

**Methods:** Sixty-four emergency medical services (EMS) volunteers were randomized to one of seven TKs, four commercial TKs, and three improvised. The device was applied by volunteers (in random order) to a lower extremity and the dominant upper extremity, as well as above and below the knee and elbow. Arterial occlusion was measured using a Doppler stethoscope. Data collected included: (1) occlusion time; (2) securing time; (3) occlusion success; (4) pain; (5) application ease; (6) device malfunction; (7) prior training; (8) and anecdotal observation.

**Results:** A mixed model analysis of variance was used to examine the differences between TK types and location of application ( $p < 0.05$ ). The Combat Application Tourniquet™ (CAT) and the Medical Advantage Tourniquet™ (MAT) were statistically superior twice as often as the next best TK ( $p < 0.05$ ). The CAT and MAT were never shown to be inferior in any comparison ( $p < 0.05$ ). Commercial TKs have shorter application times, higher occlusion rates, and are easier to apply ( $p < 0.05$ ). For each TK type, there was no difference in occlusion rate observed when applied above or below the elbow or knee ( $p < 0.05$ ).

**Conclusions:** The efficacy of commercial TKs is clearly superior to that of improvised techniques. The CAT and the MAT were clearly the most effective devices. With distal application, no reduction in occlusion rates was observed. Tourniquets should be placed distal to joints when possible.

**Keywords:** application; disaster; comparison; emergency medical services; hemorrhage; tourniquet

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#### (N49) Development of an Emergency Medical Technician Textbook in Sri Lanka

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**Introduction:** The establishment of emergency medical services (EMS) systems in developing countries has been fostered by disease patterns shifting to those that require emergent intervention. A key component of EMS systems is that personnel must be trained to international standards. The purpose of this project was to create a textbook that could be used in Sri Lanka to educate emergency medical technicians (EMTs).

**Methods:** Previously developed textbooks were reviewed and found to be ineffective because they were direct translations of North American texts and specific to this region. Translations were literal, had grammatical errors, and lacked a national context. A team of American EMS instructors and Sri Lankan doctors reviewed EMS textbooks and wrote comparable, contextualized texts in Sinhalese and Tamil.

**Results:** During a 16-month period, two textbooks specific to Sri Lanka and written by native speakers were created. The books emphasized diseases common to Sri Lanka (including organophosphate poisoning and krait envenomation). With the help of a graphic designer, all figures and photos are culturally appropriate. More than 800 EMTs

were trained using the texts. Ten participants desiring regional certification passed the Australasian EMT-Basic examination. All currently are practicing in Sri Lanka and the Sri Lankan Ministry of Healthcare has adopted the text for future training.

**Conclusions:** Emergency medical technician texts that are translated directly into local languages without contextualization to that country are ineffective tools to train local personnel. Creation of a contextualized book written by local experts is possible, more effective, and creates ownership of the training process itself.

**Keywords:** country-specific; emergency medical services; emergency medical technician; Sri Lanka; textbook; training

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#### (N50) Importance of Nursing Leadership and Management in Emergency Situations

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**Introduction:** Leadership is an essential component of management especially in emergency situations. It is critical that leadership roles are established for nursing. Nursing leadership includes coaching and mentoring others and creating an environment for continuous quality care. Through professional nurses' associations, this leadership helps to develop the profession while strategically positioning it to influence health planning and policy. The aim of this study is to clarify the leadership role of trained and skilled nurse managers to accomplish the patient care process in emergency situations. In addition, this research will identify the levels of the following characteristics necessary for nursing leadership: (1) involvement and management; (2) coordination; (3) communication; (4) direction; (5) coaching; and (6) motivation. Standardizing how nurses manage human and material resources, conceptualize values and ethics, and communicate in the emergency environment is critical.

**Methods:** This research will combine the clinical, administrative, education, and policy planning expertise to create Critical Pathway Guidelines for nursing care management. The study will map the nursing and decision-making process and develop a quality control check list.

**Conclusions:** Considering the important role that nursing care management plays in saving lives, special attention should be given to management training and support in the field of emergency medicine. The development and standardization of protocols require the close collaboration of a spectrum of nursing leaders from clinical care to education and policy development.

Patient care is a rhythmic process; by recognizing this nurses can manage their activities in tune with that rhythm.

**Keywords:** emergency medical services; leadership; management; nursing; standardization

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