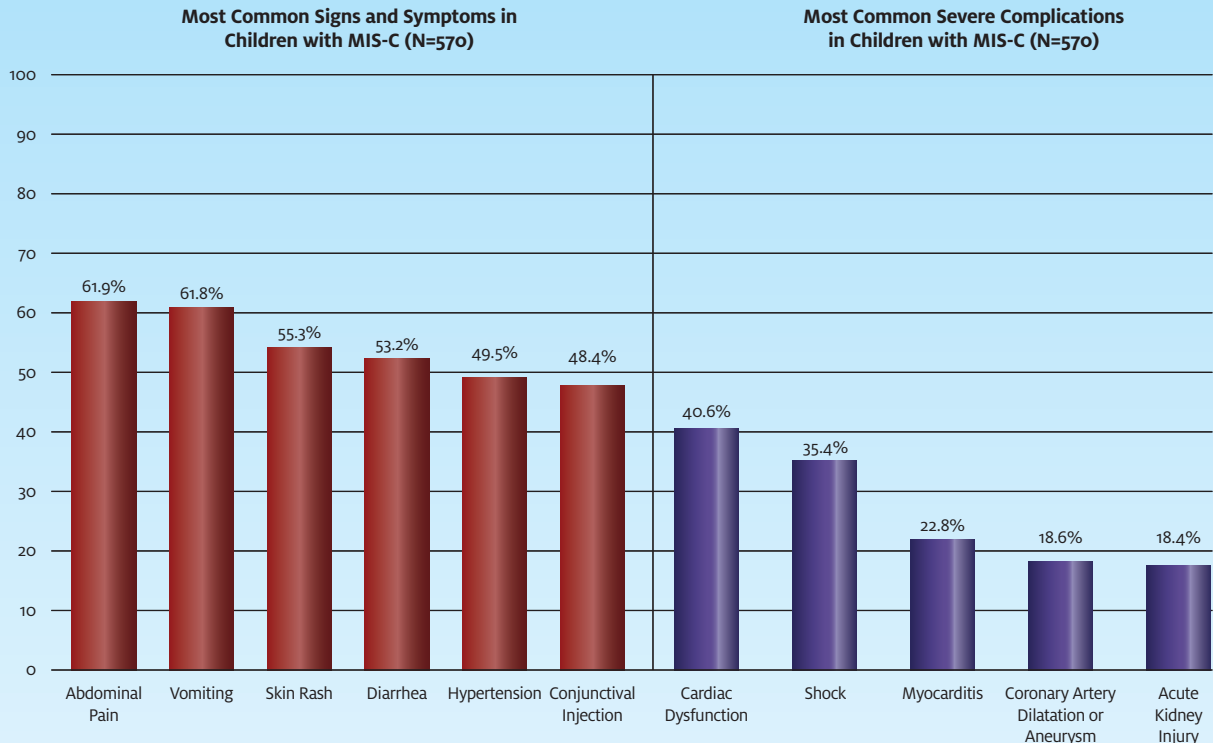
At the outset of the COVID-19 pandemic, it appeared that children were somehow less susceptible to becoming infected and, if they did get sick, had some unexplained level of protection against becoming severely ill. Like many “facts” about the virus, however, our understanding has changed since then.

While it still appears that children are getting sick at lower rates than adults, we now know COVID-19 can have dire consequences for younger patients. In fact, one particular effect has become known as multisystem inflammatory syndrome in children (MIS-C). And, while it’s not as widespread as COVID-19 is in the general population, it’s deadly. The original article on page

11 of this issue provides some excellent tips specifically for urgent care providers, and offers insights gleaned from two real-world cases.

The Centers for Disease Control and Prevention has been quick to issue updates on the evolving body of knowledge about MIS-C. For example, a study published in *Morbidity and Mortality Weekly Report* noted that four or more organ systems were involved in 86% of cases of MIS-C. Check out the graphs below to see what that study had to say about the most common symptoms and severe complications in 570 children diagnosed with MIS-C. ■

## PEDIATRIC MIS-C SYMPTOMS AND COMPLICATIONS



Data source: Godfred-Cato S, Bryant B, Leung J, et al. COVID-19-associated multisystem inflammatory syndrome in children-United States, March-July 2020. *MMWR*. 2020;69(32):1074-1080.

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