



**EMERGENCY RESPONSE TRAINING**



**PROGRAM OVERVIEW**  
*(NON-URBAN)*

**SEPTEMBER 2012**

## **INTRODUCTION**

Peak Emergency Response Training (PEAK) (*a division of Peak Project Management, Inc.*) is a Canada based company that provides advanced emergency response training, predominantly to non-urban responders such as professional and volunteer ski patrollers, search & rescue personnel and other (*non-urban*) first responders.

Non-urban responders are required to operate at a level of care above that normally offered by urban first responders. This is called for because of the rugged terrain and vastness that is encountered in the backcountry. This results in extended distances and time frames when accessing the advanced pre-hospital care provided by ambulance paramedics.

Our programs are designed specifically to address the in-situ patient care and risk management concerns of non-urban organizations and corporations. The '*Advanced Protocol Training Program*' that PEAK has offered since 1998 is comprised of nine advanced emergency medical protocol modules. These modules meet specific emergency response training needs not currently met under conventional programs available to non-paramedical responders. They include:

- Pain Management : Nitrous Oxide (Entonox) Protocol
- Fracture Management: Sager Traction Splint Protocol
- Anaphylaxis Management: Epinephrine & Benadryl (Assist) Protocols
- Shortness of Breath Management: Salbutamol (Assist) Protocol
- Cardiac Chest Pain Management: Nitroglycerin & ASA (Assist) Protocols
- Non-Urban Cardiac Arrest Management: AED Protocols
- Advanced Non-Urban Cardiac Arrest Management (for BLS Non-Urban Responders)
- Advanced Non-Urban Airway Management: KING LT-D Protocol

These training programs are an essential investment in the preparedness of your emergency response team. They empower your team to intervene in life-threatening situations in which they would otherwise be ill-equipped. Together, the protocols and the training programs we provide are very effectively addressing the patient care and risk management concerns of non-urban organizations and corporations.

## **MEDICAL DIRECTION AND OVERSIGHT**

PEAK provides its clients with standards, protocols, and the necessary medical direction to ensure continuous quality assurance and proper data management. In addition, we provide access to clinical and technical advice from our Medical Direction Team, which is led by Dr. Angus Gilchrist and is comprised of six other experienced physicians; Dr. Fran Mondor, Dr. Al Huber, Dr. Hazel Park, Dr. Helen Engelbrecht, Dr. Graham Dodd, Dr. Simon Ward and Dr. Bill Akeroyd.

The Heart and Stroke Foundation of Canada (HSFC) establishes the Canadian guidelines for the performance of emergency cardiac care (ECC). Most lead organizations involved in ECC adhere to the standards set by the HSFC. PEAK is a proud 'Registered Training Affiliate' of the HSFC.



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## **PAIN MANAGEMENT: NITROUS OXIDE (ENTONOX) PROTOCOL**

In the past non-urban responders were unable to provide any means of pain relief. This is no longer the case. Nitrous Oxide (Entonox) has become an important component of overall patient management and, in many industries, the standard of care. Entonox (nitrous oxide + oxygen) is a safe, non-invasive and potent analgesic.

Specific uses may include pain management during:

- Re-alignment of fractures &/or dislocations.
- The splinting process.
- Transportation over rough and difficult terrain.

Entonox is a benign and effective medication that responders can administer to help reduce the level of anxiety and discomfort in their patients. It significantly reduces the emotional impact on patients, caregivers and bystanders by assisting with rapid splinting and transport, which is critical to the successful outcome of a non-urban injury.

## **FRACTURE MANAGEMENT: SAGER TRACTION SPLINT PROTOCOL**

One of the most frequent injuries that non-urban responders deal with are long-bone leg fractures. Very often, definitive pre-hospital management requires immobilization with a constant, measured traction. Historically, maintaining traction in this manner in the field has been all but impossible and patient outcomes have been consequently compromised. The Sager Traction Splint provides this essential, measured and uninterrupted pull on the axis of a leg fracture in a simple and expedient manner.

The benefits of traction splinting may include:

- Reduction of pain.
- Prevention of secondary injury due to over-riding bone ends.
- Restoration of circulation and sensation and reduction of blood loss.
- Support and immobilization.
- Reduction or prevention of serious complications and disability.
- Greater patient care / customer service.

Due to these benefits, the Sager Traction Splint has become an essential item in the non-urban responders' tool kit. Its proven effectiveness in our increasingly litigious society has established it as the medical and *legal* standard for leg fracture management.

## **INTRODUCTION – DRUG ASSIST PROTOCOLS**

Anaphylaxis (life-threatening allergic reaction), acute Shortness of Breath (due to asthma) and Cardiac Chest Pain (angina or heart attack) can occur anywhere and at any time of year in otherwise healthy, active people. Most individuals with these conditions have been previously diagnosed and carry with them the medications necessary to manage their acute episodes. However, occasionally these people lose or forget their medication and rely on the EMS system to provide the needed treatment in order to survive. In non-urban settings these patients do not have the time to wait for EMS or EMS is simply not available to them.

These three modules (the 'Anaphylaxis Management', 'Shortness of Breath Management' and the 'Cardiac Chest Pain Management' Protocols) provide the non-urban responder with the knowledge and confidence necessary to quickly identify a patient's needs and to determine if, when, and how to address them. These protocols increase the level of patient care by educating the responder as to when it is appropriate and, just as importantly, when not to use the medications.

## **ANAPHYLAXIS MANAGEMENT: EPINEPHRINE & BENADRYL (ASSIST) PROTOCOLS**

Anaphylaxis is a severe whole-body allergic reaction following an exposure to an allergen. Common allergens include insect bites/stings, foods, environmental substances and drugs/medications. Anaphylaxis occurs frequently in the non-urban environment and is a life-threatening medical emergency that requires immediate treatment. The only immediate and effective treatment available is the combination of Epinephrine and Benadryl.

People with known severe allergic reactions often carry with them an Epinephrine auto-injector, however, in non-urban environments these medications are frequently forgotten or not carried due to a perception of inconvenient bulkiness. It is also important to note that the effective duration of Epinephrine is only 20-60 minutes, and of course extrications and evacuations from the non-urban environment often take much longer than that. Anaphylaxis has a very poor prognosis without prompt and ongoing treatment. Therefore, additional medication is usually required during rescues. Fortunately, symptoms typically abate with appropriate treatment and this underscores the importance of appropriately trained and equipped responders.

## **SHORTNESS OF BREATH MANAGEMENT: SALBUTAMOL (ASSIST) PROTOCOL**

As discussed above, remote locations can be particularly unforgiving when one becomes acutely ill. One condition that is treatable by non-urban responders is Asthma. Asthma is a disease of the respiratory system wherein the airways constrict, becoming inflamed and narrowed with excessive amounts of mucus - often in response to one or more environmental triggers. Examples of these triggers include exposure to an environmental stimulant or allergen, cold or warm air, dry or moist air, exercise or exertion, or emotional stressors. Between acute episodes ('asthma attacks'), most patients feel well; however, affected individuals may suffer life-threatening episodes characterized by severe shortness of breath.

These 'attacks' (or exacerbations) can be effectively treated in the field with Salbutamol (commonly known as Ventolin). Salbutamol is a benign bronchodilator which, in extreme situations, provides the necessary intervention and time to evacuate a patient from the non-urban environment to advanced care for definitive treatment.

Not unlike anaphylaxis, severe asthma attacks left untreated can result in death, again reinforcing the need to have staff trained to deal with these potentially life-threatening medical emergencies.

## **CARDIAC CHEST PAIN MANAGEMENT: NITRO & ASA (ASSIST) PROTOCOLS**

Another condition that non-urban responders are encountering with increasing frequency is coronary artery disease. It has no age limitations and no gender bias. Cardiac patients are being continually encouraged to exercise and remain active; however, with that advice comes the risk of exacerbations in remote locations. Consequently, non-urban responders are being faced with treating acutely-ill cardiac patients more frequently than ever before. Patients experiencing cardiac chest pain require immediate medical attention and this protocol gives the non-urban responder both the knowledge needed to recognize a cardiac event, as well as the tools necessary to treat these patients who might otherwise suffer permanent damage to their hearts.

Cardiac chest pain is most commonly caused by a diminished supply of oxygen to the heart muscle. Nitroglycerin relaxes the blood vessels to the heart thus allowing more blood to flow to the area of the heart that is being oxygen starved.

ASA has been indicated by Health Canada for use during acute angina and heart attacks. If administered within the first hours following a cardiac event, ASA may reduce a person's risk of fatality by nearly 25 percent. ASA works by reducing the tendency of blood platelets to form the clots which typically cause the blockage of arteries during heart attacks.

## **NON-URBAN CARDIAC ARREST MANAGEMENT: AED PROTOCOL**

Sudden cardiac arrest (SCA) is the leading cause of death among adults. Every minute a person remains in cardiac arrest, survivability is reduced by 10%. The definitive treatment for ventricular fibrillation (the most common 'treatable' type of cardiac arrest) is defibrillation. Early CPR in conjunction with defibrillation increases survival rates by nearly 50%.

The increased time required for paramedics to respond to remote locations, have a significant impact on cardiac arrest patients' outcomes. It is clear that a victim of SCA has little or no chance of surviving in that environment without immediate advanced treatment. However, new technology (AED – Automated External Defibrillation) has made the previously exclusive skill of defibrillation now available to non-paramedic staff for use in a safe and effective manner. We are now seeing SCA patients in the non-urban environment surviving as a result of non-urban responder provided defibrillation.

PEAK is the leader in non-urban Public Access Defibrillation (PAD) implementation in British Columbia, and we provide the required medical direction for the Cardiac Arrest Management (CAM - AED) component of our *Advanced Emergency Medical Training Program*. PEAK aims to provide a simple and cost-efficient approach to the management and organization of a corporation's CAM - AED program.

## **ADVANCED NON-URBAN AIRWAY MANAGEMENT: KING LT-D PROTOCOL**

While the common belief may be that *rapid transport* of patients from remote and non-urban areas can resolve most emergency problems experienced there, it is simply not the case. Effective basic patient care must be provided and maintained during prolonged and difficult evacuations. As the distance and time involved in evacuation increases with the remoteness of the event, so increases the need for higher levels of training and treatment in order to keep seriously injured and ill patients alive until advanced life support is available. Effective airway management has been identified as the most crucial factor in survival during rescues from non-urban areas.

It is difficult to provide effective bag-valve-mask ventilation in an emergency room; how much more so when packaging and transporting a patient in an often hostile environment?

Therefore it is critical for non-urban responders to have a means of confidently providing a secured airway and reliable ventilations during extrication and treatment, as well as during packaging and evacuation, in order to ensure the most favourable outcome possible.

Immediate, effective airway management is the cornerstone of good patient care - the 'A' of the ABC mantra highlights its necessity. There are many advantages of definitive pre-hospital airway care, including the delivery of high concentrations of oxygen, the prevention of gastric distension, and the protection of the lungs from the aspiration of emesis, to mention only a few.

The KING LT-D is a safe and reliable disposable supraglottic airway tool for pre-hospital emergency airway management and ventilation when endotracheal intubation is not feasible or available. Studies indicate that, when the KING LT-D is used, the development of gastric distension (and consequent vomiting / aspiration) is reduced by as much as 95% when compared to the use of the bag-valve-mask on its own. In addition, the KING LT-D has been engineered to withstand extreme environmental conditions, and takes literally only seconds to insert - which makes it a most suitable airway management device for the non-urban environment.

## **INSTRUCTOR DEVELOPMENT TRAINING COURSES**

In addition, we provide the necessary Instructor Development Training for organizations to become self-sufficient. This program is not for all organizations or corporations; however, should this be of interest, please contact us and we will be pleased to provide further information on the subject.