JUCM™
THE JOURNAL OF URGENT CARE MEDICINE®
JUNE 2011
VOLUME 5, NUMBER 9
www.jucm.com | The Official Publication of the **Urgent Care Association of America**

IN THIS ISSUE

Anaphylaxis

Clinical Guidelines for Diagnosis and Management

A **BRAVEHEART** PUBLICATION

We are Committed to Urgent Care

- Unparalleled customer service
- Full line of prepackaged pharmaceuticals
- No fee, web based dispensing system
- Expert EMR integrators
- Guaranteed Work Comp and Occupational Health billing services

UCAOA PLATINUM PARTNER

Physician Partner Rx

A division of Rebel Distributors Corp.

Contact us at:

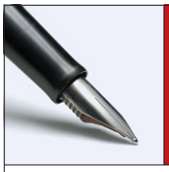
800.333.9800

uc@physicianpartner.com | www.physicianpartner.com

Our commitment is your success

Mention this ad and receive a $250.00 American Express Gift Card with your initial order of $1000.00 or more *

* offer valid for new accounts only



LETTER FROM THE EDITOR-IN-CHIEF

In Appreciation...

Silent gratitude isn't much use to anyone.
— Gladys Browyn Stern

JUCM, The Journal of Urgent Care Medicine, is approaching its fifth year of publication (a feat not without reason for celebration). In an environment of tremendous financial pressures, increasing scrutiny, and decreasing ad revenues, medical publishing is confronting significant challenges. *JUCM* is not immune. Most casual readers remain unaware of the challenges behind the scenes. It is, perhaps, no concern of theirs. But that does not mean the efforts should go unrecognized. *JUCM* would not be possible without the contributions of many, often without compensation, certainly without riches, and always with a passion and commitment that far outweighs any return.

I am proud to report, that for the third year running, *JUCM* has been recognized by the American Society of Healthcare Publication Editors (ASHPE) for both editorial and graphics categories. This is no small achievement. The ASHPE awards are one of the pre-eminent recognitions in healthcare publishing. We are competing with such stalwarts of the industry as *American Medical News* and *Medical Economics,* along with several highly regarded clinical peer-reviewed journals. We are very proud of this distinctive honor. The urgent care community benefits greatly by such national recognition, and it underscores the quality of the editorial product *JUCM* puts out every month. Congratulations to this year's winners:

- GOLD – Best How-To Article: "Protecting the Urgent Care Center from Sexual Harassment Claims," Alan Ayers, April 2010
- GOLD – Best Case History: "The Case for Relationship-based Clerical Care," Noel Clinton, May 2010
- BRONZE – Best Computer-generated Cover: "The Traveling Patient," Tom DePrenda, February 2010

I'd like to give a special thank you to all of our contributor editors, without whom the journal would not be the same:

- Nahum Kovalski, BSc, MDCM: Abstracts/Insights in Images
- Frank Leone, MBA, MPH: Occupational Medicine (while Frank has decided to resign his editorial position, we are most grateful for his 5 years of service at *JUCM*)
- John Shufeldt, MD, JD, MBA: Health Law
- David Stern, MD, CPC: Coding Q&A

In addition, thank you to regular contributors: Alan Ayers (Practice Management) and Drs. Michael Weinstock and Jill Miller (Bouncebacks).

A special note of thanks to Harris Fleming, who, after five years of critical editorial guidance, has left to pursue other opportunities. I am pleased to introduce Neil Chesanow as our new Managing Editor. Neil brings a wealth of healthcare-related editorial and writing experience at major publications.

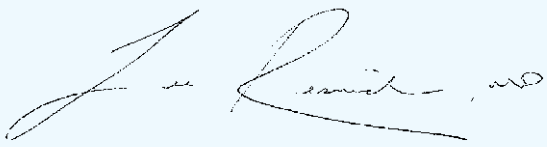
Tom DePrenda, our award winning Art Director, deserves considerable praise for the eye-popping graphics and visual appeal of our journal.

Thanks to our peer-reviewers and editorial and advisory boards. Their behind-the-scenes work ensures our readers see only the most relevant, unbiased, and evidence-based content available.

And finally, immeasurable gratitude to our publishers, Stu Williams and Peter Murphy of Braveheart Publishing. Despite tremendous pressures, Braveheart never relented, never doubted, and NEVER cut corners for the sake of profits.

From the beginning, *JUCM* made a commitment to our readers and to the discipline: If we cannot publish a quality product, then it is simply not worth publishing. In my humble opinion, Stu and Pete have exceeded their promise. Braveheart publishes a book of phenomenal quality, well beyond what one might expect from such a small publishing house.

So, silent no more! A big thank you, Stu, Pete, and the rest of the *JUCM* team for five years of support and dedication on behalf of the discipline and the entire urgent care community. ■



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

piccolo xpress™
chemistry analyzer

greater profitability is just a blood draw away.

Why send your revenue to the lab when you can do on-site chemistry analysis with the Piccolo Xpress?

- *On-the-spot lab results without the lab*
- *3 easy steps, no special skills required*
- *Improve patient care and increase profits*
- *Quick & accurate diagnostics for:*
  - *General and occupational health screenings*
  - *Abdominal, kidney & liver disorders*
  - *Monitoring treatment & medications*
  - *Cardiac, muscle, bone, inflammation, pancreas and many, many more*

For more information call *1.800.822.2947*
or go to: *www.abaxis.com/piccolouc*

The Piccolo Xpress is the only analyzer to deliver a comprehensive CLIA waived chemistry menu:

CLIA WAIVED		
	Comprehensive Metabolic Panel	ALB, ALP, ALT, AST, BUN, Ca, Cl^-, CRE, GLU, K^+, Na^+, TBIL, tCO_2, TP
	Basic Metabolic Panel	BUN, Ca, Cl^-, CRE, GLU, K^+, Na^+, tCO_2
	Lipid Panel	CHOL, CHOL/HDL*, HDL, LDL*, TRIG, VLDL*
	Lipid Panel Plus	ALT, AST, CHOL, CHOL/HDL*, GLU, HDL, LDL*, TRIG, VLDL*
	Liver Panel Plus	ALB, ALP, ALT, AMY, AST, GGT, TBIL, TP
	General Chemistry 6	ALT, AST, BUN, CRE, GGT, GLU
	General Chemistry 13	ALB, ALP, ALT, AMY, AST, BUN, Ca, CRE, GGT, GLU, TBIL, TP, UA
	Electrolyte Panel	Cl^-, K^+, Na^+, tCO_2
	Kidney Check	BUN, CRE
	Renal Function Panel	ALB, BUN, Ca, Cl^-, CRE, GLU, K^+, Na^+, PHOS, tCO_2
	MetLyte 8 Panel	BUN, CK, Cl^-, CRE, GLU, K^+, Na^+, tCO_2 *Calculated
	Hepatic Function Panel	ALB, ALP, ALT, AST, DBIL, TBIL, TP
	Basic Metabolic Panel Plus	BUN, Ca, Cl^-, CRE, GLU, K^+, Na^+, tCO_2, Mg, Lactate Dehydrogenase

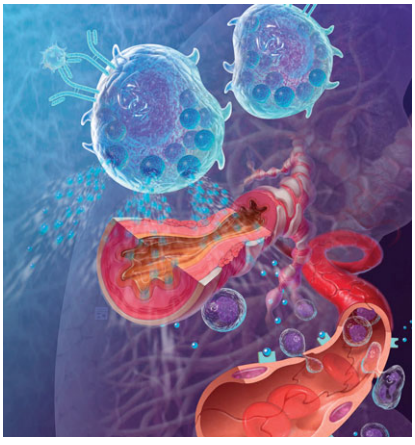
© 2009 Abaxis, Inc. 3240 Whipple Road, Union City, CA 94587 Piccolo Xpress is a trademark of Abaxis, Inc. 888-3314 Rev.A

JUCM™

The Official Publication of the **Urgent Care Association of America**

June 2011

VOLUME 5, NUMBER 9



CLINICAL

IN THE NEXT ISSUE OF *JUCM*

Acute stridor in pediatric patients is alarming to children, parents, and healthcare providers alike. Children presenting with stridor require a careful evaluation to determine the underlying cause of abnormal air passage during breathing and to promptly detect and address any life-threatening etiologies. Here is guidance for the urgent care clinician on initial evaluation and management of children presenting with this worrisome symptom.

JUCM EDITOR-IN-CHIEF

Lee A. Resnick, MD
Case Western Reserve University
Department of Family Medicine
Institute of Urgent Care Medicine

JUCM EDITORIAL BOARD

Jeffrey P. Collins, MD, MA
Harvard Medical School;
Massachusetts General Hospital

Tanise Edwards, MD, FAAEM
Author/editor (*Urgent Care Medicine*)

William Gluckman, DO, MBA, FACEP, CPE, CPC
St. Joseph's Regional Medical Center
Paterson, NJ
New Jersey Medical School

Nahum Kovalski, BSc, MDCM
Terem Emergency Medical Centers

Peter Lamelas, MD, MBA, FACEP, FAAEP
MD Now Urgent Care Medical Centers, Inc.

Melvin Lee, MD
Urgent Cares of America;
Raleigh Urgent Care Networks

Genevieve M. Messick, MD
Immediate Health Associates

Marc R. Salzberg, MD, FACEP
Stat Health Immediate Medical Care, PC

John Shufeldt, MD, JD, MBA, FACEP
Shufeldt Consulting

Joseph Toscano, MD
San Ramon (CA) Regional Medical Center
Urgent Care Center, Palo Alto (CA) Medical Foundation

Mark D. Wright, MD
The University of Arizona

JUCM ADVISORY BOARD

Michelle H. Biros, MD, MS
University of Minnesota

Kenneth V. Iserson, MD, MBA, FACEP, FAAEM
The University of Arizona

Gary M. Klein, MD, MPH, MBA, CHS-V, FAADM
mEDhealth advisors; Military Health Systems, Department of Defense

Benson S. Munger, PhD
The University of Arizona

Emory Petrack, MD, FAAP
Petrack Consulting, Inc.;
Fairview Hospital
Hillcrest Hospital
Cleveland, OH

Peter Rosen, MD
Harvard Medical School

David Rosenberg, MD, MPH
University Hospitals Medical Practices
Case Western Reserve University
School of Medicine

Martin A. Samuels, MD, DSc (hon), FAAN, MACP
Harvard Medical School

Kurt C. Stange, MD, PhD
Case Western Reserve University

Robin M. Weinick, PhD
RAND

UCAOA BOARD OF DIRECTORS

Marc R. Salzberg, MD, FACEP, President
Nathan Newman, MD, FAAFP, Vice President
Cindi Lang, RN, MS, Secretary
Laurel Stoimenoff, Treasurer
William Gluckman, DO, MBA, FACEP, CPE, CPC, Director
Jimmy Hoppers, MD, Director
Robert R. Kimball, MD, FCFP, Director
Don Dillahunty, DO, MPH, Director
Roger Hicks, MD, Director
Peter Lamelas, MD, MBA, Director
Steve Sellars, MBA, Director
Lou Ellen Horowitz, MA, Executive Director

JUCM The Journal of Urgent Care Medicine *(www.jucm.com) is published through a partnership between Braveheart Publishing (www.braveheart-group.com) and the Urgent Care Association of America (www.ucaoa.org).*

JUCM

EDITOR-IN-CHIEF
Lee A. Resnick, MD
editor@jucm.com

EDITOR
Neil Chesanow
nchesanow@jucm.com

CONTRIBUTING EDITORS
Nahum Kovalski, BSc, MDCM
Frank Leone, MBA, MPH
John Shufeldt, MD, JD, MBA, FACEP
David Stern, MD, CPC

ART DIRECTOR
Tom DePrenda
tdeprenda@jucm.com

BRAVEHEART PUBLISHING

65 North Franklin Turnpike, Second Floor,
Ramsey NJ 07446

PUBLISHERS
Peter Murphy
pmurphy@braveheart-group.com
(201) 529-4020
Stuart Williams
swilliams@braveheart-group.com
(201) 529-4004

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, *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.

JUCM The Journal of Urgent Care Medicine (*JUCM*) makes every effort to select authors who are knowledgeable in their fields. However, *JUCM* does not warrant the expertise of any author in a particular field, nor is it responsible for any statements by such authors. The opinions expressed in the articles and columns are those of the authors, do not imply endorsement of advertised products, and do not necessarily reflect the opinions or recommendations of Braveheart Publishing or the editors and staff of *JUCM*. Any procedures, medications, or other courses of diagnosis or treatment discussed or suggested by authors should not be used by clinicians without evaluation of their patients' conditions and possible contraindications or dangers in use, review of any applicable manufacturer's product information, and comparison with the recommendations of other authorities.

JUCM (ISSN 1938-002X) printed edition is published monthly except for August for $50.00 by Braveheart Group LLC, 65 North Franklin Turnpike, Second Floor, Ramsey, NJ 07446. *JUCM* is pending periodical status at Mahwah Postal Annex, 46 Industrial Drive, Mahwah, NJ 07430 and additional mailing offices. POSTMASTER: Send address changes to Braveheart Group LLC, 65 North Franklin Turnpike, Second Floor, Ramsey NJ 07446.

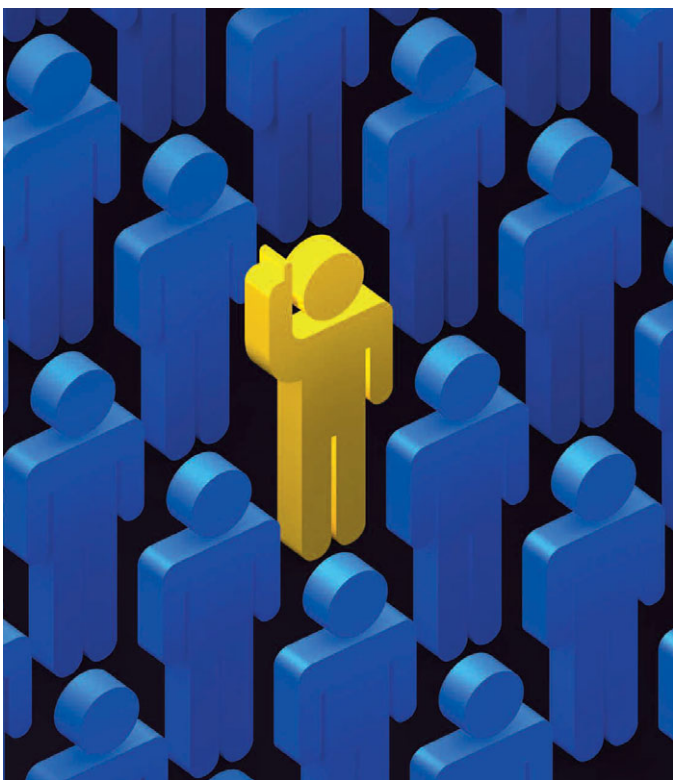
JUCM CONTRIBUTORS

Anaphylaxis, a severe, whole-body, allergic reaction to a chemical that has become an allergen, is a true medical emergency, often with rapid and unpredictable onset. Commonly seen in young, otherwise healthy patients, it is potentially lethal without prompt medical attention.

In their cover story on the subject, David Wein, MD, MBA, FACEP, and Dennis Dixon, MD, discuss the pathophysiology of hypersensitivity reactions, criteria indicative of anaphylaxis, anaphylaxis vs anaphylactoid reactions, and management of anaphylaxis, including airway management and the use of epinephrine, antihistamines, and corticosteroids. Adjunctive treatments, anaphylaxis on beta blockers, and angioedema are also examined, a list of important red flags is included, and patient disposition is explained. In addition, the authors devised an algorithm for evaluation and management of anaphylaxis in the urgent care setting.

Dr. Wein is an Assistant Professor of Emergency Medicine at the University of South Florida College of Medicine in Tampa, Florida, and Associate Medical Director of the Emergency Department at Tampa General Hospital. Dr. Dixon is a graduating third-year resident in emergency medicine at the University of South Florida College of Medicine.

In one of two case reports we present this month, Marren J. Weber, DO, discusses a patient with acute myocardial infarction after a normal stress test. Evaluation of chest pain in low-risk patients can be daunting. An echo stress test, while helpful for risk stratification, is limited by predictive accuracy that is no better than "moderate," Dr. Weber writes. Her case, in which the patient had no known history of cardiovascular disease, exemplifies the challenge.



The Joint Commission
Accreditation
Ambulatory Care

One of these centers is Joint Commission accredited.

(here's a hint: it's golden)

Distinguish your urgent care center with Joint Commission accreditation. The Joint Commission's name recognition helps win customers, attract and retain qualified staff, and can improve visibility with networks and payors.

Are you Golden?

Get more information at:
www.jointcommission.org/UC

Discounts available for UCAOA members

Control

your insurance destiny.

Through UCAC, member/owners are intimately involved in every step of the claims handling process. They select their own defense counsel and even have greater control over their insurance products and services.

Contact a Medical Professional Insurance Advisor today. We welcome the opportunity to present you with an alternative to traditional medical malpractice insurance.

www.urgentcaremedicalmalpractice.com • 847.463.7333

UCAC
Urgent Care Assurance Company, RRG
An insurance company created and owned by urgent care physicians.

JUCM CONTRIBUTORS

Dr. Weber is a staff physician at University Hospitals Concord Health Center Urgent Care in Concord Township, Ohio. She is board certified in family medicine.

In our second case report, Michael Talkar, MD, discusses a patient with acute pancreatitis. The initial presentation was new-onset mild epigastric pain for one day. Although pancreatitis is a common cause of abdominal pain, many of its signs and symptoms are shared by other intra-abdominal conditions, Dr. Talkar writes. Most patients can be handled on an outpatient basis if the diagnosis is correct, he says. His patient is a case in point.

Dr. Talker is a staff physician at University Hospitals Urgent Care in Cleveland, Ohio. He is board certified in family medicine.

Also in this issue:

Nahum Kovalski, BSc, MDCM, reviews new abstracts on current literature germane to the urgent care clinician, including head injury and concussion, low-back pain, acute bronchitis in infants, herpes transmission risk, acute coronary syndrome, pediatric epididymitis, and emergency department discharge instructions, which are often incomplete.

John Shufeldt, MD, JD, MBA, FACEP, reminisces about some of the procedures he performed during his long career that were then the standard of care but which today make him wince. Even more wincingly, he offers examples of that standard 200 years ago (eg, "Females, who live on tea and other watery diets, generally become weak and proceed to hysterics"). He then offers a vision of medicine as he believes it will evolve in the next few decades, with "technological change so rapid and profound it represents a rupture in the fabric of human history."

David Stern, MD, CPC, presents the second installment in his series on medical necessity in E/M coding. In this issue, the discussion centers on performing and documenting review of systems (ROS) and past history, family history, and social history (PFSH).

Our **Developing Data** end piece this month compares overall patient wait times in urgent cares in 2008 and 2010. In the most crucial category—15 minutes or less—the change has been dramatic. ■

To Subscribe to *JUCM*

JUCM is distributed on a complimentary basis to medical practitioners—physicians, physician assistants, and nurse practitioners—working in urgent care practice settings in the United States. If you would like to subscribe, please log on to *www.jucm.com* and click on "Free Subcription."

Announcing the Urgent Care Association of America Foundation

LOU ELLEN HORWITZ, MA

When we hear the word "foundation," it brings to mind solidity, support, and something you can build upon. It is "the basis on which a thing stands; underlying support," according to my *American Heritage Dictionary.*

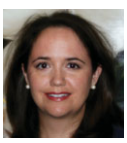
As UCAOA is officially a trade association, our main "customer" is the urgent care industry: all of you. But we also understand that urgent care is part of a much larger continuum: the entire healthcare delivery system and the patients it serves. Their concerns are our concerns, too.

A little over a year ago, the leadership of UCAOA started discussing how we could address some of those larger concerns and support the efforts of others who wanted to do research, outreach, training and education, and even humanitarian efforts. All the projects we discussed were in alignment with what we think of as "urgent care values": accessible, affordable, efficient, effective healthcare.

The natural solution was the establishment of an Urgent Care Association of America Foundation.

The next step was identification of the founding board members, who are now known as Trustees. These individuals would need to represent many different aspects of the healthcare delivery system while still having a connection with urgent care. A few months later, the new Board of Trustees was in place, all of the appropriate paperwork was filed, and a mission and bylaws were developed.

During those same months, UCAOA put some resources toward building the initial public "face" for the Foundation. If you have looked closely at the Urgent Care Center website for patients and other external audiences (*www.urgentcarecenter.org*), you may have noticed that it was "brought to you by the UCAOA Foundation." Our Board of Directors also voted to provide the Foundation with a small startup grant, and some other members who were connected to the founding pooled their resources to provide another small grant. The Foundation was officially on its way.



Lou Ellen Horwitz is Executive Director of the Urgent Care Association of America. She may be contacted at *lhorwitz@ucaoa.org*.

"With the combination of all our efforts, we can do some great things by taking our collective power to new places and by contributing to the healthcare industry in ways we are just beginning to imagine."

That said, it's not really "official" until it is formally introduced, so I am pleased to now publicly announce the creation of the Urgent Care Association of America Foundation. The founding Trustees are: Dr. Jeff Collins (Chairman), Dr. Natasha Cruz (Secretary), Dr. Mallika Marshall, Dr. Bruce McIntosh, Dr. Lee Resnick, Dr. Elizabeth Scheufele, Dr. John Shufeldt, and David Wood. Our thanks go out to the Trustees, the UCAOA Directors, and the other members who have supported this effort so far.

In the coming months, we will be launching the Foundation's direct website and providing more information about the different kinds of projects the Foundation is looking to fund—as well as ways you can help to support those efforts. We can't do it without your contributions, input, and assistance in spreading the word.

With the combination of all our efforts, we can do some great things by taking our collective power to new places and by contributing to the healthcare industry in ways we are just beginning to imagine. We hope you will join the Foundation on that journey.

P.S. By the time you read this, the 2011 convention will have come and gone—and we will already be thinking about 2012 in Las Vegas! We want to thank everyone who came to the event: attendees, exhibitors, and instructors . We hope you had a wonderful time and left with much more than you had when you arrived! ■

McKESSON
Empowering Healthcare

Discover Why Over 60,000 Physician Offices and Urgent Care Centers Rely On Us For Supplies and More.

Think Quality
Think McKESSON

As the nation's largest, most experienced distributor of medical supplies, McKesson delivers a higher level of commitment to service, to increasing efficiency, and to reducing costs for our physician offices and urgent care centers. We not only offer 150,000+ quality products — but also comprehensive technology solutions, consistent pricing, and an easy-to-use online ordering system that can help your center grow.

Contact your McKesson Medical-Surgical Account Manager for more information. Or call 866.McK.ANSWer (866.625.2679).

©2011 McKesson Medical-Surgical Inc.

Anaphylaxis: Clinical Guidelines for Diagnosis and Management

Urgent message: Anaphylaxis is a true medical emergency that requires rapid and aggressive treatment. When a patient with a Type 1 hypersensitivity reaction is brought to your urgent care, here is how to proceed.

DAVID WEIN, MD, MBA, FACEP, and DENNIS DIXON, MD

Introduction

Anaphylaxis is a severe, whole-body, allergic reaction to a chemical that has become an allergen. Anaphylaxis is a true medical emergency, often with a rapid and unpredictable onset. It is commonly seen in young, otherwise healthy patients; without prompt medical intervention, it is potentially lethal. Fortunately, treatments for anaphylaxis are very effective and widely available.

Overall, the risk of death from anaphylaxis has been estimated at around 1%, with 500-1000 deaths annually.[1] Due to an unclear definition of the criteria for anaphylaxis, as well as poor reporting, the number of annual deaths may be significantly higher.[1]

Pathophysiology

Hypersensitivity reactions occur when a normal immune system responds in an excessive or undesirable way. Effects of these reactions vary from mild discomfort to death, depending on the type and severity of the reaction. According to the traditional Gell and Coombs classification, there are four types of hypersensitivity reactions[2]:

David Wein is Assistant Professor of Emergency Medicine at the University of South Florida College of Medicine in Tampa, Florida, and Associate Medical Director of the Emergency Department at Tampa General Hospital.

Dennis Dixon is a graduating third-year resident in emergency medicine at the University of South Florida College of Medicine.

© Phototake USA / Steve Oh, M.S.

Type I (immediate) hypersensitivity reactions

Type 1 hypersensitivity reactions are immunoglobulin E (IgE)-mediated.[2] Often they are referred to as "immediate" hypersensitivity reactions because symptoms occur within minutes of exposure. Type I hypersensitivity reactions require a prior sensitization to an antigen, at which time IgE is formed and binds to mast cells and basophils. During subsequent exposures, cell-bound IgE is cross-linked by the antigen, leading to degranulation. Multiple mediators (histamines, cytokines, and leukotrienes) are then released, causing clinical symptoms.

Table 1. Criteria Indicative of Anaphylaxis

Anaphylaxis is highly probable when any one of these criteria are met:

Criteria 1

Acute onset of illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritis or flushing, swollen lips-tongue-uvula)

And at least one of the following symptoms:

- Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced peak expiratory flow [PEF], hypoxemia)
- Reduced BP or associated symptoms of end-organ damage (eg, hypotonia, syncope, incontinence)

Criteria 2

Two or more of the following symptoms that occur rapidly after exposure to a likely antigen (minutes to several hours):

- Involvement or the skin-mucosal tissue (eg, generalized hives, itch-flush, swollen lips-tongue-uvula)
- Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxemia)
- Reduced BP or associated symptoms (eg, hypotonia, syncope, incontinence)
- Persistent gastrointestinal symptoms (eg, cramping, abdominal pain, vomiting)

Criteria 3

Reduced BP after exposure to a known allergen (minutes to hours)

- *Infants and children:* low systolic BP (age specific) or >30% decrease in systolic BP
- *Adults:* BP <90 mm Hg or >30% decrease from that person's baseline

Source:

Sampson H, Muñoz-Furlong A, Campbell R, et al. Second symposium on the definition and management of anaphylaxis: summary report—second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *Ann Emerg Med.* 2006;47(4):373-380.

Type II (cytotoxic) hypersensitivity reactions

Type II hypersensitivity reactions are caused by immunoglobulin M (IgM)- or immunoglobulin G (IgG)-binding cell-bound antigens, leading to complement activation and destruction of the cell.[2] Examples include autoimmune hemolytic anemia, idiopathic thrombocytopenia purpura, and Goodpasture's nephritis.

Type III (immune complex) hypersensitivity reactions

Type III hypersensitivity reactions are also mediated by IgM and IgG.[2] In contrast to Type II reactions, circulating antigen-antibody complexes are deposited in capillaries, again leading to complement activation and cell destruction. Examples include serum sickness and systemic lupus erythematosus.

Type IV (delayed) hypersensitivity reactions

Type IV hypersensitivity reactions are mediated by T-lymphocytes,[2] as opposed to antibodies. The most common example is contact dermatitis.

Clinical Syndromes

This article discusses Type I hypersensitivity reaction only, as this type of reaction is responsible for urticaria, angioedema, and anaphylaxis. While these manifestations may occur in isolation, it appears as though these findings are part of a continuum of the same spectrum of allergic disease.[2]

Urticaria is defined as raised, circumscribed areas involving the dermis and epidermis, which cause pruritis. Angioedema involves edema of subcutaneous and submucosal tissue secondary to increased vascular permeability. Typically for Type I hypersensitivity reactions, cutaneous symptoms are exceedingly common, seen in 90% of reactions.[3] Respiratory symptoms are seen in 40%-60% of cases. GI and cardiovascular symptoms are less common, each only occurring in about 30% of cases.[3]

While we understand the common symptoms seen in anaphylaxis, no clear definition for anaphylaxis exists. In 2006, there was a consensus attempt to define anaphylaxis and its management; while no unified definition was agreed upon, it is thought that anaphylaxis is highly likely when any one of three criteria are met (**Table 1**).[4]

Anaphylaxis vs Anaphylactoid Reactions

Anaphylactoid reactions are complement-mediated reactions that do not involve antibodies or prior antigen sensitization, as are seen in anaphylactic reactions.[5] Clinically, it is virtually impossible to differentiate an anaphylactoid reaction from an anaphylactic reaction, but luckily treatment is the same for both.

Anaphylactoid reactions have a tendency to be dose dependent; patients who have an anaphylactoid reaction may not have a subsequent reaction if re-exposed to the offending agent. One of the most commonly seen anaphylactoid reactions is to radiocontrast media. At one time, it was thought that these were Type I hypersensitivity reactions to iodine, but they were later found to be anaphylactoid reactions caused by the hyperosmo-

NEED MORE PATIENTS?

Urgent Care facilities are losing market share to retail clinics, house call and on-line providers. These competitors are reducing your patient volumes and hurting your bottom line.

Now there's a solution

MeMD is a HIPAA-compliant portal connecting your providers to patients on-line. MeMD is designed specifically for urgent care centers.

This powerful solution helps your center:

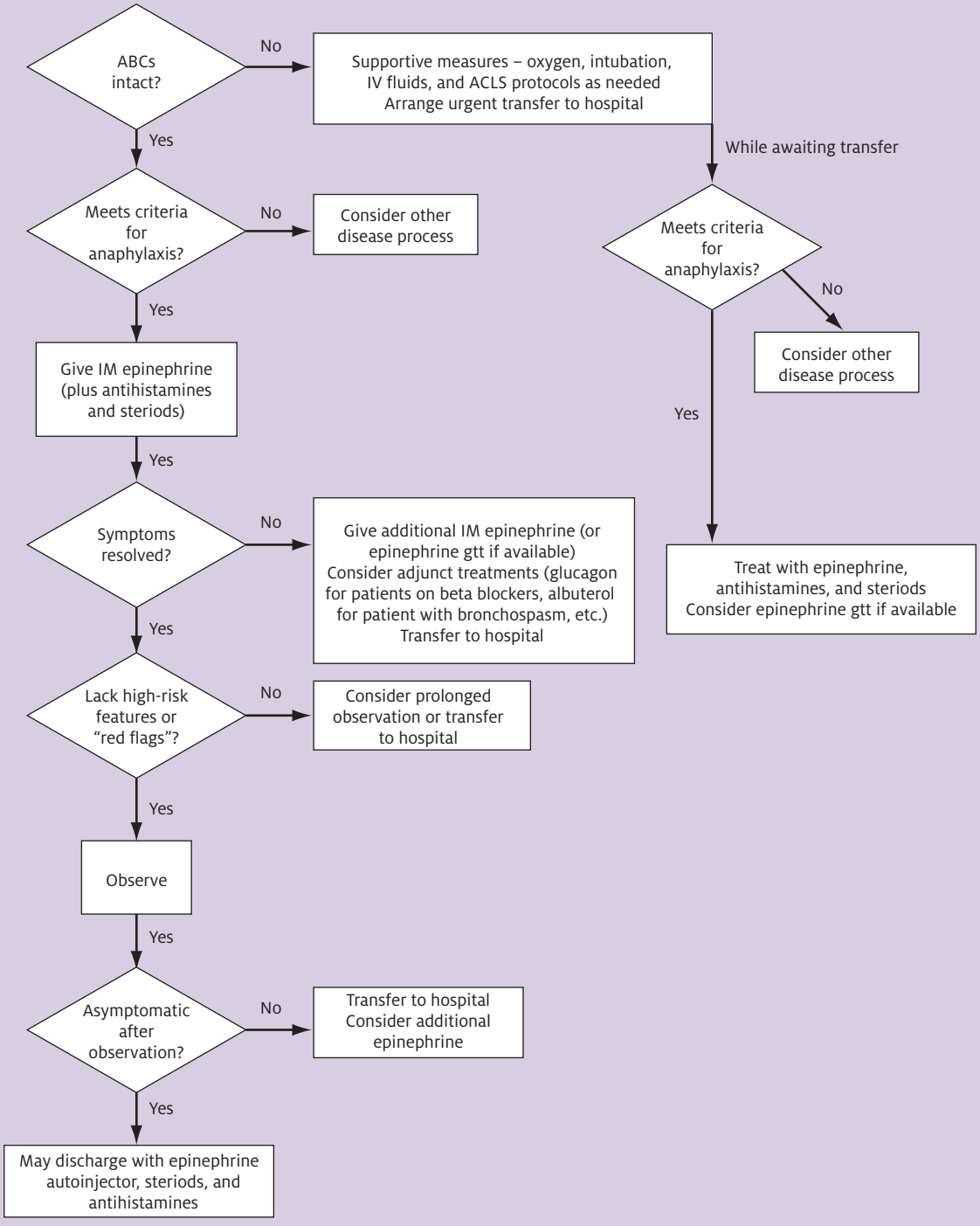
- Attract new patients
- Keep your current patients
- Offer employers a cost effective solution to rising healthcare premiums
- Leverage unused provider capacity
- Improve patient satisfaction
- Schedule on-line follow up visits resulting in improved patient safety

Partner with MeMD and be a part of *Healthcare in the Future Tense*
1-855-MEMD-NOW (1-855-636-3669) or visit our web site at **www.memd.me**.

Take care of your patients… virtually anywhere.

MeMD™
Healthcare Virtually Anywhere

Figure 1. Algorithm for evaluation and management of anaphylaxis.



lar concentration of the radiocontrast media.[5] These reactions are becoming less frequent with the development low-osmolality contrast solutions.

A number of protocols exist to prevent contrast-related anaphylactoid reactions in susceptible patients, and while they vary by institution, they generally include steroids plus antihistamines administered 1-13 hours prior to administration of the contrast media.[5]

Of note, while asthma and allergy history increase the risk for adverse reactions to contrast material, a history of shellfish or iodine allergy is not directly associated with reaction to contrast.[5]

Management of Anaphylaxis

Management of anaphylaxis centers around the use of epinephrine, with antihistamines and steroids as adjunctive treatments (**Figure 1**).

Airway management and aggressive fluid resuscitation are also key to proper management. Special considerations should be made when treating patients with angioedema or those taking beta blockers. Important red flags are discussed on page 14.

Airway management

As in the management of any critical patient, ABCs (airway, breathing, and circulation) are the priority. Edema often leads to airway compromise, requiring intubation. Patients who do not show signs of impending airway compromise should be re-examined frequently, as they have the potential to decompensate rapidly. In an outpatient setting without airway capabilities, the patient should be transferred to a hospital if there is any sign of respiratory distress, as the potential for the patient to decompensate is high. Transfer of such a patient should occur with a transport team that has airway management capabilities.

Epinephrine

Epinephrine is the drug of choice for the treatment of anaphylaxis.[3,4,6] Patients meeting criteria for anaphylaxis should receive epinephrine. While there have not been any controlled trials on the use of epinephrine in anaphylaxis, recommendations are based on pathophysiology, animal models, and expert consensus guidelines.

In terms of safety, epinephrine has been used for many years and overall has been shown to be a very safe drug. Most complications have been related to the IV route and are primarily related to incorrect dosing. Perhaps some caution should be used in elderly or cardiac patients, especially when using the IV route.

There are no absolute contraindications to the use of epinephrine, although several theoretical contraindications exist. In patients on beta blockers, the use of epinephrine can potentially lead to unopposed alpha stimulation, but most experts recommend using epinephrine in these patients, if needed. In fact, these patients sometimes require higher doses. (Patients on beta blockers are discussed in greater detail in *Anaphylaxis on beta blockers* on page 14.)

Most commercially available epinephrine contains sodium metabisulfite as a preservative, which could pose a problem to sulfite-allergic patients.[7] Currently there is no consensus on treatment in this group of patients, but experts still recommend giving epinephrine in the setting of anaphylaxis.

Epinephrine should initially be given 0.01 mg/kg up to a maximal dose of 0.5 mg IM of 1:1000 dilution every 5-15 minutes as needed. Commercially available epinephrine autoinjectors are available in two doses: 0.3 mg (for patients over 30 kg) and 0.15 mg (for patients 15-30 kg). While epinephrine is often given subcutaneously, the intramuscular route offers a more rapid and predictable absorption of the drug,[4,8] as decreased peripheral blood flow during anaphylaxis is likely to decrease the efficacy of the subcutaneous route.

In addition, a prospective, randomized, blinded, placebo-controlled, six-way crossover study of intramuscular vs subcutaneous injection of epinephrine in young men found that intramuscular injections in the thigh from an autoinjector had the best and most rapid absorption when compared to other methods of delivery.[8] It is important to note that this study only measured serum epinephrine levels in healthy subjects following administration and was not outcome-based.

In general, the intramuscular route is the safest method of administration of epinephrine. However, if the patient continues to decompensate in spite of treatment, intravenous administration may be required.

Protocols regarding IV epinephrine have not been well established, and a debate remains over the best dilution to use. In the absence of a readily available, premade epinephrine infusion, it is easy to mix your own IV epinephrine using crash cart epinephrine, which is a 1:10,000 (100 mcg/mL) dilution; 1 mL of crash cart epinephrine contains 100 mcg of epinephrine. Dilute 1 mL of crash cart epinephrine into 9 cc of normal saline, making 10 mL of 1:100,000 (10 mcg/mL) epinephrine. This can be administered 0.5 mL-1 mL every 2-5 minutes as needed.

Antihistamines

Antihistamines are given routinely in anaphylaxis, but their effectiveness may be only minimal in the acute phase. They work mainly by preventing mast cell degranulation, which with anaphylaxis has already occurred.[4,6]

The role of H1 blockers (diphenhydramine, hydroxyzine) in allergic reactions has been well established. Of the commonly used H1 blockers, diphenhydramine is the only one that comes in an IV formulation. For an adult, the dose is 25 mg-50 mg IV; for a child, the dose is 1 mg/kg up to a maximal dose of 50 mg IV.

Promethazine is another H1 blocker. In some countries it is used to treat allergic reactions, but in the United States it is reserved for use as an antiemetic.

In contrast to the use of H1 blockers, the use of H2 blockers is more controversial. It is thought that they may add a possible benefit when used in combination with an H1 blocker.[4,6,9] H2 blockers are safe and fairly inexpensive, so there is little downside to giving them. Famotidine 20 mg IV, ranitidine 50 mg IV, and cimetidine 300 mg IV are commonly used adult doses.

In cases of anaphylaxis, the decision to give antihistamines should not delay administration of epinephrine. While antihistamines alone may be used to treat minor allergic reactions, they are not sufficient in cases meeting the criteria for anaphylaxis and should be used only as an adjunct to epinephrine therapy. Antihistamines may also play a role in treating biphasic reactions.

Corticosteroids

There is no role for steroids in the acute management of anaphylactic reactions because onset is delayed 4-6 hours. However, steroids may prevent protracted or biphasic reactions. If given, methylprednisolone should be administered 1 mg/kg-2 mg/kg IV.[4]

Adjunctive treatments

Oxygen should be administered to any patient with signs of respiratory compromise. Inhaled beta agonists (eg, albuterol) may have a role in continued bronchospasm refractory to epinephrine. In addition, aggressive IV fluid resuscitation is recommended early in the disease process. This is typically accomplished with isotonic crystalloid fluids (normal saline or Lactated Ringer's Irrigation), administered in 20 mg/kg boluses under pressure.

Anaphylaxis on beta blockers

There have been many reports of patients on beta blockers experiencing anaphylactic reactions that are refractory to the usual doses of epinephrine and who require higher doses. In these patients, glucagon may help as an adjunct to epinephrine.[4,6] The initial dose is 1 mg-5 mg IV given over 5 minutes, followed by an infusion of 5 mcg/min-15 mcg/min.[4] This dose of glucagon frequently can cause nausea and vomiting.

Table 2. Red Flags

- Prior severe reaction
- Nut or hymenoptera exposure[1]
- Beta blocker use [2,3]
- Cardiac or pulmonary comorbidities
- Hoarseness
- Swelling of lips, tongue, or uvula
- Respiratory distress
- Hypotension refractory to epinephrine

Sources:

1. Australasian Society of Clinical Immunology and Allergy. ASCIA guidelines for adrenaline autoinjector prescription. Available at: http://www.allergy.org.au/anaphylaxis/epipen_guidelines.htm. Accessed May 17, 2011.
2. Sampson H, Muñoz-Furlong A, Campbell R, et al. Second symposium on the definition and management of anaphylaxis: summary report—second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *Ann Emerg Med.* 2006;47(4):373-380.
3. Andeae DA, Andreae MH. Should antihistamines be used to treat anaphylaxis? *BMJ.* 2009;339:290-291.

Angioedema

Angioedema due to ACE inhibitors is thought to be linked to increased bradykinin levels as a result of blocked breakdown mechanisms. Typically it is seen in the first week after starting treatment, but in some patients, angioedema has occurred months to years after starting treatment. In contrast to other type I hypersensitivity reactions, ACE inhibitor-induced angioedema lacks simultaneous urticaria. Management is generally accomplished with standard anaphylactic treatments, although no controlled trials have demonstrated efficacy of these treatments. The use of fresh frozen plasma (FFP) has been proposed, especially in cases refractory to other treatments.[2]

Another relatively common cause of angioedema is C1 esterase deficiency. It is hereditary and linked to increased bradykinin levels as a result of uninhibited production. Treatment generally involves FFP, although this is controversial. Standard anaphylactic treatments are ineffective.[2]

Red flags

There are several red flags to watch out for when evalu-

ating a patient with anaphylaxis (**Table 2**). Previous history of a severe reaction, especially one requiring intubation or vasoactive substances, should be taken very seriously. Allergies to nuts and hymenoptera have a tendency to cause more severe reactions compared to other common allergens. As noted previously, patients taking beta blockers may experience symptoms refractory to epinephrine. Additionally, patients with cardiac or pulmonary comorbidities lack the reserve seen in healthier patients and have the potential to decompensate quickly.

When examining the patient, hoarseness is caused by edema around the vocal cords and signifies impending airway compromise if not dealt with promptly. Any swelling of the lips, tongue, uvula, or oral mucosa may progress to airway obstruction. Lastly, a patient exhibiting hypotension at any time, especially if not responsive to the first dose of IM epinephrine, should be admitted to the hospital for observation, as these patients have the potential to do very poorly.

Disposition

Patients with severe anaphylactic reactions generally require hospital admission. Factors to consider include severity of symptoms, history of protracted or recurrent anaphylaxis, comorbidities (asthma, COPD, CHF, etc.), beta blocker use, extremes of age, and home/social situation. Generally, in the outpatient setting, all but the most mild reactions should be transferred to the hospital ED for further evaluation and observation. This can vary widely, depending on the ease of transport and outpatient facility capabilities.

Unfortunately, there are no good guidelines for disposition of patients with mild or rapidly resolving symptoms. If a patient is to be discharged, he or she should be observed for a minimum of several hours, and maybe longer for individuals with more severe disease or high-risk features. Recurrence of allergic symptoms following resolution has been reported in up to 20% of cases, some as long as 72 hours following initial symptoms.[10]

If a patient is to be discharged following an anaphylactic reaction, it is mandatory that he or she has a reliable caretaker and 911 telephone access, as well as receive a prescription for epinephrine autoinjectors, including instructions on their use. A good rule of thumb is to prescribe two or three autoinjectors on discharge and instruct the patient to always carry one on his person. A short course of H1 blockers, H2 blockers, and steroids is also recommended. While there has not been a fully proven treatment duration, three days is usually sufficient.[2]

In addition, epinephrine autoinjectors may be indicated in select patients suffering from allergic reactions even if they do not meet criteria for anaphylaxis.[4] Certain allergies—such as to peanuts, tree nuts, shellfish, and insect stings—have high potential for causing anaphylactic reactions during future exposures.[11] Asthmatic patients who have suffered a generalized allergic reaction and individuals living in remote locations with limited access to emergency medical care should also be prescribed an epinephrine autoinjector.[11]

Conclusion

Anaphylaxis is a medical emergency that requires rapid and aggressive treatment. It is important to remember that although skin findings are common, they are not necessary for the diagnosis of anaphylaxis. Epinephrine is safe and effective and should be considered the mainstay of treatment. Intramuscular injections are preferred over the subcutaneous route. Antihistamines (both H1 and H2 blockers) and steroids probably do not play a major role in the treatment of acute anaphylactic reactions, but there is little reason not to give them and they will likely help to prevent the recurrence of symptoms. Have a low threshold to admit patients suffering from anaphylaxis for hospital observation, and remember that even with treatment, symptoms may recur. ■

REFERENCES

1. Neugut AI, Ghatak AT, Miller RL. Anaphylaxis in the United States: an investigation into its epidemiology. *Arch Intern Med.* 2001;161(1):15–21.
2. Davis, JE. Allergy and anaphylaxis: analyzing the spectrum of clinical manifestations. *Emerg Med Pract.* 2005;7(10):1-24.
3. Lieberman P, Kemp S, Oppenheimer S, et al. The diagnosis and management of anaphylaxis: an updated practice parameter. *J Allergy Clin Immunol.* 2005;115(3):S483-S523.
4. Sampson H, Muñoz-Furlong A, Campbell R, et al. Second symposium on the definition and management of anaphylaxis: summary report—second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. *Ann Emerg Med.* 2006;47(4):373-380.
5. Maddox TG. Adverse reactions to contrast material: recognition, prevention, and treatment. *Am Fam Physician.* 2002;66(7):1229-1234.
6. Andeae DA, Andreae MH. Should antihistamines be used to treat anaphylaxis? *BMJ.* 2009;339:290-291.
7. Roth JV, Shields A. A dilemma: how does one treat anaphylaxis in the sulfite allergic patient since epinephrine contains sodium metabisulfite? *Anesth Analg.* 2004;98(5):1499-1500.
8. Simons FE, Gu X, Simons KJ. Epinephrine absorption in adults: intramuscular vs subcutaneous injection. *J Allergy Clin Immunol.* 2001;108(5):871-873.
9. Tang AW. A practical guide to anaphylaxis. *Am Fam Physician.* 2003;68(7):1325-1332.
10. Ellis AK, Day JH. Incidence and characteristics of biphasic anaphylaxis: a prospective evaluation of 103 patients. *Ann Allergy Asthma Immunol.* 2007;98(1):64-69.
11. Australasian Society of Clinical Immunology and Allergy. ASCIA guidelines for adrenaline autoinjector prescription. Available at: http://www.allergy.org.au/anaphylaxis/epipen_guidelines.htm. Accessed May 19, 2011.

UCMC urgent care management certificate™

The Next Step

in Urgent Care Management

For more information contact

ucmc@ucaoa.org

or go to www.ucaoa.org/ucmc

UCAOA Professional Learning Program

Case Report

Acute MI After a Normal Stress Test

Urgent message: Evaluation of chest pain in the low-risk patient can be daunting. This case, in which the patient had no known history of cardiovascular disease, exemplifies the challenge.

MARREN J. WEBER, DO

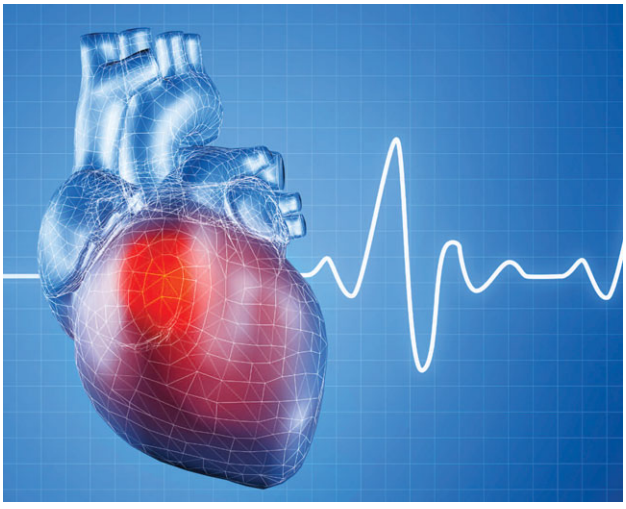
Introduction

The standard treadmill exercise tolerance test (ETT) and echocardiography are widely used as the initial tests of choice for prediction of cardiovascular disease. Historically stress echocardiography has been recognized to perform well in predicting mortality in conjunction with clinical data and other risk stratification measures.[1] However, while it remains a useful diagnostic tool, it is limited by a moderate predictive accuracy of 70%-90% (varying by modality), irrespective of patient subset.[2]

Case Presentation

VG is a 59-year-old male who presented to urgent care with a complaint of chest pain. His past medical history was significant only for acid reflux, and he had no known familial history of cardiac disease. He is a one-pack-per-day smoker seen annually by a primary care provider, although he had never had a screening stress test. At his first visit, his chest pain had been intermittent for about two weeks, sternal, and not associated with nausea, shortness of breath, radiation, or palpitations.

His work-up included blood work (troponin negative) and an ECG (**Figure 1**), which showed T wave inversion in leads V2-V4 only (no previous ECG was available for comparison). The patient refused hospital admission, requesting an outpatient work-up instead. His TIMI score was 0. He was discharged with instructions to follow up with cardiology.



© iStockPhoto.com

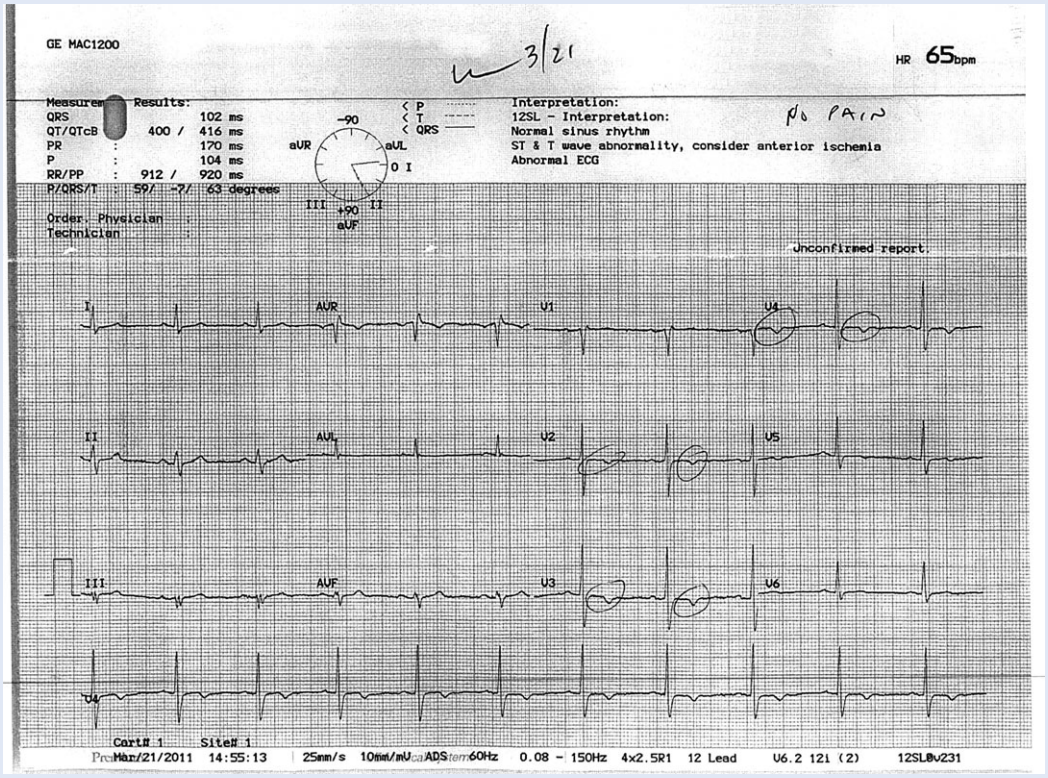
Ten days later, VG presented again to urgent care with sternal chest pain. He stated that he had been seen by cardiology for the appropriate follow-up stress testing and was told it was normal. As before, he was not experiencing dyspnea or any radiation of his pain. Severity was rated at 7-9/10. His pain was dull or squeezing in character, and he noted some indigestion. Eating made his pain worse; the pain was unrelieved by taking omeprazole (Prilosec) or calcium carbonate (TUMS).

Observations and Findings

Evaluation of the patient revealed the following vital signs:

Marren Weber is a staff physician at University Hospitals Concord Health Center Urgent Care in Concord Township, Ohio. She is board-certified in family medicine..

Figure 1. Initial Visit



- BP: 153/94
- P: 79
- R: 20
- T: 97.5° F
- O_2 sat: 99%
- Wt: 100 kg

On examination, VG was in mild distress. His lungs were clear. He had no murmurs, no S3 or S4 rubs, and no jugular venous distention (JVD). His ECG (**Figure 2** and **Figure 3**) showed ST depression >1 mm in leads V3 through V5, with flattening of the T wave.

The patient's pain was relieved entirely after taking two 0.4mg SL nitroglycerin tablets and 4L O_2 NC. However, he then became clammy, diaphoretic, and significantly bradycardic at 38 bpm. He was transferred emergently to the nearest ED by EMS. His troponin results were subsequently found to be positive at 2.15.

Disposition

VG's records were retrieved and his ETT was reviewed 6 days prior to his second urgent care visit. Following a standard Bruce protocol, the patient achieved 85% MPHR with normal wall motion, normal ejection fraction, and no ECG changes or chest pain. Resting EF was 65% and the stress test conclusion was normal.

Records from the admitting hospital show the patient was evaluated in the ED, where he had no chest pain. Cardiology was consulted and VG was admitted for cardiac catheterization. Cath results were:

- EF: 40%
- Akinetic inferobasal wall with moderate impairment to overall LV function
- Right coronary artery: 100% occlusion, stented
- Left anterior descending mid-portion: 99% occluded with a ruptured plaque, stented

Discussion

This case pointedly demonstrates the limitations in ETT as a prognostic test. ETT results are generally considered positive if the ECG shows 1 mm ST segment depression, horizontal or downsloping.[3] The test is non-diagnostic if ischemic ST depression is absent but HR does not reach 85% of predicted maximum for age/gender, or if

Figure 2. Return evaluation—acute injury pattern.

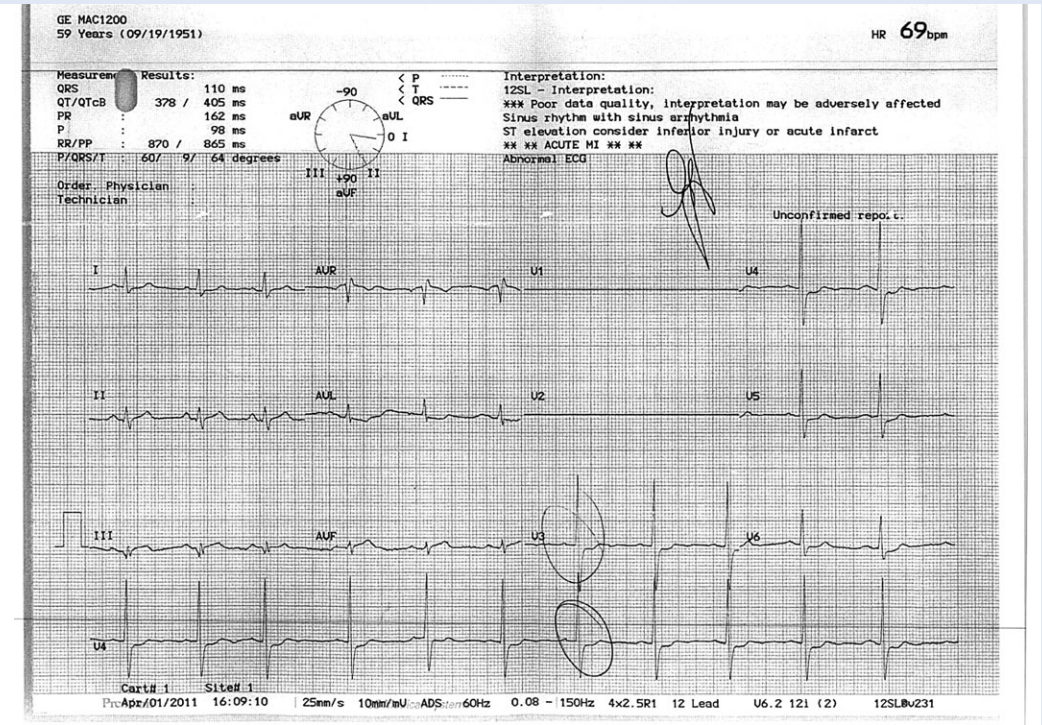
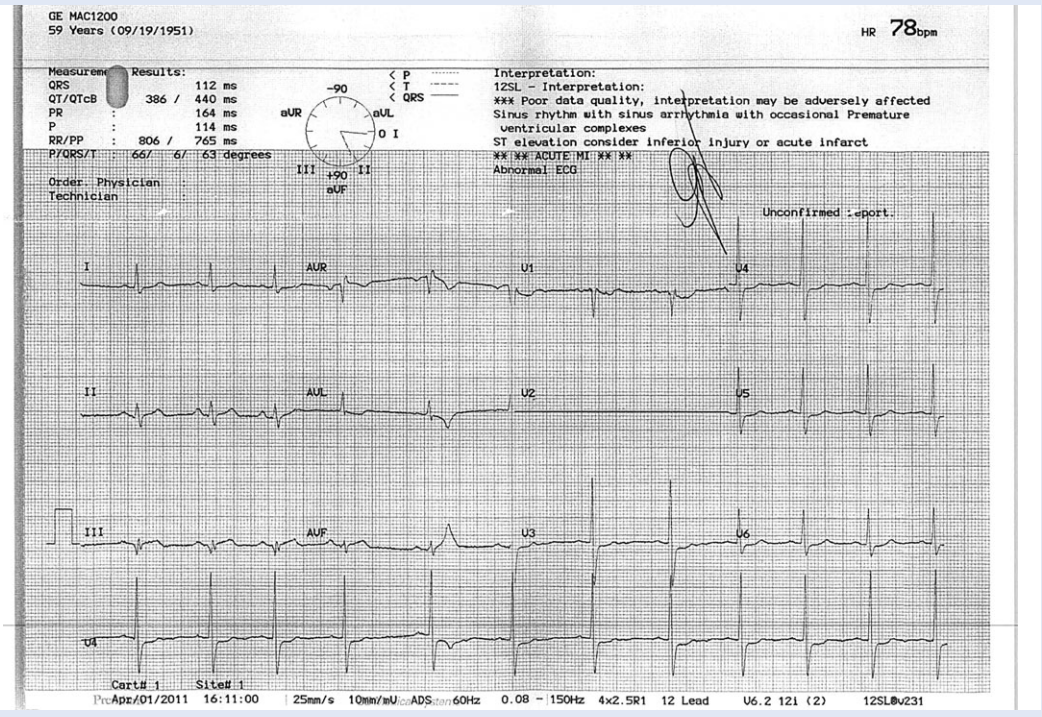
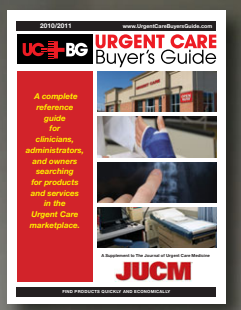


Figure 3. Return evaluation—acute injury pattern.



Get connected— and stay connected.

The 2010/2011 Urgent Care Buyer's Guide helps you reach urgent care stakeholders no matter where you are. Log on to *www.jucm.com/buyersguide* to find an enhanced, electronic version, organized by category or searchable by key word.



UC BG URGENT CARE Buyer's Guide℠

the ST changes were non-diagnostic (ST depression 0.5-0.9 mm, ST depression with slight upslope, or non-specific T wave abnormalities).

The ETT's predicted accuracy of approximately 70% is seen in multiple studies. There is, however, some controversy about its overall predictive value when combined with demographic and clinical data.

In addition, there are subtle ECG measures relating to rate, conduction, left ventricular mass, and repolarization, which only moderately improve risk stratification, but which are predictive of long-term mortality.[4] The four most significant are higher ventricular rate, more leftward QRS axis, more downward ST segment deviation, and longer QT interval, all of which can be present in a negative or non-diagnostic ETT.[5]

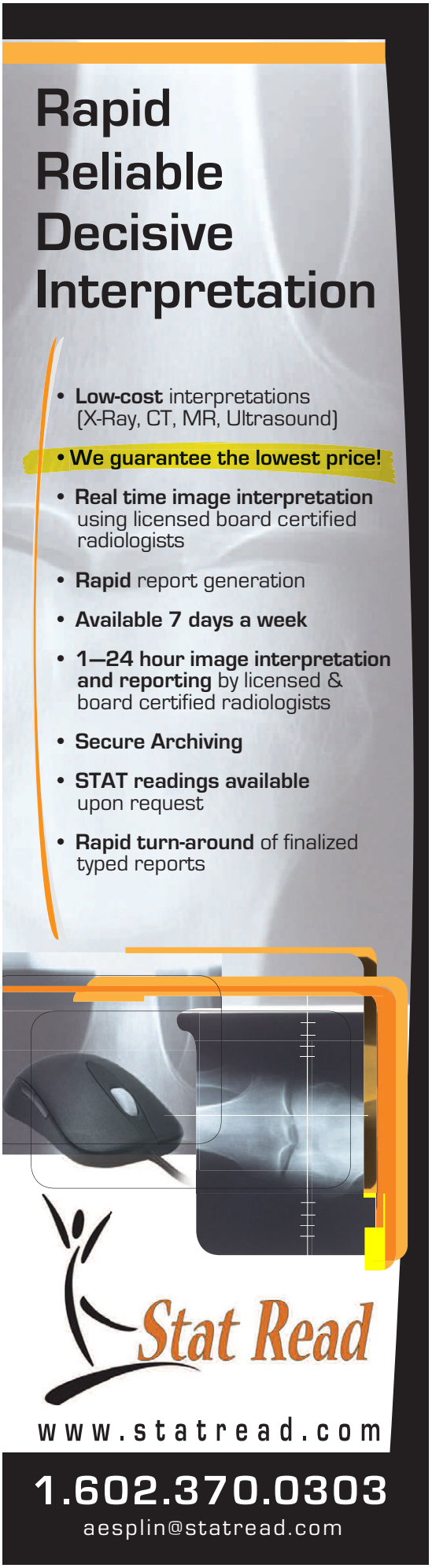
It is particularly difficult to stratify the low-risk patient with a clinically normal resting ECG. Of patients seen in the ED for acute chest pain, approximately 4%-5% with acute coronary syndrome (ACS) are inadvertently sent home.[6] The push for accelerated diagnostic protocols (stress testing and echo within 48 hours of discharge) is to get physicians to stratify higher-risk patients promptly. However, inconclusive ETT results are relatively common,[6] often requiring further diagnostic testing. In patients under age 40, with a prevalence of ACS of <2%, the use of ETT is of limited diagnostic utility.[2] Finally, the accuracy of ETT is lower in women than in men, with a lower specificity, sensitivity, and positive predictive value.[3]

Conclusion

In evaluating chest pain in the urgent care patient with no known history of cardiovascular disease, the physician has many factors to consider. As this case demonstrates, even an echo stress test, while helpful for risk stratification, can be falsely negative. Clear communication with the patient of all test results and their limitations is critical when evaluating chest pain. Shared decision-making and good documentation are important as well. The emergence of multidetector CT angiography, coronary artery calcium scores, serum markers of inflammation, and novel biomarkers of ischemia all hold promise in the evaluation of the low-risk patient. Until their role is clarified, however, evaluating chest pain in low risk patients remains a daunting challenge. ■

REFERENCES

1. Rubinshtein R, Hallon DA, Gaspar T, et al. Usefulness of 64-slice multidetector computed tomography in diagnostic triage of patients with chest pain and negative or non-diagnostic exercise treadmill result. *Am J Cardiol.* 2007;99(7):925-929.
2. Hermann L, Weingart S, Duvall WL, Henzlova MJ. The limited utility of routine cardiac stress testing in emergency department chest pain patients younger than 40 years. *Ann Emerg Med.* 2009;54(1):12-16.
3. Morise AP, Diamond GA. Comparison of the sensitivity and specificity of exercise electrocardiography in biased and unbiased populations of men and women. *Am Heart J.* 1995;130(4):741-747.
4. Gorodeski E, Ishwaran H et al. Quantitative electrocardiographic measures and long-term mortality in exercise test patients with clinically normal resting electrocardiograms. *Am Heart J.* 2009;158(1):61-70.e1.
5. Greenland P, Xie X, Liu K, et al. Impact of minor electrocardiographic ST-segment and/or T-wave abnormalities on cardiovascular mortality during long-term follow-up. *Am J Cardiol.* 2003;91(9):1068-1074.
6. Nucifora G, Badano LP, Sarraf-Zadegan N, et al. Comparison of early dobutamine stress echocardiography and exercise electrocardiographic testing for management of patients presenting to the emergency departments with chest pain. *Am J Cardiol.* 2007;100(7):1068-1073.



Case Report

A Case of Acute Pancreatitis

Urgent message: Although pancreatitis is a common cause of abdominal pain, many of its signs and symptoms are shared by other intra-abdominal conditions. Most patients can be handled on an outpatient basis if diagnosis is accurate, as this case illustrates.

MICHAEL TALKAR, MD

Introduction

Abdominal pain is a common and varied presentation in urgent care. A history and physical exam can be used to triage the majority of emergent cases. Strong communication is vital to ensuring good outcomes and minimizing misses.

Case Presentation

C.O. is a 35-year-old white male presenting with new-onset mild epigastric pain for one day. The pain was episodic at first but became constant. It was localized to the epigastrium, achy, dull, not related to activity, non-radiating, and rated 4/10 at presentation. The pain worsened with movement and was relieved by sitting. No fever, nausea, vomiting or change in bowel movements were reported.

Observations/Findings

Evaluation of the patient revealed the following:
PMHX: GERD, hypertriglyceridemia
MEDS: Fenofibrate (Tricor), TUMS
Allergies: None
PSHX: None
Social: No tobacco, drugs, or alcohol
FH: Non-contributory
ROS: Cough on and off for one week, nonproductive, without dyspnea or wheezing.

PE:

- Temp: 99.1° F
- P: 72
- R: 18
- BP: 125/85
- O_2 sat 97% RA
- Well-appearing male in no apparent pain.
- Skin/MSI: No rashes or joint deformities or ecchymoses
- COR: RRR, no M/R/G
- RESP: CTAB, no W/R/R
- ABD: +BS, soft, mild localized pain on palpation in epigastrium. No rebound or guarding. All other quadrants were benign

© iStockPhoto.com

Diagnostics:

- ECG: Normal

Michael Talkar is a staff physician at University Hospitals Urgent Care in Cleveland, Ohio. He is board certified in family medicine.

- Troponin: 0.0
- U/A: Normal
- CMP: LFTs were a send-out. BMP normal, except Glu113
- Amylase/lipase: Send-out
- CBC: Normal
- CXR: Normal

"Ninety percent of patients require supportive measures only. The general principle is: 'Rest the pancreas.'"

Laboratory Results

Since a few lab results were pending and the patient was in no acute distress, a decision was made to hold off on the CT scan until the labs arrived. Of note, a GI cocktail did not alleviate the pain. The patient was sent home with expectant management.

Later that day, the labs arrived:

- Serum bilirubin: 0.7
- Amylase: Normal
- Lipase: 426H (NL 114-286)
- LFTS: Unable to complete due to "milky" serum!

Patient was contacted and asked to fast that evening and return in the morning for a fasting lipid panel and an ultrasound. The results:

- Triglycerides:1653
- Cholesterol: 222
- Abdominal U/S: Liver hepatosteatosis, pancreas normal, no gallstones

Diagnosis

Acute pancreatitis. Cause: hypertriglyceridemia.

Course and Treatment

Interestingly, patient had stopped taking Tricor a few weeks earlier. His primary care physician was contacted. He confirmed the patient's triglycerides were in the normal range two months earlier. A follow-up appointment was made for the patient with his primary doctor for LFTs +/- CT scan on outpatient basis. A follow-up call two days later revealed cessation of abdominal pain.

Discussion

Pancreatitis is a common cause of abdominal pain. Its clinical presentation can vary from mild abdominal pain to refractory shock. Many of its signs and symptoms are shared by other intra-abdominal conditions. The two most common causes are gallstones and alcohol, which account for nearly 90% of cases. Drugs account for up to 50% of the remaining cases. Metabolic disturbances (triglycerides), infection, inflammation, and trauma account for the rest.

The major symptom is mid-epigastric or left upper quadrant pain, mostly constant, boring pain that often radiates to back, flanks, chest, or lower abdomen. The pain is exacerbated in the supine position and can be relieved with sitting. Nausea, vomiting, and bloating are common. A physical exam may reveal low-grade fever, tachycardia, diminished bowel sounds (ileus), epigastric tenderness, and peritonitis (late finding). Cullen's sign (bluish discoloration around the umbilicus) and Grey Turner's sign (bluish discoloration of the flanks) are rare but characteristic signs of hemorrhagic pancreatitis.

Serum amylase and lipase are the most widely used tests in evaluating pancreatitis. Lipase is a more accurate test than amylase (90% sensitivity and specificity).

Plain radiographs are most useful in excluding other diseases, such as perforation or obstruction. Ultrasonography is most helpful in gallstone identification or biliary dilatation. Pancreatic edema and pseudocysts can also be identified. A CT scan is the most important imaging test for the diagnosis of acute pancreatitis and its intra-abdominal complications, as well as for assessment of severity. Patients with clinical and biochemical features of pancreatitis who do not improve with initial conservative therapy or those suspected of complications should undergo a CT scan of the abdomen.

Ninety percent of patients require supportive measures only. The general principle is: "Rest the pancreas." Fluids, pain medication, and anti-emetics are examples of these supportive measures. Empiric antibiotics are not indicated in mild to moderate disease. Patients with mild disease and no evidence of systemic complications can be managed on an outpatient basis, if tolerating meds PO and pain is well-controlled. A clear liquid diet is recommended and a follow-up in 24-48 hours is needed. All other patients should be admitted to the hospital. Complications include pseudocyst, abscess, hemorrhage, hypocalcemia, hyperglycemia, and acute respiratory stress syndrome (ARDS).

Conclusion

A careful history, judicious diagnostics, strong communication, and close follow-up allow for effective evaluation and management of most cases of acute abdominal pain in the urgent care setting. Pancreatitis is a fairly common cause of such pain and can be managed in the majority of cases on an outpatient basis. ■

Connect with Urgent Care Employers

Find Your New Job TODAY!

FREE Online Job Board:

- Receive New Jobs Via Email
- Apply Online
- Save Jobs
- Upload Your Resume

JUCM CAREERCENTER

THE JOURNAL OF URGENT CARE MEDICINE

Open a barcode scanner app on your smartphone. Position your phone's camera over this QR code to scan.

www.UrgentCareCareerCenter.com

(800) 237-9851 • info@urgentcarecareercenter.com

Every Man His Own Doctor

JOHN SHUFELDT, MD, JD, MBA, FACEP

While treating patients in the emergency department, I occasionally marvel at the changes I have witnessed over my 25 years in medicine. Sometimes I think, "Thank God I did not treat you 25 years ago, because if I had, I would have done (fill in the blank), it would not have worked, and you would have probably hated every second of it."

I am as old as Moses, so it should come as little surprise that when I started my career, we intubated two or three people in florid congestive heart failure (CHF) every shift; did thoracotomies in all coding trauma patients, regardless of the etiology and occasionally bare-handed; and performed therapeutic phlebotomy on CHF patients in renal failure. I once used leeches on a nearly necrotic penis. Another time, I drilled an ED burr hole in an unresponsive patient with a blown pupil.

I haven't intubated a CHF patient in years or performed a thoracotomy in about four years. I, along with the leeches, stopped blood-letting about 10 years ago and, thankfully, have not done a burr hole again (whether it was needed or not).

I was recently visiting my parents and happened to come across a book my sister (an EM physician in Chicago) gave to my father after having the original copy rebound. The book, titled *Every Man His Own Doctor*, was written in 1816 by William Buchan, MD. The following excerpts are taken verbatim from the book. As you read them, remember: Less than 200 years ago, this was considered *the* treatise on the prevention and cure of diseases.

Of Children

"One great source of disease of children is the unhealthiness of the parents. It would be as reasonable to expect a rich crop from barren soil, as that strong and healthy children should be born of parents whose constitutions have been worn out with intemperance and disease."

John Shufeldt is principal of Shufeldt Consulting and sits on the Editorial Board of *JUCM*. He may be contacted at *JohnShufeldt@shufeldtconsulting.com*.

"A delicate female, brought up within the indoors, an utter stranger to exercise and open air, who lives on tea and other slops, may bring a child into the world, but it will be hardly fit to live."

"Cleanliness is not only agreeable to the eye, but tends greatly to preserve the health of children. It promotes the perspiration, and, by that means, frees the body from superfluous humours,[1] which, if retained, could not fail to occasion diseases."

Of the Laborious, the Sedentary, and the Studious

"Though those who follow laborious employments are in general the most healthy of mankind, yet the nature of their occupations, and the places where they are carried on, expose them more particularly to some diseases. The erysipelas,[2] of St. Anthony's fire, is a disease very incident to the laborious. The iliac passion,[3] the cholic, and other complaints of the bowels, are often occasioned by the same causes as erysipelas; but they may likewise proceed from flatulent and indigestible food."

"A bad figure of body is a very common consequence of close application to sedentary employment. The scrophula, consumption, hysterics and nervous disease, now so common, were very little known in the country before sedentary artificers became so numerous."

"Intense thinking is so destructive to health, that few instances can be produced of studious persons who are strong and healthy. Hard study always implies a sedentary life; and when intense thinking is joined to the want of exercise, the consequences must be bad."

Of Aliment[4]

"Our aliment ought neither be too moist or too dry. Moist aliment relaxes the solids, and renders the body feeble. Females, who live on tea and other watery diets, generally become weak and proceed to hysterics."

Of Intemperance

"A modern author observes that temperance and exercise are

the two best physicians in the world. How quickly does the immoderate pursuit of carnal pleasures, or the abuse of intoxicating liquors, ruin the best constitution!"

"Nothing tends so much to prevent the propagation, and shorten the lives of children as the intemperance of parents."

"Every act of intoxication puts nature to the expense of a fever in order to discharge the poisonous draught."

Of Infection

"Many diseases are infectious. Every person ought therefore, as far as he can, to avoid all communication with the diseased. The common practice of visiting the sick, though often well meant, has many ill consequences."

Of the Passions

"Many persons of a religious turn of mind behave as if they thought it is a crime to be cheerful. They imagine the whole of religion consists in certain mortifications, or denying themselves the smallest indulgences, even of the most innocent amusements. It is a great pity that every religion should be so perverted, as to become the cause of those very evils which it was designed to cure."

"Few persons fall desperately in love all at once. We would therefore advise every one, before he tampers with this passion, to consider well the probability of his being able to obtain the object of his wishes."

Of Common Evacuations

"Many persons have lost their lives, and others have brought on very tedious, and even incurable disorders by retaining their urine too long from a false delicacy."

Of Fevers

"As more than one half of mankind is said to perish by fevers, it is of importance to be acquainted with their causes. The most general causes of fevers are: infection, errors in diet, unwholesome air, violent emotions of the mind, excess or suppression of usual evacuations, external or internal injuries, and extremes of heat or cold."

"Nothing is more desired by a patient in a fever than fresh air. It not only removes anxiety, but cools the blood, revives the spirits and proves everyway beneficial."

Of the Quinsy[5]

"It prevails in the winter and spring, and is the most fatal to young people of a sanguine temperament."

"An inflammation of the throat is often occasioned by omitting some part of the covering usually worn about the neck, by drinking cold liquor when the body is warm, by riding or walking against a cold northerly wind, or anything that greatly cools the throat and parts adjacent."

The book dispenses advice on all things related to health for a total of 460 pages printed in very small type. Interestingly, the last third of the book is devoted to the care and treatment of horses and sheep (which mirrors the treatment of humans).

It is remarkable that in the 195 years since *Every Man His Own Doctor* was published we have gone from using Peruvian bark to treat all sorts of things to using embryonic stem cells for spinal cord regeneration and doing transatlantic robotic surgery. To quote the rock group Matchbox 20's front man, Rob Thomas, "Look how far we've come!" Even more amazing is that as dramatic as the pace of change has been over the past two centuries, it is getting exponentially faster.

In *The Law of Accelerating Returns*, published in 2001, author, inventor, and futurist Dr. Ray Kurzweil opines, "The analysis of the rate of change of technology shows that technological change is exponential, contrary to the common sense 'intuitive linear' view. So we won't experience 100 years of progress in the 21st century, we will experience more like 20,000 years of progress (at today's rate). The 'returns,' such as chip speed and cost effectiveness, also increase exponentially. There is even exponential growth in exponential growth. Within a few decades, machine intelligence will surpass human intelligence leading to The Singularity—technological change so rapid and profound it represents a rupture in the fabric of human history. The implications include the merger of biological and non-biological intelligence, immortal software-based humans, and ultra-high levels of intelligence that expand outward in the universe at the speed of light."

What does all this mean for us living in the urgent care universe? I have to believe that our future will look very different from the present in an incredibly short amount of time. Or, as Dr. Egon Spengler said in the movie Ghostbusters, "Try to imagine all life as you know it stopping instantaneously and every molecule in your body exploding at the speed of light." ■

Notes

[1]Hippocrates (460-370 BC) believed certain human moods, emotions, and behaviors were caused by body fluids (called "humours"), of which there were four: blood, yellow bile, black bile, and phlegm.

[2]Erysipelas = cellulitis.

[3]Iliac passion = a violent vomiting of fecal matter.

[4]Aliment = nourishment, nutriment.

[5]Quincy = peritonsillar abscess. ■

INSIGHTS IN IMAGE

CLINICAL CHALLENGE: CASE 1

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

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

FIGURE 1

The patient is an otherwise healthy child, age 11, who presents with acute pain to the wrist following a blow.

View the image taken (**Figure 1**) and consider what your diagnosis and next steps would be.

Resolution of the case is described on the next page.

THE RESOLUTION

FIGURE 2

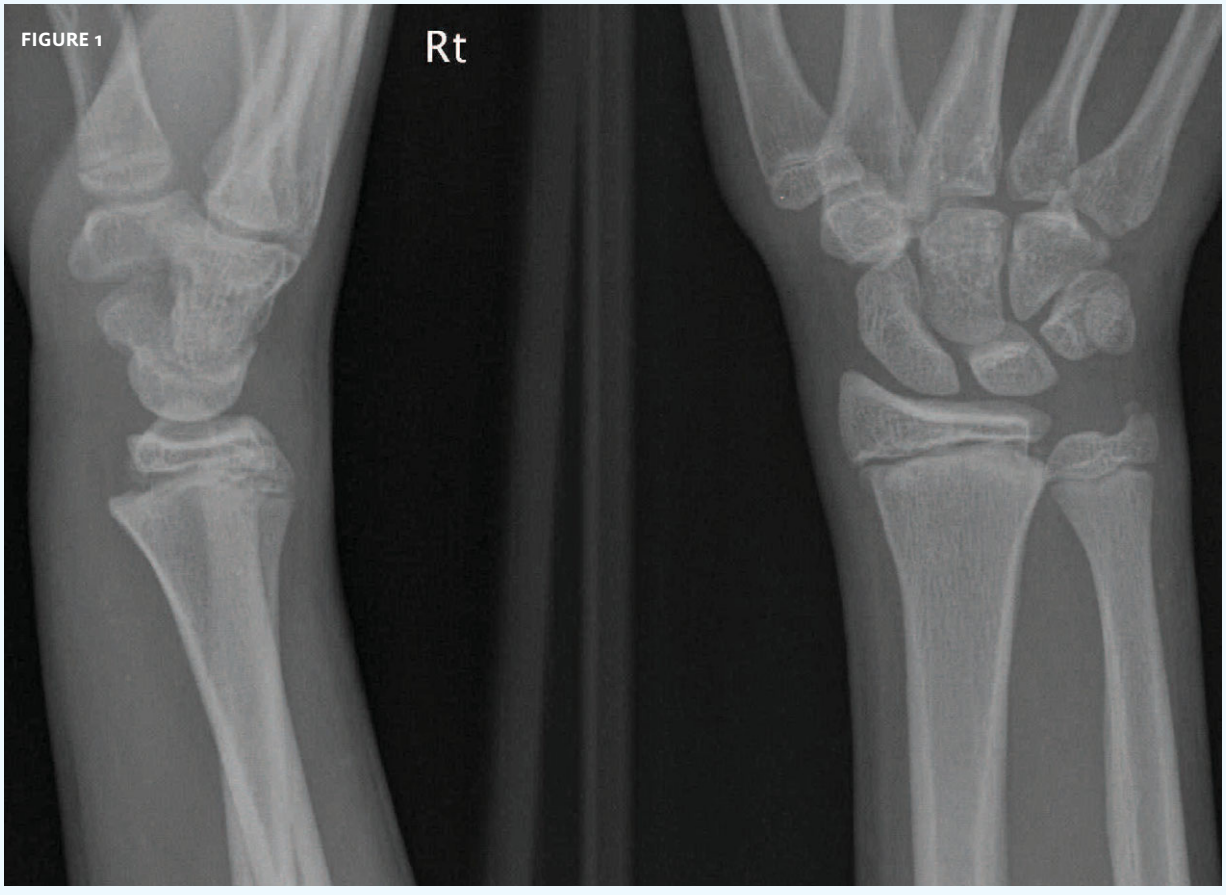
The patient's problem list includes trauma. The diagnoses are: Fx, Fx radius distal.

This is a Salter II fracture of the distal radius. The fracture is stable and can be splinted and referred.

Acknowledgement: Case presented by Nahum Kovalski, BSc, MDCM, Terem Emergency Medical Centers, Jerusalem, Israel.

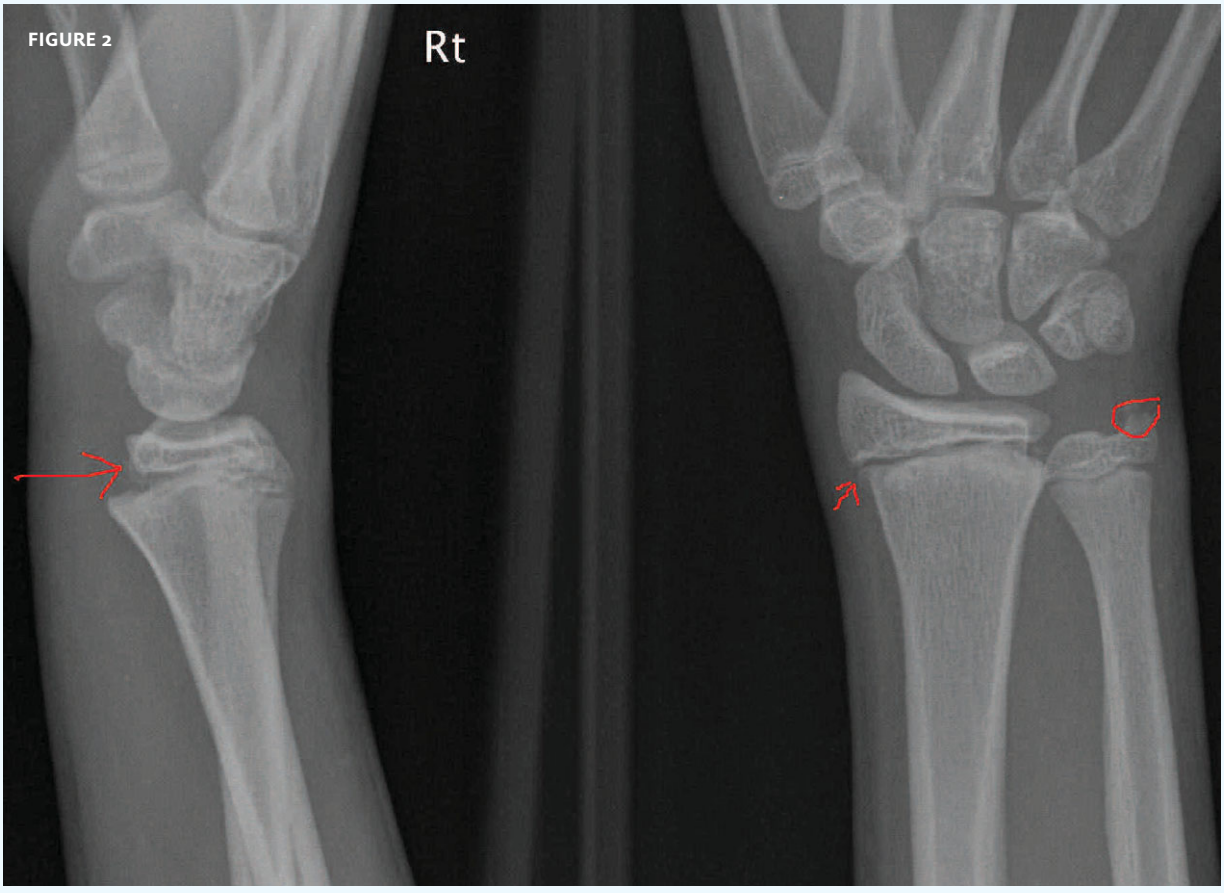
CLINICAL CHALLENGE: CASE 2

FIGURE 1



The patient, an otherwise healthy 16-year-old, fell and suffered a blow to the wrist one hour prior to presentation.

THE RESOLUTION



The patient's problem list includes trauma. Diagnoses are Fx, Fx radius distal, Fx ulna distal.

There is a Salter I fracture of the distal radius. Note the slippage of the epiphysis. This requires reduction. There is also a distal ulnar styloid fracture.

Near total displacement of the radial physis is not uncommon and often requires operative fixation.

Refer to hospital for orthopedic management.

Acknowledgement: Case presented by Nahum Kovalski, BSc, MDCM, Terem Emergency Medical Centers, Jerusalem, Israel.

CODING Q&A

Medical Necessity in E/M Coding, Part 2: ROS and PFSH

DAVID STERN, MD, CPC

Last month, we presented definitions for medical necessity offered by the AMA and the Centers for Medicare & Medicaid Services (CMS). We looked at the elements appropriate to perform and document in the History of Present Illness (HPI). And we briefly discussed Recovery Audit Contractors (RAC) audits. (If you missed it, the column is archived on the *JUCM* website [*http://jucm.com*] in the May 2011 issue.)

This month, our focus is on Review of Systems (ROS) and Past History, Family History, and Social History (PFSH). What makes this discussion particularly important to have at this time is that some coding auditors with little understanding of urgent care medicine have been inappropriately downcoding E/M levels. Coding for ROS and PFSH are cases in point.

To the board-certified primary care or emergency physician, the issues we are about to explore may seem elementary. But due to the aggressive nature of some coding audits, the rationale for performing ROS and PFSH in the urgent care setting is necessary to clarify.

This series of columns is not meant to offer encyclopedic coverage of medical necessity in E/M coding. Instead, it seeks to focus on some occasionally challenging coding issues faced by urgent care clinicians, with examples to illustrate when and why a given code is appropriate.

With that preamble, let's look why ROS and PFSH are clinically relevant, legitimately code-worthy components in the evaluation and management of the urgent care patient.

Q. Which elements are appropriate to perform and document in the ROS for a typical urgent care visit?

David E. Stern, MD, CPC is a certified professional coder. He is a partner in Physicians Immediate Care, operating 12 urgent care centers in Oklahoma and Illinois. Dr. Stern speaks frequently at urgent care conferences. He is CEO of Practice Velocity (*www.practicevelocity.com*), providing urgent care software solutions to more than 500 urgent care centers. He welcomes your questions about coding in urgent care.

A. Nowhere is there a greater misunderstanding of the typical urgent care encounter than in the area of ROS. Many auditors see no need for a significant ROS for patients with minor medical problems. Some physicians argue that the ROS has little usefulness in the urgent care setting. Nothing could be further from the truth.

If you are among the doubters, take this challenge: Perform a full ROS on patients for one week and see if you still feel the same way. But be prepared to be surprised. For it is precisely in the urgent care setting, where a patient who rarely seeks medical care is often seen and little is known of his or her baseline health status, that the ROS can make a dramatic improvement in the quality of care.

For example, on the second day after I implemented a policy of performing a full ROS for all my patient encounters, I saw a patient in his mid-40s for a refill of his antidepressant. He was otherwise healthy, but on the full ROS he had noted a complaint of chest pressure. He said that it was "almost not worth mentioning," since it was quite minor and he only felt pressure when he pushed a heavily loaded wheelbarrow uphill. Two days later, he underwent cardiac bypass surgery for critical three-vessel disease. If I had not performed a full ROS, he would likely be dead today.

Another example involved an undocumented immigrant who had cut his fingertip at work three days earlier and now presented with secondary cellulitis. He denied any medical history, but on ROS mentioned that he woke up at night an average of three times to urinate. I asked if he had diabetes. He said he had a history of diabetes but had stopped taking insulin and has not had any problems since. A radiograph of his finger, however, revealed diffuse osteopenia of the distil phalanx. He was immediately admitted to the hospital for intravenous antibiotic treatment for his osteomyelitis. Without the full ROS, a radiograph might not have been performed, and the patient might have lost his finger.

Much as in emergency medicine, a full ROS in urgent care medicine can make a critical contribution to patient care.

With an established patient, some physicians fear that performing a complete ROS would be seen as an attempt to "upcode" a visit. However, in both the 1995 and 1997 CMS guidelines for the established E/M code, documentation on ROS of only two systems is needed for coding a Level 4 Office Visit (99214). In the urgent care setting, even with an established patient, it is almost always appropriate to document the system related to the complaint and the constitutional system (fever, chills, weight loss, weight gain, etc).

Even with an established patient presenting with a seemingly simple sore throat, inquiring about the following systems would meet the level of medical necessity:

- Fever, chills, sweats, malaise (constitutional)—to assess for the likelihood of streptococcal infection or infectious mononucleosis
- Ear pain, drooling (ENT)—to assess for the likelihood of a secondary infection, tonsilar abscess, or epiglottitis
- Focal or diffuse "gland" swelling (hematologic/lymphatic)—to assess for the likelihood of infectious mononucleosis
- Confusion, depression, or racing ideas (psychiatric)—to assess for severity of infection and/or the ability of the patient to follow a multi-day prescribed regimen
- Cough, shortness of breath (respiratory)—to assess respiratory involvement of an infectious entity
- Headache, dizziness, light-headedness (neurological)—to assess for dehydration or even meningitis
- Seasonal allergic symptoms (allergic/immunologic)—to assess allergic causation
- Rashes (integumentary)—as in strep throat with scarlet fever
- Nausea, vomiting (gastrointestinal)—to assess for risk of dehydration
- Absence of urination or dark urine (genitourinary)—to assess for dehydration or early evidence of hepatitis due to infectious mononucleosis

With an established patient, unless you are coding a Level 5 Established Patient Visit (99215), you need not fear that a complete ROS will be viewed as an attempt to upcode the visit, as only two systems in the ROS are required for a Level 4 E/M code (99214). Thus, in the urgent care setting, documenting two systems is almost always appropriate. In addition, short of a 99215 code in an established patient, whether the physician documents two systems or 12 on the ROS, the E/M code will not be affected. ■

Q. Which elements are appropriate to perform and document in the PFSH for a typical urgent care visit?

A. When teaching the importance of taking a history to medical students or young physicians, it is important

"A complete PFSH is appropriate for most patient encounters in the urgent care setting."

to emphasize, "If you don't ask, the patient will not tell you." Patients (much like chart auditors) often do not realize the importance of a medical history. Consider once again the patient with a seemingly simple sore throat:

Past History

It is appropriate to review every patient's history of:

- Medical conditions. For example, it is relevant to know whether a patient with a upper respiratory infection has been diagnosed with an immune deficiency, frequent ear infections, or a strep throat infection that resulted in rheumatic fever.
- Allergies. The physician must avoid prescribing medications to which the patient is allergic.
- Medications. It is critical to know what medications the patient is taking (or has recently taken) to avoid drug-drug interactions. Patients on simvastatin (Zocor) for hypercholesterolemia, for example, should avoid such macrolide antibiotics as erythromycin to avoid severe consequences. Patients on MAO inhibitors should be warned of the severe (often lethal) consequences of taking simple over-the-counter cold remedies even a few days after discontinuing the MAOI.
- Surgeries. Whenever a patient is seen for a condition that might involve a bacterial pathogen, it is relevant to know whether the patient has any implants (for example, cardiac valves, artificial joints, or ventriculoperitoneal shunts), as these may be seeded by a bacterial infection.

Family History

For the initial encounter, it is appropriate to find out if the patient has a family history of any inherited medical problems. For children, it is especially important to be aware of congenital conditions that other siblings have to avoid misdiagnosing a rare presentation of a common problem that is really a common presentation of a rare genetic condition. A family history of hemophilia, cystic fibrosis, or sickle cell anemia, for example, will significantly affect the differential diagnosis and prognosis for many conditions.

You might ask what relevance this could have for a patient. But if a physician considers prescribing a sulfa drug or even aspirin, this would be relatively contraindicated in a patient with a close relative with a history of G6PD deficiency.

I once saw a patient for what at first appeared to be a simple herniated lumbar disc. Within two weeks, the patient had

an extremely rapid and severe atrophy of the affected calf muscle. What no physician picked up—because no one asked—was that the patient had a strong family history for amyotrophic lateral sclerosis, which very rarely can have a familial form. He underwent surgery and his pain was relieved. A month later, he rapidly deteriorated with amyotrophic lateral sclerosis. Thus, at least on the initial encounter, excellent urgent care requires obtaining and documenting a family history.

Social History

An auditor might state that an urgent care physician should have no interest in taking a social history. Smoking and secondhand smoke, however, can effect the patient's susceptibility to upper respiratory infections and many other conditions commonly seen in the urgent care setting. In addition, the most impactful time to reinforce the harmful effects of smoking is when the patient is suffering from the actual condition.

For children, stability of the home environment can significantly affect the patient's ability to take a full course of antibiotic or other medications. In a chaotic home environment, the physician may determine that it is unlikely that the child will receive a full course of treatment. The physician may opt for a single dose of an injectable antibiotic over a multi-day regimen of an oral antibiotic.

Adult patients who use alcohol to excess may have significant compliance issues, so medication regimens that are shorter, or that involve injectable drugs, may be indicated.

As such, all three elements of PFSH are appropriate for a typical initial encounter with a patient in the urgent care setting. Both the 1995 and 1997 CMS guidelines for E/M documentation state that a physician seeing a new patient must document all three components of PFSH to obtain credit for a complete PFSH.

For an established patient, one might argue that it is not always necessary to update the family history. From a coding perspective, however, this makes no difference; for an established patient, the physician must document only two areas of the PFSH to obtain credit for a complete PFSH. Thus, a complete PFSH is appropriate for most patient encounters in the urgent care setting. ■

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

Disclaimer: JUCM *and the author provide this information for educational purposes only. The reader should not make any application of this information without consulting with the particular payors in question and/or obtaining appropriate legal advice.*

CALL FOR ARTICLES

Excellence is a team sport. *JUCM* needs your help!

JUCM is proud to have won two gold awards in 2011 (for best case history and best how-to article) from the American Society of Healthcare Publication Editors (ASHPE).

But if people like you didn't write those articles, *JUCM* would be an empty shell, nothing more.

We need physicians, nurse practitioners, and physician assistants to contribute articles on the core competencies for urgent care medicine, as well as Case Reports and Clinical Challenges.

We need business-savvy doctors, practice managers, consultants, attorneys, financial experts, and vendors to contact us with article ideas to improve urgent cares as businesses.

If you have a good idea, we can give you an article outline to follow (if you'd like one), as well as advice and support as you write.

Your article would then receive professional editing and graphic design by our award-winning staff to make it look its best in print and on the Web.

Who knows? It could be you who receives a gold award from ASHPE next year.

For further details, contact Neil Chesanow, *JUCM's* editor, at *nchesanow@jucm.com*.

JUCM

THE JOURNAL OF URGENT CARE MEDICINE®

ABSTRACTS IN URGENT CARE

- Low-back Pain
- Head Injury and Concussion
- Acute Bronchitis in Infants
- Herpes Transmission Risk
- Pediatric Epididymitis
- Acute Coronary Syndrome
- ED Verbal Discharge Instructions

NAHUM KOVALSKI, BSc, MDCM

Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

When Should Diagnostic Imaging Be Used for Patients With Low-back Pain?

Key point: With low-back pain, the risks associated with X-rays and MRIs often outweigh the benefits.

Citation: Daily POEM: imaging for low-back pain: rarely indicated, often harmful. Available at: *www.essentialevidience-plus.com*.

These guidelines are based on a systematic review and meta-analysis of research investigating the usefulness of various imaging studies in patients with low-back pain. Based on a meta-analysis of six studies, routine imaging with x-ray, MRI, or computed tomography in patients without underlying conditions does not have any effect on pain, function, quality of life, or patient-rated improvement, and, contrary to common wisdom, does not alleviate patients' anxieties about back pain.

These studies were done in patients with and without radiculopathy. Several studies have demonstrated that patients who had routine imaging will have more pain and worse overall health status. That is not to say that imaging won't pick up abnormalities; herniated or bulging discs and spinal stenosis are commonly found in asymptomatic patients, as well as in those with back pain, with up to 90% of asymptomatic individuals older than 60 years having a degenerated or bulging disc. Abnormal findings can lead to surgery that will not be effective since the exposed abnormality is simply coincident to the real cause of the pain.

The guidelines suggest plain films, along with erythrocyte sedimentation rate determination, for patients with major risk factors for cancer, and MRI for patients at risk for spinal infection (low-back pain, fever, intravenous drug use), signs of cauda equina syndrome, or severe neurologic deficits, such as progressive weakness or motor deficits at multiple neurologic levels.

X-rays and magnetic resonance imaging (MRI) for patients with low-back pain are associated with increased cost, poorer health in recipients, and an increased risk for surgery. Routine imaging of back patients is not warranted and, moreover, the indications for imaging are few: major risk factors for cancer, signs of cauda equina syndrome, and severe neurologic deficits. Radiography recommendations after a trial of therapy include weak risk factors for cancer, signs of ankylosing spondylitis in young patients, or vertebral fracture risk factors in older people. MRI should be limited to patients with radiculopathy or symptoms of spinal stenosis who don't respond to therapy. Using diagnostic tests for a putative therapeutic effect does not decrease patients' anxiety. ■

Nahum Kovalski is an urgent care practitioner and Assistant Medical Director/CIO at Terem Emergency Medical Centers in Jerusalem, Israel. He also sits on the *JUCM* Editorial Board.

Symptoms Persist After Minor Head Injury and Concussion

Key point: Post-concussive symptoms persist for at least 1 month in most patients.

Citation: Cunningham J, Brison RJ, Pickett W. Concussive symptoms in emergency department patients diagnosed with minor head injury. *J Emerg Med*. 2011;40(3):262-266.

The prevalence and management of concussion in patients with head injury have received much attention in the medical literature and lay press. Researchers prospectively assessed the prevalence and patterns of concussive symptoms at 1 month in a convenience sample of 94 patients who presented to two Canadian emergency departments after minor head injury (defined

as any acute traumatic head injury in a patient with a transient loss of brain function and Glasgow Coma Scale score of 15 at presentation).

Overall, 68 patients (72%) reported concussive symptoms at presentation, and 59 (63%) reported persistent concussive symptoms at one-month follow-up. The most persistent symptoms were headache (42%), dizziness (29%), fatigue (28%), and cognitive impairment (28%).

Published in *J Watch Emerg Med,* April 29, 2011 — Richard D. Zane, MD, FAAEM. ■

Steroids and Bronchodilators for Acute Bronchitis in Infants

Key point: Evidence shows the effectiveness and superiority of adrenaline.

Citation: Hartling L, Fernandes RM, Bialy L, et al. Steroids and bronchodilators for acute bronchiolitis in the first two years of life: systematic review and meta-analysis. *BMJ*. 2011;342:d1714.

The objective of this review was to evaluate, via systematic review and meta-analysis, and compare the efficacy and safety of bronchodilators and steroids, alone or combined, for the acute management of bronchiolitis in children aged less than 2 years. forty-eight trials (4897 patients, 13 comparisons) were included.

Only adrenaline (epinephrine) reduced admissions on day 1 (compared with placebo: pooled risk ratio 0.67). Unadjusted results from a single large trial showed that combined dexamethasone and adrenaline reduced admissions on day 7 (risk ratio 0.65). A mixed treatment comparison supported adrenaline alone or combined with steroids as the preferred treatments for outpatients.

The incidence of reported harms did not differ. None of the interventions examined showed clear efficacy for length of stay among inpatients.

Evidence shows the effectiveness and superiority of adrenaline for outcomes of most clinical relevance among outpatients with acute bronchiolitis, and evidence from a single precise trial for combined adrenaline and dexamethasone. ■

Transmission Risk High for Herpes Shedding

Key point: Among patients seropositive for herpes simplex virus type 2, genital shedding is likely universal, regardless of symptoms.

Citation: Tronstein E, Johnston C, Huang M L, et al. Herpes shedding patterns show wide risks for transmission. *JAMA*. 2011;305(14):1441-1449.

Researchers followed some 500 seropositive individuals for 2 months, during which the subjects collected daily swabs from the genital area. Rates of viral shedding were twice as high among symptomatic participants, but even asymptomatic subjects showed shedding on 10% of days. In addition, the number of virus copies shed was similar between symptomatic and asymptomatic participants.

The authors say their findings suggest that clinical management of seropositive—but asymptomatic—patients should include anticipatory guidance on recognizing genital symptoms as well as counseling on condom use, valacyclovir therapy, and the need to disclose serostatus to sexual partners. ■

Urgent Care Medicine

Medical Professional Liability Insurance

The Wood Insurance Group, a leading national insurance underwriter, offers significantly discounted, competitively priced Medical Professional Liability Insurance for Urgent Care Medicine. We have been serving the Urgent Care community for over 20 years, and our UCM products were designed specifically for Urgent Care Clinics.

Our Total Quality Approach includes:

- Preferred Coverage Features
  - Per visit rating (type & number)
  - Prior Acts Coverage
  - Defense outside the limit
  - Unlimited Tail available
  - Exclusive "Best Practice" Discounts
- Exceptional Service Standards
  - Knowledgeable, friendly staff
  - Easy application process
  - Risk Mgmt/Educational support
  - Fast turnaround on policy changes
  - Rapid response claim service

THE WOOD INSURANCE GROUP

4835 East Cactus Road, Suite 440
Scottsdale, Arizona 85254
(800) 695-0219 • (602) 230-8200
Fax (602) 230-8207
E-mail: davidw@woodinsurancegroup.com
Contact: David Wood Ext 270

Bacteria Are an Uncommon Cause of Pediatric Epididymitis

Key point: Antibiotics rarely are indicated for pediatric epididymitis.

Citation: Santillanes G, Gausche-Hill M, Lewis RJ. Are antibiotics necessary for pediatric epididymitis? *Pediatr Emerg Care*. 2011;27(3):174-178.

Adult epididymitis is usually caused by enteric or sexually transmitted organisms, whereas pediatric epididymitis is thought to be caused by ascending urinary pathogens. To determine the frequency of bacterial causes of pediatric epididymitis, investigators reviewed charts of patients aged ≤18 years with epididymitis diagnosed at an urban pediatric emergency department in California from 1996 to 2006. The cause was considered to be bacterial if urine cultures were positive.

Of 140 patients who met inclusion criteria, 124 (89%) underwent urinalysis, urine culture, or both. Although only nine patients had positive results on one or both tests, 91% of all patients were treated empirically with antibiotics, most often cephalexin or co-trimoxazole. Urine cultures were positive in four of 97 patients (4.1%) who were tested. Age, maximum temperature, and urine white blood cell count did not differ significantly between patients with negative urine cultures and those with positive cultures. Of 54 adolescent boys (age: ≥12 years), only 12 (37%) were tested for sexually transmitted pathogens, with one positive result.

Published in *J Watch Emerg Med,* April 22, 2011—Katherine Bakes, MD. ■

BNP for Diagnosis and Management of Emergency Department Patients With Suspected Acute Coronary Syndrome?

Key point: A single B-type natriuretic peptide level obtained within four hours of presentation is not useful for identifying risk for acute myocardial infarction, revascularization, or death within 30 days.

Citation: Hubbard BL, Newton CR, Carter PM, et al. The inability of B-type natriuretic protein to predict short-term risk of death or myocardial infarction in non-heart-failure patients with marginally increased troponin levels. *Ann Emerg Med*. 2010;56(5):472-480.

Although B-type natriuretic peptide (BNP) has been demonstrated to be a useful diagnostic and prognostic marker for patients with congestive heart failure, it has not been shown to aid management or diagnosis in the emergency department, except in patients who present with dyspnea, for whom acute decompensated heart failure is a consideration.

In a prospective study, researchers assessed the association between BNP level and outcome in 348 adult patients who presented to a single ED with symptoms suggestive of acute coronary syndrome, non-diagnostic but detectable troponin levels (0.04 to 0.4 ng/mL), and non-diagnostic electrocardiograms.

BNP levels were obtained within four hours of presentation; clinicians were blinded to the results. Exclusion criteria were ECG results suggestive of acute myocardial injury, left bundle branch block, atrial fibrillation, or ventricular tachycardia or fibrillation; syncope or focal neurological symptoms; and history or current diagnosis of heart failure or pulmonary edema.

Using the standard threshold of ≥80 pg/mL, the authors found that BNP had a negative predictive value of 80% for the primary outcome of acute myocardial infarction (AMI) or death within 30 days. Sensitivity was 38%, specificity was 48%, and positive predictive value was 12%.

For the secondary outcome—the composite of AMI, death, percutaneous coronary intervention, or coronary artery bypass grafting within 30 days—negative predictive value was 69%, sensitivity was 43%, specificity was 48%, and positive predictive value was 24%.

On the basis of the results from this study and others, BNP measurement is not a useful test for guiding the diagnosis or management of ED patients with suspected acute coronary syndromes and should not be used for this purpose.

Published in *J Watch Emerg Med*, December 17, 2010—Richard D. Zane, MD, FAAEM. ■

Verbal Discharge Instructions Are Often Incomplete

Key point: Few ER patients received full discharge instructions, and patients' understanding of them was rarely assessed.

Citation: Vashi A, Rhodes KV. "Sign right here and you're good to go": a content analysis of audiotaped emergency department discharge instructions. *Ann Emerg Med.* 2011;57(4):315-322.e1.

Researchers analyzed audio-recorded verbal discharge instructions for 477 adult female patients at two EDs to assess inclusion of nine components of the instructions and to evaluate the quality of each component (minimal, adequate, or excellent).

Most patients were given an opportunity to ask questions (91%), although the quality of the interaction was usually minimal. Most patients also were given instructions about medications (80%), an explanation of their symptoms (76%), instructions about follow-up care (73%), and instructions about self-care (69%). Fewer patients received an explanation of their expected course of illness (51%), recommendations for a specific time for follow-up (39%), or instructions about symptoms that should prompt return to the ED (34%). Patients were rarely given an opportunity to confirm understanding of the instructions (22%), and, when they were, the quality of the interaction was usually minimal.

Published in *J Watch Emerg Med*, April 29, 2011—Richard D. Zane, MD, FAAEM. ■

Dunkirk and Solomons, Maryland

Seeking part-time BC/BE EM, IM, and FP physicians to practice urgent care medicine at Dunkirk and Solomons Urgent Care Centers in Calvert County, Maryland. Enjoy a collegial relationship with nurses, mid-level providers, and urgent care support staff, excellent work environment, a flexible schedule, and competitive compensation.

Send CV: Emergency Medicine Associates
20010 Century Blvd, Suite 200
Germantown, MD 20874
Fax: (240) 686-2334
Email: Recruitment@EMAonline.com

URGENT CARE / EMERGENCY MEDICINE

Los Angeles Downtown and Beverly Hills Physician Medical Group expanding. **Position:** Board Certified in EM or a Primary Care with UC/EM experience. We are looking for physicians who wish to grow with us. Compensation package includes health, med-mal, and paid vacation with incentives bonus. A rare opportunity. Email CV to: GHowell@ReliantMedicalCenter.com and/or fax to: 310-546-1641

Inquiries held in strictest confidence.

Email: JUCM@russelljohns.com

questcare URGENT CARE

Physician owned and operated group seeks energetic experienced BC FP for new urgent care practice. This individual must have a Texas license and possess the dedication of delivering high-quality care while exceeding customer service expectations. The clinic offers the latest in medical diagnostic equipment including digital radiography, point of care lab testing, EKG and a rapid diagnostic lab for those non-life threatening urgent and acute care services for adults and children. The clinic is open 7 days a week.

Questcare Urgent Care Clinic is located in the beautiful Park Cities area where exclusive neighborhoods showcase beautiful homes. This area has numerous shopping centers, art galleries and one of the best public school systems in the nation.

- Now accepting CV's for full-time opportunities
- Flexible schedule
- Competitive compensation
- Paid Malpractice

Contact: Peggy Dunning
214-217-1900
pdunning@questcare.net
www.questcare.com
www.questcareurgent.com/

URGENT CARE AZTEC NEW MEXICO - Full time position available for a board certified M.D or D.O. in a walk- in Urgent Care Clinic. 12 to 15, 10 hour shifts per month. Flexible schedule. Benefits include Health Insurance, Malpractice Insurance and Continuing Ed allowance. Come and enjoy the beautiful San Juan Mountains where skiing, mountain biking and kayaking are a way of life. Contact: Paula Dunne 970 247 8382, ext. 103. or email CV's to Russ@duran-gourgentcare.com.

SAVANNAH GEORGIA

Excellent opportunity for well-qualified Primary Care Physician to join a stable, established group to staff our Immediate Care Centers. Work with a collegial group of physicians, focused on providing quality occupational and family medical care while living only minutes from the beach.

Visit our website: www.geamba.com or email CV to: pbashlor@geamba.com Call (912) 691-1533 for information.

How to Use:

Open a barcode scanner app on your smartphone. Position phone's camera over QR code and scan.

Want one of these?

To place a QR code in your CLASSIFIEDS advertisement, call us at: **(800) 237-9851.**

Righttime MEDICAL CARE

PHYSICIAN EMPLOYMENT OPPORTUNITIES

Righttime Medical Care, a physician-owned urgent care, is currently recruiting full and part-time physicians to meet the ever-increasing patient care needs of our growing healthcare business.

Founded in 1989, Righttime Medical Care has delivered on its mission of quality medical care and exceptional patient service to more than one million adults and children in 7 central Maryland locations.

Our promise of being there when our patients need us most, 365 days a year, offers our physician employees exceptional schedule flexibility. We offer competitive compensation and benefits, training and a dynamic environment focused on patient care.

Please email your CV to mdrecruitment@myrighttime.com. or call 443.336.4624 for more information

myRighttime.com

Recruit Urgent Care Professionals online at JUCM CareerCenter

Tools for Employers:

- Post Jobs Online
- Manage Resumes
- Track Job Performance
- Upgrade Opportunities

Post an Urgent Care Job Today!

Open a barcode scanner app on your smartphone. Position your phone's camera over this QR code to scan.

JUCM THE JOURNAL OF URGENT CARE MEDICINE CAREERCENTER

www.UrgentCareCareerCenter.com

(800) 237-9851 • sales@urgentcarecareercenter.com

PRESBYTERIAN

PRESBYTERIAN HEALTHCARE SERVICES
Albuquerque, New Mexico

Presbyterian Healthcare Services (PHS) is New Mexico's largest, private, non-profit healthcare system and named one of the "Top Ten Healthcare Systems in America". PHS is seeking four BE/BC Family Practice Physicians to work in our Urgent Care Centers. There are five Urgent Care Centers in Albuquerque and full time providers work 14 shifts per month or average around 144 hours per month.

Enjoy over 300 days of sunshine, a multi-cultural environment and casual southwestern lifestyle. Albuquerque has been recognized as "One of the Top Five Smart cities to Live." It is also is home to University of New Mexico, a world class university.

These opportunities offer: competitive salary * relocation * CME allowance * 403(b) with match * 457(b)* health, life, AD&D, disability insurance, life * dental * vision * pre-tax health and child care spending accounts * malpractice insurance, etc. (Not a J-1, H-1 opportunity) EOE.

For more information contact:
Kay Kernaghan, PHS
PO Box 26666, ABQ, NM 87125
kkernagh@phs.org
866-757-5263 or fax: 505-923-5388

URGENT CARE

New York, Mid-Hudson Valley

Openings for
BC/BE Family Practice &
Emergency Medicine physicians.

65 miles from Manhattan. Outstanding opportunity for personal and professional growth in the fastest growing practice in New York State, located in one of the fastest growing regions in New York State!!

- *Unique Urgent Care facility integrated with premier multi-specialty group medical practice.*
- *State-of-the-art facility.*
- *Electronic medical records. In-house digital imaging.*
- *Excellent compensation/partnership track.*

Please Write, Fax or Email to:

Hal Teitelbaum, MD, MBA, Managing Partner
155 Crystal Run Road, Middletown, NY 10941
Fax: 845. 703. 6201
Email: hteitelbaum@crystalrunhealthcare.com

Crystal Run Healthcare

CRYSTALRUNHEALTHCARE.COM

Recruit Urgent Care Professionals on the New JUCM CareerCenter

- Post Jobs Online
- Manage Resumes
- Track Job Posting Performance
- Upgrade Opportunities

UCAOA members receive up to 20% discount

POST YOUR JOB OPENINGS TODAY!

www.UrgentCareCareerCenter.com

(800) 237-9851 • sales@urgentcarecareercenter.com

JUCM THE JOURNAL OF URGENT CARE MEDICINE CAREERCENTER

Open a barcode scanner app on your smartphone. Position your phone's camera over this QR code to scan.

MEDcare urgent care center

Full-time and part-time job openings for ER physicians at a state-of-the-art Urgent Care center with two locations in beautiful Charleston, South Carolina - on the coast!
Center is equipped with computed radiography, multi-slice CT scanner, in-house laboratory, EMR, and utilizes medical scribes. Open 7 days a week, 12 hours a day - no call and no overnight shifts. Enjoy a great work environment in a fantastic city that has been on Conde Naste's "top ten" city list for the last 16 years!

Join this fast growing, physician run practice. Initial salary up to $125/hr with health benefits, 401K, malpractice, and more.

Also available to certain candidates is the opportunity to progress in a Physician Leadership Program which offers additional benefits.
Don't miss this opportunity to join a proven leader in Urgent Care.
Send resumes to:
physicianrecruiting@medcare-express.com

ASPIRUS
Passion for excellence. Compassion for people.

Enjoy work/life balance at our Walk In facilities

Seeking BC/BE Family Medicine or Med/Peds physicians for Wisconsin

Locations include:
Rhinelander, Stevens Point, Wausau, Weston, and Wisconsin Rapids

- Very competitive salary— full-time, starting at $185,000 — sign on bonus
- No call, pager or hospital rounds
- Flexible scheduling
- Epic EMR, with time built into your shift for charting
- Generous benefits package including exceptional CME & retirement plan
- Relocation allowance available
- On site lab, radiology, and excellent nursing support staff
- Walk in experience preferred, but not required

Not a Visa Opportunity

Contact: Karen Lindstrum Physician Recruiter, for more information about this outstanding opportunity

Phone: 800-792-8728 • karen.lindstrum@aspirus.org • www.aspirus.org

MARKETPLACE

MEDICAL EQUIPMENT

EKG Machines for LESS!!

Medical Device Depot sells the BEST NAME BRANDS at the LOWEST prices!

Choose from one of these Great SPECIALS:

AT-1i: Multi-channel EKG w/interpretation **$1,398**

AT-2i: Multi-channel EKG w/interpretation & full page printout **$1,856**

AT-2 light: Multi-channel EKG w/interpretation, full page printout & alphanumeric keyboard **$2,275**

AT-2 plus: Multi-channel EKG w/interpretation, full page printout, alphanumeric keyboard & EKG waveform display **$2,677** Add spirometry for **$1,000**

See before you buy!!
Our machines come with a longterm warranty and in-office training.

Medical Device Depot ©Inc.
Call for on-site demonstration or more info!
Toll Free 877-646-3300
www.medicaldevicedepot.com

Reach your audience:

Family Medicine, Internal Medicine, Pediatrics, Emergency Medicine, Physician Assistants, and Nurse Practitioners.

Next available issue is September with a closing date of July 29th.

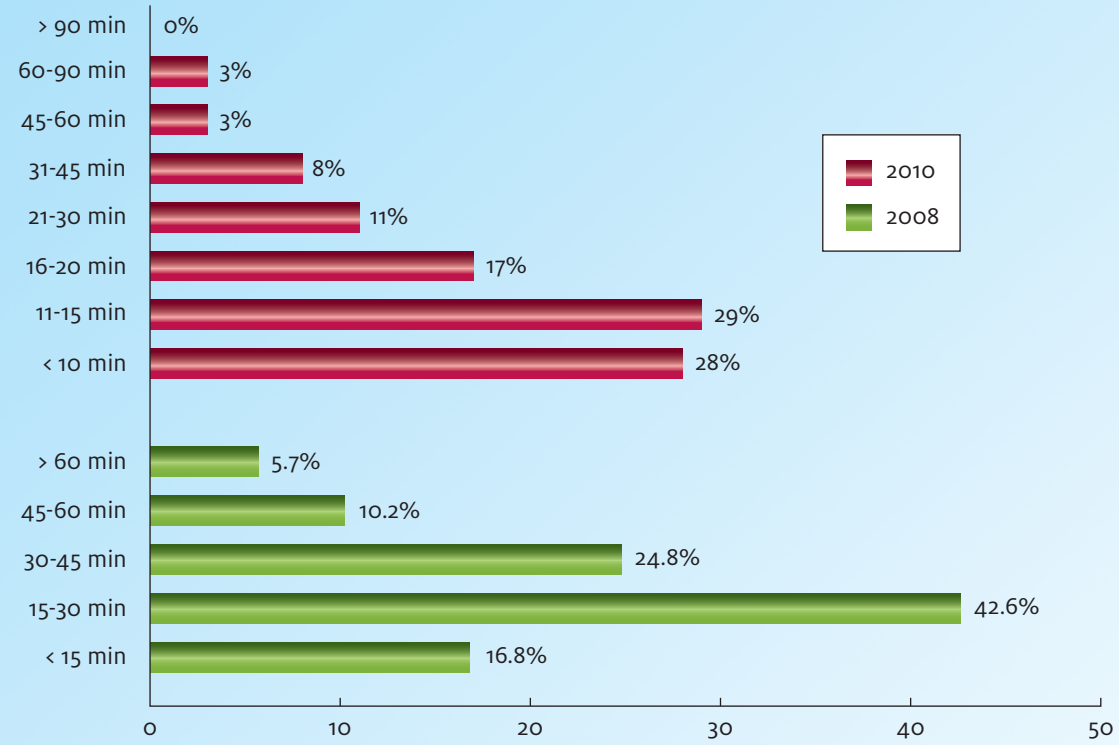
Contact: Trish O'Brien
(800) 237-9851, ext. 237 • Fax (727) 445-9380
Email: jucm@russelljohns.com

DEVELOPING DATA

In each issue on this page, we report on research from or relevant to the emerging urgent care marketplace. This month, we offer a look at data from the 2010 Urgent Care Benchmarking Survey Results. These data are based on responses of 1,691 US urgent care centers; 32% were UCAOA members. The survey was limited to "full-fledged urgent care centers," the qualifications for which included accepting walk-ins during all hours of operation, as well as having a licensed provider on site, x-ray and labs on-site, the ability to administer IV fluids and perform minor procedures, and being open seven days a week, at least four hours per day.

In this issue: Are patient wait times improving?

OVERALL PATIENT WAIT TIMES



Urgent cares have gotten the message that shorter wait times are a must to keep competitive. In two years, there have been dramatic improvements. In 2008, about 17% of patients waited less than 15 minutes to be seen by clinician; in 2010, a majority of patients (nearly 60%) were seen that quickly. Longer wait times plunged significantly as well. In 2008, for example, 10% of patients waited 45-60 minutes to be seen; in 2010, the number was down to 3%.

Acknowledgement: The 2010 Urgent Care Benchmarking Study was funded by the Urgent Care Association of America and administered by Professional Research Associates, based in Omaha, NE. The full 40-page report can be purchased at www.ucaoa.org/benchmarking.

If you are aware of new data that you've found useful in your practice, let us know via an e-mail to *editor@jucm.com*. We will share your discovery with your colleagues in an upcoming issue of *JUCM*.

UCAOA

OCTOBER 20-22, 2011

Fall Urgent Care Conference

HYATT REGENCY DFW ★ DALLAS, TEXAS

IMPROVED CODING FOR **Experienced Coders**

CODING FUNDAMENTALS FOR THE **Non-Coders**

COMPREHENSIVE CLINIC **Startup**

Clinical MASTERCLASSES

Recruitment TO RETENTION AND EVERYTHING IN BETWEEN

WWW.UCAOA.ORG/FALL

VelociDoc® Tablet EMR

Certified For Meaningful Use by CCHIT®

Up to $44,000 per Physician

Schedule a free demo today!

- 888-357-7209 or
- info@practicevelocity.com

ONC-ATCB CERTIFIED
Supporting Meaningful Use
2011-2012
Complete EHR

VelociDoc® 11.01
CC-1112-947320-1
practicevelocity.com
/meaningfuluse

practicevelocity.com
888-357-4209

PRACTICE VELOCITY®
Urgent Care Solutions®

URGENT CARE ASSOCIATION OF AMERICA
UCAOA PLATINUM PARTNER
Corporate Support Program