THE JOURNAL OF URGENT CARE MEDICINE®

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NOVEMBER 2016

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Maintenance of Certification: The Odyssey Continues



These are by far the most frequent questions I am asked by urgent care physicians: "My primary board certification is expiring. Do I have to recertify? Which of the urgent care boards should I take?" If you have been in urgent care practice long

enough, you'll come to a painful moment of truth: Our primary board certification is in a specialty we no longer practice, covering competencies we no longer use. To make matters worse, we have not stayed up to date with the latest guidelines affecting our original specialty and are ill prepared to sit for an exam. Dare I say that we shouldn't even be *able* to pass?

The answer to the question of whether you should recertify is a resounding "maybe." And that's much more evolved than my answer only a couple of years ago. Here's why: Maintenance of certification (MOC) is under a full-blown attack. Physicians are at their breaking point, especially with their own representatives adding another layer of responsibility. MOC, after all, is not required by the U.S. government or even most state medical boards. It is a hurdle imposed by the boards that constitute the American Board of Medical Specialties (ABMS), with little support from constituent physicians. I have discussed why in previous editorials. What has changed is the noise being made by fed-up physicians who see this as another overreach that just cannot be tolerated any longer. Nearly every ABMS board is under pressure to eliminate or significantly modify its MOC requirements. Finally there is momentum for change. At the core of this issue is the hollow claim by the ABMS that MOC is optional. Nearly every payor and every hospital requires it, so if you want to practice freely, it is required. Challenges to this requirement are beginning to gain traction. Here's a roundup of the latest events:

The National Board of Physicians and Surgeons (NBPAS), the most prominent crusader against MOC, is gaining supporters and recognition. This group's main premise is that those *already* board-certified should be allowed maintain that certification through more flexible continuing education, rather than through the prescriptive programs and recertification examinations that are required by the ABMS boards. NBPAS is *not* a home for those who have never been certified by an ABMS board. It is, however, gaining attention among payors,

"Our primary board certification is in a specialty we no longer practice, covering competencies we no longer use."

hospitals, and state medical boards. NBPAS offers the most likely way to defeat MOC.

More recently, legal challenges to the exclusivity of MOC have been made and several states have considered legislation to remove it as a requirement for credentialing. Oklahoma is the first state to enact a law that strips the monopoly of MOC as the only path to hospital privileges and payor credentialing. Several other states have introduced similar legislation. It does appear that there is momentum building, but it could be a few years before the majority of states follow suit.

While you wait for your state to make the change, you have an option that might be palatable:

If you are unlikely to change jobs anytime soon and are okay with some uncertainty, you can plead your case to payors and/or your hospital credentialing committee. Most regional hospitals and payors recognize that there are not enough board-certified physicians to go around and are open to entertaining alternatives. A well-prepared case for these alternatives is your best bet. Current options for urgent care physicians include the NBPAS and the Board of Certification in Urgent Care Medicine, the latter offering alternative certification through the American Board of Physician Specialties. You might be surprised to find a supportive ear and some credentialing flexibility.

Perhaps we are finally catching a wave of sensibility that carries enough momentum to finally put this issue to rest and provide alternative pathways to payor credentialing and hospital privileges. Until then, surf at your own risk.



Lee A. Resnick, MD, FAAFP Editor-in-Chief, JUCM, The Journal of Urgent Care Medicine



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VOLUME 11, NUMBER 2



CLINICAL

Pediatric Oral Lesions in the **Urgent Care Setting**

When a child arrives at an urgent care center with oral lesions, an oral examination is necessary for making a diagnosis. Learn what to look for and how to safely and adequately examine a distressed child.

Therese L. Canares, MD, and Shawna S. Mudd, DNP, CRNP

HEALTH LAW AND COMPLIANCE

Income Tax Liability from Phantom Income



The legal structure that physician and entrepreneur investors choose for their urgent care center may set them up for an income tax liability from phantom income. Learn how you can guard against such unwelcome surprises.

Gregory M. Weigand, JD, MBA

PRACTICE MANAGEMENT

Understanding the Impacts of Health-Care Reform on Urgent Care: Care Utilization, Population Health and Integration, and Reimbursement



Health-care reform has brought major reimbursement changes, resulting in efforts to cut costs. Urgent care can offer the services and education programs that will reduce the use of emergency departments, lowering expense to the patient and to the system.

Michael F. Boyle, MD, MBA, FACEP

CASE REPORT





Both children and adults may end up in your urgent care center with nasal pain. Do you know the many causes, including life-threatening conditions?

Suzanne Alton, DNP, FNP-BC, RN, and Harold S. Pine, MD, FAAP, FACS

IN THE NEXT ISSUE OF JUCM

Stacey L. Zill, JD, explains how to comply with a subpoena requesting protected health information and still maintain patient privacy and confidentiality.

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Mission Statement

JUCM The Journal of Urgent Care Medicine supports the evolution of urgent care medicine by creating content that addresses both the clinical practice of urgent care medicine and the practice management challenges of keeping pace with an ever-changing healthcare marketplace. As the Official Publication of the Urgent Care Association of America and the Urgent Care College of Physicians, JUCM seeks to provide a forum for the exchange of ideas and to expand on the core competencies of urgent care medicine as they apply to physicians, physician assistants, and nurse practitioners.

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rgent care physicians are in an awkward position when it comes to specialty recertification. Many hold board certification in a specialty they no longer practice, one that covers competencies they no longer use. Should they seek recertification in their original specialty? Maybe—or maybe not, writes Editorin-Chief Lee Resnick, MD, FAAFP. They may have other options.

Both adults and children seek treatment for nasal pain. But what's causing it—something easily treatable in the urgent care center, or



something life-threatening? Suzanne Alton, DNP, FNP-BC, RN, and Harold S. Pine, MD, FAAP, FACS, walk you through the diagnostic process.

Alton is a family nurse practitioner and an Assistant Professor teaching in the Graduate Nursing Program at the University of Texas Medical Branch (UTMB) in Galveston, Texas. She works at UTMB's Victory Lakes Urgent Care part time. Pine is a pediatric otolaryngologist and an Associate Professor teaching in the Department of Otolaryngology at the UTMB.



How many times have you encountered a child who needs an oral examination but is frightened and will not stay still? Authors

Therese L. Canares, MD, and Shawna S. Mudd, DNP, CRNP, start their article by describing techniques that will make the examination easier and shorter for you and the child, and then they help you identify the various oral lesions common in children.

Canares is an Assistant Professor in pediatric emergency medicine at Johns Hopkins School of Medicine, and Mudd is Assistant Professor in the Department of Acute and Chronic Care at the Johns Hopkins School of Nursing in Baltimore, Maryland.

How an urgent care center is legally structured can expose the physicians and entrepreneurs who invest in it to income tax liability from phantom income, which is income that they did not



actually receive. In our *Health Law and Compliance* section, Gregory M. Weigand, JD, MBA, tells investors what steps they should consider taking to have enough funds available to cover such a liability.

Weigand is an associate in the Miami, Florida, office of DLA Piper, LLP, and focuses his practice on U.S. and international taxation.

Health-care reform is changing how urgent care centers fit within the health-care system. In our *Practice Management* section, author Michael F. Boyle, MD, MBA, FACEP, writes that by inte-



grating with larger health systems, urgent care is becoming an accessibility portal that reduces expense to the patient and the health-care system.

Boyle is Regional Medical Director of ECI Healthcare Partners, a Schumacher Clinical Partner, in Traverse City, Michigan, and is a coauthor of the book *The Healthcare Executive's Guide* to Urgent Care Centers and Freestanding EDs.



In our Insights in Images section, Mohamad Lazkani, MD, Luke Seibolt, MD, and Joshua Waggoner, MD, present, for your diagnosis, findings in a young football player with sudden chest pain.

Lazkani is an interventional cardiologist, Sei-

bolt is an internist, and Waggoner is an interventional cardiologist at Banner-University

Medical Center Phoenix in Arizona.

Also in this issue:

Sean M. McNeeley, MD, and the Urgent Care College of Physicians review new reports from the literature on acetaminophen for patients with asthma, antibiotic therapy and pneumonia, live attenuated influenza vaccine, errors in the use of asthma inhalers, anticoagulants and isolated thrombosis of the calf, a protocol for deciding on the safety of sending home patients who have chest pain, patients taking antibiotics that they weren't prescribed, and just how contagious respiratory syncytial virus is.

In our *Coding Q* column, **David E. Stern, MD, CPC,** discusses Medicare reimbursement for imaging.

In our *Developing Data* column, we bring you statistics on the frequency of influenza diagnoses in U.S. urgent care centers between January 2010 and October 2016 relative to total urgent care visits that had an evaluation and management code.

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Release Date: November 1, 2016 Expiration Date: October 31, 2017

Target Audience

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Learning Objectives

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

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CONTINUING MEDICAL EDUCATION

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

Pediatric Oral Lesions in the Urgent Care Setting (p. 11)

- The classic presentation of hand-foot-and-mouth disease is a prodrome of fever and malaise, followed by development of painful oral ulcerations of the palate, buccal mucosa, tongue, or lips and an erythematous maculopapular or vesicular rash on the palms, soles, extremities, buttocks, or trunk. What is the most common cause of hand-foot-andmouth disease?
 - a. Rhinovirus
 - b. Coronavirus
 - c. Herpes simplex virus
 - d. Coxsackievirus
 - e. Clostridium difficile
- 2. Herpetic gingivostomatitis is a common cause of oral lesions in young children who have been infected with herpes simplex virus. What is the recommended treatment?
 - a. Cephalexin
 - b. Penicillin
 - c. Doxycycline
 - d. Acyclovir
 - e. Metronidazole
- 3. Classic signs of group A β-hemolytic streptococcal (GAS) pharyngitis include a sudden onset of pain with swallowing, fever, headache, abdominal pain, nausea, and vomiting, with an absence of coughing, conjunctivitis, or other systemic symptoms. The intraoral findings include enlarged, erythematous, exudative tonsils and palatal petechiae. Enlarged, tender cervical lymph nodes or a fine, sandpaper-like scarlatiniform rash may be present. In which age group is GAS most commonly seen?
 - a. Age 2–4 months
 - b. Age 6–12 months
 - c. Age 5–15 years
 - d. Age 50-60 years
 - e. Age >75 years

Understanding the Impacts of Health-Care Reform on Urgent Care: Care Utilization, Population Health and Integration, and Reimbursement (p. 27)

- Which of the following provides care for uninsured Americans and gains control of health-care expenditures through care integration, improved technology, and population health management?
 - a. Medicare Act (MA)
 - b. Uninsured Americans Healthcare Act (UAHA)
 - c. Patient Protection and Affordable Care Act (PPACA)
 - d. a and b
 - e. All of the above

- 2. According to the article, which of the following is a reason/are reasons for an urgent care center?
 - a. To lower the burden of primary-care offices and saturated emergency departments
 - b. To promote health, wellness, immunizations, healthy-lifestyle education, weight loss, smoking cessation, and workplace health and provide occupational medicine
 - c. To decrease duplication of testing, improve communication among providers, and make possible the extraction of large volumes of data for analysis
 - d. a and b
 - e. None of the above
- 3. Starting in 2017, Medicare will decrease reimbursements if providers do not participate in which of the following programs?
 - a. Urgent Care Association of America (UCAOA)
 - b. Physician Quality Reporting System (PQRS)
 - c. Physicians Immediate Care (PIC)
 - d. Centers for Disease Control and Prevention (CDC)
 - e. Reporting of Urgent Care Patients (RUCP)

Painful Nose Crusting in a Child (p. 33)

- 1. Which is the most common bacterial cause of nasal vestibulitis?
 - a. Staphylococcus aureus
 - b. Klebsiella pneumoniae
 - c. Escherichia coli
 - d. Mycobacterium avium complex
 - e. Salmonella
- 2. Which of the following may be included in a differential diagnosis when considering causes of nasal vestibulitis?
 - a. Squamous cell cancer
 - b. Abscess
 - c. Lupus vulgaris
 - d. Cutaneous tuberculosis
 - e. All of the above
- 3. One of the most serious complications of nasal vestibulitis is cavernous sinus thrombosis. Which findings may be present in these patients?
 - a. Fever
 - b. Headache
 - c. Ocular signs such as orbital pain
 - d. Papilledema
 - e. All of the above

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FROM THE UCAOA PRESIDENT

Urgent Care in Transition

STEVE P. SELLARS, MBA

all is here! As seasons go, this is one of my favorites. It's a time for appreciating the miracle of nature as one season transitions to the next. It's a time when we as a country take stock and give thanks for our many blessings. It's also an opportunity to look back at the year that has passed and make sure we're on the right track to achieve our long-term goals.

It's no secret to urgent care clinicians and business professionals that our industry is in a period of unprecedented change. As president of UCAOA, I want you to know UCAOA leadership is aware of that change and has never been more committed to position our industry to successfully navigate those changes.

The good news is that the staff at UCAOA have forged a strong foundation from which to build. We have created a robust organizational infrastructure, the kind needed to support one of the fastest-growing segments of U.S. health care. I'm proud of our accomplishments, including these:

- Very successful annual gatherings for members
- Robust industry benchmarking reports distributed annually
- An increase in the number of certified and accredited urgent care centers
- Ongoing advocacy efforts on both the national and state levels
- Easily accessible training and opportunities for continuing medical education

Despite the progress that has been made, the UCAOA board firmly believes that our association must continue to grow and evolve if it is to maintain its place as the preeminent voice of the urgent care industry. Going forward, that will require being intentional in our efforts at reaching out to include a broad cross-section of groups. As I've said before, we must look for opportunities to engage physician organizations, health systems, payors, and other associations. We must be open to invit-



Steve P. Sellars, MBA, serves as president of the Urgent Care Association of America through 2017. He is Chief Executive Officer of Premier Health, Baton Rouge, Louisiana.

"We must look for opportunities to engage physician organizations, health systems, payors, and other associations. We must be open to inviting new players that emerge in the retail medicine space. . . . We must work to find common ground with organizations that share our association's concerns on issues ranging from shrinking reimbursements to increased government regulations."

ing new players that emerge in the retail medicine space. You've heard the old saying "There's power in numbers." It's true. When possible, we must work to find common ground with organizations that share our association's concerns on issues ranging from shrinking reimbursements to increased government regulations. By joining forces, we only enhance the likelihood of creating positive outcomes in both the examination room and our boardrooms. In a value-based continuum of care where there will be multiple health-care delivery models for nonemergency conditions, the UCAOA board is committed to building relationships that will position our industry to thrive in this new world of health care.

As we appreciate the transition in seasons from summer to fall, I want to once again express my excitement about and enthusiasm for the great things I believe are in store for our association and our industry. I especially want to thank so many of you who've offered valuable input and guidance over the last year as the UCAOA board has sought to create a new road map for the future. Your continued feedback and participation will be key to the association's long-term success.

As UCAOA president, I once again pledge to work hard every day to be a good steward and promise to stay true to the vision of our founders while delivering on promises of today's UCAOA.

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Pediatric Oral Lesions in the Urgent Care Setting

Urgent message: Being able to recognize the distinct oral lesions of common illnesses in children is essential, but it can be difficult to conduct an oral examination in frightened young children.

THERESE L. CANARES, MD, and SHAWNA S. MUDD, DNP, CRNP

Introduction

nspecting intraoral lesions in children will often confirm a diagnosis, but getting uncooperative patients to let the clinician visualize such lesions is challenging. Here we provide helpful examination tips and review common pediatric infectious and allergic oral lesions and their treatment.

Techniques for Examination of the Oral Cavity in Children

To many children, oral examinations are frightening. Improper immobilization results in an inadequate examination, increased patient distress, and increased potential for injury to both the child and the healthcare provider. Tips for performing an adequate and safe examination include the following:

- The clinician should wear a mask and eye protection as safeguards against spitting or coughing by the patient.
- A tongue blade, gauze, an adequate light source, and specimen-collection devices should be easily accessible.
- Children who can sit upright may sit in their parent's or guardian's lap, whereas children of any age can lie supine on the examination table (Figure 1).
 - For the lap examination, seat the child facing sideways or facing the clinician. Have the parent or guardian wrap one arm across the child, encompassing both arms of the child with that arm, and use their free hand to immobilize the



child's head against their chest. A child who is kicking can be immobilized if the parent or guardian crosses one leg over the child's legs.

• For examining a child in the supine position, lay the child on the examination table. The parent or guardian holds both arms of the child alongside the child's ears, with lateral pressure at the upper arm to limit side-to-side movements of the child's head. The clinician may lean over

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the child's torso to limit leg or trunk movements during the examination.

Once the child is immobilized, the mouth can be examined. A tongue blade causes the least gagging or biting when inserted vertically along the inside of the cheek until it reaches the posterior buccal shelf. A vertical tongue blade placed at the gap between clamped teeth and the cheek may encourage mouth-opening by limiting the child's ability to close the mouth completely. When the child cries, the clinician can swiftly shift the blade to the center of the tongue to see the posterior oropharynx. For inspecting the gingiva, buccal mucosa, and tongue, the provider should use gauze for grasping wet mucosal tissue.

Hand-Foot-and-Mouth Disease

Hand-foot-and-mouth disease (HFMD) is a common cause of oral exanthems in young children during the summer and fall. Caused by coxsackievirus, an enterovirus, HFMD is highly contagious and spreads through respiratory transmission or through contact with vesicles and stool.¹

Medical History and Physical Examination

The classic presentation is a prodrome of fever and malaise, followed by development of painful oral ulcerations of the palate, buccal mucosa, tongue, or lips and an erythematous maculopapular or vesicular rash on the palms, soles, extremities, buttocks, or trunk. Concurrent respiratory (e.g., cough, rhinorrhea) or gastrointestinal (e.g., vomiting, diarrhea) symptoms may be present. Verbal children report a sore throat, whereas nonverbal children may present with decreased oral intake, fussiness with oral feedings, increased drooling, or irritability (**Figure 2**).

Diagnosis

The diagnosis of HFMD is made by findings on the clinical examination and medical history. Viral culture is not necessary unless atypical symptoms are present or if other etiologies (e.g., herpes simplex virus [HSV]) are suspected.

Red Flags

Rare, severe cases of HFMD can occur with the development of viral meningitis and encephali-

tis. Recently, atypical presentations of HFMD have been seen worldwide, presenting with extensive cutaneous involvement and attributed to other enteroviral species.²

Treatment

Treatment for HFMD is supportive because the disease is self-limited, lasting 7 to 10 days. The most common clinical challenge in HFMD is pain control and hydration, particularly in younger children. Oral analgesics are often adequate for pain control. A commonly used, though not well-studied, topical oral analgesic is "magic mouth-wash": a mixture of liquid diphenhydramine, Maalox, and viscous lidocaine 2% at a 1:1:0.5 ratio. Dosing is limited by the diphenhydramine at 5 mg/kg per day every 6 hours. Include the lidocaine only if the patient is able to swish and spit.³ Encourage small, frequent sips of an oral rehydration solution, such as Pedialyte, if the child has decreased oral intake. Consider emergency department transfer if the child has moderate to severe dehydration and requires intravenous fluids.

Herpetic Gingivostomatitis

Herpetic gingivostomatitis is a common cause of oral

lesions in young children who have been infected with HSV. Transmission is generally through saliva or direct contact with infected lesions.

Medical History and Physical Examination

Primary outbreaks in children are more severe than subsequent outbreaks, with development of vesicular lesions over the lips, tongue, gingiva, buccal mucosa, and palate. These lesions are very painful and can contribute to poor oral intake, particularly in the younger child. The presentation of the oral vesicles during a primary outbreak is often heralded by fever, generalized malaise, lymphadenopathy, and friable, erythematous gingiva. Subsequent outbreaks are less severe, with lesions localized to the lips. Close contacts and family members are often the source of transmission and may report oral lesions.

Diagnosis

Diagnosis is made clinically, by confirmation of vesicles at different stages of healing on oral mucosa or the lips. Diagnostic testing with viral culture, serology, or polymerase chain reaction may be used if the etiology must be confirmed.⁴

Red Flags

Children can autoinoculate themselves with HSV at other sites. Be sure to evaluate the fingers of children who engage in thumb-sucking for herpetic whitlow or eczema herpeticum. Lesions near or involving the eye are at risk of HSV epithelial keratitis, which can result in scarring and permanent vision loss.⁵ Ophthalmologic consultation is warranted because of the associated morbidity and potential for recurrence.

Treatment

Systematic review of oral acyclovir for primary herpetic gingivostomatitis in children younger than 6 years of age shows weak evidence that it will decrease the number of oral lesions, the formation of new lesions, oral intolerance, or the rate of hospital admission.^{6,7} Despite limited evidence, we recommend that clinicians prescribe oral acyclovir within 3 to 4 days of disease onset, and for those with severe pain or difficulty maintaining hydration. Supportive management of herpetic gin-

Figure 2. A child with copious vesicular lesions of hand-foot-andmouth disease affecting the lips, hands, feet, and lower legs.



givostomatitis includes oral analgesics for pain control and oral hydration. Barrier ointments (e.g., petroleum jelly) may be soothing and prevent lip adhesion.

Streptococcal Pharyngitis

Group A β -hemolytic streptococcal (GAS) pharyngitis, commonly called strep throat, is the most common type of bacterial pharyngitis in children. GAS pharyngitis is most commonly seen in children between the ages of 5 and 15 years and tends to occur between late fall and early spring.

Medical History and Physical Examination

Classic signs of GAS pharyngitis include a sudden onset of pain with swallowing, fever, headache, abdominal pain, nausea, and vomiting, with an absence of coughing, conjunctivitis, or other systemic symptoms. Intraoral findings include enlarged, erythematous, exudative tonsils and palatal petechiae (**Figure 3**). Enlarged, tender cervical lymph nodes or a fine, sandpaper-like scarlatiniform rash may be present. Figure 3. Palatal petechiae and pharyngeal erythema in a child with group A β -hemolytic streptococcal pharyngitis.



Also present is orange staining from an ice pop.

Diagnosis

Clinical findings alone are not adequate to diagnose GAS pharyngitis, and dependence on them leads to inappropriate antibiotic use. Throat culture and rapid antigen detection test are the gold standards for diagnosis. Because the incidence of GAS pharyngitis is greater in children than in adults, obtaining a throat culture is recommended if findings on the antigen test are negative. Children should be tested on the basis of their risk factors for GAS pharyngitis, which include age (5–15 years), seasonality, and clinical signs and symptoms. Routine testing for GAS pharyngitis is generally not indicated in children younger than 3 years of age because of the low incidence of the disease in this age group and the low likelihood of complications.⁸

A number of clinical decision rules (e.g., modified Centor criteria) have been evaluated for their ability to predict the likelihood that findings on throat culture will be positive for GAS pharyngitis; however, metaanalysis suggests poor specificity for the rules. Current recommendations are to use rapid testing for diagnosis rather than rely on clinical decision rules alone.⁹

Differential Diagnosis

Additional clinical findings may suggest other diagnoses (e.g., abscess, ulcers) or may reveal symptoms of other entities (e.g., rhinorrhea, cough, and conjunctivitis).⁸

Viral pathogens (e.g., adenovirus, influenza, entero-

viruses) are a common cause of pharyngitis. Epstein-Barr virus (EBV) and cytomegalovirus, the viruses causing mononucleosis syndrome, similarly produce fever, exudative tonsils, and lymphadenopathy.

Red Flags

Lemierre syndrome, septic thrombophlebitis of the internal jugular vein, should be considered if a patient with GAS pharyngitis appears septic and has unilateral swelling or tenderness of the throat and neck. The infection occurs from contiguous spread of an oropharyngeal infection.

Treatment

Although GAS pharyngitis is a self-limited condition, treatment shortens the duration of symptoms, decreases transmission, and prevents development of acute rheumatic fever.⁵ The first-line treatments include amoxicillin and a single dose of intramuscular penicillin G benzathine. Hydration and pain control are tenets of symptomatic management. Steroids are not routinely recommended for children and adolescents with pharyngitis, because of insufficient evidence of benefit.¹⁰

Infectious Mononucleosis

Infectious mononucleosis is a viral illness most often caused by EBV. Often called the kissing disease, it is most common during adolescence and preadolescence and is transmitted through respiratory secretions. By adulthood, most people are EBV-seropositive after subclinical or symptomatic infections.

Medical History and Physical Examination

Mononucleosis presents as pharyngitis, anterior and posterior cervical lymphadenopathy, fever, and fatigue. Its symptoms and clinical presentation can mimic those of GAS pharyngitis, including pharyngeal exudate, erythematous tonsils, and palatal petechiae, but with a several-day prodrome of fatigue and anorexia.

Diagnosis

The severity of pharyngitis is generally less than that of GAS pharyngitis, but fever and malaise may remain prolonged, lasting even several weeks. A prolonged duration of symptoms should lead the clinician to consider mononucleosis instead of GAS pharyngitis, or even coinfection by mononucleosis and GAS pharyngitis, despite negative findings on throat culture for GAS. Although the diagnosis is generally a clinical one, the presence of >10% atypical lymphocytes is suggestive of mononucleosis, and confirmation can be obtained through a mononucleosis spot test (also called a monospot test) or EBV titers. A monospot may produce a false negative result early in the course.

Red Flags

A potentially dangerous manifestation of infectious mononucleosis is hepatosplenomegaly, which can predispose active children and adolescents to splenic rupture. Rupture can be life-threatening, so contact sports must be avoided until splenomegaly is resolved, or 4 weeks from diagnosis. Four weeks has been chosen by consensus as a safe point for return to sports, though evidence is lacking. For athletes desiring to participate sooner or for those with equivocal examination findings, spleen size may be evaluated by abdominal ultrasonography.¹¹

Treatment

Patients with hepatosplenomegaly are advised to avoid activity. Treatment is supportive, with hydration, rest, and oral analgesia. There is limited evidence to support the use of steroids with or without the use of antivirals for symptomatic relief.¹²

Peritonsillar Abscess

A peritonsillar abscess (PTA) is the collection of pus between the capsule of the tonsil and the pharyngeal muscles. It often arises from contiguous spread of a pharyngeal infection.

Medical History and Physical Examination

The features of a PTA often encountered in the medical history are fever, (unilateral) throat pain, and a muffled or "hot potato" voice. There may be a history of a preceding upper respiratory infection. Patients are typically adolescents. They have difficulty swallowing, drool, and cannot tolerate oral intake. Physical examination reveals a fluctuant bulge with erythema and surrounding edema at the tonsil or pillar unilaterally. There may also be asymmetry of the palate, uvula deviation, trismus, and cervical or submandibular lymphadenopathy (**Figure 4**). The presentation of peritonsillar cellulitis is similar, but without fluctuance, uvula deviation, and trismus.

Diagnosis

Diagnosis is often made clinically, and it is confirmed on release of pus after drainage. Laboratory work (complete blood cell count, C-reactive protein, metabolic panel, or blood cultures) may be helpful if there is the Figure 4. Peritonsillar abscess on the patient's right side, with increased erythema and swelling of the right tonsil and pillar.



The classic uvula deviation is not visible because the uvula is adhered to the right tonsil.

possibility of systemic infection or dehydration. A rapid antigen detection test is helpful because Group A β -hemolytic streptococcus is a frequent bacterial pathogen. However, PTA infections are often polymicrobial, with mixed aerobic and anaerobic bacteria.¹³

Radiologic evaluation with ultrasonography or computed tomography is indicated when there is the possibility of advanced parapharyngeal infection, or when it is necessary to differentiate abscess from cellulitis.¹⁴ Lateral neck x-rays are not indicated for this diagnosis, though they are helpful in the young child with retropharyngeal abscess (RPA).

A PTA may be indistinguishable from peritonsillar cellulitis until drainage is performed to confirm the presence of pus. A bacterial culture is indicated for immunocompromised patients who are at risk of infection by resistant organisms, but it is not recommended for routine analysis, because culture findings often do not alter treatment.¹⁴

Differential Diagnosis

Viral or bacterial pharyngitis may present with similar symptoms. Consider infectious mononucleosis as a concurrent or alternative diagnosis.¹⁴ The features that distinguish PTA from pharyngitis are the asymmetry seen in the palate and tonsillar pillars. Some clinicians consider RPA when thinking about infections of the deep neck

Figure 5. A newborn with white pseudomembranous plaques from thrush.



space, but this is a separate entity. RPA presents in toddlers to preschool-age children with fever, irritability, drooling or difficulty handling secretions, and neck stiffness. On examination, the child may tripod or have discomfort moving the neck. Trismus, muffled voice, or visible posterior pharyngeal changes can be present in RPA.

Red Flags

Watch for the child who is systemically ill, is having respiratory difficulty, or is dehydrated from poor oral intake. Complications of PTA include airway obstruction, rupture of the abscess with aspiration of pus, and extension to soft issues, causing an infection of the deep neck space.¹⁴ Consider Lemierre syndrome as a complication of a PTA.

Treatment

Initial treatment in the urgent care setting includes confirming a patent airway and controlling pain and fever. If the patient appears systemically ill, provide intravenous hydration. If the provider is confident that this is a peritonsillar cellulitis, a 24-hour trial of oral antibiotics with close follow-up is an option, but it is important to give the patient's parent or guardian clear instructions to seek care for the child if there is no improvement (i.e., if there is persistent fever, throat pain or swelling, or difficulty breathing). If there is the possibility of PTA, the patient should be referred to a hospital with otorhinolaryngology coverage to perform needle aspiration or incision and drainage. A 14-day course of antibiotics to cover oral flora is indicated for PTA or cellulitis. Parenteral recommendations are clindamycin or amoxicillin-sulbactam, and oral options are clindamycin or amoxicillin-clavulanate.

Thrush

Thrush is a fungal infection of the mouth, most commonly caused by *Candida albicans*. It occurs in healthy infants, but immunocompromised patients, those with diabetes mellitus, and those taking inhaled corticosteroids are also at risk.

Medical History and Physical Examination

Thrush can be easily missed in newborns because infants are often asymptomatic. The symptomatic infant may have difficulty feeding. Concomitant findings may include a diaper rash in the infant or increased nipple pain and redness in the breast-feeding mother. The provider should inspect the buccal mucosa, palate, and tongue using a tongue depressor to raise the cheek or open the mouth. Examination findings include a pseudomembranous white plaque on any part of the oral cavity; the plaque does not scrape off with a tongue blade (**Figure 5**). If the infant has a diaper rash from *Candida*, there may be erythematous patches or papules (i.e., satellite lesions), with areas of white scale, in the diaper area. The breast-feeding mother may have erythematous, shiny, flaky, or very painful nipples.

In an infant with a chief symptom of diaper rash, check the mouth for associated thrush, and vice versa. Oral candidiasis can also present as angular cheilitis after frequent licking at the corners of the mouth.

Diagnosis

Thrush is a clinical diagnosis. White plaques in the mouth are distinguishable from milk because milk will scrape off the mucosa, whereas thrush will not. Microscopic confirmation can be made with a potassium hydroxide preparation.

Red Flags

In an otherwise healthy child older than 1 year of age with thrush, consider underlying immunologic or endocrinologic disorders, such as human immunodeficiency virus, a primary immunodeficiency, or diabetes mellitus.

Treatment

The infant should be prescribed oral nystatin, and the parent or guardian should be given instructions to give

the medication until the lesions are resolved (typically within 2 weeks), plus an additional 3 days.¹⁵ Fluconazole is an alternative if there is treatment failure with nystatin.¹⁶ Diaper rash and nipple candidiasis are treated with a topical antifungal cream or ointment, such as nystatin or clotrimazole, used after each diaper change or feeding, respectively. Topical antifungals should be applied for the same duration as the oral medicine. Advise the mother to apply the topical antifungal onto her nipple just after breast-feeding the infant, to limit ingestion of the topical formulation.¹⁷

Parents must be educated on the ubiquitous nature of *Candida* and the possibility of reinfection if all fomites are not cleaned. All artificial nipples (including those used in pacifiers and bottles) must be boiled or cleaned with hot, soapy water after each use. Emphasize the importance of treating a breast-feeding mother's nipples because they are a source of shared *Candida* infection. The parent or guardian should follow up with the child's pediatrician in 1 month if the symptoms are not resolved.

Allergic Rhinitis

Allergic rhinitis frequently leads to a sore throat because of cobblestoning or lymphoid hyperplasia in the posterior oropharynx (**Figure 6**).

Medical History and Physical Examination

When there is an allergic etiology, the clinician may elicit a history of rhinorrhea, nasal congestion or obstruction, cough, fatigue, or pruritus of the eyes, nose, and palate. Patients with rhinitis often wake up with a sore throat. On examination, the provider may find that the posterior oropharynx has cobblestoning, the turbinates are boggy, and the conjunctiva is injected. The source of sore throat and cobblestoning is a combination of postnasal drip and mucus accumulation in the throat, leading to hyperplastic pharyngeal lymphoid tissue. Other examination findings include a horizontal fold at the nasal bridge (allergic salute) and infraorbital edema or discoloration (allergic shiners).¹⁸

Diagnosis

This is a clinical diagnosis based on medical history and inspection of the posterior oropharynx.

Red Flags

Other causes of cobblestoning include rhinitis due to viral infection, sinusitis, gastroesophageal reflux disease, and, rarely, inflammatory bowel disease.¹⁹ If antihista-





mines or nasal corticosteroids are not effective, consider an alternative source of throat pain with cobblestoning. Allergic rhinitis develops only after years of allergen exposure. If the child is younger than 2 years of age, consider alternative diagnoses.

Treatment

Mild, intermittent allergic rhinitis is treated with an oral antihistamine, such as cetirizine or loratadine. Add a nasal corticosteroid for moderate or persistent symptoms.^{18,20} Remind the child's parent or guardian that nasal steroids can provide immediate symptomatic relief but that full benefit may take days to weeks.¹⁸ If the source appears to be viral or infectious, nasal steroids will not help in the short time frame of symptomatology. Recommend supportive care, or a spoonful of honey to help with cough and sore throat (if the child is older than 1 year of age). The American Academy of Pediatrics recommends no over-the-counter cough-and-cold formulations for children younger than 6 years of age, because of lack of efficacy and potential for harm.^{21,22}

Conclusion

Use of specific techniques makes it easier for health-care providers to examine infants and children for common

pediatric oral lesions. A careful medical history and strategic inspection of the mouth are essential for diagnosis of pediatric oral conditions. The most important considerations with pediatric oral lesions are treatment of pain and assessment of hydration. Consider referral to an emergency department for dehydration, sepsis, or ill appearance, or when a PTA is a possibility.

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Income Tax Liability from Phantom Income

Gregory M. Weigand, JD, MBA

Urgent message: How physician and entrepreneur investors structure their urgent care center may expose them to an income tax liability from phantom income, but there are steps they can take to ensure there are sufficient funds to cover it.

Introduction

ncome taxes are one of life's certainties for most working Americans. Typically, however, income taxes are paid only on cash received during the course of a year. For example, a Form W-2 received by an employee summarizes the amount of wages that were paid to that employee during the year, similar to how a Form 1099-INT summarizes the amount of interest income that was paid to an individual during the course of the year (e.g., from a bank account). No one is surprised when their accountant tells them they owe taxes on these amounts.

However, there are circumstances where an individual may be required to report income on their U.S. individual income tax return (i.e., Form 1040) but where no corresponding cash was actually received by that individual. This income is commonly referred to as *phantom income* or *dry income*. Because of the way that many urgent care centers are organized, physicians and entrepreneurs who invest in centers are often caught by surprise when they are told they have an income tax liability resulting from phantom income.

Phantom Income

Phantom income generally arises when an urgent care center or other enterprise is organized as a pass-through entity, typically a limited liability company (LLC), some form of partnership (e.g., limited liability partnership [LLP]), or a subchapter S corporation (S corp). Although there may be some nuanced



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differences between different forms of entities, a discussion of which is beyond the scope of this article, the primary characteristic of a pass-through entity is that income generated by the entity is allocated (but not necessarily distributed) on the basis of a partner's, member's, or shareholder's ownership percentage in the entity.

Assume that an urgent care center is organized as a limited partnership of three owners: physician A, physician B, and investor C. Assume that physician A owns 50% of the center, and physician B and investor C each own 25%. At year end, the center reports a net profit of \$1000 on its partnership return. However, instead of distributing the center's entire net profit to each owner in accordance with their pro rata ownership, the owners decide to reinvest in the business. In this example, the owners decide to make cash distributions totaling only \$100, or 10% of the center's net profits, and use the remaining \$900, or 90% of the center's net profits, to (1) prepay interest and principal on an outstanding bank loan and (2) modernize the center's office.

Thus, although physician A, physician B, and investor C receive only cash distributions of \$50, \$25, and \$25, respectively, for income tax purposes, they are allocated a net profit of \$500, \$250, and \$250, respectively. (The balance of the net profit not actually distributed will be added to each partner's capital [equity] account in the partnership. Thus, if the partnership were to dissolve, each partner would be entitled to receive liguidating proceeds of at least the value of their capital account, absent any liquidation preferences.) Each of the three owners would receive a Schedule K-1, which is the Internal Revenue Service (IRS) tax form that reports each partner's allocation of the partnership's net income. As a result, physician A would report \$500 of income on her Form 1040 despite having received only \$50 in cash, and physician B and investor C would each report \$250 on their respective Form 1040 despite only having received \$25 each in cash. Physician A will be taxed on \$450 more income than she received in cash, and physician B and investor C will be taxed on \$225 more income than each of them received in cash—hence, an income tax liability from phantom income.

Each owner must pay income tax on the income that is allocated to them (whether or not any cash is actually distributed to them). Thus, assuming a marginal individual income tax rate of 30% per owner, physicians A and B and investor C will have an income tax liability of \$150, \$75, and \$75, respectively. That means their individual income tax bill from owning the urgent care center will be three times the total amount of cash they received by virtue of their ownership. That is, they will have to come up with cash from other sources just to pay the income tax resulting from the phantom income.

The numbers used in this example are nominal, but the reality can be stark. Consider a center with \$200,000 in net profits under the same facts: Physician A is left with a \$30,000 tax bill that exceeds her cash distributions from the center by \$20,000. An owner's income tax liability may be substantial and thus difficult to cover in a single payment to the IRS.

Preparing and Planning for Phantom Income

Owners and investors can guard against the unwelcome surprises associated with phantom income. Initially, they must identify whether the urgent care center is structured as a pass-through entity (including an S corp) or as a corporation that does not generate phantom income. Once they have determined that the center is a pass-through entity, they should analyze the center's financial statements, including a statement of cash flows, to understand how likely it is that the center will generate phantom income and, if it is likely, what the magnitude of the phantom income might be. Then they can at least establish procedures to track phantom income throughout the tax year and better plan for the potential tax liability. They may even be able to identify solutions to mitigate or eliminate the potential tax consequences. Here are some planning techniques and precautions.

Acquisition Due Diligence

Investors are well advised to seek the advice of a qualified tax professional before acquiring an ownership interest in an urgent care center. Prudent due diligence regarding the center's operations and financial statements may make clear whether the center is poised to generate a significant amount of phantom income, whether the center will generate a commensurate amount of cash that may be distributed, and whether it has cash-intensive expenses and balance sheet items (e.g., debt) or significant capital needs on the horizon.

Consideration of Cash-Intensive Expenses and Balance Sheet Items

Urgent care center investors and owners should analyze the company's statement of cash flows and sources and uses of cash. For example, an otherwise profitable center may have significant amounts of debt on its balance sheet. Though the interest portion of the debt service may be deductible and result in a lower net-profit figure that is ultimately allocated to the owners, the principal payments are not deductible and may be a significant cash drain on the business, creating an impediment to distribution of cash to the owner to cover their individual income tax liability.

Tax Distributions

It is common for owners of a pass-through entity to include a tax distribution provision in the entity's governing documents (e.g., LLC operating agreement). Although each tax distribution provision may have its own unique characteristics and mechanics, the overall purpose of such a provision is to cause the company to distribute a sufficient amount of cash to each owner to enable them to cover the income tax liability resulting from their allocation of the entity's income. Care must be taken when drafting such provisions to avoid unintended consequences (e.g., an owner receiving more cash from the entity than what that owner would otherwise be entitled to receive). Of course, for a tax distribution provision to serve its intended purpose, the entity must actually have cash to distribute. In some cases, the governing documents of an urgent care center may permit the center to borrow money in order to distribute a sufficient amount of cash to cover each owner's income tax liability.

Sound Cash Management and Creation of Reserve Accounts To avoid an unwelcome surprise of a significant income tax liability for any owners, the owners and management should undertake sound cash-management procedures and consider establishing cash reserve accounts. Thus, the business can ensure, absent other contingencies or emergencies, that it has sufficient cash to distribute under a mandatory tax distribution provision, or that it is simply better positioned to distribute a greater percentage of its annual profit.

Production of Interim Financial Statements and Estimated Tax Payments

To avoid having to make a significant lump-sum income tax payment at the end of the year (and also to avoid potential estimated tax penalties), owners should make quarterly estimated tax payments that are based on the quarterly profit of the urgent care center. Interim (e.g., quarterly) financial statements may be used as a tool by tax advisors to help the owners calculate their quarterly estimated tax payment.

Conclusion

Physicians and other investors in an urgent care center must consider the legal form of the business to identify whether phantom income may be a relevant consideration. If phantom income is a possibility, the owners should investigate what steps they can take to mitigate the possibility of insufficient cash distributions to cover any tax liability.



ABSTRACTS IN URGENT CARE

- Acetaminophen Is Likely Not Causing More Asthma Symptoms Than Ibuprofen
- Lengthy Antibiotic Therapy May Not Be Needed for Pneumonia
- Live Attenuated Influenza Vaccine Does Not Confer a Herd Benefit
- Users of Asthma Inhalers Still Make the Same Errors That They Always Have

- Sometimes Anticoagulation Is Necessary for Isolated Thrombosis of the Calf
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- U.S. Patients Take Antibiotics That Are Not Prescribed for Them
- Spreading Respiratory Syncytial Virus Is Easier Than Commonly Believed

SEAN M. MCNEELEY, MD

ach month the Urgent Care College of Physicians (UCCOP) provides a handful of abstracts from or related to urgent care practices or practitioners. Sean M. McNeeley, MD, leads this effort.

Acetaminophen Is Likely Not Causing More Asthma Symptoms Than Ibuprofen

Key point: No difference in asthma symptoms was found between children given acetaminophen and those given ibuprofen.

Citation: Sheehan WJ, Mauger DT, Paul IM, et al; NIH/ NHLBI AsthmaNet. Acetaminophen versus ibuprofen in young children with mild persistent asthma. *N Engl J Med*. 2016;375:619-630.

Concerns have recently been noted regarding acetaminophen use and increased asthma exacerbations. This multicenter, prospective, randomized, double-blind parallel group study attempted to determine the validity of those concerns. Three hundred children whose age ranged from 12 to 59 months and who had mild persistent asthma were randomized into two groups: one taking ibuprofen and one taking acetaminophen. The end point studied was asthma exacerbation for which steroids by



Sean M. McNeeley, MD, is an urgent care practitioner and Network Medical Director at University Hospitals of Cleveland, home of the first fellowship in urgent care medicine. Dr. McNeeley is a board member of UCAOA, UCCOP, and the Board of Certification in Urgent Care Medicine. He also sits on the *JUCM* editorial board. any route were required. There was no difference in findings between these groups. Although the study was not large or representative of all children with asthma, it was well designed. The knowledge that acetaminophen is not likely causing more asthma symptoms should at the least comfort both urgent care providers and parents. Additional larger and more diverse studies would be helpful.

Lengthy Antibiotic Therapy May Not Be Needed for Pneumonia

Key point: Antibiotic therapy for 5 days may be appropriate for some patients with pneumonia.

Citation: Uranga A, España PP, Bilbao A, et al. Duration of antibiotic treatment in community-acquired pneumonia: a multicenter randomized clinical trial. *JAMA Intern Med*. 2016;176:1257–1265.

The optimal duration of antibiotic therapy for pneumonia has not been determined. This randomized, multicenter noninferiority study focused on the duration of treatment for 312 patients hospitalized in Spain for community-acquired pneumonia. The patients received either standard therapy or 5 days of antibiotics if they met guidelines for clinical stability provided by the Infectious Diseases Society of America and the American Thoracic Society. The intervention group did as well as the control





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ABSTRACTS IN URGENT CARE

"Concerns have recently been noted regarding acetaminophen use and increased asthma exacerbations.... Three hundred children whose age ranged from 12 to 59 months and who had mild persistent asthma were [studied].... The knowledge that acetaminophen is not likely causing more asthma symptoms should at the least comfort both urgent care providers and parents."

group at 10 and 30 days. Two issues with the study were enrollment of hospitalized patients only and giving a quinolone to 80% of patients. Otherwise, the study findings do support the guidelines and the need for shorter courses of antibiotics even for some patients with pneumonia. Shorter courses would help make patients' compliance more likely and would somewhat alleviate concerns about antibiotic resistance.

Live Attenuated Influenza Vaccine Does Not Confer a Herd Benefit

Key point: There is no herd benefit from live attenuated influenza vaccine.

Citation: Loeb M, Russell ML, Manning V, et al. Live attenuated versus inactivated influenza vaccine in Hutterite children: a cluster randomized blinded trial. *Ann Intern Med.* 2016 August 16. doi: 10.7326/M16-0513. [Epub ahead of print.]

The authors of this study note that children are a large source of influenza seen during the seasonal increase. They speculated that perhaps the live attenuated vaccine would cause more community immunity than the inactivated type. Most vaccine studies focus only on the direct effect of the vaccine, but this study went a step further. The authors performed a cluster randomized trial involving 4611 Hutterite children in 52 communities in Canada over 3 years. The children were between the ages of 36 months and 15 years. Approximately 75% received a vaccine. Influenza infection occurred at a rate of 5.3% in the group receiving the live attenuated vaccine and a rate of 5.2% in the group receiving the inactivated vaccine. This is one more study with findings that urgent care providers can use to help families choose between types of vaccine. *Note:* When this column was written, the Centers for Disease Control and Prevention had recommended against giving the live vaccine during the 2016–2017 season because of efficacy concerns: http://www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm.

Users of Asthma Inhalers Still Make the Same Errors That They Always Have

Key point: Use errors by patients have continued since inhalers were created.

Citation: Sanchis J, Gich I, Pedersen S; Aerosol Drug Management Improvement Team (ADMIT). Systematic review of errors in inhaler use: has patient technique improved over time? *Chest.* 2016;150:394–406.

This review of 144 papers analyzed findings from 40 years of inhaler studies. The most common errors patients make with metered dose inhalers include lack of coordination (45%), incorrect speed or depth of inhalation (44%), and no breathhold after inhalation (46%). Errors with dry powder inhalers included incorrect preparation (29%), no full expiration before inhalation (46%), and no breath-hold after inhalation (37%). The researchers found no differences when comparing the first 20 years' worth of studies with the next 20 years' worth. Urgent care providers who keep these errors in mind can instruct patients in how to best use inhalers. However, in view of these findings, perhaps the inhaler industry should try a new approach.

Sometimes Anticoagulation Is Necessary for Isolated Thrombosis of the Calf

Key point: In some cases, isolated calf thrombosis may need treatment.

Citation: Utter GH, Dhillon TS, Salcedo ES, et al. Therapeutic anticoagulation for isolated calf deep vein thrombosis. *JAMA Surg.* 2016 September 21. doi: 10.1001/jamasurg .2016.1770. [Epub ahead of print.]

Although most agree with using anticoagulation for deep vein thrombosis (DVT), there is debate about using blood thinners for isolated calf thrombosis. The single-center retrospective cohort study reported here reviewed outcomes within 180 days for pulmonary embolism and proximal DVT in 243 patients receiving anticoagulation and 141 healthy participants. As expected, therapeutic anticoagulation reduced the risk of pulmonary embolism or more proximal DVT (odds ratio, 0.34) but increased the risk of bleeding (odds ratio, 4.35). This is good information for urgent care providers to discuss with patients who have isolated calf DVT.

The EDACS-ADP Is Helpful in Deciding Which Patients at Low Risk for Acute Coronary Syndrome Can Go Home

Key point: A protocol for ruling out chest pain quickly in patients at low risk for acute coronary syndrome is validated. Citation: Flaws D, Than M, Scheuermeyer FX, et al. External validation of the emergency department assessment of chest pain score accelerated diagnostic pathway (EDACS-ADP). Emerg Med J. 2016;33:618–625.

This retrospective validation of the Emergency Department Assessment of Chest Pain Score and Accelerated Diagnostic Pathway was conducted to determine whether pathway scores can help health-care providers decide which patients at low risk for acute coronary syndrome (ACS) can safely be sent home. The authors reviewed data for 763 patients who presented to a hospital in Canada with potential ACS. The review classified 41.6% of the patients as being at low risk. The sensitivity and negative predictive value of the pathway were both 100% for a 30-day window after discharge. The pathway's parameters include age, sex, and symptoms and signs. Along with normal electrocardiographic findings and negative findings on assessment for troponin levels at 0 and 2 hours, this pathway made it possible for health-care providers to classify these patients as being at low risk. Although most of this information could be obtained at an urgent care center, the proper assessment location during the 2-hour wait is a concern. As accuracy of biomarker measurements improves, the wait time continues to decrease and may eventually be short enough for urgent care treatment.

U.S. Patients Take Antibiotics That Are Not Prescribed for Them

Key point: Nonprescription antibiotic use increases resistance and is prevalent.

Citation: Zoorob R, Grigoryan L, Nash S, Trautner BW. Nonprescription antimicrobial use in a primary care population in the United States. *Antimicrob Agents Chemother*. 2016;60:5527-5532.

Researchers studied nonprescribed use of antibiotics in the United States by surveying patients in waiting rooms at several primary-care locations between April and August 2015. Of those surveyed, 400 completed the questionnaire. Such use has already been studied in immigrants from Latin America. Antibiotics used included those left over from previous prescriptions and those brought in from other countries. Storage of antibiotics was highly correlated with nonprescribed use. Use of non-prescribed antibiotics was reported by 5% of respondents, with amoxicillin, azithromycin, and ciprofloxacin comprising the majority of medications taken. Intended self-treatments were

"The most common errors patients make with metered dose inhalers include lack of coordination (45%), incorrect speed or depth of inhalation (44%), and no breath-hold after inhalation (46%). Errors with dry powder inhalers included incorrect preparation (29%), no full expiration before inhalation (46%), and no breath-hold after inhalation (37%)."

for toothaches, sore throats, earaches, and urinary tract infections. Those who intended to use prescribed antibiotics and stored them were four times more likely than other respondents to have put such antibiotics to a nonprescribed use. These findings should serve as a reminder to urgent care providers to always instruct patients to finish taking the antibiotics that they are prescribed or else throw away any leftover medication. It is also important to discuss with patients the risks of nonprescribed use.

Spreading Respiratory Syncytial Virus Is Easier Than Commonly Believed

Key point: Respiratory syncytial virus may be more infectious than once thought.

Citation: Kulkarni H, Smith CM, Lee Ddo H, et al. Evidence of respiratory syncytial virus spread by aerosol. Time to revisit infection control strategies? *Am J Respir Crit Care Med.* 2016;194:308-316.

Respiratory syncytial virus (RSV) has traditionally been thought to spread by large respiratory droplets and by physical contact, such as contact with the hands of health-care providers and caretakers. This study looked at whether RSV is transferred by small aerosolized particles that would stay present much longer than expected. The authors set up machines to collect particles at 1 m, 5 m, and 10 m away from children hospitalized because of RSV. They found aerosolized particles at 1 m and at less than 5 m, and particles at both distances remained infectious to human cells in culture. This information, although hospital-based, likely has bearing on the acute-care setting: The distance involved in infectivity and the time before the area is clear of RSV particles are both longer than previously thought. More research in this area is needed to confirm these findings, because the total number of participants in the study was quite low.

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Understanding the Impacts of Health-Care Reform on Urgent Care: Care Utilization, Population Health and Integration, and Reimbursement

Urgent message: Urgent care plays a vital role in reducing medical expenses and improving population health by enabling the right care, at the right place, by the right provider, at the right price.

MICHAEL F. BOYLE, MD, MBA, FACEP

Introduction

ealth-care reform, quality of care, and costs are center stage topics for politicians and the general public. As medical providers and administrators in the United States, we share in the challenge of understanding this complex system. Whereas traditional approaches in the fee-for-service environment focused on "sick care," population health promotes prevention and healthy lifestyles. Under discussion here are the assessment of previous health-care utilization patterns, allowing the prediction of future urgent care needs; understanding the critical need for integration of urgent care programs into health-care systems, allowing for reduction in costs and improved patient access; and reviewing new Medicare reimbursement models in relation to urgent care center fiscal stability and success. Care improvement through integration of urgent care centers will play a critical role in our future health-care environment.¹⁻³

The intent of the Patient Protection and Affordable Care Act (PPACA) was to provide care for uninsured Americans and gain control of health-care expenditures through care integration, improved technology, and population health management. Massachusetts was one



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of the first states to have success with provision of health insurance to the majority of its residents; though patients had insurance, access to providers was limited because of the predominance of a Medicaid product.⁴ Without access, provision of care becomes difficult.

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Care Utilization

The primary reasons for reform include controlling the escalation of health-care costs and provision of health coverage for the uninsured. As many health care providers and patients are aware, health care in the United States is more expensive than in most other industrialized nations, surpassing \$8000 per capita. Premiums and out-of-pocket costs have increased even though reform has occurred. The reasons for this are multifactorial: the increased use of technology, pharmaceutical expenses, overutilization, poor coordination of care, fraud, and medical malpractice, along with many others. Expenses are decreased by either reducing utilization or reducing utilization costs.²

Understanding utilization is critical to understanding health care. According to statistics from the Centers for Disease Control and Prevention, the average citizen visits a physician office three times per year, with approximately 1.6 visits to primary-care providers, 0.8 to medical specialists, and 0.6 to surgical specialists.⁴ Emergency department (ED) use averages one visit for every three citizens, or just over 120 million patient visits per year (**Figure 1**). As the population ages, this utilization shifts upward toward 1.66 visits for primary-care providers.⁵

Using those statistics, predictive modeling suggests that a hypothetical locality of 100,000 citizens would require at least one ED caring for about 33,000 patients (one visit for every three citizens) and a primary-care network that can manage approximately 160,000 visits.

Primary-care offices often maintain panels of 2000 to 4000 patients per provider, with the specific number depending on the level of office support available, the use of advanced practice providers, and the average age of the patient in the practice.⁵ An older population predicts higher resource utilization and more complicated (higher-medicalacuity) office evaluations, more urgent care visits, and more ED visits.5 Based on Medicare fee schedules. reimbursement is at a fixed rate and lower than for commercial products. This concept is critical to understand when opening an urgent care center in New York City compared with one in Miami. The higher number of Medicare patients in the latter location leads to higher utilization

of urgent care services by the Medicare population and potentially lower reimbursement compared with commercial carriers.

In business and medicine, product utilization increases or decreases according to market fundamentals and the need for service. When there is high demand for a product (i.e., health care for epidemic influenza), utilization increases. Unlike the case with business product demand, the price of health care does not respond in similar fashion, because of fixed or negotiated reimbursement under specific insurance products. Insurance carriers often increase patient deductibles and out-ofpocket costs in an attempt to control utilization. As health-care (out-of-pocket) costs increase, utilization may decrease or become more selective. Patients seek lower-cost alternatives with similar quality (e.g., an urgent care center vs. an ED) and easier access (telemedicine vs. urgent care). Medical utilization may be predictable on the basis of the already-mentioned statistics and may assist in determining the need for further facilities, including urgent care centers. Typically, minor illness and injury volumes are predictable and do not change unless access decreases (local closure of a physician office, urgent care center, or ED), the local population increases (e.g., new industry moves to the area), or epidemic illness occurs. Population health management attempts to shift utilization toward prevention of illness rather than treatment of illness.

| Table 1. Urgent Care Opportunity with Medicare Population Health | | | | |
|---|-------------|------------------------------------|--|--|
| Description | Code | Medicare Fee Schedule ^a | | |
| Post-discharge follow-up | 99495 | \$163 | | |
| Post-discharge follow-up, high risk | 99496 | \$231 | | |
| Smoking cessation | 99406 | \$11-\$15 | | |
| Weight-loss counseling (nutrition) | 97802 | \$30-\$40 | | |
| Immunization | G0008/G0009 | \$8 | | |
| Influenza | 90686 | \$12-\$24 | | |
| Health risk stratification examination (initial preventive physical examination) | G0402 | \$150-\$200 | | |
| Electrocardiogram | G0366 | \$15-\$25 | | |
| ^a Reimbursement may vary by geographic region. | | | | |

Population Health and Integration

According to Don Berwick, MD, of the Institute for Healthcare Improvement, the aims of population health are improving the overall health-care experience, improving the health of specific populations, and reducing the total per capita costs of care.⁶ Physicians, urgent care centers, and hospitals attempt to reduce variability, costs, and errors through the standardization of health practice. In addition to creating additional points of patient access to care, urgent care centers help to reduce the unit cost of care and direct new patients into the integrated hospital system.⁷

Integration occurs in the form of accountable care organizations serving Medicare populations, clinically integrated networks serving a locality and marketing directly to employers (i.e., eliminating insurance carriers), or local health systems attempting to improve health management for populations that include their own employees.^{2,3} Previously, patients were cared for by independent providers (physicians) and multiple healthcare organizations that functioned under different platforms, imaging and medical records systems, and accounting systems. By using the same platform and electronic medical record systems, providers and hospitals can reduce errors, duplication, and costs.^{2,3} An integrated spectrum of care progresses from the physician office to urgent care, emergency care, inpatient care, and post-acute care.^{8,9}

Post-acute care within 2 to 4 weeks of hospital discharge may help reduce patient readmissions and improve outcomes for this high-risk population. Less than half of readmitted patients are seen by their primary-care physician before being readmitted to the hospital.¹⁰ Post-acute care programs are structured to reduce readmission cases with early assessment of recently discharged patients. By integrating with the hospital case-management program, urgent care centers easily provide critical assessment of these frail patients by reviewing the plan of care, examining the patient to ensure that their health is continuing to improve, and ensuring that discharge medications are taken correctly. Further, primary-care appointments are scheduled, and any additional social needs are evaluated. Two recently added Medicare codes, 99495 and 99496, define the protocol of patient phone calls, face-to-face evaluations, and specific documentation requirements (Table 1). The new paradigm for population health attempts to reduce the need for hospitalization and post-discharge assessment, focusing on preventive care and early health risk identification.

Health risk assessment and early identification of illness are identified by a health risk assessment examination (HRAE) or an initial preventive physical examination (IPPE). These IPPEs are specifically designed for new Medicare enrollees, but patients not having Medicare coverage may require similar examinations depending on the coverage requirements. Urgent care centers have become the physical examination experts, providing assessment for Department of Transportation, flight, sports, immigration, and school physicals. Performing HRAEs and IPPEs in urgent care centers is a logical and cost-effective option when followed by appropriate referral to primarycare providers for assignment to medical homes (Table 2). This reduces the burden and workload for primarycare providers in the same organization. The examination also allows for electrocardiography performance, diabetes

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Category 1 (high risk for acute event in short term)

- One or more chronic diseases
- Multiple disease risk factors
- Poor socioeconomic factors

Category 2 (further development of chronic illness)

- No or one chronic disease
- Three or more risk factors
- Socioeconomic factors

Category 3 (generally well)

- One or more risk factors
- Risk factors may be unknown
- Patient education for risk factors

Category 4 (truly well)

- No illness
- No risk factors
- No socioeconomic issues

testing, and lipid screening, along with several other separate and billable services.

Besides the IPPE, other shared initiatives between urgent care and primary care can involve health promotion through wellness, immunizations, healthy-lifestyle education, weight-loss and smoking-cessation classes, and workplace health and occupational medicine programs. Each of these can be provided in the costeffective urgent care environment. Many urgent care centers are integrated into larger health systems that use preventive-care screening initiatives prompted by embedded computer technology. These prompt alerts may be identified by all providers within the system and may be forwarded to patients via electronic notification, improving health compliance and preventive-care goals.

Under the Health Information Technology for Economic and Clinical Health Act of 2009, the government allocated over \$19 billion to provide assistance to healthcare providers and systems. The benefits from these common data pools and integrated electronic medical records are becoming more evident. Clinicians have the ability to instantaneously review recent and remote test results, previous medical problems, and medical regimens that the patient has undergone. This information results in decreased duplication of testing, improved communication among providers, and the ability to extract large volumes of data for analysis. Clinical researchers can synthesize small volumes of data and develop recommendations for future treatment modalities. Massive data aggregation allows for near real-time analysis of patient data and the ability to assess disease-management trends.^{6,11} The new field of health-care analytics permits data synthesis and improved predictions of patient outcomes, complications, and costs of care. These predictions promote a cost-efficient system and care-management modification when data are utilized correctly.

Reimbursement

Reimbursement changes play a key role in reduction of overall health-care costs. Understanding these payment changes and demographic shifts with payors becomes critical to financial viability. Although Massachusetts has one of the most successful universal coverage programs in the country, the majority of patients were enrolled in state Medicaid programs, resulting in a 4% increase in ED utilization.¹² Though patients had Medicaid coverage, provider access panels did not expand, which caused limited availability of primary-care resources. Since implementation of the PPACA, we have seen a similar shift in EDs and urgent care sites, with a decrease in the self-pay population being directly correlated to an increase in Medicaid volume. Contrary to the Massachusetts experience, ED volumes have not significantly changed. This may be related to the significant expansion of urgent care centers and federally qualified healthcare centers, allowing for improved access.

Under the PPACA, major reimbursement changes include pay for performance, penalties for patient readmission, and bundled payment. Understanding these modalities and additional chargeable codes under population health helps systems maintain financial viability.

The Physician Quality Reporting System (PQRS), developed in 2006 by the Centers for Medicare & Medicaid Services (CMS), ties reimbursement to quality performance of selected initiatives. Medicare initiatives under the PQRS provide incentives for those that report performance and meet or exceed set goals. Yet according to data from the 2015 Benchmarking Survey of the Urgent Care Association of America (which is based on 2014 data), less than 50% of urgent care sites participate in this program.¹³ In 2015, successful PQRS participation required reporting on at least nine measures covering at least three National Quality Strategy domains.⁷ CMS guidelines requires providers who bill for any Medicare Part B face-to-face services to also report on cost-cutting measures. Incentive payment requires reporting on nine measures over three domains, although to avoid penalty, providers must report on three measures over one domain (one of nine includes an outcome measure). Future reimbursement is tied to both reporting and performance on these initiatives (Figure 2). Under the PQRS, providers and groups may face up to a 6% reduction in Medicare payments. Lack of participation will result in decreased reimbursement starting in 2017 for Medicare-billable cases.

An additional modality is bundled payment for specific procedures, including hip and knee replacements. Reimbursement is provided to one entity, most likely the hospital; this payment must then be split between the health-care institution and all providers involved. Medicare patients average about 10% of the urgent care visits. Financial impacts may be greater under these reimbursement changes, with areas of Florida and other locations catering to a higher Medicare population.

Discussion

Harris suggests that ED visits may be reduced by 30% through diversion to other health-care alternatives.² A more conservative estimate would be 20% of the overall ED population, resulting in a savings of about \$5 billion. Though many have developed promotional slogans for population health changes, I suggest and introduce a care concept of the "Right Patient, cared for at the Right Place, by the Right Provider, charged the Right Price," or RP⁴.

Administrators and providers of urgent care must understand health-care demographics and utilization in order to determine expansion alternatives. Reviewing population density, utilization, and internet mapping technology (locating medical facilities and urgent care centers), operators and prospective owners can assess medical need for urgent care centers. Returning to the example of the hypothetical city, with a population of 100,000, the ED could easily divert 20%, or 6600 patients with lower-acuity needs, to urgent care. In addition, after-hours care, episodic illness and injury care, routine physical examinations (sports, Department of Transportation, immigration, etc.), and occupational medicine could easily add another 10,000 visits. In that hypothetical situation, more than two urgent care sites could lead to saturation.

Many larger cities have approached the saturation point for urgent care services, with expansion of sites simply resulting in a dilution of the same client base. Therefore, smaller cities seem to provide more opportunity. Further, significant saturation will likely occur when there are more than 12,000 urgent care clinics across the nation. Growth will be challenging, and financial success may be limited. Integration with the local health-care system provides additional opportunity and patient volume in a mutually beneficial relationship between the system and urgent care centers.

Conclusion

The domains of urgent care and population health share common goals and support the RP⁴ concept. With health system integration, urgent care centers provide care for the minor episodic injury and minor illness populations at a cost-effective price. Providing after-hours, weekend, and holiday access makes urgent care centers an invaluable resource by reducing the need for the use of EDs and reducing expense to the patient and the system. Health promotion through HRAEs, immunizations, and smoking-cessation and weight-loss programs and counseling is a critical component of population health and is easily integrated into urgent care. Urgent care centers become accessibility portals for overburdened primarycare offices and saturated EDs. Health system integration provides a common platform for technology and electronic health records, leading to improved care, reduction in duplication, and decreased costs. Proper understanding of health-care utilization reduces the potential for local urgent care center saturation. Finally, understanding new reimbursement methods becomes critical to financial viability. Urgent care as an industry and "new" specialty must be at the negotiating table alongside health-care systems, specialists, and primary-care providers.

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Painful Nose Crusting in a Child

Urgent message: Common nasal infections can have serious health consequences if not quickly diagnosed and treated.

SUZANNE ALTON, DNP, FNP-BC, RN, and HAROLD S. PINE, MD, FAAP, FACS

Introduction

oth children and adults present to urgent care centers with nasal pain. Infectious causes of such pain include impetigo, furuncles, and nasal vestibulitis (NV). Noninfectious causes include squamous cell cancer and lupus vulgaris. A careful physical examination and a thorough medical history can allow the health-care provider to rule out more serious conditions or to transfer the patient to an emergency department if lifethreatening conditions are present.

Case Presentation

A 6-year-old boy was brought to an urgent care center, where he reported that his nose had been hurting recently. He had a lot of crusts that initiated from inside the right nostril, similar to what is shown in **Figure 1**. His parent reported that his symptoms had gradually worsened over the preceding 7 to 10 days. Initially he had crusting alone, but then the interior of his right nostril became tender and gradually became more painful, with small amounts of bleeding on crust removal. The parent reported that the boy had not been running a fever but did have a cold (viral upper respiratory infection) that resolved in the week prior to the onset of the crusting and pain. The boy was otherwise healthy, with no chronic diseases, and his immunizations were up to date. His vital signs were within normal parameters.

Physical Examination

On physical examination, the outside of our patient's nose looked normal. However, when a speculum examination was done, it was apparent that both nasal vestibules and other inner nose tissues were erythematous, the right side more so than the left. On the right



side, the area next to the inferior septum had crusted, dried discharge with some excoriated areas. Findings on examination of his ears and mouth were unremarkable.

Differential Diagnosis

Other possible causes of our patient's condition included impetigo in the nose, but impetigo does not generate the amount of pain seen in our patient. In some patients with nasal pain, the external tip of the nose is bright red. This is called the Rudolph sign, and it should alert the health-care practitioner to the presence of a furuncle, or abscess, under the erythematous tissue or inside the superior inner nose.¹ If there is a furuncle present, it should be incised and drained, and the patient should

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Figure 1. Nasal vestibulitis.



be given clear instructions to not squeeze the infected area, to avoid causing cavernous sinus thrombosis (CST).

Squamous cell cancer inside the nares can look very similar to a nasal infection, but healing will not occur with antibiotics. It is important to give clear instructions for the patient to return—or, if the patient is a child, for the patient's parent or guardian to bring the child back—to the urgent care center if symptoms recur or do not decrease.

The provider should keep in mind that lupus vulgaris, an uncommon form of cutaneous tuberculosis, is a possibility, but it is a condition that would not heal with antibiotic treatment.

Diagnosis

Our patient had NV. The hallmark manifestations are pain inside the nose and crusts that sometimes cause bleeding when removed. There may be excoriation and fissuring in the vestibule if the infection is severe. Our patient's NV was severe, but most patients present before outer signs are visible, and it is necessary to perform a careful examination with a lighted nasal speculum in order to see abnormalities. Swelling of the nasal vestibule, erythema, heat in the area, and fissuring of the skin by the septum or at the entrance of the nares are other common symptoms.

An infection may be a result of normal nasal bacterial carriage, or it can be transmitted from fingers if the nose is picked frequently. The infectious agent that most frequently causes NV is *Staphylococcus aureus*. It is important to consider methicillin-resistant *S. aureus* (MRSA) as a possible etiologic agent, depending on community prevalence. Herpes simplex has also been documented

"Any condition that alters the normal mucosal barrier and results in epithelial breaks with potential portals of entry by bacteria can cause [nasal vestibulitis]."

as a cause of NV,² but its presence is relatively easy to determine from its characteristic lesions.

Obtaining a culture from a patient with NV is difficult because only crusting may be present. There are more unusual causes of NV, but they are rare. A history of travel by the patient or other unusual events can be helpful in teasing out unusual causes, such as leishmaniasis³ or *Nocardiopsis*.⁴

Discussion

Causes

NV frequently develops after an upper respiratory tract infection as copious mucoid nasal discharge decreases and is replaced by crusts that the patient either picks out of the nose or pulls out with tissue. Removing the crusts may cause small amounts of bleeding.

NV is common in children, and the cause in children is likely nose-picking, which increases the risk of tissue trauma and inoculation with *S. aureus*. If nasal symptoms in a child are unilateral, however, assume that there is a foreign body in the nose, and perform a careful speculum examination. Button batteries in the nose can perforate the septum in as little as 2 to 7 hours,⁵ so if the presence of such a battery is suspected, the child should be referred to an emergency department. [*Editor's note: see "Pediatric Periorbital Cellulitis from an Intranasal Button Battery" at* http://www.jucm.com/pediatric-periorbital-cellulitis-from-an-intranasal-button-battery/.]

Other common causes of NV are allergic rhinitis, folliculitis from a nasal hair, and a pustule or furuncle inside the nose.⁶ Patients may think that they have a pimple inside their nose because of the degree of tenderness in the area. Any condition that alters the normal mucosal barrier and results in epithelial breaks with potential portals of entry by bacteria can cause NV. Other conditions that can increase the risk of NV are dry environments with low humidity, the use of isotretinoin, and smoking.² Conditions and treatments that predispose the skin to infection, such as using epidermal growth factor receptor inhibitors for cancer treatment, have been documented as risk factors for developing NV.⁷



(Image reused under a Creative Commons Attribution-Share Alike 2.0 Generic license [https://creativecommons.org/licenses/by-sa/2.0/deed.en]. Available from: https://commons.wikimedia.org/wiki/File:Danger_triangle_of_the_face_diagram.jpg.)

Complications

The most common complications of NV are abscesses and facial cellulitis. The most serious complication of NV is CST, which develops when an infection spreads from the "danger triangle" (**Figure 2**) of the face. The nose and upper lip area form a triangle from which blood drains into valveless veins. Bacteria can enter the venous system there, and because of the lack of valves, they spread backward into the brain. This can lead to bacteria in the cavernous sinus (**Figure 3**), which can cause clotting or obstruction.⁸

The cavernous sinus houses several cranial nerves that pass through the brain (**Figure 4**). Cranial nerve VI, the abducens nerve, travels through the middle of the sinus alongside the internal carotid artery. The cavernous sinus is composed of highly trabeculated tissue that contributes to clot formation after bacterial infections, and clots can cause obstruction and swelling. CST is most frequently



caused by nasal infections, including furuncles and ethmoidal or sphenoidal sinusitis, and less often by dental infections.^{8,9} Spreading of bacteria through orbital infections or otitis media is less common.¹⁰

A persistent, worsening headache is a cardinal symptom of CST and one of its earliest symptoms.^{8,9} Such a headache may precede fever or ocular signs, and it occurs in most patients (50%-90%) with CST. Desa and Green⁹ reported that nuchal rigidity was present in about one-third of the cases they reviewed. Pressure on the cranial nerves in the cavernous sinus predominantly affects vision and results in a myriad of visual abnormalities. Ocular signs occur in 80% or more of individuals who have CST, and they frequently include orbital pain and fullness caused by venous congestion and obstruction.¹⁰ Chemosis, proptosis, ptosis, and periorbital edema often occur as a result.9 Other visual manifestations include sluggish pupillary response, papilledema, decreased visual acuity, increased intraocular pressure, diplopia, and cranial nerve palsies.¹⁰

Extraocular movement abnormalities are expected in CST, owing to the pressure on the cranial nerves in the cavernous sinus. The abducens nerve (which normally abducts the eye) is frequently affected because of its central location in the cavernous sinus, causing a palsy or paralysis to develop that limits the affected side to a lateral gaze.

The spread of swelling and other ocular abnormalities

from one eye to the other within 24 to 48 hours is considered pathognomonic for CST. The outward signs develop as the infection travels from the affected side of the cavernous sinus through small veins to the contralateral sinus. Changes in mentation and decreased level of consciousness then follow because neurologic function is compromised.

CST is usually diagnosed with the use of magnetic resonance imaging and requires early, aggressive treatment with antibiotics for a lengthy period. Any of these signs and symptoms should prompt transfer of the patient to an emergency department with intravenous antibiotics and specialty consultation. Mortality from CST is high, at 20% to 30%, even with appropriate medical treatment.⁹ For this reason, patients who present



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with NV or other infections in the danger triangle should be informed (or their parents or guardians should be informed) that worsening cellulitis symptoms or any ocular symptoms should be evaluated in an emergency department.

Treatment

The chief treatment for NV is antibacterial ointment, applied twice daily for 5 days. Mupirocin is an excellent choice because it also treats MRSA. The ointment vehicle provides pain relief by moisturizing the area and softening crusts. Note that softening the crusts before removing them can decrease bleeding. Applying warm compresses several times a day is also recommended, which may help promote circulation to the area and speed healing. Any fluctuant tissue must incised and drained, although fluctuance is not common in NV. For severe manifestations or associated areas of cellulitis, oral antibiotics with appropriate coverage for *S. aureus* should be used. Our patient was prescribed mupirocin, and his condition cleared after a week, with no recurrence.

Conclusion

NV is a painful infection causing crusting inside the nares that can lead to serious sequelae if left untreated. The treatment of choice is topical mupirocin, which cures the infection and soothes the inflammation. The most serious complication of an infection like NV in the danger triangle of the face is CST, a life-threatening infectious clotting condition. The most common signs of CST are a worsening headache and visual disturbances, especially cranial nerve palsies affecting the eyes. Prompt transfer to an emergency department is warranted if CST is a possibility.

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CODING Q&A

Imaging: X-Rays and Computed Tomography

DAVID E. STERN, MD, CPC

Q. I understand that there will be reductions for x-ray reimbursements from Medicare in 2017. Is this true? To give imaging providers an additional incentive to adopt more advanced x-ray technology, Medicare will reduce reimbursement, beginning in 2017, for the technical component (and the technical component of the global fee) in claims submitted for x-rays performed with analog equipment. The cuts will continue in future years for those using computed radiography equipment (Table 1).

Although the Centers for Medicare & Medicaid Services (CMS) have not made it clear how services performed using older technology will be identified, it is expected that they will create a modifier to append to the appropriate *Current Procedural Terminology* (CPT) code, similar to the XR-29 regulation for computed tomography (CT) scans in 2016.

Each method offers its own attributes (**Table 2**). With that in mind, you will also want to consider the number of x-rays performed in your facility, the staffing and space you have available, and the upfront cost when deciding whether to purchase different x-ray equipment.

It is assumed that most organizations have already replaced analog equipment, possibly with computed radiography before digital radiography was widely available. If you have not done so yet, it might be worth it to invest in digital radiography since it is inevitable that is the direction the industry is heading.

I plan to purchase CT scanners and start providing scanning services. I already offer x-ray services. Are there certain equipment requirements that I should be aware of?



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| Table 1. Reductions in Medicare Reimbursements for X-Rays | | | | | |
|---|---------------------|----------------------------|--|--|--|
| X-Ray Technology | Year Implemented | Reimbursement Reduction | | | |
| Analog | 2017 | 20% | | | |
| Computed radiography | 2018 | 7% | | | |
| Computed radiography | 2023 | 10% | | | |
| Digital radiography | None | None | | | |

| Table 2. Variables Arreeting Costs of A-Kay Types | | | | | |
|---|---|--|--|--|--|
| Analog X-Ray | Computed Radiography X-Ray | Direct Digital X-Ray | | | |
| Ordinary x-ray machines use high dose | Lower dose than analog and higher than digital | New flat-panel detectors allow low dose | | | |
| Need to repeat x-ray because of low quality of images | Image transferred to plate, then from plate to the reader | Constant quality because automatic exposure control software eliminates need to repeat x-ray | | | |
| Only one local hard copy | Image can be digitized | Easy availability also in the Cloud for quality control and research | | | |
| Poor image or viewer quality | Similar to quality of digital radiography at high dose levels and can degrade in the time it takes to process the cassette | Better image quality with respect to contrast and detail detectability | | | |
| Delay between x-ray exposure and image availability | Image rendered digitally in under 1 minute | Image immediately available | | | |
| Image archiving is labor intensive | Digitized image storage is more space efficient than film | Easy storage and instant access to archived images | | | |

CMS requires that health-care providers who provide CT scanning services comply with the XR-29 standard of the National Electrical Manufacturers Association (NEMA) in order to avoid reimbursement penalties. The NEMA XR-29 standard specifies four attributes of CT scanners that will help

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CODING Q&A

optimize and/or manage doses of ionizing radiation and deliver the diagnostic image quality needed by the provider:

- Digital Imaging and Communications in Medicine (DICOM)-compliant radiation-dose structured reporting
- Dose-check features
- Automatic exposure control
- Reference adult and pediatric protocols

Further, CMS will reduce the payment for the technical component (and the technical component of the global fee) of the Physician Fee Schedule service by 5% in 2016 and 15% in 2017 and subsequent years for CT services billed in imaging centers, physician offices, and hospital outpatient settings. Those services are identified by CPT codes:

- 70450 through 70498
- 71250 through 71275
- 72125 through 72133
- 72191 through 72194
- 73200 through 73206
- 73700 through 73706
- 74150 through 74178
- 74261 through 74263
- 75571 through 75574
- Any succeeding codes

If services are performed on CT scanners that are not compliant with NEMA Standard XR-29-2013, billers must append modifier **-CT**, "computed tomography services furnished using equipment that does not meet each of the attributes of the National Electrical Manufacturers Association (NEMA) XR-29-2013 standard," to the CPT code. More information on the modifier and the claim adjustment codes can be found in the *MLN Matters* newsletter at https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMatters Articles/downloads/MM9250.pdf.

To determine whether your CT equipment complies with the XR-29 standard, you can contact your CT scanner's manufacturer. In addition, you should also visit your manufacturer's XR-29 vendor certification web portal on the MITA Smart Dose website (http://www.medicalimaging.org/policy-and-positions/mita-smart-dose/) to download verification of compliance.

Note: CPT codes, descriptions, and other data only are @ 2011, American Medical Association (AMA). All Rights Reserved (or such other date of publication of CPT). CPT is a trademark of the AMA.

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Young Football Player with Sudden Chest Pain

Mohamad Lazkani, MD, Luke Seibolt, MD, and Joshua Waggoner, MD



Case

A 20-year-old previously healthy man presents with sudden onset of substernal chest pressure after completing football practice. His chest pain is nonradiating, nonreproducible, and nonpositional. He does not have associated palpitations, dyspnea, or diaphoresis. He reports that he has not had recent upper respiratory tract infections or contact with ill people. He does not have a history of using alcohol, tobacco, or illicit drugs. He has no family history of sudden cardiac death or early coronary artery disease.

View the electrocardiogram obtained (**Figure 1**) and consider what your diagnosis would be. Resolution of the case is described on the next page.

THE RESOLUTION



Differential Diagnosis

- ST-elevation myocardial infarction (STEMI)
- Coronary vasospasm
- Acute pericarditis
- Stressed-induced cardiomyopathy
- Left ventricular aneurysm

Diagnosis

The patient had had a STEMI. Testing showed an elevated troponin-I level, peaking at 65 ng/mL. His cardiovascular examination showed a regular rate and rhythm with intermittent premature beats on auscultation without a pericardial rub. He had congruent ST-segment elevations (see *arrows* in Figure 1) in the inferior leads on electrocardiography (ECG). Catheterization of the right coronary artery revealed an acute thrombus (**Figure 2**).

Learnings

Several medical conditions can result in ST elevations on ECG:

- Acute coronary syndrome (ACS) is composed of unstable angina, non-ST-segment elevation myocardial infarction (NSTEMI), and ST-segment elevation myocardial infarction (STEMI). Chest pain associated with ACS occurs when myocardial oxygen demand exceeds supply. Classic angina is substernal discomfort precipitated by exertion and relieved with rest or nitroglycerin within 10 minutes of symptom onset. STEMI refers to acute transmural myocardial ischemia, commonly due to a thrombotic occlusion of an epicardial coronary artery, with elevation in cardiac biomarkers.
- Coronary vasospasm is intense vasoconstriction of coronary arteries causing total or subtotal vessel occlusion. Common precipitating factors include physical or mental stress, alcohol use, hyperventilation, and pharmacologic agents such as cocaine, sympathomimetic agents, β-blockers, and

ergot alkaloids. Significant risk factors include smoking, being middle-aged or older, and the presence of highsensitivity C-reactive protein.

- In acute pericarditis, 80% to 90% of cases are idiopathic (viral), and the remaining 10% to 20% are associated with post-cardiac injury syndrome, connective-tissue diseases, or malignancy. Pleuritic chest pain is relieved by sitting forward. There is pericardial friction rub on cardiac auscultation.
- Stress-induced cardiomyopathy is a transient systolic dysfunction of mid and apical segments of the left ventricle, causing the left ventricle to balloon during systole. Stress cardiomyopathy frequently occurs after acute critical illness or intense emotional or physical stress.
- Left ventricular aneurysms (LVAs) are thin, scarred, or fibrotic portions of muscle wall containing necrosis, often because of a transmural acute myocardial infarction. LVAs are commonly located in anterior or apical walls after total occlusion of the left anterior descending artery without the development of collateralization. Patients often present with cardiac enlargement felt with displacement of the apical impulse, with a third and/or fourth heart sound, and with a mitral regurgitation systolic murmur.

Treatment

Treatment is as follows:

- STEMI: Percutaneous coronary intervention should be performed as soon as possible. While awaiting emergency medical services, administer aspirin (chewable, 325 mg), establish intravenous access, bring a defibrillator into the room, and keep staff members with the patient.
- Coronary vasospasm: Calcium-channel blockers are typically given.
- Acute pericarditis: Patients are given nonsteroidal antiinflammatory drugs and colchicine.
- Stress-induced cardiomyopathy: Treatment is based on the patient's clinical presentation and involves supportive care plus goal-directed medical therapy for left ventricular systolic dysfunction.
- LVAs: Small to moderate asymptomatic LVAs are generally managed medically, which includes anticoagulation if a mural thrombus is present. Transfer for surgical repair should be considered for symptomatic patients with akinetic or dyskinetic segments or those with intractable ventricular arrhythmias.



INSIGHTS IN IMAGES CLINICAL CHALLENGE: CASE 2

Knee Pain in a 78-Year-Old



Case

A 78-year-old man presents to an urgent care center with bilateral knee pain that he has had for 1 week. The pain is worse in his right knee and is worse with ambulation. He says that he has not experienced any recent trauma, but he does note that he has been helping his son move into an apartment. He reports no fever, dizziness, chest pain, or shortness of breath. He has hypertension, for which he takes lisinopril. He is a nonsmoker.

View the image taken (**Figure 1**) and consider what your diagnosis would be. Resolution of the case is described on the next page.

THE RESOLUTION



Differential Diagnosis

- Patella fracture
- Fracture of the tibial spine
- Osteomyelitis of the femur
- Knee dislocation
- Osteoarthritis
- Tibial plateau fracture

Physical Examination

On physical examination, his vital signs are as follows: temperature, 99.2°F (37.3°C); pulse rate, 114 beats/min; respiration rate, 28 breaths/min; blood pressure, 162/94 mm Hg; and oxygen saturation, 99% on room air. He is alert and oriented, is not in acute distress, and is breathing comfortably.

The patient's right knee has some minimal generalized swelling. The skin on the knee is normal in appearance without erythema. The right knee is found to be stable (there is no laxity when testing for ligamentous integrity), and findings on the Lachman test (for an anterior cruciate ligament injury) are negative. The patella is mobile. The patient has pain with palpation of the medial aspect of the knee over the medial collateral ligament.

His left knee also is swollen, slightly more than the right knee, and there is a small effusion, but the skin is normal in appearance without erythema. Like the other knee, the left knee is stable. Findings on the Lachman test are negative. The patella is mobile. In this knee, the patient has generalized pain with palpation, but it is minimal.

Diagnosis

An x-ray (**Figure 2**) is obtained that shows arthritic changes in both knees. The patient has osteoarthritis. Note the presence of osteophytes, narrowing of the joint space (*black arrow*), and increased subchondral bone density (*white arrow*).

Learnings

Osteoarthritis of the knee is a common condition, with prevalence of 12.2% in one study, and with higher rates in women (14.9%) than men (8.7%). It is a common cause of morbidity and disability.

What to Look For

When obtaining the medical history, determine the onset of pain, whether it occurred from an impact or started suddenly during an activity. Evaluate for swelling, and ask whether the swelling is predictably present at certain times of the day or after certain motions of the knee (e.g., after walking or after engaging in sports).

- Immediate swelling implies acute disruption from a fracture, strained or torn ligament, or dislocation.
- Delayed swelling is more suggestive of a meniscus injury.

Locking or buckling of the knee suggests a meniscal injury. Typical findings with knee osteoarthritis include intermittent swelling, a sensation of grinding and locking, pain with range of motion, and pain that is exacerbated with specific activities. A history of fracture or previous surgery, especially in conjunction with recurrent pain, is more suggestive of osteoarthritis.

Inquire about arthralgias in other joints, which may be present with inflammatory or reactive arthritis. Calf muscle pain or swelling may be present with deep vein thrombosis. Paresthesias or a unilateral cool sensation, especially with a history of peripheral vascular disease, may indicate vascular insufficiency or obstruction. Symptoms of systemic illness such as polyarthralgia, fever, and morning stiffness may suggest gout, hyperuricemia, rheumatoid arthritis, or pseudogout.

When performing the physical examination, document the patient's general appearance, position, and ability to ambulate. Inspect *and* palpate for skin changes such as erythema, ecchymosis, abrasions, lacerations, fluctuance, necrosis, and crepitus, as well as for surgical scars. Determine the location of pain: Does the pain localize, on palpation, to the medial or lateral collateral ligaments? Evaluate for exacerbators of pain such as movement through the range of motion.

Treatment in the urgent care setting can involve dispensing medication for pain (acetaminophen, oral or topical nonsteroidal anti-inflammatory drugs, gabapentin or pregabalin, or capsaicin cream). If the patient is to be discharged home, refer the patient to an orthopedist for further assessment.

Indications for transfer to an emergency department include dislocation, open fracture, intractable pain, and the possibility of septic arthritis.

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For more information about MED7 and our clinics please visit our website: www.med7.com We offer an attractive compensation package. Contact Merl O'Brien, MD, at: (916) 791-1300, ext. 111; or email CV to: sherry@med7atwork.com

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MARKET PLACE





DEVELOPING DATA

he following chart, based on a study of over 20,000,000 patients' records in Practice Velocity's database of patient visits across the United States, illustrates the frequency of influenza diagnoses between January 2010 and October 2016 relative to total urgent care visits that carried an evaluation and management (E/M) code. The period of December through January is the typical peak of the flu season, although in some years flu outbreaks occur somewhat earlier or later. In 2016, for instance, there was a low incidence of flu until March. Some years have a "double hump" flu season, meaning that the number of flu cases increases in both December and March. Generally, though, flu peaks only once, in either December or March.

November through April is generally considered respiratory season, and the incidence of flu coincides with an increase in total urgent care visits attributable to all respiratory-related conditions during those months. December typically brings an additional increase in visits because of holiday-related activities, and when flu is present during such events, this results in a significant increase over the "average" month. Thus, many urgent care centers schedule additional health-care providers to accommodate volume spikes in December.



FLU AS A PERCENTAGE OF TOTAL VISITS

Notes: Influenza diagnoses are identified by the presence of an ICD-9-CM (*International Classification of Diseases, Ninth Revision, Clinical Modification*) billing code associated with influenza. ICD-9-CM codes are used for consistency in year-to-year comparisons. Total visits include those with only an evaluation and management (E/M) code and exclude workers' compensation visits, employer-paid services, sports physical examinations, and nonphysician visits. (Source: Practice Velocity, LLC.)



K.I.S.S.



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