



COLLEGE OF  
URGENT CARE  
MEDICINE

## URGENT CARING QUARTERLY

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## Message from the CUCM President: Urgent Care and the Post-Pandemic World

The COVID-19 pandemic may be coming to an end, but the past 3 years have taken a toll on Urgent Care providers and staff. When the healthcare system was overwhelmed during the pandemic, Urgent Care centers were a lifeline for healthcare — providing diagnostic testing, evaluation and treatment for patients who could not be seen elsewhere. We were overworked and exhausted, but we persevered because of our commitment to take care of our patients and our communities. By most metrics, the pandemic is over. The national healthcare emergency will expire on May 11, 2023. Daily life is returning to pre-pandemic routines. Yet, many Urgent Care providers continue to feel stress and burnout even as life returns to “normal.”

During the pandemic, patients could not easily access primary care or specialty care. Emergency departments were beyond capacity. Patients turned to Urgent Care because Urgent Care offered much needed access to walk-in care. While this was good for volume, many Urgent Care centers were not designed to manage chronic medical conditions. As the pandemic winds down, access to primary care has not improved, and in many markets has worsened. An informal survey of colleagues across the United States reveals that wait times for primary care appointments can be up to several months.

At the same time, we have an obligation to provide the best possible care for our patients. If primary care follow-up is infeasible or unrealistic, what are our options? As an industry we may need to re-evaluate our practice model and come up with solutions. Some Urgent Care practices successfully incorporated elements of primary care into the Urgent Care practice. Unfortunately, many practitioners are increasingly frustrated facing patients who are presenting to Urgent Care centers for chronic management of conditions because they do not have access to primary care.

The Urgent Care Association and the College of Urgent Care Medicine have formed a taskforce to *advance the specialty*. While the initial focus is on identifying competencies and services that differentiate Urgent Care from primary care, should we also look at identifying primary care services that can be efficiently and effectively managed in Urgent Care? After all, if follow-up with primary care is not feasible, should we develop pathways to manage conditions such as uncomplicated hypertension, diabetes and thyroid disorders? Even with primary care clinics offering work-in slots and after-hours services, patients continue to seek care at Urgent Care centers.

The College of Urgent Care Medicine represents you. We need your help. We need you to play an active role in helping to shape the future of the specialty of Urgent Care medicine. I hope to see you at the Urgent Care Convention coming up in April. The College Member Meeting and Lunch is Tuesday, April 4. This is the once-a-year opportunity we have to meet to tackle issues exclusive to physicians, NPs and PAs practicing Urgent Care medicine. We will host panel discussion with experts in our field while also seeking your feedback. I look forward to meeting you and hearing your thoughts, ideas, and concerns. See you soon!

A handwritten signature in black ink, appearing to read 'C. Chao'.

Chris Chao, MD, President, College of Urgent Care Medicine Board of Directors

## From the Editors-in-Chief



Tracey Davidoff, MD, FCUCM

A handwritten signature in black ink that reads "Tracey Davidoff".



Cesar Mora Jaramillo, MD, FCUCM

A handwritten signature in black ink that reads "Cesar Mora Jaramillo".

Welcome to the latest edition of Urgent Caring Quarterly! The excitement builds for the upcoming Urgent Care Convention!

This year's event promises to be bigger and better, with an exciting lineup of keynote speakers, workshops, and networking opportunities for healthcare professionals in the Urgent Care field. With carefully crafted pre-convention activities, concurrent tracks of clinical content, hands-on sessions and interactive case study reviews, we are excited to attend and look forward to seeing those of you who are also registered so together we can — consistent with the event's theme — *Drive Change*.

Of course, no convention would be complete without opportunities to socialize with other attendees. One of the most exciting networking events of the convention is the College Member Meeting and Lunch, where all members of the College of Urgent Care Medicine come together, share their experiences, and discuss the future of the field. It also provides a great opportunity to connect with our peers and make new friends.

The meeting is always an energizing and enlightening experience, and we can't wait to see you there. Don't miss out on this opportunity to advance the specialty of Urgent Care and shape the future of healthcare.

We are all aware of the challenges the healthcare community faces with the recent waves of RSV, influenza, and COVID-19 infections. These past months have been challenging for clinicians working tirelessly to provide care and support to patients in need. But despite the difficulties, we've seen the healthcare community come together and support one another. Thank you for your hard work and dedication.

Finally, we would like to extend a heartfelt thank you to all of our peer reviewers and contributors for their invaluable support in making this publication possible and the amazing response to our call for volunteers. Your commitment to excellence and dedication to sharing your knowledge and expertise with our readers is truly appreciated. Your contributions have helped to create a rich and diverse content offering in this issue, and we are proud to share your insights and perspectives with our readers. We are grateful for the time and effort you have put into ensuring that the content is of the highest quality and

that it provides value and inspiration to our members. We are honored to have you as part of our team, and we look forward to continuing this work with you in the future.

This quarter, we thank: Jessica Kovalchick, PA-C; Nathan Keith Waldrep, MD and Sean McNeely, MD; who served as peer reviewers.

## Editorials and Opinions

### **It's Time. The Need for an Urgent Care-Focused Life Support Course for Pediatric Patients.**

Nikhil B. Shah, M.D.

The field of Urgent Care medicine was born from a revolutionary vision of what healthcare could be and physician innovators who recognized gaps in the healthcare delivery model. Over the past three decades, the growth of Urgent Care has been exponential, driven by the rapidly changing face of the modern consumerist economy. Although Urgent Care has undeniably established itself as an integral component of the healthcare infrastructure, it has seemingly evolved in a separate, albeit parallel, market to traditional healthcare institutions. Urgent Care staffing models, office capabilities, equipment, and medications have had to keep pace to meet the demands of a growing influx of patients as they look for alternatives to the emergency department. What has not kept pace is the ability of Urgent Care to address the needs of increasing numbers of critically ill children presenting in this setting as a result of this shift.

In 2007, the American Academy of Pediatrics (AAP) published guidance on essential and recommended equipment and medications that outpatient pediatric offices should carry in the event of a pediatric emergency and has suggested regular simulation-based practice to maintain skills<sup>1</sup>. However, implementation of these recommendations has shown wide variability across settings. In fact, a study from as recently as two years ago reported that almost 50% of practices in a cohort of 42 offices across nine states had no policies or protocols in place for dealing with emergencies<sup>2</sup>.

For years, Urgent Care practitioners have relied on the American Heart Association's Pediatric Advanced Life Support (PALS) course for guidance in managing pediatric emergencies. PALS has asserted itself as a ubiquitous, reliable reference for clinicians who encounter children in the emergency department and other inpatient settings. However, it has become increasingly apparent that PALS algorithms, equipment, medications, and personnel requirements may not be applicable to the Urgent Care setting. For example, it would be unlikely for an Urgent Care office to have a monitor/defibrillator, wall oxygen or wall suction. Endotracheal tubes and other advanced airway devices are also less commonplace due to medicolegal concerns arising from staffing with newer, inexperienced providers who may lack training in their use. Finally, the staffing make-up of an Urgent Care office may place a physician or an advanced practice provider (APP) with a medical assistant/receptionist, X-ray tech, or possibly a nurse, as the care team that must manage a pediatric emergency. This is in stark contrast to the in-hospital setting in which resources are seemingly inexhaustible and where a critically ill child would be managed by a team of multiple physicians, APPs, and nurses.

It is time clinicians have an Urgent Care-focused resource for managing critically ill children that takes into consideration the unique personnel, medications, and equipment found in this resource-limited setting.

Our institution has recently developed and internally implemented RESCUE $epc$  (Resuscitation and Stabilization of Children in the Urgent Care Environment – emergency preparedness course) to address this need. RESCUE $epc$  is a blended-learning activity in which participants must complete pre-course work in the form of online learning modules prior to attending an instructor-led classroom training session. The foundation for the course is a novel, team-based management approach referred to as the “RESCUE Protocol” which utilizes evidence-based, Urgent Care-specific algorithms. The in-person training comprises a brief review of key points from the online pre-coursework, practice-till-perfect of Urgent Care-specific skills (e.g., operating an oxygen tank, portable suction device, AED, etc.), and simulation-based practice scenarios. The course concludes with an online post-assessment and megacode scenario. Successful completion of the course requires a minimum passing score of 80% on the online exam and meeting all required competencies delineated in the structured debrief tool for the megacode scenario.

Thus far, RESCUE $epc$  has been piloted in a single region within our organization, totaling nearly 50 provider and nurse participants. The course will be implemented in our remaining regions over the course of this year. Key competencies highlighted in the course are tied to various quality metrics that will be tracked over time. Ultimately the success of RESCUE $epc$  will depend on whether it has an impact on patient outcomes, which will also be examined. The plan is to eventually make the course available externally to both pediatric and general Urgent Care centers. RESCUE $epc$  has been an ambitious undertaking with the potential to change the way critically ill pediatric patients are managed in the Urgent Care environment. It is an idea whose time has come.

*Dr. Shah is the Director of Provider Training at PM Pediatric Care*

#### REFERENCES:

1. Frush K; American Academy of Pediatrics Committee on Pediatric Emergency Medicine. Preparation for emergencies in the offices of pediatricians and pediatric primary care providers. *Pediatrics*. 2007; 120(1):200–212
2. Abulebda K, Yuknis ML, Whitfill T, et al; Improving Pediatrics Acute Care Through Simulation (ImpACTS). Preparedness for pediatric office emergencies: a multicenter, simulation-based study. *Pediatrics*. 2021;148(3):e2020038463

## **Social Determinants of Health in Urgent Care: Why They Matter and How to Address Them**

Cesar Mora Jaramillo, MD, FAAFP, FCUCM



Since the Centers for Medicare & Medicaid Services (CMS) issued guidance to emphasize the importance of social factors that can affect the health outcomes of patients (especially marginalized populations), many Urgent Care centers are prioritizing quality of care initiatives. This means that even in fast-paced settings, we can always do more for our patients — but with limited resources and time, can Urgent Care Centers implement Social Determinants of Health (SDOH) screenings in their practices?

Urgent Care centers play a critical role in providing medical care for individuals in need of immediate attention for non-emergent conditions. Thus, we see first-hand healthcare inequities every day in the patient populations we serve. Urgent Care clinicians focus on treating acute illness or acute manifestations of chronic illness, but it is important to recognize that many of these illnesses are

the downstream consequences of unaddressed SDOH. That said, population health can assist in combating health disparities, and Urgent Care centers should not be the last to implement innovative and valuable strategies.

SDOH refer to factors or situations (non-medical) that influence health and access to healthcare. The influence of these social conditions/situations such as homelessness, low literacy, limited access to food and transportation, housing security, education, violence, social support, health behaviors, and poverty can lead to poor health outcomes and overutilization of high-cost care settings. Furthermore, research has solidified the need for healthcare facilities to provide more than just a visit service, especially for patients who have social needs impacting their health.

In the context of Urgent Care, addressing SDOH can play a significant role not only in the patient's experience, but improving population health and outcomes. By incorporating SDOH screening and interventions, we can better serve those patients who need us the most. For instance, poverty, lack of access to transportation, and lack of insurance can impact a patient's ability to seek prompt and effective care for an urgent health issue or time sensitive follow-up.

We, as the frontline providers of acute care, can identify and address SDOHs by connecting patients to local resources. Hence, the importance of having partnerships within the community are essential. These partnerships should include community food banks, homeless shelters, domestic violence resource centers, substance abuse and rehabilitation programs, and routine free or low-cost healthcare clinics. In acute care settings, addressing these conditions might require a coordinated and systemic approach.

By including these social risk factors in the patient diagnosis and addressing them, we can reduce longstanding disparities in health, and healthcare providers can substantiate the increased complexity of these cases. They can also demonstrate the need for higher levels of care and additional care planning. Urgent Care clinicians are capable of providing integrative care delivery models, which aim to address patients' physical, mental, and social needs while targeting value, quality, and better outcomes.

The Kaiser Family Foundation states, "Although there has been significant progress recognizing and addressing social determinants of health, many challenges remain. Notably, these efforts require working across siloed sectors with separate funding streams, where investments in one sector may accrue savings in another. Moreover, communities may not always have sufficient service capacity or supply to meet identified needs. Further, there remain gaps and inconsistencies in data on social determinants of health that limit the ability to aggregate data across settings or to use data to inform policy and operations, guide quality improvement, or evaluate interventions."

Addressing SDOH in the Urgent Care setting can be challenging, but the benefits are clear. Clinicians can develop more informed diagnosis and treatment plans with a higher likelihood of success — in addition to improving patient health, increasing patient satisfaction, reducing healthcare costs, improving population health, and strengthening community connections.

While opportunities to advance health equity through clinical care continue to be important, social determinants of health can increase or decrease the risk of poor health outcomes. As healthcare professionals, we must ensure that everyone has access to high quality and equitable care, regardless of their background/circumstances or ability to pay.

## REFERENCES:

1. Wallace AS, Luther B, Guo J, Wang C, Sisler S, Wong B. Implementing a Social Determinants Screening and Referral Infrastructure During Routine Emergency Department Visits, Utah, 2017–2018. *Prev Chronic Dis* 2020;17:190339. DOI: <http://dx.doi.org/10.5888/pcd17.190339>
2. How hospitals, EDS effectively code social determinants of health. *RevCycleIntelligence*. <https://www.revcycleintelligence.com/news/How-Hospitals-EDs-Effectively-Code-Social-Determinants-of-Health>. Published July 25, 2022. Accessed February 5, 2023.
3. McCarthy M, Zheng, Z, Wilder M, Elm A. Purchase Subscribe Save Share Reprints Request The Influence of Social Determinants of Health on Emergency Departments Visits in a Medicaid Sample. *Annals of Emergency Medicine*. [https://www.annemergmed.com/article/S0196-0644\(20\)31389-5/fulltext](https://www.annemergmed.com/article/S0196-0644(20)31389-5/fulltext). Published March 11, 2022.
4. Axelson DJ, Stull MJ, Coates WC. Social Determinants of Health: A Missing Link in Emergency Medicine Training. *AEM Educ Train*. 2017 Sep 18;2(1):66-68. doi: 10.1002/aet2.10056. PMID: 30051070; PMCID: PMC6001589.
5. Artiga S, Hinton E, Published: May 10 Beyond health care: The role of Social Determinants in promoting health and health equity. *KFF*. <https://www.kff.org/racial-equity-and-health-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>. Published May 10, 2018. Accessed February 5, 2023.
6. Whitman A, De Lew, N, Chappel A, Aysola V, Zuckerman R, Sommers B. Addressing Social Determinants of Health: Examples of Successful Evidence-Based Strategies and Current Federal Efforts. *ASPE Office of Health Policy*. <https://www.aspe.hhs.gov/sites/default/files/documents/e2b650cd64cf84aae8ff0fae7474af82/SDOH-Evidence-Review.pdf>. Published April 1, 2022. Accessed February 6, 2023.

## The Last Patient of the Night

Sabah Fatima Iqbal, MD

The parents rush in, the baby in the crook of the father’s arm, a long bare leg dangling beneath the hastily wrapped blanket, a hat askew, half covering a little eye. The newborn cry of fury. It is late; 10 minutes before close, 10 minutes before we step into the cool night air, lock the doors, turn down the lights on another night of pediatric Urgent Care. But this mother is worried; the baby cries; she thinks it may be too much. He eats, perhaps too little. They are baffled as to why the hospital let them take their mewling little child home without more instructions. They are tired, dark rings under their eyes.

The baby looks well: He is vigorous, strong, and even without touching him, I can see his tone is good, his color pink, his breathing even and regular. He is, however, furious at his leg getting cold, and the parents are squinting at me as we talk, because they can’t hear me over his cries.

So, I take the screaming bundle, lay him on the white paper sheet of the exam table, arrange the baby’s blanket into a quick triangle, and wrap him into a tiny baby burrito with all the skill of a mother-of-two-pediatric-emergency-physician. His arms and legs are tucked away. I tighten the blanket, lift him up and start the bounce-step-bounce-step that all parents learn. The crying halts suddenly. Quiet descends. And now, we can talk.

We talk about feeding - he’s normal, diapers – he’s normal, crying – he’s normal. We talk about babies, how they like being swaddled, like being held, how this is a very, very hard time for everyone. How this is all normal. The father’s shoulders soften. The mother says, “Can you come home with us tonight? Please? Because this is the first time he’s stopped crying in six hours.”

I continue the bounce-step, bounce-step because this is the best part of my day; the sweet baby warmth, a parent ready to learn. This is the keystone of pediatric Urgent Care, providing practical guidance and medical knowledge in a small dose — enough to get them through the night, the next few days, until the next well check. Straddling the gulf between the medical home of the general pediatrician and the constant chaos of the ER, Urgent Care allows for the deep and critical connection of helping families in their moments of crisis.

And when we step out of the exam room, the baby calm, the parents relaxed, the nurse is standing guard; the clinic lights are off. The office closed. She is waiting for the last patient of the night. “Dr. Iqbal, does the baby need anything?” It’s late, but she’s ready to draw a bilirubin, start a PO trial, check a diaper. “No, Miriam,” I tell her, “The baby is fine and ready to go home.” She walks them out, her training as a car seat safety technician kicking in as she expertly checks the car seat straps of the infant carrier to make sure it is secure, and offering the mom a squeeze of the hand, another last commiseration and reassurance.

*Dr. Iqbal is the Regional Lead, South Atlantic Medical Director with PM Pediatrics*

## Clinical Presentations—Case Study

### A Male Patient with “Urinary Symptoms”

Tracey Q. Davidoff, MD, FCUCM



#### Case Presentation

A 56-year-old male with no significant past medical history presents to Urgent Care with a complaint of a urinary tract infection. He is brought back by the medical assistant who obtains a urine sample. Upon evaluation by the provider, he discloses that he suspects he has a urinary tract infection because he has noted blood when he ejaculates. He states that approximately three weeks ago he had self-performed a manual release, and noted blood in the sperm. He had a small amount of blood spontaneously drain from his penis for about a day, but then the symptoms resolved. He continued to self-perform manual releases without more episodes of hematospermia, until several days prior to this visit, when the bloody sperm recurred. The patient states this time he had copious blood with clots draining from his urethra for several hours after the episode but has not noted blood since. He delayed seeking medical attention because he was embarrassed. He is now afraid to masturbate again. He denies any trauma to the genitals before or during masturbation. He has no dysuria, urgency, frequency, abdominal pain, penile or scrotal pain, fever, or chills. He has noted no rashes or lesions on his penis. He is not on aspirin or blood thinners. He denies intercourse with males or females in years and has never had an STI that he is aware of.

His vital signs are normal.

The urine sample obtained by the MA is normal.

His physical exam, including a genital exam is normal.



## **Discussion**

Hemospermia, or blood in the ejaculate, is not a common complaint seen in Urgent Care or primary care.<sup>1</sup> It is actually very rare in any setting. The true incidence is not known likely due to under reporting. Although frightening, in most cases the cause is benign.<sup>2</sup> Because it is so rare, there is little research available.

It is extremely important to take a thorough history to delineate exactly where the blood is coming from. Renal, bladder, and urethral blood could easily be confused with hemospermia by the patient. As the work up is vastly different, every effort needs to be made to narrow the source of bleeding.

The most common causes of hemospermia are post-procedural. This would include prostate biopsy, radiation treatment of the prostate, and vasectomy. Non-procedural trauma is also possible. Infections, including STI's, malignancy, infiltrative and anatomic disorders, and exogenous or endogenous bleeding disorders may also contribute to hemospermia. Frequent daily ejaculation may also be a cause.

In most cases, especially in men under 40, often the cause is benign or never found, and usually resolves spontaneously without treatment. In a case series by Zhao in 2011, 270 men with hemospermia underwent transrectal ultrasound. No man < age 40 had cancer, and only 8 of 126 patients (6.3%) > age 40 had carcinoma (five prostate, two seminal vesicle, and one bladder).<sup>3</sup>

Evaluation of men with hemospermia should include a detailed history and a careful physical exam. A urinalysis should be performed on all patients. A urine culture should be done if the urinalysis is consistent with pyuria. Patients who have symptoms of urethritis, but no pyuria should have testing for STIs including gonorrhea and chlamydia. Trichomonas should also be considered.

Semen analysis is generally of little value except when there is a question of whether there is actually blood in the semen, or if the patient has traveled to an area in which schistosomiasis is endemic. Microscopic evaluation can detect blood and schistocytes if present.

Rare cases may require a transrectal ultrasound of the prostate, MRI of the prostate, or a referral to a urologist. Prostatic-specific antigen testing is not necessary in these patients. In most cases, a clear cause will not be found, and the symptoms will resolve spontaneously. Treatment is rarely required, and reassurance is all that is necessary.

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<sup>1</sup> Tintinalli J, et. al. Tintinalli's Emergency Medicine, 9<sup>th</sup> Ed. 2020. Pp. 598

<sup>2</sup> [https://www.uptodate.com/contents/hemospermia?search=hemospermia&source=search\\_result&selectedTitle=1~35&usage\\_type=default&display\\_rank=1#H1](https://www.uptodate.com/contents/hemospermia?search=hemospermia&source=search_result&selectedTitle=1~35&usage_type=default&display_rank=1#H1) accessed online 12/11/22

<sup>3</sup> Zhao H, Luo J, Wang D, Lu J, Zhong W, Wei J, Chen W. The value of transrectal ultrasound in the diagnosis of hemospermia in a large cohort of patients. J Androl. 2012;33(5):897. Epub 2011 Apr 21. Accessed online 12/11/22

**Case Resolution:** This patient requested to see a urologist. Gonorrhea and Chlamydia testing were negative, ultrasound was negative, and the patient’s symptoms did not recur. No further evaluation or follow up was recommended.

**Best Practices Summary of the College of Urgent Care Medicine**

**Title: Opioids for Pain Control in Urgent Care**

Date Reviewed	19 February 2023
Subject	The Use of Opioids for Pain Control in Urgent Care
Patient Population	Patients over 18 with an acute or chronic painful condition. Excludes patients with pain from sickle cell crisis, cancer pain, and palliative or end-of life care.
Rationale	Patients will present to Urgent Care centers with painful conditions requiring medication for relief of pain. Not all patients will receive adequate pain control or will be able to tolerate acetaminophen or NSAIDs. Some patients will require treatment with opioids. The Urgent Care provider should be well versed in the indications, risks and benefits of treatment with narcotic pain relievers.
Introduction	<p>The over-prescription of opioids has led to a national opioid crisis. At its peak, the overuse of opioids was estimated to cost over \$700 billion annually. State and federal agencies have introduced stricter guidelines to address the opioid crisis. Research published by the CDC determined that the dose and duration of the treatment represents an important factor leading to addiction. In this report, it was also suggested that a treatment as short as 10 days can lead to opioid dependency. Recent data also suggests that up to 15% of surgical patients may become dependent following the perioperative use of opioids. This re-enforces the recommendation limiting the amount of opioids used for acute pain, and endorses a multi-modal approach to the treatment of pain.</p> <p>The goal of acute pain management is to relieve suffering, facilitate function, enhance recovery, and satisfy patients. Pain control regimens must take into account medical, psychological, and physical condition; age; personal preference; and response to agents given. The optimal strategy for acute pain control should consist of multimodal therapy to increase efficacy, reduce side effects of therapy, and minimize the need for opioids.</p>
Evidence based guideline	Dowell D, Ragan KR, et. al. CDC Clinical Practice Guideline for Prescribing Opioids for Pain-United States, 2022, MMWR Recomm Rep 2022;71(No. RR-3): 1-95. DOI: <a href="http://dx.doi.org/10.15585/mmwr.rr7103a1">http://dx.doi.org/10.15585/mmwr.rr7103a1</a>
Discussion	Patients present to Urgent Care with a wide variety of painful conditions requiring medication for pain control. Some conditions may be so severe that non-opioid treatments may not provide relief. These may include but are not limited to kidney stones, fractures, herpes zoster, and rib fractures. Other patients may not tolerate acetaminophen or NSAIDs due to allergy, gastric disorders including PUD, gastritis, and bariatric surgery, and renal disorders.

	<p>First line treatment for pain control should be non-pharmacologic management. This may include heat for soreness, ice for painful injuries, elevation, compression, and immobilization. Topical agents may have some effect for painful conditions and include topical diclofenac, lidocaine patches, menthol preparations, and capsaicin. Acetaminophen and NSAIDs should be tried first for pain. If one drug is ineffective, another should be tried as some patients find better relief from one NSAID over another. If unable to tolerate oral medications, acetaminophen may be given IV, and ketorolac may be given IV or IM.</p> <p>Once it is determined that first line pain control methods are not appropriate, or have failed, and the patient is in moderate to severe pain, opioid pain relievers may be considered. Patients should be informed of the realistic expectations and the risks of opioid therapy, such as sedation, respiratory depression, pruritis, urinary retention, constipation, nausea, as well as longer term risks such as tolerance, dependence, withdrawal upon cessation of treatment and abuse. Patients need to have reasonable expectations; the goal is to make the pain tolerable, but not necessarily relieved.</p> <p>Prescribers should review medical records to determine if the patient has had previous experience with narcotic medication, if they have risk factors for abuse, and if there are any other medications that may be a contraindication or increase risk for additive side effects.</p> <p>If available, state databases should be consulted to identify any recent prescriptions or warning signs. All applicable state laws should be followed when prescribing controlled substances.</p> <p>Patients with pre-existing opioid abuse disorders should be treated with non-opioid options or referred to pain management.</p> <p>The lowest potency and the lowest dose possible that provides improvement in the patient’s pain should be prescribed. The goal should be to make the patient’s pain tolerable with the fewest side effects. Immediate release preparations should be used as initial therapy, not long acting. Only a several days supply should be provided, and the patient reassessed frequently. They should be switched to a non-opioid medication as soon as possible.</p> <p>Upon completion of therapy, patient education should include tapering, if indicated, proper storage and disposal of unused medication.</p>
Summary	<ul style="list-style-type: none"> <li>• Non-drug and non-opioid drug therapies should be maximized before initiating opioid therapy</li> <li>• Clinicians should discuss with patients the realistic benefits and known risks of opioid therapy</li> <li>• Immediate-release opioids, not long-acting, should be used for the initiation of opioid therapy</li> </ul>

	<ul style="list-style-type: none"> <li>• If opioid therapy is initiated, it should be at the lowest effective dose possible for the shortest amount of time</li> <li>• Patients should be reassessed within 1-4 weeks of initiation of opioids to evaluate risks and benefits of therapy</li> <li>• Each patient should be evaluated for the risk of opioid-related abuse and discuss the risk with patient before starting therapy. Patients should be re-evaluated periodically to ensure no abuse is occurring.</li> <li>• Prescribers should review the patient’s history of controlled substance prescriptions to ensure the patient is not receiving dosages or combinations that could result in overdose</li> <li>• Patients with pre-existing opioid abuse disorder should be treated with evidence-based medications or arrange treatment with specialty care</li> </ul>
References	<p>Dowell D, Ragan KR, et. al. CDC Clinical Practice Guideline for Prescribing Opioids for Pain-United States, 2022, MMWR Recomm Rep 2022;71(No. RR-3): 1-95. DOI: <a href="http://dx.doi.org/10.15585/mmwr.rr7103a1">http://dx.doi.org/10.15585/mmwr.rr7103a1</a></p> <p>Wardhan R, Chelly J. Recent advances in acute pain management: understanding the mechanisms of acute pain, the prescription of opioids, and the role of multimodal pain therapy. F1000Res. 2017 Nov 29;6:2065. doi: 10.12688/f1000research.12286.1. PMID: 29225793; PMCID: PMC5710326.</p>
Reviewers	<p>Tracey Q. Davidoff, MD, FCUCM Sean McNeeley, MD, FCUCM</p>

## Coding Corner

### Five-Year-Old with Runny Nose & Sore Throat

Brad Laymon PA-C, CPC, CEMC



#### The Documentation

##### Subjective

Five y/o established patient here for runny nose and sore throat. Mom is with patient. Symptoms present for three days. No fever, cough, or rash. No other complaints. Mom would like COVID testing since patient had an exposure at daycare.

Past Medical History: None  
Current Medications: None  
No Known Drug Allergies

##### Objective

Alert child sitting in mom's lap. Temp- 98.0, HR 128, RR 26, SPO2 98%  
HEENT: No corneal injection, TMs clear, oropharynx is erythematous but no exudates. PND noted.  
Neck: supple, no adenopathy  
Lungs: CTAB, No rhonchi or wheezing  
Heart: Tachy rate, No murmur

##### Recent results

Collection time: 08/24/22 11:18 AM  
POCT rapid Covid is negative

##### Assessment

URI  
Exposure to COVID

##### Plan

Orders Placed in This Encounter: POCT COVID test  
Facility-Administered Encounter Medications: None  
Medications Prescribed During This Encounter: None

##### Discussion

We will break this case down by referring to the MDM Elements:

##### Number and Complexity of Problems Addressed

The patient complaint is a runny nose and a sore throat. This would fall under "1 acute, uncomplicated illness or injury", which is a "Low" MDM or Level 3.

### **Amount and/or Complexity of Data to be Reviewed and Analyzed**

In this case, the provider ordered a POCT COVID. This would count towards 1 “ordering of each unique test” in Category 1.

The provider did *not* document that the mother provided the HPI, therefore one point for independent historian would not be awarded. This meets the criteria for straightforward, which is Level 2.

### **Risk of Complications and/or Morbidity or Mortality of Patient Management**

No prescriptions were sent to the pharmacy. The provider did *not* document recommendations for the patient to take OTC medications. This would be straightforward or Level 2.

Two of the three elements of MDM need to be met when choosing your level of service. We successfully met Level 3 for *problems addressed* but only straightforward, Level 2 for *data* and *risk*. Unfortunately based on the documentation provided, the correct E/M code is a 99212.

### **Discussion**

What if the provider had documented he/she used an independent historian, in this case the mother, to gather the HPI? This would have increased the LOS to a 99213 since the Complexity of Data Category 1 “low” requirement would be met. Data Category 2 would also be met, and we only need one of the two.

What if the provider had documented that the patient should take OTC medications such as ibuprofen and dextromethorphan for their symptoms? If he/she had, this would increase the risk to a “low” Level 3, also increasing the LOS to 99213.

This case illustrates the need for proper documentation of OTC meds and independent historian which in many cases, may be the difference between Level 2 and 3 billing.

## **Occupational Medicine**



### **Determining Causation in Workplace Injuries**

Max Lebow, MD, MPH, FACEP, FACOEM

Section Editor, Occupational Medicine

Not every employee’s injury or illness is considered related to their employment. One of the unique challenges for the Occupational Medicine provider is determining whether their patient’s injury is related to their work – often a non-clinical decision. Causation determination has repercussions in most aspects of the patient’s case from that point forward.

#### **How Causation Determination Impacts the Workplace Injury/Illness.**

1. **Causation Determines Treatment Location** – Care providers with some Work Comp experience may treat work-related injuries. Non-work-related injuries will be treated by the patient’s Primary Care Provider, although a few states also allow the patient’s primary physician to be their occupational physician.

2. **Causation Determines Outcome** – Work-related injuries can take up to three times longer to resolve than non-work-related injuries.
3. **Causation Has a Direct Economic Impact on the Patient** – Employees may collect Workers' Compensation benefits to replace lost income during recovery if the injury is deemed work-related.
4. **Causation Has an Economic Impact on the Employer** – Increasing the employer's insurance rates and other indirect negative economic impacts.

### **Determining Causation**

Determining causation is usually straightforward. For example, a butcher who sustains a finger laceration by a meat slicer leaves little question as to the work-relatedness of the injury. However, more complex cases, such as patients with pre-existing medical conditions who have a flareup at work or an injury that occurs off-site, may require the provider to understand OSHA guidance and their state legislation to help make the correct causation decision.

### **OSHA 1904.5: Determination of Work-Relatedness (State OSHA programs often mimic US OSHA)**

OSHA states that an injury is work-related if the event or exposure is caused or contributed to the resulting condition or significantly aggravates a pre-existing injury or illness, and exemptions do not apply. These OSHA exemptions (most applicable) include:

- An illness that surfaces at work but results solely from a non-work-related event or exposure.
- Injury or illness results solely from voluntary participation in a wellness program, medical, fitness, or recreational activity such as blood donation, flu shot, or exercise class.
- Illness solely the result of an employee eating, drinking, or preparing food or drink for personal consumption (unless contaminated by toxic workplace materials).
- Injuries caused by an MVA while the employee is commuting to or from work.
- Common cold or flu. (Note: contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work.)
- Mental illness — although there are many steps. We will explore stress and PTSD in the workplace in a later article.

### **Concept of AOE/COE**

Another way to approach work-relatedness is consideration of AOE/COE or Arises Out of Employment and in the Course of Employment.

Arises Out of Employment (AOE) is determined by the treating provider. After a history and physical, the provider must factor into the assessment the mechanism of injury, the patient's job description, and the relationship between workplace risk and the resultant injury or illness. In many states, the physician will then be asked to determine, within Reasonable Medical Probability or more likely than not, that the patient's injury is or is not work-related. Some states will then consider a percentage of contribution. In California, for example, the work injury need only contribute to 1% of the patient's disability to be compensable.

COE-Occur in the Course of Employment is a more complex assessment often determined in a medical-legal environment. This considers factors such as where the injury occurred and whether the employee was doing work that contributed to their employer or on behalf of their employer.

### **Aggravation of a Pre-Existing Medical Condition.**

An aggravation/exacerbation determination is whether a workplace injury/exposure worsened a patient's pre-existing medical condition, either temporarily or permanently. This often requires the provider to review past medical records and previous treatments and other risk factors. To many occupational medicine physicians, this is the most difficult determination.

Determining aggravation is more difficult when the pre-existing medical condition is a previous work-related injury. Determining if the current incident represents a new injury, is an aggravation of a previous injury, or is unrelated to work can be a difficult but impactful decision.

### **The Importance of a Complete and Thorough History in Causation Determination**

From the previous discussion, it is easy to see that a standard Urgent Care history is inadequate to communicate causation determination. While some cases are obvious, all patient charts should document enough information to establish the temporal relationship to the patient's injury, a detailed mechanism of injury, and whether other causes may explain the patient's pain or functional impairment.

This article represents an introduction to occupational medicine causation determination. The work-relatedness of psychological impairments such as stress and PTSD will be the subject of a future discussion.

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## **ECG Corner**

**Jerry W. Jones, MD, FACEP, FAAEM**

Section Editor, ECG

### **Subtlety, Jones's Rule and the 12-Lead ECG**



The following 12-lead ECG was forwarded to me by one of my former Masterclass students.



## Figure 1

Chief Complaint: Pressure-like central chest pain with diaphoresis for 45 minutes.

Rhythm: Sinus (Upright P waves in Leads I and II, +/- biphasic P wave in Lead V1)

Rate: Mid- to upper 60's

Blocks (SA, AV, bundle branch): None

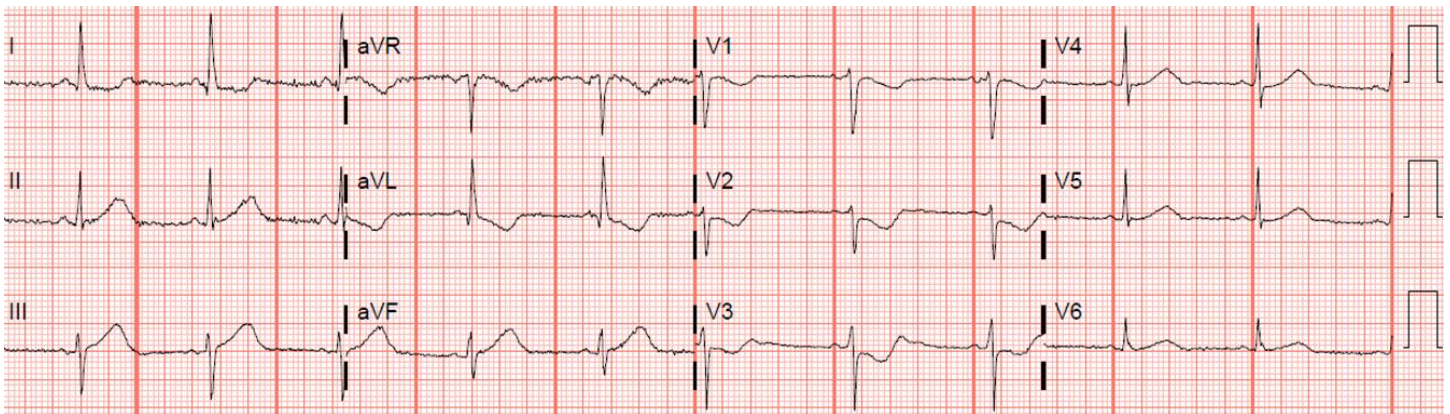
PR Interval: Normal

QT: No measurements, but concerning because it ends near the middle of the R-R interval

ST Deviations: To be discussed.

Aside from the usual measurements and observations, what did you notice first on this ECG? Was it the depressed ST segments with T wave inversions? Or was it the upright T waves?

Most people look for ST elevation which is very minimal on this 12-lead ECG (it's there in Lead III). But I'm willing to bet that the first thing that caught your eye was the ST depression with T wave inversion in Leads I, aVL, and V1 and V2. Lead V3 also has ST depression but the T wave is biphasic (down/up). T waves are labelled by how they end. Although the T wave in Lead V3 is definitely *biphasic*... it's officially an *upright* T wave because it ends above the baseline.



(Figure 1)

### **Jones's Rule**

At this point I would like to introduce you to **Jones's Rule**...

"Any ST depression on the ECG of a patient with chest pain compatible with an acute coronary syndrome should be considered a *reciprocal change* to an acute epicardial ischemia (STEMI) *until proved otherwise!*"

### **Corollary to Jones's Rule**

And the **Corollary to Jones's Rule**...

"The ST depression of a reciprocal change may appear *before the ST elevation is discernible* and – even when both are present – *the reciprocal change may be more impressive*. Remember: the ST elevation is pointing to where the problem is!"

### ST Depression and Vascular and Anatomical Areas

We definitely see lots of obvious ST depression on this ECG and that ST depression appears to fit two different anatomical locations: the ST depression in Leads I and aVL represent the *basolateral* (formerly “high lateral”) area and the ST depression in Leads V1 – V3 represent the *left para-apical* (formerly “septal”) area.

Here are the *anatomical and vascular areas* on the ECG:

Leads	Anatomical Area	Vascular Area
II, III and aVF	Inferior Wall (LV)	RCA, LCx, LAD
I, aVL	Basolateral Wall (LV)	LAD, LCx
V1 – V3	(Postero-)Lateral Wall (LV)	LCx, RCA
	Anterior Wall (LV)	LAD
	Anterior Wall (RV)	RCA
V7 – V9	(Postero-)Lateral Wall (LV)	LCx, RCA
V1R – V6R	Right Ventricle	RCA, LAD

Some of the listings may surprise you: The LAD can certainly cause an inferior wall MI since most (around 80%) of LADs wrap around the apex and supply part of the inferior wall of the left ventricle. The LAD can also result in minor infarctions of the anterior right ventricle because the LAD does send branches over to that area. Those are the branches that “no one ever talks about” and which you very rarely see on any diagrams (mainly because they are very small and usually of no hemodynamic consequence).

The ST depression of subendocardial ischemia *does not localize* on the ECG! Typically, it includes several vascular territories. When you see ST depression limited specifically to a single vascular territory – consider that a *reciprocal change* until proved otherwise (once again - Jones’s Rule). Here is an example of *true* subendocardial ischemia on a 12-lead ECG:

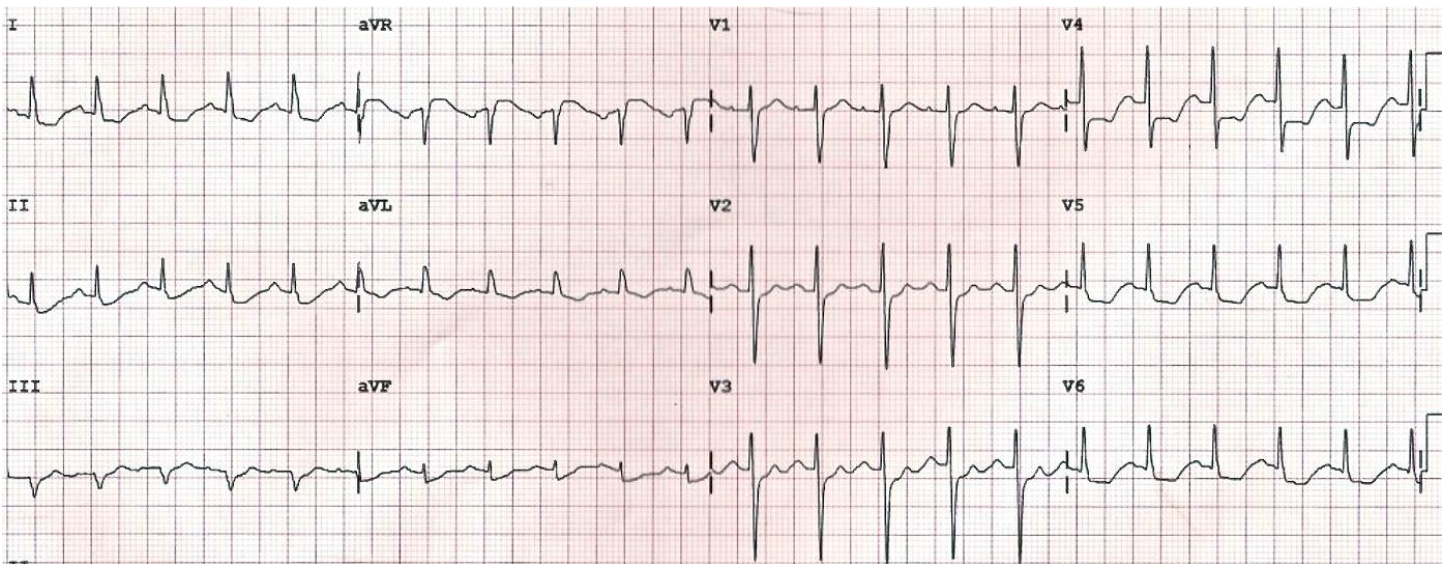


Figure 2

Look at the distribution of ST depression on this ECG! This is called *circumferential subendocardial ischemia*. Compare the ST depression in this ECG (Figure 2) with that in Figure 1. You can better appreciate the *localization* of the ST depression in Figure 1.

Remembering Jones's Rule, we suspect that the leads with ST depression in Figure 1 are NOT indicating subendocardial ischemia, but instead, they demonstrate early acute transmural ischemia in the myocardium *opposite* those leads. Those ST elevations represent *reciprocal changes* – not localized subendocardial ischemia.

### **Reciprocity and Reciprocal Change**

Leads I and aVL share reciprocity with the inferior leads (II, III and aVF). Leads V1 – V3 share reciprocity with Leads V7 - V9; but those leads were never recorded, so we don't know what they looked like. However, we are allowed to diagnose a posterolateral\* (formerly "posterior") STEMI based on ST depression with T wave inversion in Leads V1 – V3. The original description of a "posterior" infarction was a tall R wave in Lead V1 with a flat, depressed ST segment and an upright T wave. What they did not realize at the time is that they were describing a *completed infarction with post-reperfusion changes* – not an early transmural ischemia. What we see in Leads V1 and V2 on *this* ECG (Figure 1) is exactly what one would expect of an acute transmural ischemia of the (postero-)lateral wall *in progress*.

Getting back to the frontal plane (limb) leads, we can definitely suspect that there are reciprocal changes occurring in Leads I and aVL. That means we should be looking for acute ST elevations occurring in Leads II, III and aVF. But all we see is about 1 mm of ST elevation in Lead III only. And we should have STE in at least TWO contiguous leads to diagnose a STEMI.

### **Hyperacute T Waves**

Is there any other hint that we are seeing an acute transmural ischemia in progress? *Yes!* Look at the T waves in the inferior leads – they all have very wide bases! In fact, the T waves appear to begin at the J point (the termination) of the QRS complexes in those leads. Those are hyperacute T waves. If you spend your career looking for *tall*, wide hyperacute T waves (as many introductory texts and websites instruct you to do), you are going to miss a lot of hyperacute T waves. (My neighbor owns several "Big and Tall" clothing shops for men. I once asked him if he had many customers over seven feet tall. He replied, "A few – but most are just wide!") The same with hyperacute T waves. This idea is reinforced in Leads V4 – V6. Those T waves aren't tall at all – but their bases are certainly *wide*.

*Hyperacute T waves are a subendocardial phenomenon!* They indicate that the ischemia is rapidly *approaching* the epicardial layer – but it's not there yet! Only when the ST elevation appears has the epicardium been reached and the ischemia has become fully transmural. The hyperacute T waves will usually disappear rapidly after the appearance of the ST elevation, but occasionally some may persist a bit longer. Just remember: if you see hyperacute T waves *without* ST elevation, the ischemia has not yet become transmural... *but expect it very soon!*

### **Deciding on the Culprit Artery**

Which coronary artery is our culprit here? I have a *pearl* for you:

*"You can sometimes arrive at a diagnosis much faster if you rule out what **did not happen** or **could not have happened** rather than what **did** happen."*

First, while all three coronary arteries can cause an acute inferior STEMI, the LAD does NOT create posterolateral infarctions. So, that leaves us with either the right coronary artery (RCA) or the left circumflex artery (LCx) as the culprit.

Here's another pearl for you:

*"If there is an inferior MI accompanied by ST depression in Lead aVL – the RCA is the culprit."*

Another somewhat reliable method tells us that if the ST elevation in Lead III is taller than the ST elevation in Lead II – the RCA is the culprit. It appears the RCA is going to be the culprit in this case.

### **What If the Findings Are Not Diagnostic – But You’re Still Concerned?**

How should you manage a patient like this? A normal troponin is not going to be of any help because the patient has had pain for only about 45 minutes. You initiate a work-up for acute coronary syndrome and repeat the ECG every 15 – 20 minutes. Granted, you are in an Urgent Care facility and this patient is going to be transferred – but, due to unforeseen circumstances, you may have this patient remain in your care for longer than you anticipated. With hyperacute T waves like those in the inferior and lateral leads, you probably won’t have to wait long before the ST elevation makes its presence known.

One last pearl: “Although you may *diagnose* an acute MI by the ST elevation, lack of ST elevation *never rules out* an acute MI!”

For this issue, I have presented an ECG from my collection. Please feel free to send me an ECG that you would like discussed, along with any specific questions you may have about that ECG. You can email the ECG to me ([jwjmd@medicusofhouston.com](mailto:jwjmd@medicusofhouston.com)) preferably in a JPG, PNG or PDF format (I cannot use proprietary formats from record-keeping systems). Please remove all identifying data. The ECG should be positioned correctly in landscape format. Do not send ECGs that are sideways or upside down or distributed among two or three separate files. Also, if the ECG paper has been bent, folded or creased it may not be usable. Please state in your email that you want the ECG considered for *this* publication.

\*The correct term for what we used to call a “posterior MI” or “true posterior MI” is actually “lateral MI.” That’s because it has finally been recognized that what we have always considered the lateral wall of the left ventricle is actually located posteriorly in the chest. I have created a video on YouTube that demonstrates this fact using an anatomical 3-D model of the heart. To view it, visit:

[https://www.youtube.com/watch?v=46\\_G0SFgSTc](https://www.youtube.com/watch?v=46_G0SFgSTc)

## **From the College of Urgent Care Medicine Clinical Response Committee**

### **Urgent Care Recommendations for Volume Surges**

Advanced planning for surges in Urgent Care volume should occur on both clinical and administrative levels. This planning should be done with protocols developed and be ready to be activated when needed.

Lessons learned from the COVID-19 pandemic should be incorporated into future surge and disaster planning.

Clinical staff are critical during volume surges. Infection prevention is essential to reduce sick calls. Re-education in proper protocols for handwashing and use of personal protective equipment should be encouraged. All staff should be current on vaccinations. Mental health support should be available for all employees as needed.

Clinicians need to remember that not all patients presenting for care will be afflicted with the surge illness(es). Careful assessment of chief complaints, vital signs, past medical history, and physical findings are essential to identify outlying illnesses.

Telehealth can be a valuable tool for certain patient groups during volume surges.

Operators and providers should be aware of any regulatory requirements for emergency credentialing privileges to bolster staffing.

Social media should be utilized to communicate infection prevention information, proper usage of healthcare facilities, and pertinent updates to the public.

Guidelines for the conservation of critical resources, such as personal protective equipment, antimicrobial medications, oxygen, and test materials, should be implemented.

For more information:

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/facility-planning-operations.html>

<https://www.cdc.gov/cpr/readiness/resources/healthcare/>

<https://asprtracie.hhs.gov>

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## Urgent Care Q&A Q1 2023

### **Should antibiotics be stopped in adults when a urine culture is negative?**

Although urine culture is currently regarded as the gold standard for diagnosis of UTI (albeit often retrospectively), midstream-voided urine colony counts are an imperfect diagnostic criterion for UTI. Contamination and colony counts below the laboratory's threshold for reporting can both lead to a "negative" culture for a patient who actually has a symptomatic UTI. The most important limitation of urine cultures from a stewardship perspective is that culture results in themselves tell us nothing about whether the patient has urinary symptoms (and thus true UTI) or symptoms unrelated to the urinary tract.

Also, recent research has shown that almost all females with typical urinary complaints and a negative culture still have an infection with *E. coli*.

**Source:** [ASM](#) and [UpToDate](#)

### **What is the preferred antibiotic treatment for children (infants older than one month and young children) with Urinary Tract Infection?**

A cephalosporin as the first-line oral agent in the treatment of UTI in children without genitourinary abnormalities.

- For children with a **HIGH** likelihood of renal involvement (ie, fever >39°C [102.2°F] with or without back pain) or immune deficiency, use a second-generation (eg, cefuroxime) or third-generation cephalosporin (e.g., cefixime, cefdinir, ceftibuten).

The predicted probability of resistance to first-generation cephalosporins, trimethoprim-sulfamethoxazole, or amoxicillin is relatively high, and the tissue concentrations of nitrofurantoin may not be adequate to eradicate the causative organism.

- Cefixime 8 mg/kg once daily
- Cefdinir 14 mg/kg by mouth once daily
- Cefibuten 9 mg/kg by mouth once daily
- Cefpodoxime 10 mg/kg per day by mouth divided in two doses, but no large trials have specifically evaluated the efficacy of cefpodoxime for pediatric UTI

- For children with **LOW** risk of renal involvement (fever  $\leq 39^{\circ}\text{C}$  [102.2°F], not toxic-appearing), we prefer a first-generation cephalosporin (e.g., cephalexin 50 to 100 mg/kg per day by mouth in two divided doses) provided that the local resistance of *E. coli* to first-generation cephalosporins in the specific community is not high (e.g., is not  $\geq 15$  percent).

**Length of treatment:** Longer course of therapy for febrile children (usually 10 days) and a short course of therapy (three to five days) for immune-competent children presenting without fever.

Source: [UpToDate](#)

**Email your clinical questions to the Editors:**

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Disclaimer: This material is for educational purposes only. Medical practice and knowledge are constantly evolving and changing. This information is peer-reviewed but should not be your only source. Providers of care should use discretion when applying knowledge to any individual patient.

## Urgent Updates: March 2023

### Study Estimates Global Prevalence of SJS/TEN Linked to Antibiotics

According to the first meta-analysis to examine the worldwide prevalence of Stevens-Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN) in connection with antibiotics, researchers found that antibiotics were associated with 28% of all cases of SJS and TEN. The metanalysis involved 38 studies with 2,917 patients from more than 20 countries. 86% of all SJS/TEN cases were associated with a single drug, with the rest involving multiple drug triggers, infections, or other causes. More than a quarter (28%) of those patients had used an antibiotic, and the sulfonamides were the class most often triggering SJS/TEN.

**Full Access:** [Medscape](#)

### FDA Authorizes First Over-the-Counter At-Home Test to Detect Both Influenza and COVID-19 Viruses

The U.S. Food and Drug Administration issued an emergency use authorization (EUA) for the first over-the-counter (OTC) at-home diagnostic test that can differentiate and detect influenza A and B, commonly known as the flu, and SARS-CoV-2, the virus that causes COVID-19. The Lucira COVID-19 & Flu Home Test is a single-use at-home test kit that provides results from self-collected nasal swab samples in roughly 30 minutes. **Full Access:** [FDA](#)

### Paxlovid Doesn't Increase Risk for Rebound COVID Infection: Study

Researchers found that patients who received Paxlovid, Lagevrio, or no antiviral medication had rebounds at similar rates, ranging from 4.5% to 6.6%. The study included 4,592 people in Hong Kong who were

hospitalized within 3 days of a COVID diagnosis. The study period during the time that the Omicron subvariant BA.2.2 was predominant. **Full Access:** [The Lancet](#)

### **Increase in Extensively Drug-Resistant Shigellosis in the United States**

The Centers for Disease Control and Prevention (CDC) has been monitoring an increase in extensively drug-resistant (XDR) *Shigella* infections (shigellosis) reported through national surveillance systems. Clinicians treating patients infected with XDR strains have limited antimicrobial treatment options. XDR *Shigella* strains can spread antimicrobial resistance genes to other enteric bacteria. Given these potentially serious public health concerns, CDC asks healthcare professionals to be vigilant about suspecting and reporting cases of XDR *Shigella* infection to their local or state health department and educating patients and communities at increased risk about prevention and transmission. **Full Access:** [CDC](#)

### **A Woman Dies Every Two Minutes Due to Pregnancy or Childbirth: UN Agencies New Data Show Major Setbacks for Maternal Health in Many Parts of the World, Highlighting Stark Disparities in Healthcare Access**

Every two minutes, a woman dies during pregnancy or childbirth, according to the latest estimates released in a report by United Nations agencies. The report, which tracks maternal deaths nationally, regionally and globally from 2000 to 2020, shows there were an estimated 287 000 maternal deaths worldwide in 2020. In two of the eight UN regions - Europe and Northern America, and Latin America and the Caribbean – the maternal mortality rate increased from 2016 to 2020, by 17% and 15% respectively. **Full Access:** [WHO](#)

### **Doxy PEP Does Not Lower Risk of STIs in Cisgender Women**

The benefits of doxycycline postexposure prophylaxis (Doxy PEP) in preventing the transmission of sexually transmitted infections (STIs) in men and transgender women do not appear to extend to cisgender women, who have disproportionately high rates of infection in many regions. **Full Access:** [Medscape](#)

### **Effect of an Intranasal Corticosteroid on Quality of Life and Local Microbiome in Young Children with Chronic Rhinosinusitis - A Randomized Clinical Trial**

In this open label randomized clinical trial including 63 children, the group treated with intranasal mometasone presented better clinical improvement, a greater increase in nasopharyngeal microbiome richness, and a greater decrease in nasal ILC3 abundance compared with the control group. Intranasal corticosteroids may be clinically effective in the treatment of pediatric chronic rhinosinusitis and may help correct sinonasal dysbiosis. This randomized clinical trial demonstrated that treatment with an INC improved the quality of life of children with CRS and had a significant effect on increasing sinonasal biodiversity. **Full Access:** [JAMA](#)

### **Physicians Are More Burned Out Than Ever—Here’s What Can Be Done About It**

Despite a growing body of evidence supporting a systemic approach to health care worker well-being, we’ve seen some alarming trends in burnout and turnover in health care. Suggestions to address burnout includes creating a “culture of well-being.” It lays out 7 priority areas for action: creating positive work and learning environments, investing in assessment and research, supporting mental health, addressing regulatory and policy barriers, using effective technology, adopting well-being as an institutional value, maintaining a diverse, inclusive health care workforce. **Full Access:** [JAMA](#)



We would like to welcome the following new fellows of the College of Urgent Care Medicine! These fellows represent the best of us who work every day to provide the highest quality of medicine and advance the specialty of Urgent Care Medicine. They should be honored for their dedication and contributions. This quarter's new fellows are with Little Spurs Pediatric Urgent Care in the San Antonio, TX area and can now officially represent themselves as Fellows in the College of Urgent Care Medicine (FCUCM). They are:

*Jace Balzen, MD, FAAP, FCUCM*  
&  
*Bethany Diane Smyth, PNP, FCUCM*

Do you want to be recognized? Attributes of Fellows include currently practicing physicians, PAs, and NPs who have a solid foundation in Urgent Care and who are active members of CUCM for at least one year. Further requirements can be found [here](#).

Those who achieve fellowship status will be entitled to use the initials FCUCM for as long as they are members in the College.

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## **CONTINUING MEDICAL EDUCATION (CME)**

### **Target Audience**

This CME activity is intended for medical professionals who practice medicine in the on-demand space including Urgent Care, retail medicine and other similar venues. These providers may include physicians, nurse practitioners, and physician assistants.

### **Designation Statement**

The Urgent Care Association (UCA) designates this enduring material activity for a maximum of 3 AMA PRA Category 1 Credit(s)<sup>™</sup>. Physicians should claim credits only commensurate with the extent of their participation in the activity. Credits may be claimed for one year from the date of release of this issue.



### **CME Objectives**

1. Provide updates on the diagnosis and treatment of clinical conditions commonly managed by on-demand providers
2. Alert on-demand providers to potential unusual cases that may present to them
3. Utilize tips and tricks to improve patient care in the on-demand space

### **Accreditation Statement**

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

### **CME Credit Instructions**

Once you have read the article, please log into your UCA profile. Once you are logged in go to Learn->CME->Request CME. Complete the survey with the requested information for Urgent Caring Quarterly. Your certificate will then be emailed to you within 3-5 business days. Please email [learning@ucaoa.org](mailto:learning@ucaoa.org) with questions.

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### **Disclaimer**

Medical practice and knowledge are constantly evolving and changing. This information is peer-reviewed but should not be your only source. Providers of care should use discretion when applying knowledge to any individual patient.

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## Poor Sensitivity Tests: What Are They Good For?

Victoria Pittman, MPAP, PA-C

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Brought to you by:



### Poor Sensitivity Tests: What Are They Good For?

Each shift, we order and interpret various diagnostic tests that inform our everyday therapeutic decisions for patients. There are many factors that go into choosing which test to order, but reliability and accuracy are paramount. Two key performance criteria that help determine the reliability of a test are sensitivity and specificity. While I'm sure many of us groan when we think back to learning biostatistics in school, it actually has real world implications (unlike that algebra we have yet to use)! Let's focus on the sensitivity of common tests encountered in Urgent Care and how it impacts patient care and satisfaction.

But first...a (*very quick I promise*) biostats review.

#### What Is Sensitivity, Again?<sup>4</sup>

Sensitivity is the true positive rate for a test. A test is highly sensitive if it is positive for most patients who have the certain disease the test is looking to detect. For example, a urine pregnancy test is a highly sensitive test, meaning that it is most likely to be positive in someone who is pregnant. A highly sensitive test can be helpful when ruling something out. For example, if you have a female patient with a negative pregnancy test, it is not likely that they are pregnant. If a test has low or poor sensitivity, we cannot always trust that a negative result has definitively ruled out a disease. In other words, a test with low sensitivity will have a lot of false negatives and more opportunities for missed diagnosis and management.

Specificity, on the other hand, is the true negative rate for a test. A test is highly specific when it is positive only in a very small number of people who do not have the disease (in other words, the false positive rate is exceedingly low). A highly specific test can be helpful when ruling in a disease. For example, a chest x-ray is highly specific for a rib fracture. Meaning that if you see a rib fracture on a chest radiograph, that patient has a rib fracture.

A popular mnemonic to remember sensitivity and specificity is SpPIn and SnNOuT<sup>5</sup>:

SpPIn → high **s**pecificity, **p**ositive test result, rules **i**n

SnNOuT → high **s**ensitivity, **n**egative test result, rules **o**ut

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<sup>4</sup> [CDC: Diagnostic Sensitivity and Specificity for Clinical Laboratory Testing](#)

<sup>5</sup> Pewsner D, et al. Ruling a diagnosis in or out with "SpPIn" and "SnNOuT": a note of caution. *BMJ*. 2004 Jul 24;329(7459):209-13. [PMID: 15271832](#)

Ideally, we'd like a test that has both high sensitivity and high specificity, but no test is 100% perfect. Take the example of a chest x-ray and diagnosis of rib fracture. We know that a chest x-ray is highly specific for a rib fracture (if a rib fracture is present, the patient most likely has a rib fracture). However, a chest x-ray is poorly sensitive for rib fractures. If a patient with blunt chest trauma presents to an Urgent Care and there are no rib fractures identified on the chest x-ray, this may be a false negative result. Understanding the reliability of a chest x-ray for detecting rib fractures is helpful for your decision making and management of the patient.

While it's too much to address in this article, sensitivity and specificity do not exist in a vacuum. It's important to look at the sensitivity and specificity of a test in the context of other important variables like the study population, likelihood ratios, and pretest probability.

### **Poorly Sensitive Tests in Urgent Care: They Are Everywhere!**

It's shocking how the bread-and-butter diagnostic tests we use daily in Urgent Care fall into the category of a poorly sensitive test. One such test is the rapid nasal influenza swab. The Infectious Disease Society of America guidelines recommend using influenza testing to help inform management decisions like antiviral medications<sup>6</sup>. Rapid nasal influenza tests have a sensitivity between 50% and 85%<sup>7</sup>. This means that up to 50% of the time you have a negative rapid flu result, it could be a false negative. Similarly, rapid nasal COVID tests have a sensitivity as low as 66%<sup>8</sup>. These rapid nasopharyngeal tests, however, are convenient, have a quick turnaround time, and are cost-effective for the patient. Another example of a poorly sensitive, but commonly used diagnostic test in Urgent Care is a plain abdominal film, or "KUB." This diagnostic study may be used to evaluate for ureteral or renal calculi or evidence of a small bowel obstruction<sup>9</sup>. In a resource limited environment like Urgent Care, this test is readily available and inexpensive. The sensitivity of this imaging study depends on what you're looking for but, for both the diagnosis of small bowel obstruction (SBO) and kidney stone, the sensitivity of a KUB is as low as 50%<sup>10,11</sup>. That means that if you're ruling out kidney stone or SBO based on a negative KUB, you're missing about 50% of these diagnoses, which has a significant impact on patient outcomes.

Knowing that poorly sensitive tests are common (and unavoidable), what does that mean for your next Urgent Care shift?

### **Practical Tips for Using Poorly Sensitive Tests**

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<sup>6</sup> Uyeki TM, et al. Clinical Practice Guidelines by the Infectious Diseases Society of America: 2018 Update on Diagnosis, Treatment, Chemoprophylaxis, and Institutional Outbreak Management of Seasonal Influenza. *Clin Infect Dis*. 2019 Mar 5;68(6):e1-e47. [PMID: 30566567](#)

<sup>7</sup> [CDC: Rapid Influenza Diagnostic Tests](#)

<sup>8</sup> Korleta E, et al. Real-life clinical sensitivity of SARS-CoV-2 RT-PCR test in symptomatic patients. *PLOS One*. 2021. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0251661>

<sup>9</sup> [ACR-SAR-SPR PRACTICE PARAMETER FOR THE PERFORMANCE OF ABDOMINAL RADIOGRAPHY](#)

<sup>10</sup> Fulgham PF, et al. Clinical effectiveness protocols for imaging in the management of ureteral calculous disease: AUA technology assessment. *J Urol*. 2013 Apr;189(4):1203-13. [PMID: 23085059](#)

<sup>11</sup> [RSNA: Review of Small-Bowel Obstruction: The Diagnosis and When to Worry.](#)

- Above all, trust your clinical judgment! Interpret the test result in light of the patient sitting in front of you and the whole clinical picture.
- Find out the exact sensitivity (and specificity) of the point of care tests you have available in your Urgent Care. Companies must report the sensitivity and specificity of a particular test to the FDA and that information should be made available to you. This will not only be helpful when interpreting the result, but also can help in your discussions with patients. For example, if a patient presents with symptoms consistent with influenza and has a negative result, you can pass along information like “this test is not going to catch all cases of active influenza” and discuss if you still have a high degree of suspicion.

Low-sensitivity tests aren't going away, so we need to understand how to use these tests to help our decision-making. In this month's Urgent Care Reviews and Perspectives episode, Drs. Kelly Heidepriem and Lance Shaull dive deep into low-sensitivity tests. [Listen in today!](#)

# Management of Hand Injuries in Urgent Care

Brought to you by:



## **Treatment of Dislocations**

Distal interphalangeal (DIP), proximal interphalangeal (PIP), and metacarpophalangeal (MCP) dislocations are often suspected on initial inspection. Dislocations are described using the position of the distal bone relative to the more proximal one. Dorsal DIP and PIP dislocation are most common. Radiographs are advised to exclude fracture and confirm dislocation.

Patients with closed DIP, PIP, and MCP dislocation often require digital nerve block prior to closed reduction. Most acute DIP and PIP dislocations are easily reduced on the first attempt. In select patients, after counseling and consent, a single rapid joint reduction attempt without digital nerve block may be considered. Reduction is achieved with distraction traction-counter traction. Inability to reduce the joint requires hand surgeon consultation. Following reduction, all patients require splinting in extension, neurovascular reassessment, confirmatory post-reduction radiographs, and referral to a hand surgeon.

## Scapholunate Dissociation

Scapholunate dissociation results from injury of the scapholunate interosseous ligament. The most common mechanism is a high-impact FOOSH with wrist hyperextension and ulnar deviation.<sup>1</sup>

Physical examination reveals wrist swelling, point tenderness over the scapholunate joint, and decreased range of motion. Patients should be risk-stratified for scaphoid fracture, as the typical mechanism of injury is similar.

Patients with scapholunate diastasis  $>3$  mm,<sup>2,3</sup> or clinical suspicion of scapholunate dissociation with equivocal imaging are placed in a thumb spica splint and referred to a hand surgeon. Scapholunate dissociation may require non-emergent surgical intervention to decrease the risk of severe and debilitating wrist dysfunction.

## Perilunate Dislocation and Lunate Dislocation

Perilunate dislocation and lunate dislocation are typically discussed together. They most commonly occur due to a high-impact FOOSH injury with wrist hyperextension. Physical examination may demonstrate swelling and deformity of the wrist, point tenderness over the dorsal aspect of scapholunate joint, and decreased range of motion.<sup>4</sup>

Posterior-anterior radiographs of the wrist are abnormal in perilunate and lunate dislocation; however, lateral views depict a greater degree of carpal bone displacement. Careful radiographic review (with particular attention to the lateral view) should be undertaken because missed injuries occur frequently. A 1993 study by Herzberg et al of 166 patients with perilunate dislocation reported a rate of missed injury of 25%.<sup>5</sup>

In perilunate dislocation, the lateral radiograph demonstrates displacement of the capitate (typically dorsal) with retention of the lunate articulation with the radius. The posterior-anterior view demonstrates loss of the continuity of the 3 carpal arcs and is referred to as “jumbled carpus.”

In lunate dislocation, the lateral radiograph shows displacement and rotation of the lunate (usually volar), known as the “spilled teacup” sign. The posterior-anterior view in lunate dislocation demonstrates a triangle-shaped lunate, known as the “pie in the sky” sign. Closed reduction of lunate dislocation and perilunate dislocation is often technically difficult. Emergent consultation with a hand surgeon is recommended to coordinate closed reduction versus open reduction and fixation in the operating room.<sup>5</sup>

## **Treatment of Fractures**

### Fractures of Phalanges 2, 3, 4, 5

#### *Distal Phalanx*

Distal phalanx fractures are classified into 3 categories: (1) tuft, (2) shaft, or (3) base fractures. Focused physical examination should identify point tenderness and associated nail plate injury, tendon injury, or open fracture. Anterior-posterior and lateral radiographs are recommended.<sup>6</sup>

Displaced, closed distal phalanx fractures require reduction, followed by a volar digital splint immobilizing the DIP joint. All patients with these injuries should be referred to a hand surgeon.

Based on the evidence, prophylactic antibiotics confer no benefit to low-risk open tuft fractures. Stevenson et al performed a double-blind randomized controlled trial of 193 patients with low-risk open distal phalanx fractures, all of whom underwent meticulous wound care in the ED and were then randomized to flucloxacillin versus placebo. No significant difference in wound infection rates was found (3%, and 4%, respectively;  $P > .05$ ).<sup>7</sup> Low-risk open tuft fractures require meticulous wound care, followed by reduction, primary closure, and a volar digital splint. High-risk open tuft fractures may benefit from prophylactic antibiotics.

#### *Middle and Proximal Phalanx*

Middle and proximal phalanx fractures are relatively more susceptible to rotational forces. Physical examination should identify rotational deformity (eg, scissoring of the digits with flexion), tendon injury, and open fracture. Two-view radiographs are recommended.

Displaced fractures require digital nerve block, closed reduction, and splinting. Proximal phalanx fractures in digits 2 and 3 require a radial gutter splint, while digits 4 and 5 require an ulnar gutter splint. Following splint application, all patients require neurovascular reassessment and confirmatory post-reduction radiographs. All patients with these injuries should be referred to a hand surgeon.

Emergent hand surgery consultation is recommended for non-tuft open phalangeal fractures. The inability to reduce the fracture fragment,  $>10^\circ$  angulation, 2 mm shortening, any rotational deformity, and intra-articular fractures with involvement of  $>30\%$  of the articular surface require either hand surgeon consultation or urgent referral.<sup>8</sup>

### Fractures of Metacarpals 2, 3, 4, 5

Fractures of metacarpals 2, 3, 4, and 5 are classified into 4 categories: (1) base, (2) shaft, (3) neck, and (4) head fractures. Physical examination should identify rotational deformity, fight bite injury, neurovascular injury, compartment syndrome, and open fracture. Three-view radiographs of the hand are recommended.<sup>6</sup>

Metacarpal base fractures are uncommon and usually result from axial loading on the metacarpal due to a fall with the elbow extended.<sup>9</sup> Displaced closed metacarpal base fractures require reduction, splinting, and referral.

Metacarpal shaft fractures may result from closed-fist injury or high-energy impact injury. Displaced closed metacarpal shaft fractures require adequate reduction, splinting, and referral.

A radial gutter splint is recommended for fractures of metacarpals 2 and 3, and an ulnar gutter splint is recommended for fractures of metacarpals 4 and 5. The hand should be immobilized in the intrinsic plus position. Analgesia during closed reduction may be achieved with a fracture hematoma block. All patients undergoing closed reduction require splinting, neurovascular assessment, and confirmatory post-reduction radiographs.

Metacarpal head fractures are rare. They are usually comminuted and associated with significant cartilage and/or joint disruption.

#### *Boxer's Fracture*

The most common mechanism of metacarpal neck fracture is closed-fist injury. A *boxer's fracture* is a fifth metacarpal neck fracture, and it accounts for 20% of hand fractures.<sup>10</sup> Closed reduction of a metacarpal neck fracture is achieved via the Jahss maneuver<sup>11</sup> or the 90-90 maneuver. Although a 2005 Cochrane review meta-analysis reported that there is insufficient evidence to demonstrate superiority between various splinting techniques for closed boxer's fracture, ulnar gutter splints are commonly applied.<sup>12</sup> As with rotationally deformed proximal and middle phalanx fractures, metacarpal neck fractures associated with rotational deformity also need urgent hand surgeon evaluation/referral.

Following splint application, all patients require neurovascular reassessment and confirmatory post-reduction radiographs. All patients should be referred to a hand surgeon. Patients with suspected occult fracture should be splinted and referred to a hand surgeon. Emergent consultation with a hand surgeon is recommended for open fracture, associated fight bite injury, inability to reduce the fracture, and any rotational deformity.<sup>13</sup>

#### Thumb Fractures

Thumb fractures are classified into 3 categories: (1) phalangeal, (2) metacarpal, (3) and intra-articular metacarpal base fractures. Physical examination should identify point tenderness, rotational deformity, and open fracture. Dedicated thumb radiographs are recommended. When diagnostic uncertainty persists despite normal radiographs, a Roberts view (i.e., true anterior-posterior thumb view) may be considered.

#### *Phalangeal and Metacarpal Shaft Fractures*

Closed transverse thumb phalanx and metacarpal shaft fractures require closed reduction, thumb spica splinting, and referral. Indications for emergent hand surgery consultation include open fracture, inability to reduce the fracture, >30° angulation, and any rotational deformity.<sup>14</sup>

#### *Intra-Articular Fractures of the Thumb Metacarpal Base: Bennett and Rolando Fractures*

The most common mechanism of intra-articular fractures of the base of the thumb is axial loading. A *Bennett fracture* is a 2-part intra-articular fracture dislocation or subluxation of the base of the thumb



metacarpal. A *Rolando fracture* is a Y-shaped comminuted fracture dislocation of the base of the thumb metacarpal.<sup>14</sup>

Bennett and Rolando fractures are associated with a high risk of degenerative joint disease and functional limitation at the first carpometacarpal joint. Fracture reduction is achieved via axial traction, opposition of the thumb metacarpal joint, and radial pressure over the metacarpal base. Patients require a thumb spica splint. Following splint application, all patients require neurovascular reassessment and confirmatory post reduction radiographs. All patients should be referred to a hand surgeon.<sup>14-18</sup> Patients with suspected occult fracture should be splinted and referred to a hand surgeon.

### Scaphoid Fracture

Scaphoid fracture most commonly occurs following a FOOSH injury. Complications of scaphoid fracture include avascular necrosis and scapholunate advanced collapse. These sequelae can be functionally devastating. Physical examination should identify anatomical snuffbox tenderness and tenderness with axial loading of the thumb. A 2014 meta-analysis by Carpenter et al demonstrated that the absence of snuffbox tenderness signals the lowest negative likelihood ratio of any physical examination maneuver for scaphoid fracture (odds ratio, 0.15; 95% confidence interval, 0.05-0.43).<sup>19</sup>

Wrist radiographs, including a dedicated scaphoid view, are recommended. Plain radiographs are not adequately sensitive to exclude scaphoid fracture. Initial radiographs may be normal in up to 20% of cases.<sup>6</sup>

A randomized prospective trial by Clay et al of 392 patients with scaphoid wrist fractures compared thumb spica splinting and volar wrist splinting. The authors reported no significant difference in nonunion rates (10% for both groups), but 100 patients were lost to follow-up.<sup>20</sup> Application of a thumb spica splint is recommended. In patients with suspected occult scaphoid fracture despite normal radiographs, splinting and referral to a hand surgeon is recommended. Radiographs are repeated in 10 to 14 days.<sup>6</sup>

### **Risk Management Pitfalls in Hand Injuries**

- 1. “The patient seemed to be in a lot of pain following the crush injury. Later, she began to complain of worsening pain and then complained of numbness and tingling. It’s normal for a crush injury to hurt.”**  
Pain out of proportion to the injury is an early clinical sign of possible compartment syndrome. Repeat focused hand examination should include palpation for tense, swollen hand compartments, eliciting severe tenderness on passive stretching of compartments, finding impaired sensory function (including 2-point discrimination), and looking for evidence of impaired perfusion. Emergent consultation with hand surgery is critical.
- 2. “I gave cefoxitin for an acute, clean, open distal tuft fracture and consulted a hand surgeon for operative wash-out, intravenous antibiotics, and admission.”** Parenteral antibiotics are not indicated for low-risk open distal tuft fractures. Patients require analgesia, meticulous wound care, reduction, splinting, and referral to a hand surgeon.
- 3. “A patient with wrist pain after a FOOSH injury had point tenderness over the lunate and severely impaired wrist range of motion. No anatomical snuffbox tenderness was noted. Anterior-posterior, lateral, oblique, and navicular view radiographs showed 2 mm scapholunate diastasis. Since no fracture was present on radiographs, I diagnosed the patient with a wrist sprain. The patient was**

**discharged home with rest, ice, compression wrap, NSAIDs and primary care follow-up.”** Patients with suspected scapholunate instability require thumb spica splinting and outpatient referral to hand surgery.

**4. “In a patient with mallet finger, I buddy-taped the affected digit to the adjacent digit to immobilize it.”** Mallet finger requires limited splinting of the DIP alone, in extension, for six to eight weeks and referral to a hand surgeon.

**5. “A patient with high-pressure injection injury of an unknown substance had no symptoms. Following routine wound care and tetanus vaccination, I discharged him home with a referral to primary care.”** Early high-pressure injection injury often appears clinically innocuous. The injected material tracks along neurovascular bundles along the path of least resistance. These injuries are associated with a high rate of infection, necrosis, and considerable amputation risk. All patients should receive intravenous antibiotics and immediate hand surgery consultation for operating room wound exploration and admission.

**6. “The patient presented with a grossly contaminated laceration overlying the hypothenar eminence. Wound exploration revealed no complicating soft-tissue injuries. Tissue debridement was required to remove organic plant debris. Radiography did not reveal retained foreign body or fracture. I closed the laceration with simple interrupted sutures and the patient was instructed to see his primary care doctor in 14 days for suture removal.”** Wounds at moderate to high risk of infection should receive prophylactic antibiotics. Primary closure is not recommended for high-risk wounds, but they may be considered for delayed primary closure. For primarily repaired wounds at moderate risk of infection, a scheduled recheck at 2 to 3 days can also be a useful strategy.

**7. “I could not stop the bleeding with direct pressure, so I placed a figure-of-eight suture.”** Figure-of-eight suture, or blind clamping of bleeding vessels, should be avoided due to possible injury to adjacent structures. Hemorrhage control should be managed with focal direct pressure and limb elevation. Temporary tourniquet placement should be considered if significant bleeding persists.

**8. “Despite multiple attempts, I was unable to reduce a fourth proximal phalanx oblique shaft fracture, and 15° of rotational deformity and 20° of angulation persists. I buddy-taped the affected digit and discharged the patient with instructions to follow up with a hand surgeon.”** Inability to achieve reduction goals (in this case, 0° rotational deformity and <10° angulation) requires immediate hand surgery consultation for closed reduction or possible open reduction. This patient should also have been placed in an ulnar gutter splint and not buddy taped.

**9. “The patient with a laceration overlying a joint was unable to move the joint through full range of motion due to pain during wound exploration, but I did not see any evidence of tendon injury.”** Complete examination through full range of motion is required to assess for tendon injury because the injured tendon may be retracted in the neutral position. Regional nerve block or digital nerve block is often necessary to permit full range of motion during wound exploration. If diagnostic uncertainty persists, splint and refer.

### **Five Things that Will Change Your Practice**

1. Avoid unnecessary prophylactic antibiotics in low-risk hand lacerations. Wounds at moderate-to-high risk of infection (e.g., human or animal bites, puncture wounds, penetrating tendon injury, crush injury,

gross contamination, open fractures [except tuft fracture], and wounds in immunocompromised patients) should receive prophylactic antibiotics.

2. Consider outpatient hand surgeon referral in suspected gamekeeper's thumb with an equivocal examination. The diagnosis of gamekeeper's thumb may be difficult to make on clinical grounds alone.
3. Perform a complete examination through a full range of motion to assess for tendon injury because the injured tendon may be retracted in the neutral position. Regional nerve block or digital nerve block is often necessary to permit full range of motion during wound exploration.
4. High-pressure injection injury is a true surgical emergency of the hand; emergent ED transfer/consultation with a hand surgeon is critical.
5. Nail plate removal is not indicated for subungual hematomas if there is no nail plate disruption.

## References

1. Mayfield JK, Johnson RP, Kilcoyne RK. Carpal dislocations: pathomechanics and progressive perilunar instability. *J Hand Surg Am.* 1980;5(3):226-241. (Experimental study; 32 cadavers)
2. Schimmerl-Metz SM, Metz VM, Totterman SM, et al. Radiologic measurement of the scapholunate joint: implications of biologic variation in scapholunate joint morphology. *J Hand Surg Am.* 1999;24(6):1237-1244. (Experimental study; 40 subjects)
3. Soni P, Stern CA, Foreman KB, et al. Advances in extensor tendon diagnosis and therapy. *Plast Reconstr Surg.* 2009;123(2):52e-57e. (Review article)
4. Manuel J, Moran SL. The diagnosis and treatment of scapholunate instability. *Hand Clinics.* 2010;26(1):129-144. (Review article)
5. Herzberg G, Comtet JJ, Linscheid RL, et al. Perilunate dislocations and fracture-dislocations: a multicenter study. *J Hand Surg Am.* 1993;18(5):768-779. (Retrospective study; 166 patients)
6. Torabi M, Lenchik L, Beaman FD, et al. ACR Appropriateness Criteria® Acute Hand and Wrist Trauma. *J Am Coll Radiol.* 2019;16(5S):S7-S17. (Expert consensus practice guideline)
7. Stevenson J, McNaughton G, Riley J. The use of prophylactic flucloxacillin in treatment of open fractures of the distal phalanx within an accident and emergency department: a double-blind randomized placebo-controlled trial. *J Hand Surg Br.* 2003;28(5):388-394. (Double-blind randomized controlled trial; 193 patients)
8. Henry MH. Fractures of the proximal phalanx and metacarpals in the hand: preferred methods of stabilization. *J Am Acad Orthop Surg.* 2008;16(10):586-595. (Review article)
9. Lee SG, Jupiter JB. Phalangeal and metacarpal fractures of the hand. *Hand Clin.* 2000;16(3):323-332. (Review article)
10. Theeuwen GA, Lemmens JA, van Niekerk JL. Conservative treatment of boxer's fracture: a retrospective analysis. *Injury.* 1991;22(5):394-396. (Retrospective study; 71 patients)
11. Friedrich JB, Vedder NB. An evidence-based approach to metacarpal fractures. *Plast Reconstr Surg.* 2010;126(6):2205-2209. (Review article)
12. Poolman RW, Goslings JC, Lee JB, et al. Conservative treatment for closed fifth (small finger) metacarpal neck fractures. *Cochrane Database Syst Rev.* 2005;2005(3):CD003210. (Cochrane meta-analysis; 5 studies)
13. Diaz-Garcia R, Waljee JF. Current management of metacarpal fractures. *Hand Clin.* 2013;29(4):507-518. (Review article)
14. Fufa DT, Goldfarb CA. Fractures of the thumb and finger metacarpals in athletes. *Hand Clin.* 2012;28(3):379-388. (Review article)
15. Thurston AJ, Dempsey SM. Bennett's fracture: a medium to long-term review. *Aust N Z J Surg.* 1993;63(2):120-123. (Prospective study; 66 patients)
16. Oosterbos CJ, de Boer HH. Nonoperative treatment of Bennett's fracture: a 13-year follow-up. *J Orthop Trauma.* 1995;9(1):23-27. (Retrospective study; 22 patients)
17. Timmenga EJ, Blokhuis TJ, Maas M, et al. Long-term evaluation of Bennett's fracture. A comparison between open and closed reduction. *J Hand Surg Br.* 1994;19(3):373-377. (Prospective study; 18 patients)
18. Cannon SR, Dowd GS, Williams DH, et al. A long-term study following Bennett's fracture. *J Hand Surg Br.* 1986;11(3):426-431. (Prospective study; 25 patients)
19. Carpenter CR, Pines JM, Schuur JD, et al. Adult scaphoid fracture. *Acad Emerg Med.* 2014;21(2):101-121. (Systemic review article; 75 studies)
20. Clay NR, Dias JJ, Costigan PS, et al. Need the thumb be immobilized in scaphoid fractures? A randomized prospective trial. *J Bone Joint Surg Br.* 1991;73(5):828-832. (Randomized prospective trial; 392 patients)

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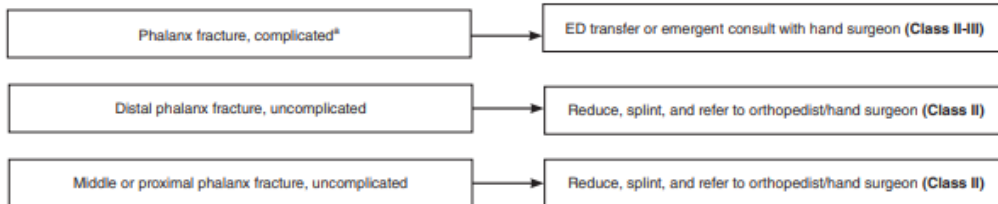
## Clinical Pathway for Management of Hand Injuries in Urgent Care

### METACARPAL FRACTURES

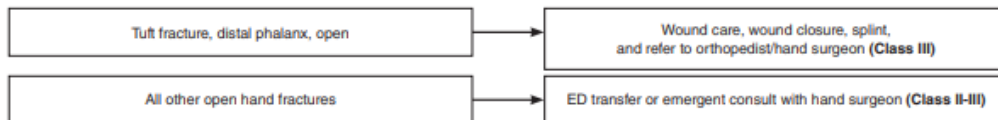


### FINGER FRACTURES

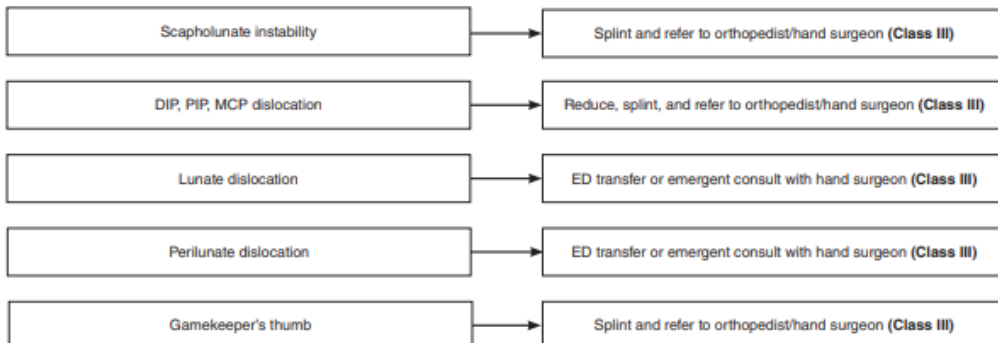
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### OPEN FRACTURES



### DISLOCATIONS/LIGAMENT INJURIES



<sup>a</sup>Inability to achieve postreduction goals, rotational deformity, or displaced intra-articular fractures.

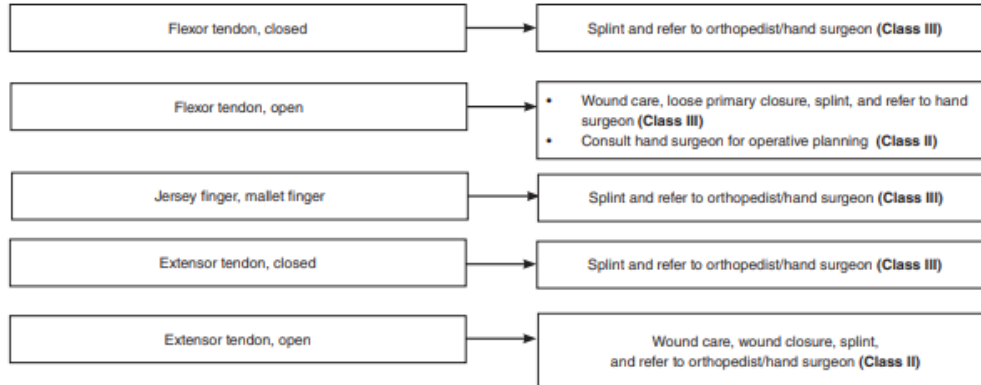
Abbreviations: DIP, distal interphalangeal; ED, emergency department; MCP, metacarpophalangeal; PIP, proximal interphalangeal.

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.  
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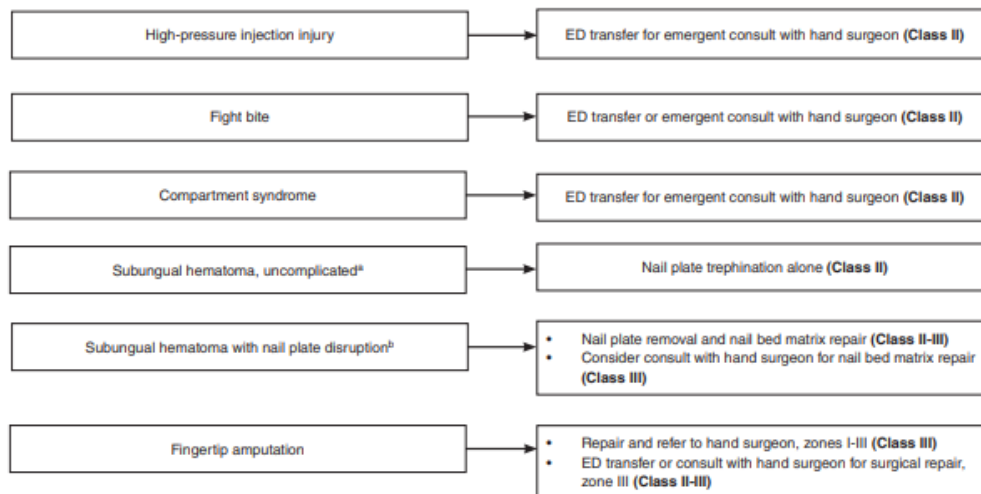


## Clinical Pathway for Management of Hand Injuries in Urgent Care

### TENDON INJURIES



### LACERATIONS AND MISCELLANEOUS INJURIES



<sup>a</sup>Absence of nail plate or margin disruption with or without uncomplicated tuft fracture.

<sup>b</sup>Nail plate, stellate nail plate injury, complicated distal phalanx fracture. Abbreviation: ED, emergency department.

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.  
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## Class of Evidence Definitions

Each action in the clinical pathways section of *Evidence-Based Urgent Care* receives a score based on the following definitions.

### Class I

- Always acceptable, safe
- Definitely useful
- Proven in both efficacy and effectiveness

#### Level of Evidence:

- One or more large prospective studies are present (with rare exceptions)
- High-quality meta-analyses
- Study results consistently positive and compelling

### Class II

- Safe, acceptable
- Probably useful

#### Level of Evidence:

- Generally higher levels of evidence
- Nonrandomized or retrospective studies: historic, cohort, or case control studies
- Less robust randomized controlled trials
- Results consistently positive

### Class III

- May be acceptable
- Possibly useful
- Considered optional or alternative treatments

#### Level of Evidence:

- Generally lower or intermediate levels of evidence
- Case series, animal studies, consensus panels
- Occasionally positive results

### Indeterminate

- Continuing area of research
- No recommendations until further research

#### Level of Evidence:

- Evidence not available
- Higher studies in progress
- Results inconsistent, contradictory
- Results not compelling

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