

EMS Update

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Meth labs are increasingly becoming a public hazard. This photo of a mobile car lab may help emergency personnel, firefighters and law enforcement officers identify a meth lab.



Meth lab chemicals ignite, present danger to EMS responders

Methamphetamine (meth) is the most commonly manufactured illegal drug. An investment of a few hundred dollars in over-the-counter

medications and chemicals can produce thousands of dollars worth of methamphetamine. Methamphetamines are synthetic amphetamines or stimulants that are produced and sold illegally in pill form, capsules, powder and chunks.

Methamphetamine manufacturers change the chemistry of alcohol, acetone, ether, heavy duty drain cleaners and ephedrine or pseudophedrine, an ingredient found

in many cold medications. It takes about 680 tablets of cold medicine to produce one ounce of meth. The assortment of dangerous chemicals and common household items are mixed with no safety or environmental precautions frequently resulting in explosions.

"Meth lab mistakes can be catastrophic and they are increas-

continued on page 2

Meth labs cont'd

The chart, at right, shows the dramatic increase in meth lab seizures in Iowa since 1996.

ingly becoming a public hazard," says Bill Elder, REMT-P, CCP, education coordinator, Sartori Paramedic Service, Cedar Falls, Iowa. "Meth labs present extreme dangers from explosions and exposure due to hazardous chemicals. Breathing the vapors and handling substances can cause serious injury and death."

Police and firefighters must take special safety courses to handle meth situations because of the likelihood of explosions, invisible poison gases and other dangers.

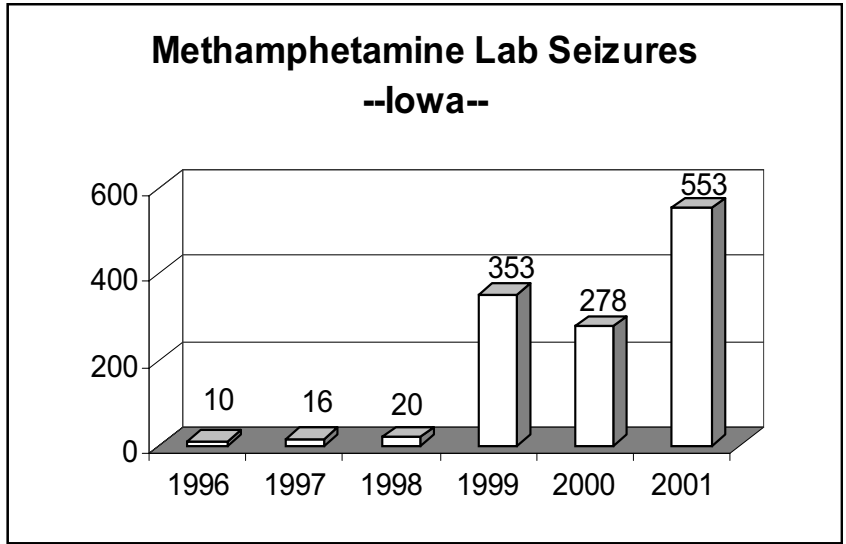
"If something goes awry in a meth lab, the manufacturers or 'cooks' will leave, then firefighters walk in on it when there is an explosion," says Elder. "A gallon of ether, one of the ingredients used to make meth, has the same explosive properties as five sticks of dynamite."

Often the police will have had an address under surveillance for meth lab activity, and if there is an explosion they advise EMS personnel of the danger.

"Usually the initial call for EMS to a meth lab explosion is back-up for the fire department; to make sure the firefighters are okay," says Elder. "The fire departments control the fire and preserve evidence. We monitor the firefighters' blood pressure, vital signs, and oxygen and determine if they are fit to return to the scene. When the Iowa Drug Enforcement Agency arrives, we do the same monitor their agents."

Many of the contaminants present during meth's cooking process can cause health problems including respiratory, skin and eye irritation, headaches, nausea and dizziness. Short-term exposures to high concentrations of some of these chemicals, such as those firefighters, EMS or law enforcement officers face when they first enter a lab, can cause severe health problems including lung damage and burns to different parts of the body.

A "cold cook" method uses liquid ammonia, dry ice and acetone. This



as of 4/15/02

Source: U.S. Drug Enforcement Administration



Bill Elder



Jackie Heinle

method can yield a batch of meth in less than an hour making it much harder to catch the criminals.

"To produce meth, drug makers often steal anhydrous ammonia, a commonly-used fertilizer in agriculture, from chemical dealerships," says Elder. "It is commonly stored as a gas. The meth manufacturer will drain the anhydrous into a 20 lb propane tank, the same one you might have on your gas outdoor grill."

"Because anhydrous ammonia is an extremely hazardous substance, the potential for explosion is great, especially when inexperienced people mix highly volatile chemicals," adds Elder.

The improper storage and transport of anhydrous ammonia places law enforcement officers, fire and medical responders, and the public at great risk.

"We're finding smaller labs in cars, storage lots, trailers, motel rooms ó where they can bring all their equipment and fit it in one small room," says Elder.

Properties used to produce meth will usually be found with a lab-like setting; including containers of chemicals, heat sources, and various types of lab equipment.

Unusual quantities of cold medications or antifreeze in strange places such as the bedroom or bathroom will be noticed.

The most productive laboratories are commonly located in rural areas

to avoid detection by law enforcement. Often these labs are larger and produce strong odors from the ether, ammonia, or acetone which smell like cat urine or nail polish remover and can be easily detected by neighbors.

"One kid was injured while cleaning up a roadside ditch," says Elder. "He picked up a thermos that had meth lab chemicals inside and it exploded."

Jackie Heinle, RN, nurse manager, Burn Treatment Center, UI Health Care, sees the victims of methamphetamine lab explosions.

"Many years ago," says Heinle, "the burn injuries from meth lab explosions were only over 10-15 percent of the body. Now we see 50-60 percent burn injuries. The labs are bigger and the product is more volatile and flammable. And, tragically, innocent children and others are getting hurt when the meth labs explode."

Heinle says that, unfortunately, the patients don't admit they are meth users or were in a meth lab explosion. The physicians need to know if they should treat a chemical injury or a burn.

"Initially we care for them as a critically injured burn patient," says Heinle. "The next day we receive the urine specimen results and see their drug withdrawal symptoms. Then we must adjust the patient's plan of care and pain management based on the withdrawal symptoms."

Appropriate equipment required to transport children in ambulance

Prehospital care providers have appropriate equipment and supplies to care for ill and injured children and infants.



Katrina Altenhofen

According to the National Highway and Traffic Administration (NHTSA), approximately six million children are transported by emergency medical services (EMS) vehicles each year in the U.S. There are risks of injury associated with ambulance transport that can be minimized.

Unlike the well developed and publicized child passenger safety standards and guidelines, specifications for the safe transport of ill and injured children in ambulances are still being developed. Data shows that the crash rate per mile traveled for ambulances is higher than for domestic vehicles.

Nadine Levick, MD, assistant professor, Division of Pediatric Emergency Medicine at Johns Hopkins Children's Center, Baltimore, is researching pediatric transportation in EMS vehicles. Under a grant provided by the Emergency Medical Services for Children (EMS-C) and NHTSA, the two studies hope to improve the safety of pediatric patients being transported.

The first project observed ambulances arriving with children at an urban pediatric emergency department to see how children were being transported. Levick's study revealed that oxygen tanks and other emergency equipment sit unrestrained in the backs of ambulances, as well as many children, either as patients or passengers.

With the second project, Levick's team is working with engineers in ambulance crash tests to figure out how potential projectiles like medical supply boxes can be stored and secured without compromising care.

"The data from these and other detailed safety tests are currently being analyzed and will be an integral element in the development of safety guidelines for the transport of ill and injured children," says Katrina Altenhofen, EMT-PS, MPH, EMS-C



Coordinator, Bureau of EMS, Iowa Department of Public Health.

Emergency Medical Services for Children is a national initiative designed to ensure that emergency medical care is available for all ill or injured children and adolescents.

A national consensus committee, sponsored by the EMS-C program, is developing preliminary recommendations for pediatric EMS transport safety until scientific research is completed and released.

"Changing EMS provider practices and making the ambulances themselves as safe as possible will require true cross-disciplinary work," according to Altenhofen.

NHTSA's Child Passenger Safety Technician curricula specifically addresses the issue of not using child passenger safety seats after they have been involved in a crash.

"Child passenger safety seats are designed for passenger vehicles and are only tested to withstand one crash—one crash only," says Altenhofen. "Therefore after a crash, a car seat should be destroyed and the ambulance not use that seat for transport again.

"It is important to note that EMS providers need to read the instructions of all equipment before using it on a patient. Various stretchers no longer allow the use of child passenger safety seats with their cot," adds Altenhofen. "I recommend ambulance crews review the vehicle owners manuals to see how child passenger safety is addressed for that specific vehicle."

More information on pediatric emergency care can be found on the the EMS for Children website at www.ems-c.org

State medical toxicologist shares poison expertise



Edward Bottei, MD

Edward Bottei, MD, is Iowa's poison expert. Bottei recently became medical director of the Iowa Statewide Poison Control Center and state medical toxicologist, Iowa Department of Public Health, Division of Health Protection and Environmental Health at St Luke's Regional Medical Center, Sioux City, Iowa.

Bottei is on call 24 hours a day to speak with physicians seeking advice on how to manage a patient with possible poisoning.

"Most of the calls I receive are from emergency room physicians who ask if poisoning fits their patient's symptoms," says Bottei.

Bottei was also named clinical assistant professor July 1 with the Department of Medicine, Division of Pulmonary Diseases, Critical Care and Occupational Medicine, University of Iowa Health Care.

"We look forward to working with Dr Bottei in several state-wide initiatives in toxicology," says Fred Hansen, MD, PhD, clinical professor, Program in Emergency Medicine, UI Health Care.

"I'm anxious to teach toxicology in the UI community and join the experts there to conduct toxicology research," says Bottei.

The Iowa Statwide Poison Control Center hotline is 1-800-222-1222.



He flies emergency patients safely through 3,000 transports

Byron Edgington, a pilot since 1983 for AirCare at University of Iowa Hospitals and Clinics (UIHC), recently completed his 3,000th medical emergency flight.

On May 23, 2002, Edgington flew a patient from Morrison, Illinois to UIHC marking his notable flight. Ninety percent of the 3,000 AirCare transports were to UIHC.

"I think I have the best job in the world," says Edgington. "It's not very often people can use their skills to help others when they need it the most. It has been very gratifying that I've been able to help critically ill or injured patients."

Edgington says AirCare pilots must get their passengers to their destination as fast as possible for the patient to have the optimum chance for recovery.

"My goal is to give this patient and flight crew an uneventful flight," says Edgington. "I take them from point A to point B. The flight nurses that sit behind me do the work. I become a gopher once we hit the ground. I take the cot out and arrange it to receive the patient."

"The crew of ten nurses and four pilots is like a family. It's a team effort and there is very little turnover. After so many years, we pilots learn when and where each one wants assistance," he adds.

Edgington says as the pilot, his chief concern is the aircraft, monitoring the communication systems, and the weather.

Don Crowl, pilot, and aviation site manager at UIHC, has worked with Edgington for 16 years.

"Byron has never had an aircraft accident or incident of any kind," says Crowl. "He has extremely good judgment and is very cautious in all aspects of flying."

The pilots do not take any risks. "In the 3,000 flights, there were about six times that I had to land as a precaution due to bad weather," says Edgington. "We are totally committed to safety."

"I check up on patients through the flight nurse who is assigned to the follow up call. I like to know how a patient does."

Edgington recalls a rewarding flight.

"There was a 7-year-old child many years ago who wasn't expected to live through the night after a farm accident. I flew him to UIHC, and three weeks later he walked out of here with his parents," he says. "Seeing just one of those is enough to make my career worthwhile."

Three other pilots and 10 nurses comprise the AirCare team.

Rural health study identifies risk factors for injury



Craig Zwerling, MD, PhD

Studies show that injuries are more common in rural areas than in urban communities.

University of Iowa researchers conducting the Keokuk County Rural Health Study want to identify the risk factors for these injuries.

"We want to identify people in rural areas with higher risks for injuries and ultimately help prevent such injuries from occurring," says Craig Zwerling, MD, PhD, professor and head, Department of Occupational and Environmental Health, University of Iowa Health Care.

The researchers studied three groups of Keokuk County (Iowa) residents including farmers, rural nonfarmers and townspeople.

Participants were asked about a number of risk factors: seatbelt use, motorcycle and all-terrain vehicle use, firearms in the home, and alcohol abuse.

Researchers found that elderly farm men were much less likely to wear seatbelts than farm women, younger farm men or other members of the rural community. Also, farmers were twice as likely as rural nonfarmers and three times more likely than townspeople to have used an all-terrain vehicle.

Farmers and rural nonfarmers were more likely than townspeople to have firearms in their homes. The study authors are concerned because other studies have shown that farmers have higher rates of depression and suicide than people in other occupations.

"This study will identify where high-risk people are so we can develop ways to intervene, change their behaviors and lower the risks of injury and/or death," says Zwerling.

The 10-year study is in its seventh year. For more information about the study, you may contact Zwerling at (319) 335-4428 or craig-zwerling@uiowa.edu.



EMS Update

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Would you like to read more about them in the *EMS Update*?

Please e-mail your questions and suggestions to irvinej@uihc.uiowa.edu.

All e-mails will receive a response.

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People with disabilities are welcome at the University of Iowa Hospitals and Clinics where reasonable accommodations will be made upon request. Please contact the UIHC Department of Social Service, (319) 356-2207.

Donations are divided into two categories: The first is the heartbeating donor who may donate his heart, liver, kidneys, lungs, intestine and pancreas. The second type of donor is the donor without a heartbeat, often called the tissue donor. Corneas, skin, bones, tendons, heart valves and saphenous veins can be used from these donors.



EMS role important in organ and tissue donation

Frequently, paramedics and EMTs are first on the scene of an accident that may result in organ or tissue donation.

The role of emergency health care professionals in the donation process takes many forms.

"Since information gathered at the scene weighs heavily in the evaluation of prospective donors, EMS providers are a vital link in the process," says Suzanne Conrad, Iowa Donor Network, (IDN) executive director.

"Accurate and concise documentation is critical to providing a clear picture of organ function and suitability for transplantation.

"Perhaps the most vital role is identifying individuals who are dead or near death and who carry a donor card or other indication of their

intent to donate," Conrad says.

More than 350 Iowans are currently waiting for organs.

Donations are divided into two categories: The heart-beating donor is typically a victim of an isolated head injury, cerebrovascular accident, asphyxiation, drowning or drug overdose, in which isolated trauma or injury to the brain tissue has occurred. These donors must meet the criteria for brain death, and heartbeat and circulation must be maintained by artificial means until the organ donation takes place.

The more common type of donor is one without a heartbeat, often called the tissue donor. Tissues from these donors remain viable for several hours after cardiac death and may be removed up to 24 hours after the heart has stopped functioning. Corneas, skin, bones, tendons, heart valves and saphenous veins can be used from these donors.

EMS professionals who may be with a potential tissue donor at an accident scene, should call the IDN referral line at 1-800-831-4131 and speak with the donation coordinator.

New law allows EMS providers to refer potential tissue donors

New legislation affecting the way organ and tissue donors give consent in Iowa became law on July 1. The law allows any Iowan to register and give consent for organ or tissue donation before death. Previously, the legal next-of-kin was approached to consent for a loved one's donation.

The new First Person Consent law also allows EMS providers the opportunity to refer non-hospital deaths to the Iowa Donor Network for evaluation of tissue donation.

"We are excited about the inclusion of the EMS language," says Michelle Kelsey, development specialist, Iowa Donor Network. "EMS providers can now honor a person's donation wishes when a death occurs outside of the hospital setting and follow the law."

"With more awareness, the EMS providers will likely think about donation as a service they can offer to the community when they come to the scene of an accident or other emergency and discover that death has occurred," says Suzanne Conrad, executive director, Iowa Donor Network (IDN).

The Iowa Donor Registry, a new avenue for Iowans to list their consent for organ and tissue donation before death allows anyone to register on-line, via a special telephone number, or through the mail.

"The Iowa Donor Registry information can be accessed at anytime, in comparison to a donor card or driver's license also recognized as a legal consent, that may get lost or misplaced at the time of death."

"Although a driver's license or donor card will also be recognized as a legal consent, the registry allows Iowans more options when choosing to donate," says Conrad.

The Iowa Donor Registry can be accessed at www.IowaDonorRegistry.org or by calling 1-877-366-6742 (1-877-DONOR-IA)



Suzanne Conrad



Michelle Kelsey

Medical dispatch service transferred to Omaha

Billie Ceglar and Ken Colins, at right, confer on a transport request at LifeCom's communications center in Omaha, Nebraska.

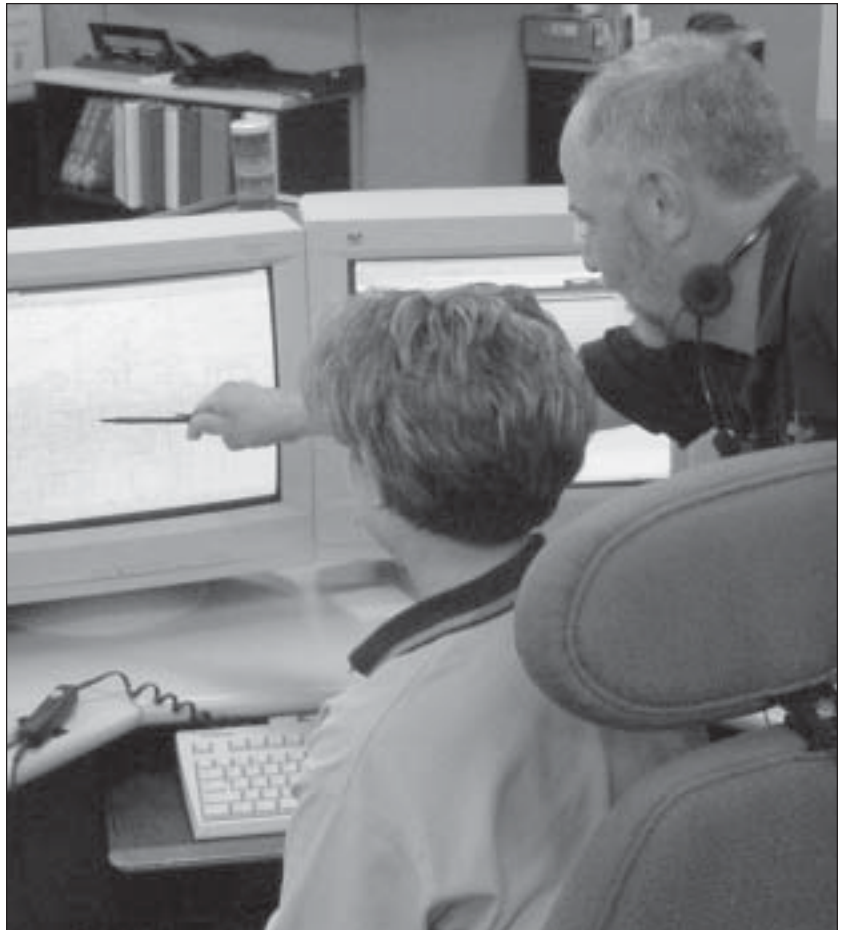
Since July 17, 2002, the LifeCom Center in Omaha, Nebraska, has been providing communications and flight following support services for AirCare I, the medical emergency helicopter located at University of Iowa Hospitals and Clinics (UIHC) in Iowa City, and Air Care II, based at Covenant Medical Center in Waterloo.

"Affiliating with the LifeCom Center will save an estimated \$150,000 during the next three to five years," says Jeffry Gauthier, administrative associate, Emergency Medical Services, UI Health Care. "LifeCom has the ability to buy, update and replace equipment and spread the cost over the 13 programs they support."

LifeCom is the largest and most sophisticated air medical transportation communications center in the nation. The center deploys 27 air medical aircraft and provides support for over 25,000 air and ground EMS transports, and 12,000 organ procurement calls each year. The nine specialists manage communications for aircraft operating in Arizona, Delaware, Florida, Georgia, Iowa, Kansas, Kentucky, Missouri, Nebraska, New York, South Carolina and Virginia.

Trudy Laffoon, director, Integrated Call Center, UI Health Care, says, "With a much higher volume of air medical transports to process, the LifeCom staff have more opportunities to maintain their familiarity with communications and flight following practices and procedures."

Mapping software allows dispatchers to receive an address from the calling agency, locate the scene, generate coordinates and relay these coordinates to the pilot. The pilot enters this information into the onboard Global Positioning System and flies to the location.



"We are encouraging requests for interfacility transports and admissions to come through the UI Consult Service which is operated 24 x 7 in our Integrated Call Center (1-800-332-8442)," says Laffoon. "Referral specialists, consisting of nurses and specially trained clerical staff, function in a concierge capacity to promptly and properly match requests for clinical consultation with the correct UI Health Care physician. Now, one telephone number will find the right physician, secure hospital admission, and if necessary, facilitate the ordering of UIHC transport resources."

If there is an interfacility transport request, a UI Health Care referral specialist first determines that a trauma/time sensitive case is on the line, then immediately routes the call to the designated UI Health Care physician and alerts the air medical dispatcher of a possible flight.

The ground standby will enable the flight crew and pilot to begin flight preparation to expediate the launch when the confirming request

has been received. Once the consultation has been completed, the referral specialist can be requested to transfer the call to the air medical dispatcher to complete the launch process.

EMS providers in the field should direct their AirCare scene requests to 1-800-272-6440.

"To facilitate a prompt response, standby requests are encouraged when there is a high probability that a helicopter will be requested," says Laffoon. "The advance notice of a pending transport allows extra time for the pre-flight weather and equipment checks. Once a transport confirmation has been received, the aircraft can then quickly launch having already completed the required pre-flight preparation."

"Iowans will continue to receive prompt medical helicopter services," says Gauthier. "We are fortunate to be able to apply technology in such a way that operational efficiencies are generated without negatively impacting the accessibility to our air medical services."



Jeff Gauthier



Trudy Laffoon

EMSLRC course calendar

		MD (CMEs)	RN (CEUs)	EMS (CEHs)
2002				
Oct 21-22	Ottumwa: Trauma Nursing Core Course	0	1.4	16
Oct 30	Iowa City: Prehospital Trauma Life Support Instructor Update	0	0	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	0	.7	7
Nov 4	Iowa City: EMT-Basic Training Program begins	0	0	0
Nov 4-5	Sioux City: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor/Instructor Renewal	Varied	Varied	varied
Nov 9-10	Peosta: Pediatric Education for Prehospital Professionals	0	1.45	15
Dec 12-13	Iowa City: Pediatric Education for Prehospital Professionals	0	1.45	15
2003				
Jan 6	Iowa City: Paramedic Specialist Full-time Training Program begins	0	0	0
Jan 11-12	Des Moines: Pediatric Advanced Life Support Provider	0	1.4	14
Jan 13-23	Creston: Critical Care Paramedic Training Program	0	0	94
Jan 25-26	Carroll: Prehospital Trauma Life Support Provider	0	1.4	16
Feb 8	Ottumwa: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor Renewal	Varied	Varied	Varied
Feb 8-9	Iowa City: Prehospital Trauma Life Support Provider	0	1.4	16
Feb 10-20	Carroll: Critical Care Paramedic Training Program	0	0	94
Feb 15	Iowa City: National Registry Testing	0	0	0
Feb 22-23	Calmar: Prehospital Trauma Life Support Provider	0	1.4	16
Feb 28, Mar 1-2	Iowa City: EMS Refresher Course	0	0	24
Mar 6-7	Peosta: Advanced Cardiac Life Support and Pediatric Advanced Life Support Instructor/Instructor Renewal	Varied	Varied	Varied
Mar 10-20	Muscatine: Critical Care Paramedic Training Program	0	0	94
Mar 14-16	Iowa City: EMS Refresher Course	0	0	24
Mar 24-25:	Iowa City: Advanced Medical Life Support	0	1.4	16
Mar 27-28	Iowa City: Advanced Trauma Life Support Student	19	0	0
Mar 28	Iowa City: Advanced Trauma Life Support Refresher	5	0	0
Mar 31-Apr 1	Iowa City: Pediatric Education for Prehospital Professionals	0	1.45	15



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