



ABSTRACTS IN URGENT CARE

On the Pandemic Potential of H1N1, Survival After Out-of-Hospital Cardiac-Arrest, Discharge Instructions, Treatment of Head Lice, Scorpion Stings, and Rheumatic Fever

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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.

Early Estimate of Pandemic Potential of Influenza A H1N1 “Swine Flu”

Key point: *The current virus is transmitted efficiently but probably is less lethal than past pandemic viruses.*

Citation: Fraser C, Donnelly CA, Cauchemez S, et al. Pandemic potential of a strain of influenza A (H1N1): Early findings. *Science*. 2009 May 14; e-pub ahead of print.

A team of epidemiologists has analyzed the influenza A (H1N1) epidemic in Mexico. Data related to the outbreak were collected primarily in April and early May 2009. The researchers presented several tentative conclusions:

Cases outside of Mexico occurred most commonly in countries that had the highest volume of travelers from Mexico.

Attack rates of clinical disease are higher in children younger than 15 years than in adults (relative risk for children, 1.52). This finding suggests that, although the virus is novel, adults might have some protection due to cross-immunity from exposure to strains that have circulated in the past.

The virus is transmitted more efficiently from person to person than are usual seasonal flu viruses.

The estimated fatality rate is 0.4%; this virus is considerably less lethal than the virus that caused the 1918–1919 pandemic but somewhat more lethal than usual seasonal flu viruses.



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These data indicate that the current H1N1 virus is more transmissible and possibly more lethal than regular seasonal flu viruses, but it is considerably less transmissible and lethal than the catastrophic 1918–1919 pandemic virus. However, influenza viruses mutate rapidly, and this virus could change considerably in the coming months.

Published in *J Watch General Med*, May 21, 2009—Anthony L. Komaroff, MD. ■

Protocol Stressing Uninterrupted Compressions Can Improve Survival After Out-of-Hospital Cardiac Arrest

Key point: *Survival among adults with bystander-witnessed, out-of-hospital cardiac arrest with an initial rhythm of ventricular fibrillation (VF) improved from 22% to 44% following changes to a resuscitation protocol.*

Citation: Garza AG, Gratton MC, Salomone JA, et al. Improved patient survival using a modified resuscitation protocol for out-of-hospital cardiac arrest. *Circulation*. 2009;119:2597-2605.

In this study, two protocols were compared. The historical protocol followed AHA 2000 guidelines, while the revised protocol modified this and advocated CPR before defibrillation, increased chest compressions, and decreased emphasis on ventilations and intubation in order to promote cardiac perfusion.

The study adds to the body of science demonstrating that chest compressions—and limiting interruptions to chest compressions—are one of the most important interventions that can be provided for out-of-hospital cardiac arrest

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In the updated protocol, the “electrical phase” occurs within the first five minutes after the cardiac arrest; this is when defibrillation is the optimal therapy. At five to 10 minutes after a cardiac arrest, in the “circulation phase,” an optimal chest-compression strategy is needed to improve coronary perfusion pressure, to set up a successful defibrillation. Optimal treatment for the third phase, the “metabolic phase,” which begins 10 minutes after cardiac arrest, is less clear.

In places such as casinos and airports, swift defibrillation upon cardiac arrest has “unquestionably” improved survival. Unfortunately, in most other scenarios, when emergency medical personnel arrive, cardiac-arrest patients are typically in the circulatory phase rather than the electrical phase, they add.

In the current study, emergency medical service providers were trained in the new resuscitation protocol, which mandated that rescue workers perform at least three rounds of 200 chest compressions before attempting intubation, maintain a 50:2 ratio of compression to ventilation, restrict aggressive ventilation, and minimize pauses for ventilation.

Overall survival increased from 7.5% to 13.9%. ■

Discharge Instructions: Understanding the Misunderstandings

Key point: Nearly 80% of patients did not understand some aspect of their ED care, usually discharge instructions, and most patients were not aware that they did not understand.

Citation: Engel KG, Heisler M, Smith DM, et al. Patient comprehension of emergency department care and instructions: Are patients aware of when they do not understand? *Ann Emerg Med* 2009;53(4):454-461.

More and more inpatient care is being shifted to the outpatient environment, and patients are increasingly being asked to assume more responsibility for their own care. Patients’ ability to adhere to complex emergency department discharge instructions is directly related to how well they understand the instructions.

In a prospective study conducted at two emergency departments in Michigan, researchers interviewed 140 patients immediately after ED discharge to assess their understanding of four categories of ED care:

- Diagnosis and cause of symptoms
- 1. ED care received (tests and treatments)
- 2. Post-ED care (prescriptions, ancillary measures, follow-up)
- 3. Symptoms that should prompt returning to the ED
- 4. Patients were allowed to look at their discharge instructions during questioning.

Overall, 78% of patients demonstrated some deficiency in comprehension (less than complete concordance) in at least one category, and 51% demonstrated deficiency in two or more categories. Most deficiencies in comprehension (34%) were related to post-ED care. Only 20% of patients with comprehension de-

ficiencies were aware that they had them.

ED staff need to be sure that patients “get it” before they leave. Asking them if they have any questions might not be enough. Perhaps we should ask patients to explain their diagnoses and treatment and follow-up plans to us in their own words.

Ironically, we probably do more to ensure understanding when patients leave against medical advice than when they are simply discharged. ■

FDA Approves Benzyl Alcohol Lotion for the Treatment of Head Lice

Key point: Three-quarters of patients in the benzyl alcohol group had no lice.

Citation: www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm149562.htm

The FDA has approved prescription-strength benzyl alcohol lotion (5%) to treat head lice in patients aged 6 months and older.

The approval follows two safety and efficacy studies of some 625 people with active head lice infestations. Two 10-minute treatments of benzyl alcohol lotion or topical placebo were given to patients 1 week apart. Two weeks after the last treatment, three-quarters of patients in the benzyl alcohol group had no lice.

The medication can cause skin, scalp, and eye irritations, as well as numbness at the application site. ■

Antivenom for Scorpion Stings

Key point: Children with severe reactions to stings recovered quickly after receiving antivenom.

Citation: Boyer LV, Theodorou AA, Berg RA, et al. Antivenom for critically ill children with neurotoxicity from scorpion stings. *N Engl J Med* 2009;360:2090-2098.

Stings from scorpions in the U.S. Southwest and Mexico can produce a neuromotor syndrome that, in its severe form, is characterized by uncoordinated hyperactivity with thrashing limbs, oculomotor and visual abnormalities, and respiratory compromise. Severe reactions are more common in children. An antivenom produced from various Mexican scorpion species (including some also found in the U.S.) was evaluated at two Arizona intensive care units, where 15 children (age range, 6 months to 18 years) were admitted within 5 hours of a scorpion sting with severe neuromotor syndrome; they were randomized to scorpion-specific antivenom or placebo.

Within four hours after treatment, the syndrome had resolved in all eight children who received antivenom and in only one who received placebo ($P < 0.001$). Antivenom recipients also received substantially less midazolam during the first four hours. One hour after treatment, no antivenom recipients and six of seven placebo recipients had detectable plasma venom concentrations levels.

The antivenom used in this study is commercially available in

Mexico but is available only on an investigational basis in the U.S.
Published in *J Watch Pediatr Adolesc Med*—Howard Baucher, MD. ■

Prevention of Rheumatic Fever

Key point: The American Heart Association has updated its scientific statement; as before, emphasis is on treatment and prevention of streptococcal pharyngitis.

Citation: Gerber MA, Baltimore RS, Eaton CB, et al. Prevention of rheumatic fever and diagnosis and treatment of acute streptococcal pharyngitis: Circulation. 2009;119:1541-1551.

This document focuses on timely diagnosis and treatment of streptococcal pharyngitis (primary prevention) and on prevention of streptococcal pharyngitis in individuals with a previous diagnosis of RF (secondary prevention).

Primary prevention requires accurate detection and proper antibiotic treatment of patients with streptococcal pharyngitis, without unnecessary treatment of those who have pharyngitis caused by other agents. Accurate detection entails using clinical judgment to evaluate signs and symptoms and confirming the diagnosis with a throat culture, a rapid antigen-detection test (RADT), or both.

This document recommends screening with RADTs and treating all patients who test positive with appropriate antibiotics. For adults who are RADT-negative, antibiotics should be withheld; for children who are RADT-negative, throat culture should be performed for confirmation, because some RADTs are more sensitive than others.

For treatment of streptococcal pharyngitis, the document recommends oral penicillin V two or three times daily for 10 days, amoxicillin once daily for 10 days, or intramuscular benzathine penicillin as a single dose. For penicillin-allergic patients, narrow-spectrum oral cephalosporins, clindamycin, or clarithromycin for 10 days—or azithromycin for five days—is suggested.

For patients with a previous diagnosis of RF, the recommended duration of prophylaxis has been unclear because guidelines from different organizations have disagreed on some of the details.

This document recommends prophylaxis for:

- 10 years or until age 40 (whichever is longer) for those with carditis and residual heart disease
- 10 years or until age 21 (whichever is longer) for those with carditis but no residual heart disease
- 5 years or until age 21 (whichever is longer) for those without carditis.

The text provides further recommendations for individualizing prophylaxis duration and suggests the possibility of life-long prophylaxis for patients who are especially vulnerable.

Published in *J Watch Infect Dis*, March 11, 2009—Robert S. Baltimore, MD. ■

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child about what will happen. This can range from challenging to impossible with a very young child, but you can often engage a child of 2 or 3 in some conversation and play. Let the child know what to do rather than what *not* to do. For example, say “Try to hold yourself real still” rather than saying “Don’t move.”

Show the child the materials you will be using. Refer to the suture material as “string Band-Aids.” Let the child feel water from the irrigation syringe so she knows what to expect. Always explain that, while it should not hurt during the repair, she *will* feel some pulling and tugging, and then demonstrate that the pulling doesn’t hurt. This way, the child will not be surprised at that sensation.

Finally, once the child is prepared, consider various distraction techniques to use during the laceration repair. Many books fit the bill: “I Spy” books are excellent for distracting toddlers and young school-aged children during the procedure. Or, use an inexpensive, portable CD player with music appropriate to the child’s age. The child can squeeze a rubber ball, or blow bubbles during the repair. Engaging the parent in helping to distract the child is a great way to keep both the child and family less anxious as you perform the procedure.

Integrating these techniques in the following order, in my experience, ensures the most effective result in easing pain and maximizing satisfaction:

1. Decide on pharmacologic agents (in this case, LET gel and lidocaine).
2. Establish trust with the child.
3. Consider alternative positioning techniques.
4. Prepare the child using appropriate language and demonstrations.
5. Distract the child during the procedure.

By combining these pharmacologic and non-pharmacologic techniques, you will create an experience that is vastly superior to what the family might have anticipated when they arrived at your center. And this positive experience during a time of anxiety will go a long way in establishing your center as “the” place for families seeking pediatric urgent care. ■