

# EMS Update

An Emergency Medical Services Learning  
Resources Center Publication

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## Stingers can continue to inject venom for 20 minutes

**T**he American College of Allergy, Asthma and Immunology estimates that more than two million people in the United States are allergic to the

venom of the bee, hornet, yellow jacket or wasp.

"The most common sites for bee stings are the face and mouth, then the bottom of the feet," says Mark Graber, MD, associate professor, Emergency Medicine and Family Medicine, University of Iowa Health Care. "The mouth, pharynx and esophagus may be stung when bees or yellow jackets in soft drink or beer containers are accidentally ingested.

A patient who is stung in the mouth, pharynx or upper airway may develop airway compromise. Bystanders may want to consider transporting the patient to the hospital or contacting the local EMS service if someone is stung in the mouth or throat."

The severity of an insect sting reaction varies from person to person. A normal reaction will result in pain, swelling and redness confined to the sting site. A large local reaction will result in swelling that extends beyond the sting site. The most serious reaction to an insect sting is anaphylaxis.

Two of the most common signs of anaphylaxis are wheezing and widespread hives. Patients may also experience generalized itching and burning, swelling in the lips or tongue, chest tightness and coughing, anxiety, abdominal cramps, and low blood pressure.

Anaphylaxis is the most extreme form of an allergic reaction, accounting for 400 to 800 deaths in the United States per year. An estimated 40 to 100 of those deaths are due to anaphylaxis caused by insect venom.

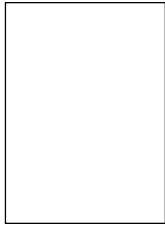
Anaphylaxis can occur within minutes after the insect sting and may be life threatening or even fatal if untreated. Therefore rapid recognition and aggressive prehospital therapy are essential. Signs and symptoms of anaphylaxis usually appear within 1 to 30 minutes of introduction of the venom.

"EMS personnel must be able to distinguish between the body's usual response to a bee sting and an allergic reaction, or anaphylaxis," says Graber.

"A severe local reaction is not anaphylaxis. Medications such as epinephrine, diphenhydramine (e.g. Benadryl) and H-2 blockers

*continued on page 2*

# Stings cont'd



**Mark Graber, MD**

*Anaphylaxis is the most extreme form of an allergic reaction, accounting for 400 to 800 deaths in the United States per year. An estimated 40 to 100 of those deaths are due to anaphylaxis caused by insect venom.*

(e.g. cimetidine) are all used to treat anaphylaxis," says Graber.

If untreated, such an anaphylactic reaction can proceed rapidly to death. In fact, more than two thirds of the patients who die of anaphylaxis do so within the first half hour.

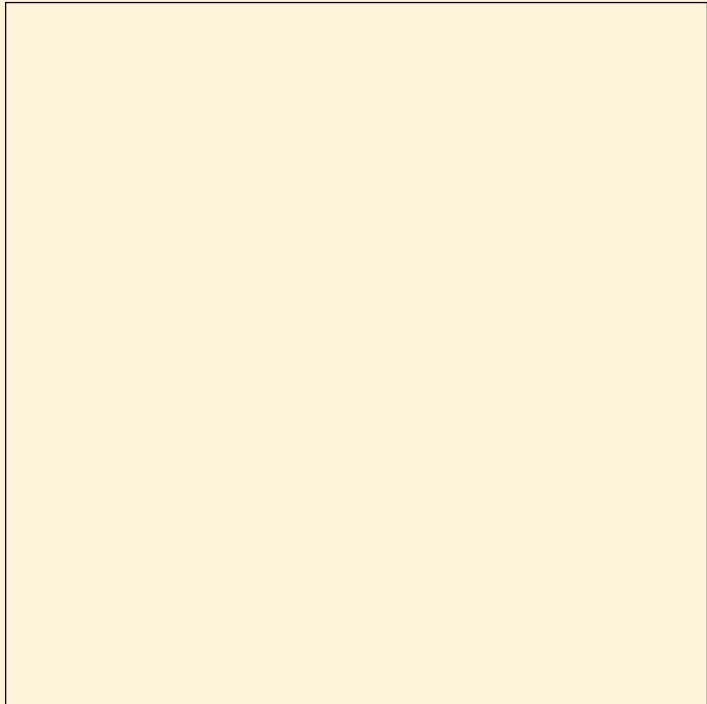
Only honeybees leave the stinger in the skin; wasps, yellow-jackets, etc, simply sting the patient and fly away. The stinger of the honeybee is barbed, so the bee cannot withdraw it. Because the stinger remains in the skin, it can continue to inject venom for up to 20 minutes after the bee has flown away.

"Contrary to popular belief," says Graber, "the main determinant of how much venom is injected into the victim is in the length of time that the stinger is in the skin, not how the stinger is removed. Thus, stingers can be removed by any means as quickly as possible. This may include scraping the skin, however tweezers may also be used since this does not result in any additional venom being injected."

Health care providers should determine whether the patient has been prescribed an emergency epinephrine (Adrenaline) drug kit (eg Epi-Pen™) and whether the medication was administered before EMS personnel arrival.

Graber says most patients coming to an emergency room do not have Epi-Pens™. Although, he says EMS personnel should look for allergy bracelets or necklaces and ask the patient, friends or family if the patient is allergic to bee stings. Responders should realize that if a patient has an allergy to one type insect, bee or wasp, it does not mean they are allergic to other bees, wasps or insects.

"Some patients have a recurrence of symptoms up to 48 hours after the initial episode of anaphylaxis," adds Graber. "Continuing diphenhydramine and cimetidine for 48 hours is prudent in the discharged patient with significant anaphylaxis."



## EMSLRC adjunct faculty bring expertise to students

"Our adjunct faculty have a lot of credibility in EMS throughout Iowa," says Doug York, REMT-PS, director, EMS Learning Resources Center. "They bring a unique perspective on various topics from clinical and educational standpoints. Our adjunct faculty have reputations of being extremely competent and knowledgeable in EMS."

Lee Ridge assists with more EMSLRC courses than any other adjunct faculty member in Iowa. Ridge, a paramedic specialist, is a flight paramedic with the University of Iowa Health Care Air Care helicopter based at Covenant Medical Center, Waterloo.

Ridge, who has been helping the EMSLRC since 1987, teaches approximately 25 courses each year, such as Advanced Cardiac Life Support, Neonatal Resuscitation, Pediatric Advanced Life Support, Prehospital Trauma Life Support, EMS Refresher, and Critical Care Paramedic training. He also helps with the national registry practical exams.

"Our adjunct faculty are certified instructors in the particular courses they teach," says York. "They help us throughout the state and go wherever our course is being held."

York says he also appreciates the adjunct instructors helping the EMS Learning Resources Center keep the student-instructor ratios low in courses.

Ridge says that he has seen so much change in EMS that he is genuinely interested in sharing what he knows.

"I teach because I hope I bring my years of experience to all the courses I help with," says Ridge.

He says he believes in the mission of the EMSLRC and enjoys sharing his experiences with other providers.

"I have had the opportunity to teach along side all of the EMSLRC staff members in a variety of situations and have learned a great deal from each of them. They exude professionalism and a willingness to share their knowledge to further emergency care education.

"I get personal satisfaction from teaching with the EMSLRC staff," says Ridge, "because I keep my skills and knowledge sharp. I also enjoy seeing the excitement in people's eyes when they learn."

"Our students benefit from the expertise our adjunct instructors bring to the courses," adds York.

*Sigourney's Keokuk County Health Center constructed a new, safe landing zone for an emergency helicopter adjacent to the Health Center. The patients and community benefit from a helipad to provide emergency air transport landing capabilities in Sigourney.*



## Keokuk County Health Center gives community new helipad

**K**eokuk County Health Center, has given the Sigourney, Iowa community a new emergency helicopter helipad.

Bill Halleran, director, Facility Services, Keokuk County Health Center (KCHC) and a part-time EMT-Intermediate with Keokuk County Ambulance Service, coordinated the helipad construction.

"Previously, any incoming helicopter landed in the hospital parking lot," says Halleran. "We shut down the parking lot until the patient was on board and the helicopter had departed. We staged ambulances at all parking lot entrances and exits to prevent vehicles from coming or going, but that left those ambulances unavailable for transports."

"We're grateful for Keokuk County Health Center's commitment to

construct a new helipad for patients in the Sigourney area," says Jeffrey Gauthier, administrative associate for Emergency Medical Services, University of Iowa Health Care.

"While the sharing of the hospital's parking lot had served the hospital and air medical responders, the increased traffic and logistics of securing a safe landing area had increasingly become a challenge," says Gauthier. "Keokuk County Health Center and the community came together with generous donations to make it a cost-effective and safe landing facility."

The community raised \$12,000 for the helipad through the 2001 Southeast Iowa Duck Race.

Halleran visited Iowa helipad sites including those in Bloomfield, Ottumwa and Marengo to learn about the various aspects. He contacted Gauthier for his comments on helipad construction.

"Jeff Gauthier and site coordinators gave me suggestions such as adding a flashing light on the wind sock and communications tower, says Halleran."

Gauthier says Keokuk County Health Center extended every courtesy and cooperated fully with his recommendations to design and construct a first-rate helipad.

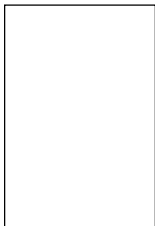
"They have provided the Health Center with a new, safe landing zone for an emergency helicopter," adds Gauthier.

Halleran says the new landing zone is more of a controlled setting.

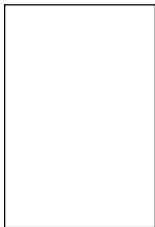
"The previous location was stressful for the pilots at times when the landing area would become a dust bowl from the helicopter rotors churning up dirt or snow or throwing debris on cars," he adds.

Federal Aviation Agency (FAA) guidelines focused on safety issues. Halleran submitted a landing site layout plan to the FAA identifying measurements, buildings, trees, and towers in the area. He says the Federal Aviation Agency is quite pleased with the new and improved helipad and landing zone.

Ninety percent of the rapid air transports out of Keokuk County Health Center are University of Iowa Health Care Air Care transports.



**Bill Halleran**



**Jeff Gauthier**

# Medical examiner death investigators gather evidence

*A medical examiner death investigator gathers information, evidence and makes preliminary determinations as to the cause and manner of death. They respond to deaths due to circumstances such as alcohol and drugs, asphyxia, ingestion, lightning, stabbing, strangulation, and suicide.*

The role of the medical examiner death investigator (ME-I) has become more important in recent years in Iowa as many physicians find it difficult to meet the medical examiner death investigation load.

The ME-I functions as a physician extender and gathers information, evidence and makes preliminary determinations on the cause and manner of death.

Rosemary Dalton, RN, is one of five non-physician medical examiner death investigators in Johnson County who rotates call coverage.

"We notify primary care physicians of patient deaths and determine if the death is a medical examiner case or an attended death, and if it was sudden, expected or unexpected," says Dalton.

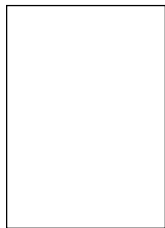
ME-Is communicate with families of deceased persons regarding the death and the investigation process. In addition, they coordinate with organ procurement agencies as needed. They also develop plans for the disposition of bodies.

A medical examiner death investigator candidate must have at least three years of experience as an EMT-Intermediate or paramedic, physician assistant, registered nurse, or nurse practitioner.

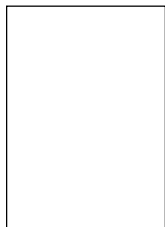
Dalton attended a five-day Medicolegal Death Investigator Training Course in St Louis which focused on death scene investigation techniques and procedures.

David White, DO, chief medical examiner, Johnson County, is one of five physician medical examiners appointed by the county.

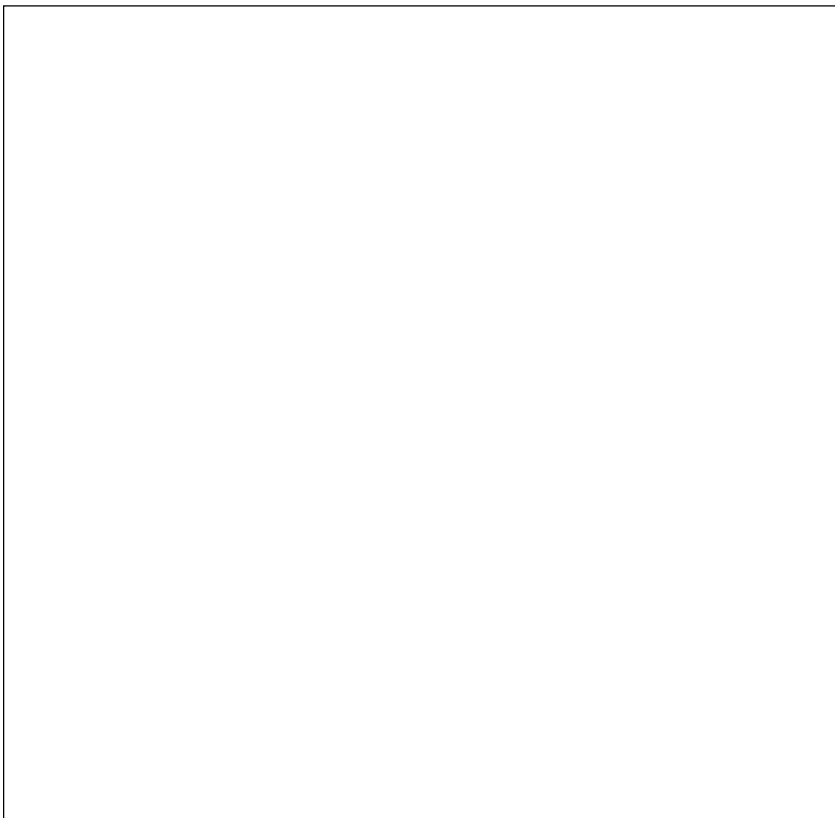
"The ME-Is have helped streamline the death investigation process for Johnson County. The five medical examiners work closely with the ME-Is as well with the State Medical Examiners office in Des Moines," says White.



**Rosemary Dalton**



**David White, DO**



## Retired, but still making a difference

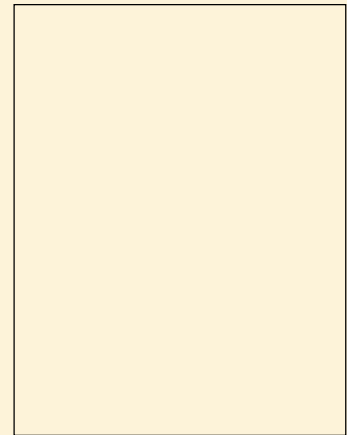
Rosemary Dalton, RN, retired May 13 from University of Iowa Health Care after caring for critically ill or injured patients for 36 years.

Dalton joined the Emergency Treatment Center in 1980 after many years of experience in critical care units and the operating room.

"I've always liked the emergency nursing atmosphere," says Dalton. "I like working with the patients who have immediate needs. I feel I can make a difference with them and I prefer the immediate interaction with patients who are critically ill or injured."

Kathy Bainbridge, RN, staff nurse, Emergency Treatment Center, worked with Dalton for more than 20 years.

"Rosie has always been willing to go the extra mile for the ETC," says Bainbridge. "She has an eagerness to continually learn more. Rosie is certified by the Emergency Nurses' Association and has multiple



**Rosemary Dalton**

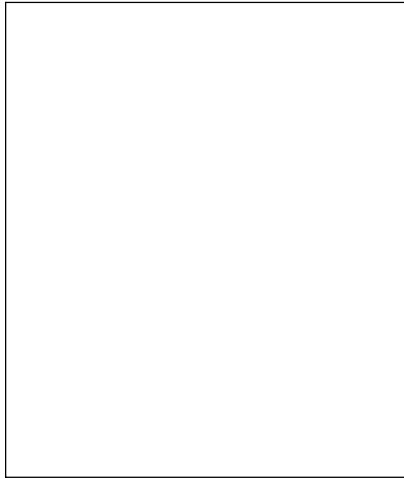
practice certifications. In addition, she has taken on the Sexual Assault Nurse Examiner (SANE) and Medical Examiner Death Investigator (ME-I) roles. Her retirement is going to be active with her SANE and ME-I schedules," adds Bainbridge.

"Rosie has seen the days before we had CT scans and MRIs to the sophisticated equipment and procedures available in health care today," adds Bainbridge.

Dalton says she appreciates the people she has worked with and their 'can do' approach to emergency patient challenges.

# They'll remember her dispatching expertise

*Sue Newman, at right, retired April 19 after 20 years of emergency dispatching with University of Iowa Health Care. Newman maintained constant contact with the dispatched emergency helicopter or vehicle until it reached its final destination.*



**S**ue Newman remembers growing up listening to an emergency radio in her father's ambulance.

Years later she found herself dispatching emergency helicopters. Newman fielded requests for the two Air Care emergency helicopters and the Mobile Critical Care Unit with University of Iowa Health Care for more than 20 years until her retirement April 19.

Newman will be remembered for coordinating multiple emergency helicopters arriving at University of Iowa Hospitals and Clinics (UIHC) in February 1996. Seven Wartburg College, Waverly, Iowa, students had been exposed to carbon monoxide poisoning and needed immediate treatment in the UIHC hyperbaric chamber. Two patients arrived in the same helicopter while five arrived on separate aircrafts.

"Sue landed six helicopters on our roof within 30 minutes," says Chuck Wendler, RN, Air Care flight nurse. "She always maintained constant contact with the helicopter until it reached its final destination."

In addition to coordinating emergency helicopter flights and ground transfers, Newman updated flight crews, physicians and nurses on patient conditions. She also kept detailed records on all emergency calls and transfers.

## Three serve American Heart Association 25 years

Robert Poindexter, director, Emergency Cardiac Care programs, American Heart Association, St Louis, salutes Rosemary Adam, Ginny Henry, and Doug York for serving the American Heart Association (AHA) for more than 25 years.

"Rosie, Doug and Ginny have taught numerous emergency cardiac care (ECC) courses, volunteered for fund-raising activities, were ambassadors for AHA in grassroots activities, mentored and assisted other volunteers, and acted as leaders to promote our mission," says Poindexter.

"Rosie Adam served as ECC chair for years, was key in promoting Advanced Cardiac Life Support (ACLS) programs, served as national faculty for ACLS, and conducted studies and research that were nationally accepted," he says.

Poindexter says Henry provides key grassroots support to implementing Chain of Survival programs in Iowa and has been active with the American Heart Association in her area.

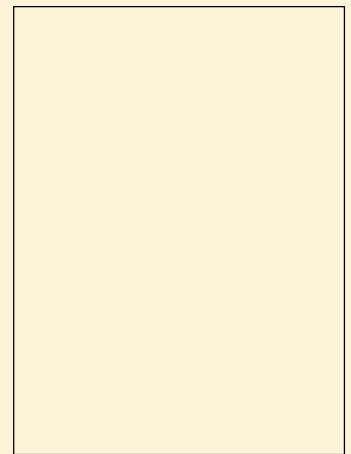
He also says York's guidance as a source on all regional and Chain of Survival issues has been a vital factor in the success of the ECC programs in Iowa.

"On behalf of the American Heart Association, we offer our sincerest thanks for their contributions to the support and promotion of the AHA mission.

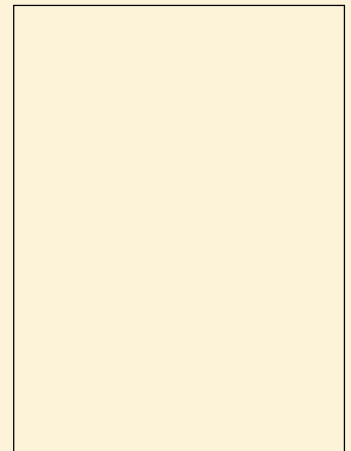
"Their time and commitment have strengthened the Chain of Survival within the ECC Network and throughout the community.

"We thank them for their hard work, energy and effectiveness that have prepared us for the work still to be done," Poindexter adds.

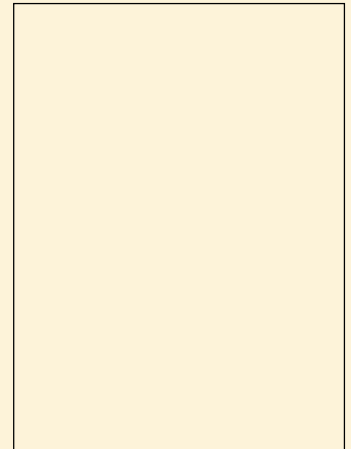
Adam and Henry are both nurses and paramedic specialists with the Emergency Medical Services Learning Resources Center. York is a nationally registered paramedic, paramedic specialist and director of the EMS Learning Resources Center.



Rosemary Adam



Ginny Henry



Doug York

**Rosemary Adam, EMT-PS, RN; Ginny Henry, EMT-PS, RN; and Doug York, REMT-P, PS, are all EMS instructors for the EMS Learning Resources Center.**

**For more information on AHA programs, call Ginny Henry, EMSLRC Training Center coordinator, at (319) 353-7495.**

# SANE: improves the response to sexual assault victims

**Sexual Assault Nurse Examiner (SANE), Cindy Funk, RN, scrapes under the fingernails, at right, to gather evidence from a sexual assault victim. University of Iowa Health Care Emergency Treatment Center has a designated room exclusive to sexually assaulted patients.**

**R**ecognizing the horror of sexual assault and the devastation it can cause victims and their significant others, Sexual Assault Nurse Examiners (SANEs) strive to ensure that victims are not retraumatized by the evidentiary exam.

A SANE is a registered nurse who has advanced education and clinical preparation in examination of sexual assault victims. They help preserve the victim's dignity and reduce psychological trauma. SANEs are technically skilled evidence collectors who display compassion and acknowledge the patient's dignity during the examination.

Cindy Funk, RN, staff nurse, Emergency Treatment Center, University of Iowa Health Care, has been a Sexual Assault Nurse Examiner since the program began in Johnson County in July 2000.

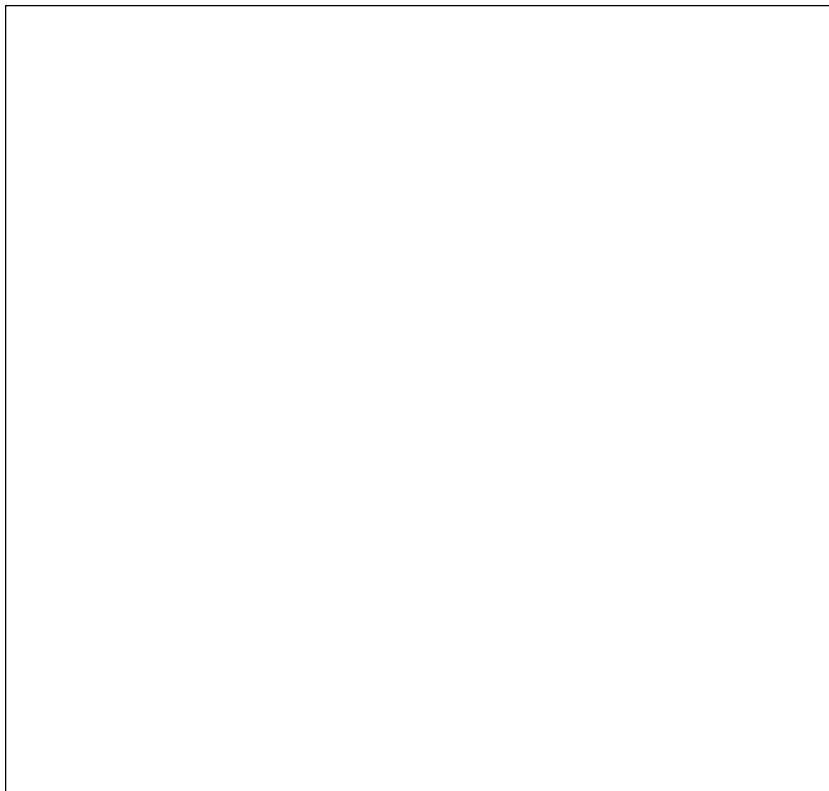
"All adults and children who are sexually assaulted deserve to receive the prompt and compassionate emergency medical-forensic care that SANEs offer," says Funk.

"We arrive in our street clothes and are not wearing emergency room staff attire," says Funk. "An exam is never done against the victim's will, no matter what age. The patient's comfort level is better when they know we are specially trained in sexual assault.

"Sometimes the victims feel it is their fault because drugs or alcohol was involved. I reassure them that no one is judging them."

Evidence collected by SANEs indicates sexual penetration or activity, and establishes if there was victim consent; this is particularly important in the prosecution of nonstranger cases.

"Even if the victim does not press charges, they get the counseling, medical treatment and moral support they need," says Funk.



An experienced SANE is adept at identifying physical trauma and psychological needs, ensuring that victims receive appropriate medical care, collecting evidence, documenting injuries and other evidence, and providing necessary referrals.

Sexual assault victims are often not allowed to eat, drink or urinate to

avoid destroying evidence while they wait for a physician or nurse to conduct the evidentiary exam.

SANEs can expedite the exam and provide prompt and compassionate emergency care. Many Sexual Assault Nurse Examiners are obstetric/gynecologic or emergency room nurses.

## EMS Update

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**Director:** Doug York  
**Writer/Editor:** Jeri Irvine

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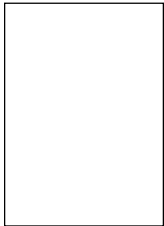
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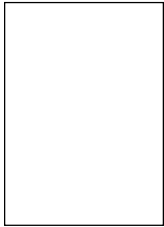
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# Critical Care Paramedic training program meets patient transport needs

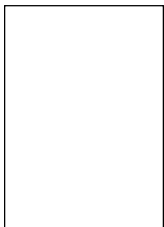
*Rosemary Adam, at right, prepares to demonstrate the airway lab portion of the Critical Care Paramedic course.*



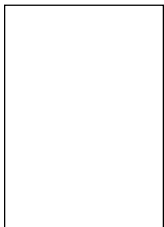
*Rosemary Adam*



*Tim Peterson, MD*



*Steve Mercer*



*Richard Young*

The Critical Care Paramedic Training program, developed in 1996, is designed for experienced paramedics and offers classroom and hands-on critical care instruction.

"The use of Critical Care Transports (CCTs) has increased in recent years to transport critically injured or ill patients from one health care facility to another," says Rosemary Adam, RN, EMT-PS. "This type of transport requires individuals with specialized knowledge and advanced skills and experience."

This requirement has led to the development of standardized training of the Critical Care Paramedic (CCP).

Adam, a nurse instructor with the EMS Learning Resources Center coordinates the CCP courses and was instrumental in developing the Iowa CCP program.

"Individuals instructing this curriculum must be knowledgeable in the area being presented. We use local talent to teach the CCP curriculum," says Adam. "Our instructors are physicians, nurses and paramedics with extensive experience in critical care."

Tim Peterson, MD, chief/medical director, Iowa Department of Public Health, Bureau of EMS, says enhancement in patient assessment and monitoring skills will improve the care available to critically ill and injured patients in Iowa.

"The CCP/CCT endorsement," says Peterson, "provides flexibility for the EMS system to grow in Iowa by providing more options for hospitals to match the needs of the patients to appropriate resources, possibly without sending a nurse or physician, or calling a helicopter for critical care transports."

The Critical Care Paramedic curriculum for the State of Iowa was

developed by a group of Iowa EMS educators organized by Steve Mercer, EMT-PS, education coordinator, Iowa Department of Public Health, Bureau of EMS. Iowa physicians identified the knowledge and skills an Iowa paramedic would need to safely and effectively transport critical care patients.

Individuals selected to attend the Critical Care Paramedic program must hold a valid Iowa Paramedic Specialist certification and have two years of active emergency experience.

The 90-hour course includes didactic (classroom) time, skill labs and clinical rotations.

The curriculum is designed into modules such as medical/legal issues; pharmacology; respiratory; cardiovascular; renal; clinical lab values and interpretations; and multiple organ dysfunction.

Clinical experiences for the CCP participant are to be completed at hospitals where there are multiple opportunities to participate in the care of critically injured/ill patients.

Upon successful completion of all the training program's requirements, course participants will receive the Critical Care Paramedic endorsement

attached to their Iowa Paramedic Specialist certification.

Three Washington County Ambulance Service, Washington, Iowa, paramedic specialists have taken the CCP course already and three are registered for upcoming CCP courses through the EMSLRC.

Richard Young, REMT-P, director, Washington County Ambulance Service, took the May 2002 Critical Care Paramedic course at the EMSLRC to increase his paramedic knowledge.

Young says he appreciated learning how to assess a critically ill or injured patient before leaving the hospital when on a transfer.

"I found it helpful to define the bloodwork, look at the BUN and creatinine, and see how the kidneys were functioning before transporting the patient," says Young.

"It was very beneficial for me to see all the equipment we could potentially use. We went to the ICUs and saw equipment and monitors actually on patients.

"I particularly appreciate the skills I learned such as the rapid sequence intubation and chest tube placements," adds Young.

# EMSLRC course calendar

		MD (CMEs)	RN (CEUs)	EMS (CEHs)
<b>2002</b>				
Jul 16-Aug 10	Washington: Critical Care Paramedic	—	—	—
Aug 1-2	Sioux City: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor/Instructor Renewal	Varied	Varied	Varied
Aug 19, 21, 26, 28	Iowa City: Basic Cardiac Rhythm Interpretation and Introduction to 12 Lead	—	Varied	Varied
Sep 10	Iowa City: Iowa Paramedic Outreach Training (ICN) begins	—	—	—
Sep 12-13	Iowa City: Advanced Trauma Life Support Student and Refresher	19	—	—
Sep 14-15	Carroll: Advanced Medical Life Support	—	1.48	14
Sep 19-20	Iowa City: Trauma Nursing Core Course	—	1.4	14
Sep 21	Dubuque: Advanced Trauma Life Support Refresher	5	—	—
Sep 26-27	Iowa City: APLS—The Pediatric Emergency Medicine Course	16.5	1.8	18
Sep 28	Iowa City: Advanced Cardiac Life Support for the Experienced Provider	8.5	0.96	9
Sep 30-Oct 1	Iowa City: Advanced Medical Life Support	—	1.48	14
Oct 3-4	Creston: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor/Instructor Renewal	Varied	Varied	Varied
Oct 7-8	Iowa City: Pediatric Education for Prehospital Professionals	—	1.45	15
Oct 8-Nov 2	Peosta: Critical Care Paramedic	—	—	—
Oct 14-15	Iowa City: Prehospital Trauma Life Support Basic/Advanced Provider	—	1.6	16
Oct 21-22	Ottumwa: Trauma Nursing Core Course	—	1.4	14
Oct 24-25	Iowa City: Advanced Trauma Life Support Student	19	—	—
Oct 25	Iowa City: Advanced Trauma Life Support Refresher	5	—	—
Oct 30	Iowa City: Prehospital Trauma Life Support Instructor Update	—	—	4
Oct 31-Nov 1	Burlington: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor/Instructor Renewal	Varied	Varied	Varied
Nov 2	Iowa City: Prehospital Trauma Life Support Instructor/Coordinator	—	.7	7
Nov 4	Iowa City: EMT-Basic Training Program begins	—	—	—
Nov 4-6-11	Iowa City: Pediatric Advanced Life Support Provider	—	1.4	14
Nov 9-10	Peosta: Pediatric Education for Prehospital Professionals	—	1.45	15
Nov 21-22	Iowa City: Advanced Trauma Life Support Student	19	—	—
Nov 22	Iowa City: Advanced Trauma Life Support Refresher	5	—	—
Dec 12-13	Iowa City: Pediatric Education for Prehospital Professionals	—	1.45	15



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