

EMERGENCY MEDICAL TECHNICIAN ADVISORY COMMITTEE

Friday, May 9, 2008, 9:00 AM

OREGON MEDICAL BOARD

1500 SW 1st Ave Ste 620

Portland, OR 97201

Board Accepted 7/11/08

Pending Committee Approval

MEMBERS PRESENT

Paul S. Rostykus, MD, Chair
Toni R. Grimes, EMT-P
Rose Howe, EMT-I
Dave Lapof, EMT-B (by telephone)
Matt Eschelbach, DO

STAFF PRESENT

Diana Dolstra, Licensing Manager
Jennifer Lannigan, Licensing Coordinator

GUESTS

Peggy Andrews, Chemeketa Community College
Shawn Baird, Oregon State Ambulance Association
Jonathan Chin, Washington County EMS
Cyndi Halaas, AMR
Justin Hardwick, Washington County EMS
Randy Jackson, Keizer Fire District, Oregon Fire Medical Administrators Association
Gregg Lander, Chemeketa Community College, EMT Consortium
Bob Leopold, DHS EMS & Trauma Systems
Gary McLean, OSPA, Salem Fire District
Ritu Sahni, MD, DHS EMS & Trauma Systems
Mark Stevens, Oregon Fire Medical Administrators Association

AGENDA

Approve minutes of the February 1, 2008 EMT Advisory Committee meeting

Final Review Administrative Rules: 847-035-0030 (10) – Add administration of Lidocaine as an intraosseous infusion anesthetic to EMT-I scope

National EMT scope of practice – Ritu Sahni, MD, MPH

Development of a standardized approach for considering changes to the EMT scope of practice

EMT-P position on Committee – End of term June 30, 2008

Hemostatic dressings – Do they need to be in the scope of practice? – Paul Rostykus, MD

EMT-I scope: Defines drugs (with any indication) or defines drugs and the specific indications? – Paul Rostykus, MD

Other business:

New devices/technologic innovations and impact on scope of practice

National Association of EMS Physicians (NAEMSP) Medical Director course and supervising physicians forum

STEMI/stroke conference

Confirm dates of next Committee meetings

Paul Rostykus, MD, Chair, called the meeting to order at 9:00 AM.

APPROVE MINUTES OF THE FEBRUARY 1, 2008 EMT ADVISORY COMMITTEE MEETING

It was moved and seconded that

THE EMT ADVISORY COMMITTEE APPROVES THE MINUTES OF THE FEBRUARY 1, 2008 EMT ADVISORY COMMITTEE MEETING.

Motion passed unanimously.

FINAL REVIEW ADMINISTRATIVE RULES: 847-035-0030 (10) – ADD ADMINISTRATION OF LIDOCAINE AS AN INTRAOSSEOUS INFUSION ANESTHETIC TO EMT-I SCOPE

EXHIBIT A

It was moved and seconded that

THE EMT ADVISORY COMMITTEE RECOMMENDS THE OREGON MEDICAL BOARD ADOPT THE AMENDMENT TO 847-035-0030 (10) TO ADD THE ADMINISTRATION OF LIDOCAINE AS AN INTRAOSSEOUS INFUSION ANESTHETIC TO THE EMT-I SCOPE OF PRACTICE.

Motion passed unanimously.

NATIONAL EMT SCOPE OF PRACTICE

Ritu Sahni, MD, MPH, Medical Director, DHS EMS & Trauma Systems, presented an update to the implementation of the National Highway Traffic Safety Administration (NHTSA) national EMS scope of practice. NHTSA is currently working on national EMS education standards; these standards will replace the current NHTSA curricula. Other components of the national agenda include national EMS education program accreditation and national EMS certification. Dr. Sahni highlighted that the NHTSA scope will likely be implemented in 2011 at the earliest.

Dr. Sahni reported that a workgroup has been formed as a joint effort between the DHS EMS office and the Oregon Medical Board (OMB) EMT Committee to look at what changes need to be made in Oregon's statutes, rules, regulations and curricula to prepare for the upcoming national scope and educational standards implementation. Dr. Sahni and Paul Rostykus, MD, will serve as Co-Chairs of this workgroup. Dr. Sahni

indicated the workgroup's first meeting was held May 8, 2008 to get organized. He said the workgroup will likely spend about a year getting input and forming a plan, and then another year getting feedback on the plan.

DEVELOPMENT OF A STANDARDIZED APPROACH FOR CONSIDERING CHANGES TO THE EMT SCOPE OF PRACTICE **EXHIBIT B**

Paul Rostykus, MD, reminded the Committee and public in attendance that the Committee had previously formulated a list of questions to pose to any individual who may propose a change to the EMT scope of practice. The Committee requests that an individual proposing the change in scope provide answers to the questions for the EMT Committee's consideration during their discussion of the proposed change. Proposed changes to the EMT scope of practice submitted to the Board will be forwarded to Dr. Sahni at DHS EMS so that he can independently research the issue prior to the subsequent OMB EMT Committee meeting.

Dr. Rostykus and Ritu Sahni, MD, MPH, developed a draft form based on these questions, and the Committee made a few amendments to the form to come up with a version to be posted on the Board's website (see *Exhibit B*).

ACTION PLAN: Board staff to post a form with the scope of practice change questions on the Oregon Medical Board website (see *Exhibit B*). Board staff to notify Dr. Sahni when form has been posted on website.

NOTE 7/11/08: *Dr. Rostykus informed the Board that the First Responder and EMT Scope of Practice Change form was now on the Board web site, and Dr. Ritu Sahni had been informed.*

EMT-P POSITION ON COMMITTEE – END OF TERM JUNE 30, 2008

Paul Rostykus, MD, indicated that the EMT-P position on the Committee currently held by Toni Grimes is due to expire on June 30, 2008. Ms. Grimes is serving her first term, is eligible and desires to serve a second term. No other candidates submitted an application for the position.

It was moved and seconded that

THE EMT ADVISORY COMMITTEE RECOMMENDS THE OREGON MEDICAL BOARD APPOINT TONI GRIMES, EMT-P, TO A SECOND TERM ON THE COMMITTEE.

Motion passed. Toni Grimes abstained.

NOTE 7/11/08: *The Board voted to appoint Toni Grimes, EMT-P, to a second term on the EMT Advisory Committee.*

ACTION PLAN: Committee to forward recommendation to reappoint Toni Grimes, EMT-P, to Board for review at July 2008 Board meeting.

HEMOSTATIC DRESSINGS – DO THEY NEED TO BE IN THE SCOPE OF PRACTICE? **EXHIBIT C**

Paul Rostykus, MD, explained that hemostatic dressings are agents used to help clot blood quickly, particularly arterial bleeding in major trauma situations (often used in the military), after conventional methods such as pressure or gauze dressings fail. He said there are several types of hemostatic agents. He posed the question of whether hemostatic dressings need to be in the EMT scope of practice. Dr. Rostykus said that if hemostatic agents are considered medications, they clearly need to be in the scope. He added that if they are considered only dressings, they probably do not need to be specifically identified in the scope.

Mark Stevens, EMT-P, Oregon Fire Medical Administrators Association and EMS Chief, Tualatin Valley Fire & Rescue (TVF&R), distributed an abstract of a study conducted by TVF&R to determine the effectiveness of the HemCon Bandage for external hemorrhage control in a civilian EMS setting (see *Exhibit C*). Mr. Stevens reported the results of the study indicated a success rate of 77% for control of bleeding with the HemCon Bandage. He said he would recommend that EMT-Bs could be trained to use the HemCon Bandage.

Ritu Sahni, MD, said that if hemostatic agents are considered dressings, they are already covered in the First Responder scope. He added, however, that the issue becomes more complicated when considering that different agents have various modes of application, meaning not all agents come in the form of a dressing/bandage only. Dr. Sahni shared that some other states have dealt with this in their scopes of practice by distinguishing between those agents that are in a bandage form (treated as a dressing in scope) versus those that involve a substance which must be applied directly to the wound and then bandaged (treated as a medication in scope).

The Committee determined that more information is needed to make a decision, including how the Food and Drug Administration (FDA) classifies and controls hemostatic agents and whether a physician prescription is required for any such agents.

Dr. Rostykus proposed that a distinction could be made between those agents that come in a contained form (contained wound dressing) versus those that are not contained, e.g., loose granules. He suggested that contained agents would be covered under the current First Responder scope under OAR 847-035-0030 (7)(f), which reads, "Provide care for soft tissue injuries," and uncontained agents would be considered medications and are not covered under the scope.

It was moved and seconded that

THE EMT ADVISORY COMMITTEE RECOMMENDS THE OREGON MEDICAL BOARD ADOPT A DEFINITION OF HEMOSTATIC AGENTS THAT ARE IN A CONTAINED FORMAT AS FALLING UNDER THE FIRST RESPONDER SCOPE OF PRACTICE UNDER OAR 847-035-0030 (7)(f), AND THOSE THAT ARE NOT IN A CONTAINED FORMAT ARE CONSIDERED MEDICATIONS AND ONLY FALL UNDER THE EMT-PARAMEDIC SCOPE OF PRACTICE UNDER OAR 847-035-0030 (11)(j).

Motion passed unanimously.

ACTION PLAN: Committee to contact FDA to discover how FDA classifies and controls hemostatic agents and whether a physician prescription is required for any such agents. Put hemostatic dressings on the agenda of the next EMT Committee meeting.

EMT-I SCOPE: DEFINES DRUGS (WITH ANY INDICATION) OR DEFINES DRUGS AND THE SPECIFIC INDICATIONS?

Paul Rostykus, MD, asked if the EMT-I scope of practice defines drugs that can be used (with any indication), or does the scope define both the drugs and the specific indications which can be used?

Peggy Andrews, Chemeketa Community College, recommended the scope not be restrictive. She indicated the goal of the EMT-I curriculum is to keep interpretations of indications for medications loose.

The Committee determined that no change in approach to defining the EMT-I scope of practice regarding indications for medications is needed.

OTHER BUSINESS

New Devices/Technologic Innovations and Impact on Scope of Practice

Paul Rostykus, MD, asked how the Committee should deal with new medical devices and their possible impact on the EMT scope of practice.

Ritu Sahni, MD, MPH, DHS EMS & Trauma Systems, indicated that he frequently gets inquiries that involve interpretation of the EMT scope of practice. Dr. Sahni asked the Committee for direction on how to handle inquiries when it is not clear whether a certain device, procedure or practice falls under the current scope. Dr. Sahni requested that when an inquiry into the scope of practice comes to the Board's EMT Committee, the Chair of the EMT Committee discuss it with the DHS EMS Medical Director so that the EMT Committee Chair and DHS EMS Medical Director can come to an agreement about an interim interpretation and report on it at the next EMT Committee meeting.

The Committee determined that in these situations Dr. Sahni, as the DHS EMS Medical Director, can consult the Chair of the Oregon Medical Board's EMT Committee. If the answer to the inquiry is still not clear, Dr. Sahni can direct the individual making the inquiry to the new *EMT Scope of Practice Change* form that will soon be posted on the Board's website to fill out and submit to the Board and DHS EMS.

NAEMSP Medical Director Course and Supervising Physician Forum

Paul Rostykus, MD, reported that a one-day Medical Directors course was held on April 24, 2008 in Eugene, with great success. He added that the next day a Supervising Physicians Forum was held, with several great discussions on many issues. Dr. Rostykus reported the next Supervising Physicians Forum is scheduled for October 10, 2008 in Bend.

Ritu Sahni, MD, indicated the next Medical Directors course is not yet scheduled. He welcomed input regarding when and where the next course should be offered, and how often to offer the course.

Matthew Eschelbach, DO, suggested a few options for the next Medical Directors course: as a pre-conference at the next OCEP (Oregon Chapter of the American College of Emergency Physicians) conference, at the next EMS Trauma conference, or at the next East Cascade EMS Council meeting.

Dr. Sahni stated that the DHS EMS office is making efforts to update contact information for supervising physicians across the state in order to facilitate better communication with those physicians.

STEMI/Stroke Conference

Paul Rostykus, MD, reported there will be a STEMI/Stroke conference on May 30, 2008 in Eugene. Dr. Rostykus indicated the conference will be interactive and participatory. He encouraged supervising physicians and representatives of EMS agencies and hospital emergency departments to attend. He said representatives from EMS and emergency department STEMI/Stroke triage systems in Oregon will be in attendance as well.

CONFIRM DATES OF NEXT COMMITTEE MEETINGS

The Committee scheduled future meetings for the following dates:

August 15, 2008

November 14, 2008 (tentative)

ADJOURNMENT

There being no further business to discuss, the meeting was adjourned at 10:30 AM.

OREGON ADMINISTRATIVE RULES
CHAPTER 847, DIVISION 035 – OREGON MEDICAL BOARD
PROPOSED RULES CHANGES – JULY 2008
FINAL REVIEW BY THE BOARD

Proposed rule amendment adds the administration of Lidocaine as an intraosseous infusion anesthetic under the EMT-Intermediate (EMT-I) scope of practice.

847-035-0030

Scope of Practice

(1) The Oregon Medical Board has established a scope of practice for emergency and nonemergency care for First Responders and EMTs. First Responders and EMTs may provide emergency and nonemergency care in the course of providing prehospital care as an incident of the operation of ambulance and as incidents of other public or private safety duties, but is not limited to "emergency care" as defined in OAR 847-035-0001 (5).

(2) The scope of practice for First Responders and EMTs is not intended as statewide standing orders or protocols. The scope of practice is the maximum functions which may be assigned to a First Responder or EMT by a Board-approved supervising physician.

(3) Supervising physicians may not assign functions exceeding the scope of practice; however, they may limit the functions within the scope at their discretion.

(4) Standing orders for an individual EMT may be requested by the Board or Section and shall be furnished upon request.

(5) No EMT may function without assigned standing orders issued by Board-approved supervising physician.

(6) An Oregon-certified First Responder or EMT, acting through standing orders, shall respect the patient's wishes including life-sustaining treatments. Physician supervised First Responders and EMTs shall request and honor life-sustaining treatment orders executed by a physician, nurse practitioner or physician assistant if available. A patient with life-sustaining treatment orders always requires respect, comfort and hygienic care.

(7) The scope of practice for emergency and nonemergency care established by the Board for First Responders is intended as authorization for performance of procedures by First Responders without direction from a Board-approved supervising physician, except as limited by subsection (2) of this rule. A First Responder may perform the following emergency care procedures without having signed standing orders from a supervising physician:

- (a) Conduct primary and secondary patient examinations;
- (b) Take and record vital signs;

- (c) Utilize noninvasive diagnostic devices in accordance with manufacturer's recommendation;
- (d) Open and maintain an airway by positioning the patient's head;
- (e) Provide external cardiopulmonary resuscitation and obstructed airway care for infants, children, and adults;
- (f) Provide care for soft tissue injuries;
- (g) Provide care for suspected fractures;
- (h) Assist with prehospital childbirth; and
- (i) Complete a clear and accurate prehospital emergency care report form on all patient contacts and provide a copy of that report to the senior EMT with the transporting ambulance.

(8) A First Responder may perform the following procedures only when the First Responder is providing emergency care as part of an agency which has a Board-approved supervising physician who has issued written standing orders to that First Responder authorizing the following:

- (a) Administration of medical oxygen;
- (b) Open and maintain an airway through the use of a nasopharyngeal and a noncuffed oropharyngeal and pharyngeal suctioning devices;
- (c) Operate a bag mask ventilation device with reservoir;
- (d) Provision of care for suspected medical emergencies, including administering liquid oral glucose for hypoglycemia; and
- (e) Administer epinephrine by automatic injection device for anaphylaxis;
- (f) Perform cardiac defibrillation with an automatic or semi-automatic defibrillator, only when the First Responder:

(A) Has successfully completed a Section- approved course of instruction in the use of the automatic or semi-automatic defibrillator; and

(B) Complies with the periodic requalification requirements for automatic or semi-automatic defibrillator as established by the Section.

(9) An Oregon-certified EMT-Basic may perform emergency and nonemergency procedures. Emergency care procedures shall be limited to the following basic life support procedures:

- (a) Perform all procedures that an Oregon-certified First Responder can perform;
- (b) Ventilate with a non-invasive positive pressure delivery device;
- (c) Insert a cuffed pharyngeal airway device in the practice of airway maintenance. A cuffed pharyngeal airway device is:

(A) A single lumen airway device designed for blind insertion into the esophagus providing airway protection where the cuffed tube prevents gastric contents from entering the pharyngeal space; or

(B) A multi-lumen airway device designed to function either as the single lumen device when placed in the esophagus, or by insertion into the trachea where the distal cuff creates an endotracheal seal around the ventilatory tube preventing aspiration of gastric contents.

(d) Provide external cardiopulmonary resuscitation and obstructed airway care for infants, children, and adults;

(e) Provide care for suspected shock, including the use of the pneumatic anti-shock garment;

(f) Provide care for suspected medical emergencies, including:

(A) Obtaining a capillary blood specimen for blood glucose monitoring;

(B) Administer epinephrine by subcutaneous injection or automatic injection device for anaphylaxis;

(C) Administer activated charcoal for poisonings; and

(D) Administer aspirin for suspected myocardial infarction.

(g) Perform cardiac defibrillation with an automatic or semi-automatic defibrillator;

(h) Transport stable patients with saline locks, heparin locks, foley catheters, or in-dwelling vascular devices;

(i) Perform other emergency tasks as requested if under the direct visual supervision of a physician and then only under the order of that physician;

(j) Complete a clear and accurate prehospital emergency care report form on all patient contacts;

(k) Assist a patient with administration of sublingual nitroglycerine tablets or spray and with metered dose inhalers that have been previously prescribed by that patient's personal physician and that are in the possession of the patient at the time the EMT-Basic is summoned to assist that patient; and

(l) In the event of a release of military chemical warfare agents from the Umatilla Army Depot, the EMT-Basic who is a member or employee of an EMS agency serving the DOD-designated Immediate Response Zone who has completed a Section-approved training program may administer atropine sulfate and pralidoxime chloride from a Section-approved pre-loaded auto-injector device, and perform endotracheal intubation, using protocols promulgated by the Section and adopted by the supervising physician. 100% of EMT-Basic actions taken pursuant to this section shall be reported to the Section via a copy of the prehospital emergency care report and shall be reviewed for appropriateness by Section staff and the Subcommittee on EMT Certification, Education and Discipline.

(m) In the event of a release of organophosphate agents the EMT-Basic, who has completed Section-approved training, may administer atropine sulfate and pralidoxime chloride by autoinjector, using protocols approved by the Section and adopted by the supervising physician.

(10) An Oregon-certified EMT-Intermediate may perform emergency and nonemergency care procedures. The emergency care procedures shall be limited to the following:

(a) Perform all procedures that an Oregon-certified EMT-Basic can perform;

(b) Initiate and maintain peripheral intravenous (I.V.) lines;

(c) Initiate and maintain an intraosseous infusion;

(d) Initiate saline or similar locks;

(e) Draw peripheral blood specimens;

(f) Administer the following medications under specific written protocols authorized by the supervising physician, or direct orders from a licensed physician:

(A) Physiologic isotonic crystalloid solution.

(B) Vasoconstrictors:

(i) Epinephrine

(ii) Vasopressin;

(C) Antiarrhythmics:

(i) Atropine sulfate,

(ii) Lidocaine,

(iii) Amiodarone;

(D) Antidotes:

(i) Naloxone hydrochloride;

(E) Antihypoglycemics:

(i) Hypertonic glucose,

(ii) Glucagon;

(F) Vasodilators:

(i) Nitroglycerine;

(G) Nebulized bronchodilators:

(i) Albuterol,

(ii) Ipratropium bromide;

(H) Analgesics for acute pain:

(i) Morphine,

(ii) Nalbuphine Hydrochloride,

(iii) Ketorolac tromethamine,

(iv) Fentanyl;

(I) Antihistamine:

(i) Diphenhydramine;

(J) Diuretic:

(i) Furosemide;

(K) Intraosseous infusion anesthetic:

(i) Lidocaine:

(g) Administer immunizations in the event of an outbreak or epidemic as declared by the Governor of the state of Oregon, the State Public Health Officer or a county health officer, as part of an emergency immunization program, under the agency's supervising physician's standing order;

(h) Administer routine or emergency immunizations, as part of an EMS Agency's occupational health program, to the EMT's EMS agency personnel, under the supervising physician's standing order.

(i) Insert an orogastric tube;

(j) Maintain during transport any intravenous medication infusions or other procedures which were initiated in a medical facility, and if clear and understandable written and verbal instructions for such maintenance have been provided by the physician, nurse practitioner or physician assistant at the sending medical facility;

(k) Initiate electrocardiographic monitoring and interpret presenting rhythm;

(l) Perform cardiac defibrillation with a manual defibrillator.

(11) An Oregon-certified EMT-Paramedic may perform emergency and nonemergency care procedures. The emergency care procedures shall be limited to:

(a) Perform all procedures that an Oregon-certified EMT-Intermediate can perform;

(b) Initiate the following airway management techniques:

(A) Endotracheal intubation;

(B) Tracheal suctioning techniques;

(C) Cricothyrotomy; and

(D) Transtracheal jet insufflation which may be used when no other mechanism is available for establishing an airway.

(c) Initiate a nasogastric tube;

(d) Provide advanced life support in the resuscitation of patients in cardiac arrest;

(e) Perform emergency cardioversion in the compromised patient;

(f) Attempt external transcutaneous pacing of bradycardia that is causing hemodynamic compromise;

(g) Initiate needle thoracentesis for tension pneumothorax in a prehospital setting;

(h) Initiate placement of a femoral intravenous line when a peripheral line cannot be placed;

(i) Initiate placement of a urinary catheter for trauma patients in a prehospital setting who have received diuretics and where the transport time is greater than thirty minutes; and

(j) Initiate or administer any medications or blood products under specific written protocols authorized by the supervising physician, or direct orders from a licensed physician.

(12) The Board has delegated to the Section the following responsibilities for ensuring that these rules are adhered to:

(a) Designing the supervising physician and agent application;

(b) Approving a supervising physician or agent; and

(c) Investigating and disciplining any EMT or First Responder who violates their scope of practice.

(d) The Section shall provide copies of any supervising physician or agent applications and any EMT or First Responder disciplinary action reports to the Board upon their request.

(13) The Section shall immediately notify the Board when questions arise regarding the qualifications or responsibilities of the supervising physician or agent of the supervising physician.

**Oregon Medical Board
EMT Scope of Practice Change**

Please complete the following questionnaire regarding your request for an addition, deletion, or change to the First Responder or EMT scope of practice. Please provide as much information as you can to speed the review process. If you do not have an answer, you may leave a section blank and we will research the answer as time permits. Your proposal will be reviewed by the Oregon Medical Board's EMT Advisory Committee and the Department of Human Service/EMS's State EMS Committee will be consulted on proposed changes to the scope of practice. If we have questions concerning the proposal for change, we will be back in touch with you for additional information. Once the proposal is complete, it will be placed on the agenda of the next EMT Advisory Committee meeting.

1. What is your proposed change to the scope of practice?

2. Why is this change needed? Why is this the best method of addressing it?

3. What are the advantages or benefits of the proposed change?
(Is there a patient benefit?)

4. What are the disadvantages or risks of the proposed change?
(Is there a potential for harm?)

5. Who else might be affected by the change? How will they be affected?

6.. Who might oppose the change? Why might they oppose it?

7. Education:

A. Is this currently being taught in the EMT or First Responder curriculum?

Yes No

B. What would be the training needed to add this to the scope of practice?

8. What are the financial impacts of the proposed change?
 - a. Cost of education and/or training
 - b. Cost of equipment and/or medication
 - c. Cost of permits (Clinical Laboratory Improvement Amendments (CLIA), Drug Enforcement Administration Registration (DEA), others?)

9. Is the proposed change currently being done in other EMS systems in the U.S.? In other countries?

10. What research or evidence is there that the proposed change is useful, beneficial, or works (please list references if any)?

NAME:	
AGENCY NAME:	
POSITION:	
ADDRESS:	STATE & ZIP
PHONE:	FAX:
CELL-PHONE:	E-MAIL:

Oregon Medical Board's EMT Advisory Committee
 Department of Human Service/EMS's State EMS Committee

HemCon Abstract
TVF&R

Purpose: The Hemcon[®] Bandage is a hemostatic dressing made of chitosan, a natural substance derived from chitin, that adheres when in contact with blood. The purpose of this study is to determine the effectiveness of the Hemcon[®] bandage in a civilian EMS system.

Methods: The Hemcon[®] Bandage was added to the trauma kits on all responding vehicles of a mixed urban-suburban fire agency. The agency provides first response ALS service to nine incorporated cities and approximately 418,000 individuals. Training was accomplished through multimedia presentations. Bandages, which are available in three sizes (4" x 4", 2" x 4", and 2" x 2") were to be used when conventional treatment (pressure/gauze dressing) failed, or for obvious arterial bleeding. After each use, EMS personnel completed a survey documenting wound characteristics and approximate time to cessation of bleeding. Outcome variables and patient demographics were abstracted and entered into an MS Excel spreadsheet. Descriptive analyses were performed.

Results: Over a two year period, the bandage was used 74 times and complete survey data was available in 70 cases. The majority of wounds were located on the head/neck (40%) and the arm/hand (39%). Patient ages ranged from 8 to 93 and 67% were male. The bandage was used after conventional methods had failed in 81% of cases. The bandage successfully controlled external hemorrhage in 77% of cases with the majority (91%) within three minutes of application. Bandage failure was attributable to improper application (63%), inability to access all bleeding surfaces (44%), and interference with adherence properties (13%). More than one factor was responsible in some cases. Success rates with the thicker first generation bandage (4" x 4") improved from 75% in year one to 93% in year two of the study. The thinner second generation bandages (2" x 2" and 2" x 4") which became available in year two, were successful in 14 out of 20 cases (70%).

Conclusions: The Hemcon[®] Bandage stops uncontrolled external hemorrhage when conventional methods such as pressure or gauze dressings fail with a success rate of 77% in a civilian EMS setting.

