



Is Our Continuing Education Really Education?

Bob Nixon, EMT-P

Something's wrong with this picture... The patient is a 40 year-old woman with a history of asthma. After giving herself five albuterol treatments without relief, she calls 9-1-1. EMS arrives and remains on the scene giving the woman a sixth treatment. When that fails, they transport her while giving her a seventh treatment. En route to the hospital, she 'crashes' and is intubated, unfortunately in the esophagus. Three days later life support is withdrawn from the patient.

A question that arises from the case is simple: Were these EMS professionals trained or were they educated? Over the years, there have been quite a few changes in the EMT and paramedic curricula as well as requirements for recertification. Of particular importance are the rules governing recertification or relicensure which call for a minimum number of 'continuing education' hours. But, is it thought-provoking education or is it regurgitative training? This article will give some food for thought about those questions and discuss the differences between education and training.

Training versus Education

The word training sounds somewhat vague. According to Merriam-Webster's Dictionary, training means, "to form by instruction, discipline, or drill or to teach so as to make fit, qualified, or proficient." In EMT and paramedic classes, students are

taught how to perform patient assessment, the signs and symptoms of particular illnesses or injuries, and the immediate care of these problems. When an EMT or paramedic graduates, he or she can function in the field and provide care for the acutely ill citizen.

Education or educating means, "to develop mentally, morally, or aesthetically especially by instruction or to provide with information." It would seem, then, that by educating the EMTs and paramedics we teach them to think and solve problems. Robert Essenhigh of Ohio State University clearly stated the difference between training and education when he said "It's the difference between *know how* (training) and *know why* (education)."

Another view holds that training has a specific, but narrow focus. Trained people are proficient in a particular field or skill while educated people are able to see the forest *and* the trees. Education allows the person to solve problems in a productive and effective manner.

Recertification Programs

Many EMS providers offer 'continuing education' programs awarding hours toward meeting the recertification requirement. Are these programs continuing education or merely remedial training? Skill and knowledge decay is a known problem that has been repeatedly documented in the literature since Skelton and McSwain's article

appeared in JACEP in 1977. This decay is also mentioned in the EMT and paramedic curricula justifying refresher training. However, if a skill is used frequently, how important is it for that person to attend refresher training covering that skill? Perhaps time would be best spent increasing the EMS professional's body of knowledge rather than regurgitating known information.

In looking at the content for many EMS conferences it becomes apparent that lot of remedial training is offered. For example, consider the following seminar titles:

- ✓ Prehospital management of anaphylaxis
- ✓ Prehospital management of AMI
- ✓ OB/Gyn emergencies
- ✓ Scene management

How many times does a person need to hear the importance of airway man-

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agement? While some may benefit from remedial training, many would prefer enhancing their education.

Summary

For the patient mentioned at the beginning of this article, no amount of training would have made any difference. However, educating the crews to look beyond what seems to be obvious may have helped. The crew involved in this call does not need training or re-training. They did what they were 'trained' to do, but did not see the real problem. When designing continuing education programs for EMTs and paramedics, perhaps we need to move beyond the basics and return to the old days when we educated them.

EMS Resources

By John Vonhof

One good way to stay current on new information in the EMS field is to regularly read one of the magazines dedicated to an aspect of EMS in which you work. The magazines below provide in-depth articles, new product information, discussions and reports, continuing education articles, case studies, and of course, advertisements for products and services the publishers hope will be of interest to EMS providers. You may be familiar with some of the magazines. Read through the overviews of each magazine, check out their websites, and subscribe to one or two. Better yet, if they are already in your workplace, peruse them there. Spend some time inside their pages and become a better-informed EMS provider. These magazines are a good resource to keep informed about changes in EMS.

In addition to their print magazines, many of these publishers offer a host of articles in their online archives. Do

Remember that training narrowly focuses on performing a particular task or skill whereas education involves the ability to think through and solve problems when the situation deviates from the norm. Alameda County EMS Agency espouses and maintains the philosophy that EMT and paramedic instruction, both initial and recertification programs should go above and beyond mere training to provide education. Instructors can and should design programs that will invite critical thinking processes and enhance learning.

For more information, contact Bob Nixon at bonixon@co.alameda.ca.us or (510) 618-2059.

not limit your reading to the magazines only. Access the magazines' websites for a few months, and read the table of contents and posted online articles to see if you would benefit from a subscription. The usual caveat applies: evaluate them from your knowledge base. What may seem simple or common sense to you may be just what another person needs to know.

JEMS - Journal of Emergency Medical Services – JEMS is the independent voice for the improvement of patient care in the prehospital setting. Each issue offers news, commentary and educational features focused on basic and advanced life support. Each issue typically features multiple article coverage of one topic. Monthly, www.JEMS.com.

Emergency Medical Services – The Journal of Emergency Care, Rescue, and Transportation appeals to the full spectrum of EMS professionals: paramedics, EMTs, administrators and instructors working in private and public services. Informative and



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Dave Sullivan	618-2029
John Vonhof	618-2038
Godfrey Wilson	618-2028
Batthius Wrather	618-2025

balanced editorial content make it an excellent source for clinical and educational material. Contains in-depth articles on different aspects of emergency care. Monthly, www.EMSMagazine.com.

9-1-1 Magazine—Managing Emergency Communications is the magazine for the public safety communications and response industry, serving law enforcement, fire, and emergency medical services. The magazine provides information to readers in all aspects of the public safety communications and response community. Each issue contains a blend of product-related technical,

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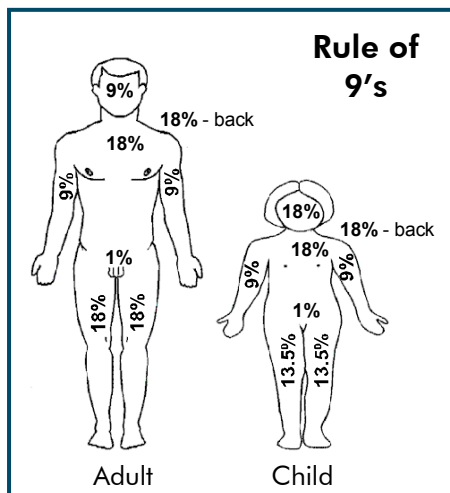


By Jim Pointer, MD

From the Medical Director

Burns & Burn Care - Summertime in California is not only fire season, it also accounts for a greater number of burn injuries than at any other time of year. In the US, approximately 2.4 million burn injuries are reported per year. Seventy-five thousand patients are hospitalized, and of those, twenty thousand are treated for burns involving at least 25% of the total body surface area. Approximately 10,000 patients a year die from injuries from burns. This article presents a brief review of the assessment and management of burn injuries.

Burns are classified by type, depth, and severity. Burns can be thermal, chemical, electrical, or radiological. By far the most common is a thermal burn, which includes injuries from flame, steam, and scalds. The traditional depth classification of burns has been first, second, or third degree. These terms have been replaced by the designations superficial, superficial partial thickness, deep partial thickness, and full thickness. The "thickness" refers to the involvement of the three layers of the skin (epidermis, dermis, and subcutaneous).



Burn severity is assessed by several methods. The classic "Rule of 9's" is familiar to all of us. The American Burn Association (ABA) classification for severity is more complex and considers the depth of the burn as well as the body surface area involved. (see ABA criteria on page 4)

Field Assessment Of Burns

Superficial burns appear red, dry, and blanch with pressure. They are usually very painful. A flash injury is an example.

Superficial partial thickness and deep partial thickness burns present with blisters, swelling, and depending on involvement of nerve endings, pain. Examples are: grease burns and burns from steam and flame.

Full thickness burns may be white and waxy appearing. Deep involvement may present as an eschar (charred appearance). In full thickness burns, lack of sensation is the rule in the burn area itself; however, a surrounding zone of second degree burn tissue is usually painful. Deep partial and full thickness burns are prone to infection, and special care should be taken to not introduce pathogens into the injured areas.

Complicating factors in burns include trauma, inhalation injuries, circumferential burns, electricity, very young and very old age, pre-existing disease, and abuse. Inhalation injuries are the leading cause of death at fires and are particularly life threatening. It is important to assess the mental status (CO poisoning), voice, lung sounds, and the presence of singed nasal hair, facial hair or soot in the pharynx. Edema may develop rapidly in upper airway

burns, requiring advanced airway management. The presence of any of these complication can hinder assessment and/or treatment. Researchers at Massachusetts General Hospital developed a simple model for predicting the risk of death from burn injuries. They established the following three risk criteria:

- Age sixty or older
- Serious injury to more than 40% of the body surface
- Presence of inhalation injury

It was established that patients with no risk factors had a 0.3% chance of death; patients with one factor had a 3% chance of death; patients with two factors had a 33% chance of death, and patients with all three risk factors had an approximate 90% chance of death.

Care Of The Burn Injured Patient - 10 Steps

1. **Protect Yourself**
2. **Stop the fire** - Use water if necessary, to stop tissue damage but quickly dry the area in large burns to prevent hypothermia. Follow trauma protocols and apply spinal precautions if indicated
3. **Rule out airway damage** - Quickly assess for inhalation injury. High flow oxygen is critical. Be prepared for intubation.
4. **Assess and expose** - After assessing the ABC's, perform a mini neurological exam (level of consciousness), and expose and examine the patient for other areas of burn. Remove jewelry, but do not remove stuck clothing.
5. **Start IV's** - Provide intravenous access with two large bore IV's (for major burns). Fluid resuscitation is particularly important; burns cause increased vascular permeability with

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Burns (Continued from page 3)

a concurrent reduction in cardiac output, a response that lasts at least 12 hours post injury.

6. **Liberally administer normal saline** - The American Burn Association consensus for fluid resuscitation is 2-4 cc's per kilogram times the body surface area for adults and for children, 3-4 cc's per kilogram times percent body surface area. So, a 100 kilogram adult with a 40% burn would receive twelve liters of fluid, half which is given over the first eight hours, and the remainder administered over the next sixteen hours.

7. **Document severity and treat the pain** - Estimate the severity of the burns using the ABA scheme or the "Rule of 9's". Administer pain relief. Morphine sulfate should be considered mandatory for relief of pain in moderate to major burns.

8. **Protect against hypothermia** - Dress the burn appropriately. For burns involving <10% body surface area, cool saline or moist dressings covered with dry outer layers is acceptable. For burns of >10% of the body surface area, dry dressings are the rule. In these larger burns,

moisture results in hypothermia and increases the risk of infection. Reduce risk of infection by wearing a gown.

9. **Elevate the burned body parts** - If possible, elevate the affected burn area. In patients with facial burns raise the head 30 to minimize swelling and to protect the airway.

10. **Consider psychological needs** - Address the patients anxiety and concern. Since most burn patients are alert, let them know what is going on. Contact a base physician for midazolam or diazepam for anxiety. If possible, transport to a burn center using the criteria shown below. Other burn patients may be transported to the closest appropriate facility.

The four most important concepts in attending major burns are:

- ✓ Airway
- ✓ Prevention of and protection from infection
- ✓ Use of dry dressings to prevent hypothermia
- ✓ Aggressive pain management

You can contact me at (510) 618-2022 or jpointer@co.alameda.ca.us if you have comments.

Criteria For Transport To A Burn Center
✓ >20% TBSA in adult
✓ >10% TBSA in patients < 10 years or > 50 years old
✓ > 5% Full Thickness Burn
✓ High Voltage Burn (>600 volts)
✓ Known Inhalation Injury
✓ Burns to face, eyes, ears, genitals, hands, feet, or major joints

Did you know...

A question came up recently whether or not paramedics can use a pre-existing IV to administer fluids and/or medications in a patient who is at home or a skilled nursing facility. The answer is yes . . . as long as the IV is properly secured, with no redness, swelling or tenderness.

Computer Simulation Challenges County's Readiness

The headline reads, "Mock Anthrax Attack 'Kills' 9000." As frightening as that sounds, it was all in preparation for what we hope never comes – a biological attack. Fortunately, this was a drill that took place in late June in a situation room at Sandia National Laboratories, testing the County's readiness to respond to a catastrophic emergency.

The attack, a computer simulation, was centered around the Berkeley Marina and was initially considered an outbreak of influenza. Once the diagnosis of anthrax had been made, the officials raced to create mass hospitals from high schools and dispense thousands of doses of Cipro. The participants worked in groups of four to six people and had eight minutes to decide how to best respond to the situation. The creators of the simulation used the latest technology, similar to that used by the Pentagon, that responds to the reactions of the participants – what you do affects how the computer changes the situation.



Participants described the simulation as 'sobering.' Not everything went well, but they learned more about how to respond to a terrorism event. Attending the program were Public Health Department officials including EMS Agency staff and Dr. Tony Iton, the new County Health Officer.

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operational, and people-oriented features, covering the skills, training, and equipment, and features on provocative issues and coverage of major incidents from both a responder and a communications standpoint. Bimonthly, www.9-1-1Magazine.com.

FireRescue Magazine offers firefighters needed information on accurate, battle-tested solutions for the dozens of fire and rescue challenges they face daily. The latest on tools, tactics and techniques are delivered in no-nonsense language, supported by photos and graphics. Monthly, www.JEMS.com.

Advanced Rescue Technology features information on technical and educational rescue material and is designed to improve efficiency and competency. Reports on big city incidents to those in rural areas. Bimonthly, www.AdvancedRT.com.

fireEMS – *The Firefighter’s Source for EMS Training* – FireEMS offers a mix of features and columns on topics ranging from incident reports/fieldwork (with the emphasis on lessons learned) to using tools and equipment, health and safety, management, and training techniques. Each month, a selection of articles focuses on a particular theme. There are 11 rotating columns on different aspects of fire service. The online version of Fire Engineering provides daily international business and industry-related news, current issue articles, and access to years of searchable editorial archives. Bimonthly, www.FireEngineering.com.

Frontline First Responder – *Disaster Management & Domestic Preparedness*. This new journal from the publishers of EMS and Advanced Rescue Technology Magazines is aimed at enhancing the tactical and operational preparedness of America's first responders, emergency providers and disaster-response personnel, through the coverage of breaking news, pertinent issues, innovative technologies and expert perspectives on issues surrounding the prevention of and response to life-threatening catastrophic events. Monthly, www.ffrmagazine.com.

Homeland First Response! – *Unified Solutions for Major Incident Readiness* – This new publication was conceived and created to accomplish a singular mission: to better prepare our nation’s first responder agencies and personnel for major incidents and disasters. Quarterly, www.JEMS.com/HomelandFirstResponse.

Next Issue: Peer Review Journals

Myths & Facts About Heat Related Problems

By Jim Morrissey, EMT-P



There is a predictable increase in heat related problems with the summer season upon us, but there is a fair amount of misconception and inaccurate information about heat illness that can negatively affect patient assessment and care. The following observations and suggestions may help in the prevention, recognition and treatment of heat related emergencies.

Myth #1: “Heat stroke victims are hot, red and dry.” 50% of heat stroke victims are sweating profusely, especially in those “exertional” situations like athletes or persons working in occlusive garments such as haz-mat, firefighting, or tactical protective gear. Look for an abnormal mental status as the primary sign of heat stroke. Anyone with an altered mental status in a hot environment is assumed to be experiencing heat stroke until proven otherwise.

Myth #2: “Immersion of a heat stroke victim in cold water is dangerous.” Cooling a heat stroke victim as quickly as possible helps reduce the devastating effects of heat stroke. The military uses this technique with good success. Other techniques such as fanning a fine mist over the patient do work, but not as quickly. Cold packs in the axilla & groin can supplement cooling techniques.

Myth #3: “Heat stroke victims have already progressed through heat exhaustion.” While this can be true, it is not necessarily the case. It has to do with rate of onset and acclimatization. A well-hydrated athlete who is not acclimatized to the heat can easily produce more heat than their body can handle and quickly become a heat stroke victim. Our bodies deal with heat as a waste product that must be “dumped” through sweating and vasodilatation. Those who work hard in extreme environments are at risk.

Fact #1: “Cardiovascular and other emergency medical calls increase significantly during heat waves.” In one city during a heat wave, deaths from cardiac and diabetes more than doubled while pneumonia deaths tripled. Infection predisposes individuals to heat illness and heat stress can exacerbate infections. Prescription and over the counter medicines can also predispose individuals to heat related illnesses.

Fact #2: “Sweat loss in humans can easily exceed 2 liters per hour during moderate exercise in hot environments.” True. Sweat loss has been measured up to over 3 liters per hour in extreme athletes (marathon runners). So, take in at least 1 liter an hour to help to offset the loss. Our bodies can only absorb about 1 liter/hour, so rest/hydration breaks are needed to balance the loss. You must also replace electrolytes by eating.

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Emergency Medical Services Agency**
A Division of the Public Health Department

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What's New on the Web



- Train-the-trainer sessions - 2004 policy update training
- EMS sponsored CE day!
- 2003 Falls Prevention manual
- EMSC program - resources for the special needs child

August is . . .

Safe Walking/Pedestrian Injury Month

*Injury
Prevention
Corner*

Did you know...

- ...Pedestrian injury is the second leading of cause of death among children 5 – 14 years.
- ...Children 5 – 9 years of age are at the greatest risk for death or injury from auto traffic.
- ...Your neighborhood street can be as dangerous as a busy highway.

- ✓ Never allow children under the age of 10 to cross the street alone.
- ✓ Teach your children to never run into the street.
- ✓ Teach your children to look **left, then right, then left again** when crossing the street.

For more information contact Barbara Cheatham
bcheatha@co.alameda.ca.us or 618-2048, or visit the Safe Kids website at www.safekids.org

Children with Special Health Care Needs

The **Emergency Information Form (EIF)** is a tool, developed by the American Academy of Pediatrics, that will ensure prompt and appropriate care for children with special health care needs. These children frequently present to ED's and other health care sites with no information describing their medical history, physical findings, and important unique management requirements. The EIF concisely summarizes a child's complicated medical history so it is available when it is needed most. More information on the EIF and a printable copy of the form can be found on our website. Contact Cynthia Frankel at (510) 618-2031 or cfrankel@co.alameda.ca.us for more information.

News & Announcements . . .



Train-the-Trainer sessions for the 2004 policies have been scheduled:

- 9/8 8:30am - 12:30pm**
Fremont Fire
3300 Capitol Ave. Bl. - Fremont
- 9/23 8:30am - 12:30pm**
Berkeley Fire
997 Cedar St. - Berkeley
- 9/24 9:00am - 1:00 pm**
Livermore/Pleasanton Fire
3333 Busch Rd - Pleasanton

Each agency must send a representative to at least one training session. The first session will be video taped. Agencies are expected to use the tape when presenting the new policies to their employees. RSVP to Kris Helander-Daugherty

khelande@co.alameda.ca.us no later than Sept. 1st.

Public Testimony on the draft policies is scheduled for the August 21st EMOC (see "Meeting Notes").

- A Continuing Education Day** - sponsored by the EMS Agency is schedule for November 4, 2002 9am - 12pm. Topics include:
- Pediatric Trauma - Dr. Jim Betts
 - The Special Needs Child - Cynthia Frankel
 - Care of the Burn Patient - Dr. Jim Pointer

The cost is \$5.00 - pre-registration is required. Check the EMS website for more information and registration forms.



Meeting Notes
EMOC: Thursday
August 21, 2003,
9:00 - 10:30 a.m.

Research Committee: Thursday
August 21, 2003, 10:30 a.m. -
12:00 pm. RSVP to Jim Pointer at
jpointer@co.alameda.ca.us or
618-2022.

**EMS website:
www.acgov.org
Click on
"departments" then
"EMS"**