ELK VALLEY

TRAUMA TRANSPORT PROTOCOL FOR THE ELK VALLEY

A PARTNERSHIP BETWEEN THE BRITISH COLUMBIA AMBULANCE SERVICE AND THE INTERIOR HEALTH AUTHORITY

- August 2006 –

Interior Health

BRITISH COLUMBIA AMBULANCE SERVICE

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INTRODUCTION

The Elk Valley Trauma Transport Protocol has been developed to assist British Columbia Ambulance Service (BCAS) Paramedics within the Elk Valley with their Trauma Patient transport decisions.

Seriously injured patients are best treated in a Trauma Receiving Hospital if one can be reached within the right time frame. The concept of the "golden hour" emphasizes the urgency necessary for successful management of the injured patient and is not intended to represent a "fixed" time period of 60 minutes. For Trauma Patients within the Elk Valley, a **40** minute time frame has been determined for the East Kootenay Regional Hospital and a **30** minute time frame has been determined for the Crowsnest Pass Hospital in Blairmore and the Elk Valley Hospital in Fernie. These Hospitals have been designated as Trauma Receiving Hospitals for the Elk Valley, and if more than one Hospital meets the time guidelines, the preferential order of transport is as follows:

1. East Kootenay Regional Hospital
2. Elk Valley Hospital
3. Crowsnest Pass Hospital

Because a major Trauma Patient's survival depends on receiving definitive care, the Paramedic has to minimize the time taken for pre-Hospital care. The time required to extricate, assess, treat, load and transport the major Trauma Patient to the Trauma Receiving Hospital must be minimized. Training in patient assessment and treatment is covered in other resource material and will not be covered in this module.

The purpose of this document is to explain the Elk Valley Protocol and define:

- How to identify the major Trauma Patient.
- Where to transport the major Trauma Patient utilizing the Elk Valley Geographical Guidelines and Map.
- What data to record on the Crew Report.

This protocol has been approved by Regional Medical Oversight, the British Columbia Ambulance Service and the Interior Health Authority, confirming that all agree on how to get the acutely injured patient to the most appropriate Treatment Center within the proper time frame.

The Elk Valley Protocol outlines a Triage Transport Algorithm that will guide pre-Hospital personnel to identify major Trauma Patients and how to determine the transport route to the most appropriate Hospital.

This document is a living document that will be revised as services within the Elk Valley are upgraded or changed by the BCAS and EKHSA.

ELK VALLEY GEOGRAPHICAL GUIDELINES

The major Trauma Receiving Hospitals for Trauma Patients are **Crowsnest Pass Hospital (CPH), Elk Valley Hospital (EVH)** and **East Kootenay Regional Hospital (EKRH).**

No matter how seriously injured or unstable Trauma Patients are in the Elk Valley, they must be transported to a Trauma Receiving Hospital (CPH, EVH or EKRH) if they are within the geographical guidelines and transport time frame.

Transport Time Frame – EKRH: 40 Minutes - CPH and EVH: 30 Minutes

If the patient is not within the transport time frame, taking into account weather and traffic conditions, the patient should be taken to the most appropriate facility (*Elkford Health Care or *Sparwood Primary Health Centre).
If questionable airway or traumatic arrest, patient must be taken to nearest facility.

***Call Health Centres prior to arrival to ensure a doctor is available. If not, proceed to next nearest appropriate Medical Facility.**

There will be no diversion for patients from a multi-casualty incident unless otherwise directed by the Emergency Physician, BCAS Dispatch or Superintendent.

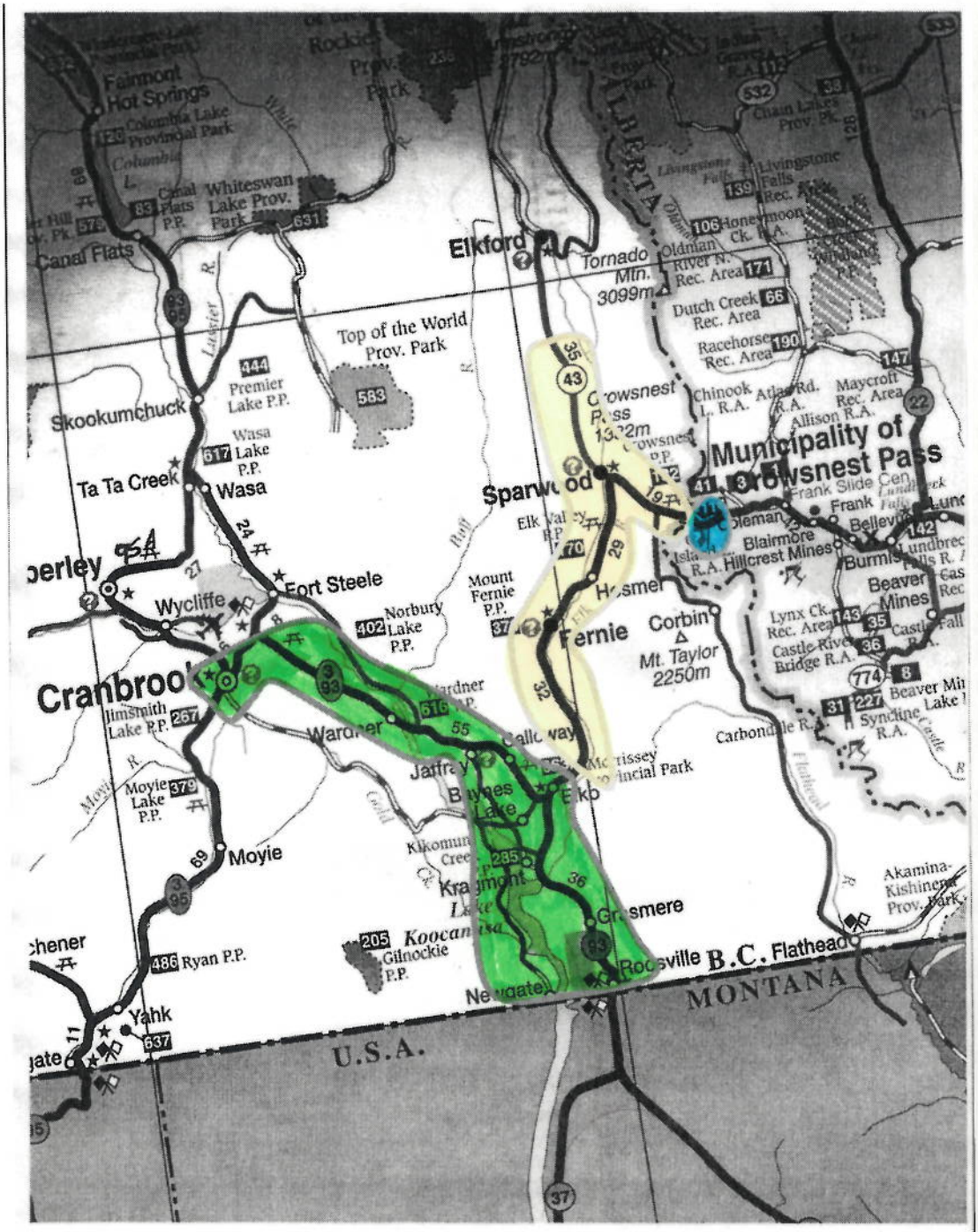
- **West of and including all of Elko** – Transport Trauma Patients directly to East Kootenay Regional Hospital.
- **Highway 93** – Transport Trauma Patients directly to East Kootenay Regional Hospital.
- **North-East of Elko** – Transport Trauma Patients directly to Elk Valley Hospital.
- **North-East of Fernie including Sparwood to the Elk Valley Coal – Line Creek Operations entrance on Highway 43** – Transport Trauma Patients directly to Elk Valley Hospital.
- **East of Sparwood to the Corbin Road (Elk Valley Coal – Coal Mountain Operations Junction) on Highway 3** – Transport Trauma Patients directly to Elk Valley Hospital.
- **East of Corbin Road (Elk Valley Coal – Coal Mountain Operations Junction) on Highway 3** – Transport Trauma Patients directly to Crowsnest Pass Hospital.
- **North of Elk Valley Coal – Line Creek Operations entrance on Highway 43 Including Elkford** – Transport Trauma Patients to Elkford Health Centre if doctor available, or Sparwood Health Centre if doctor is available. Patient to receive assessment, treatment and re-triage to Elk Valley Hospital as appropriate.

- **Special Circumstance - Kikomun Road & Jaffray-Baynes Lake Road** – EKRH Geographical Guidelines and Map include this intersection. If crews are transporting a Trauma Patient though this intersection, transport shall be to the EKRH even if 40 minute timeline will be exceeded.
- **Special Circumstance - Highway 93 –** If crews are transporting a Trauma Patient from Highway 93, transport shall be to the EKRH even if 40 minute timeline will be exceeded.

Note that the boundaries are not absolute, they are meant as firm guidelines, but you must take into account traffic and weather conditions. If in doubt you should contact the Emergency Physician for assistance with your transport decision.

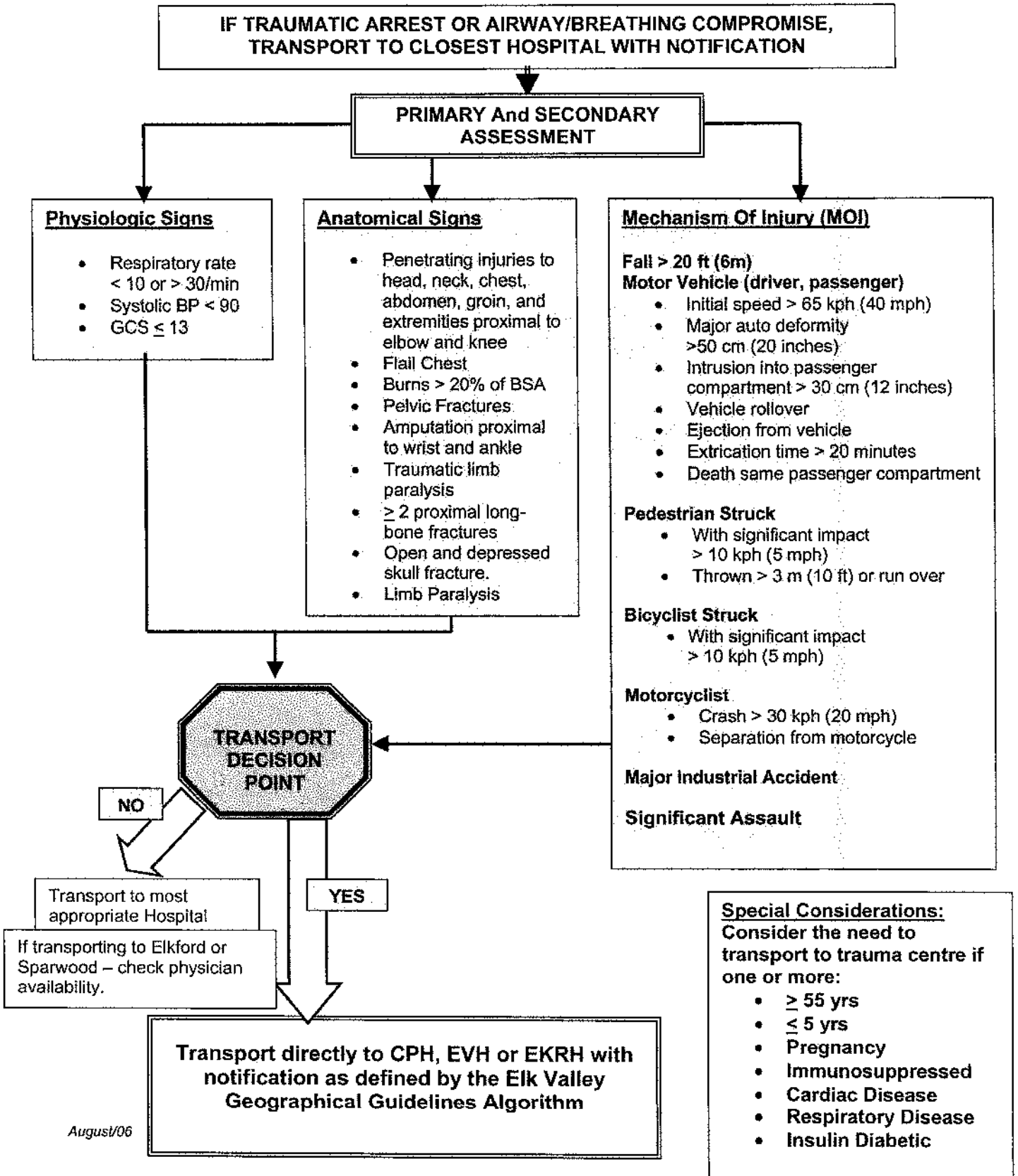
CPH ER Department Direct Line is 403-562-5002.
EVH Switchboard Line is 250-423-4453.
EKRH ER Department Direct Line is 250-420-4101.

Elkford Health Centre Switchboard Line is 250-865-2247.
Sparwood Health Centre Switchboard Line is 250-425-6212.
****If no answer – call EVH Switchboard.**



Green – Transport to EKRH Yellow – Transport to EVH Blue – Transport to CPH

ELK VALLEY BCAS TRIAGE TRANSPORT PROTOCOL



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DOCUMENTATION

An Elk Valley Protocol must be reported on your Crew Report regardless of whether the patient was transported to the Trauma Receiving Hospital or to another Hospital. This is to facilitate identifying all Trauma Patients who have a serious injury or who otherwise meet the trauma criteria.

Unit Chiefs will submit copies of all Elk Valley Protocol Crew Reports monthly to the Superintendent.

MAJOR TRAUMA TRIAGE CRITERIA FOR ADULTS

The Elk Valley Transport Protocol was designed to facilitate the recognition of major Trauma Patients. Identifying major trauma criterion through the patient's **Physiologic Signs, Anatomical Signs** and/or **Mechanism of Injury** is critical and should lead to a prompt transport decision point and an expeditious transport to the designated Hospital defined by the Elk Valley Geographical Guidelines. The criterion listed below is significant and is reiterated in this packet as any patient(s) demonstrating any or all of these signs have an increased mortality and morbidity risk. These patients need prompt pre-Hospital and transport care.

Respiratory Rate

- It is not uncommon for traumatized patients to have an elevated respiratory rate. However, respiratory rates equal to or greater than 30 breaths per minute usually indicate respiratory failure due to serious chest injury or airway problems. Similarly, a respiratory rate of less than 10 breaths per minute is insufficient to maintain oxygenation and will result in respiratory failure. Therefore, Trauma Patients with a respiratory rate of 30 or more breaths per minute, or a rate of less than 10 per minute, are to be triaged as major Trauma Patients. **If the patient is experiencing airway or breathing compromise, the patient is to be transported to the closest Hospital.**

Hemorrhagic Shock

- Patients showing signs of hemorrhagic shock, specifically a systolic blood pressure of less than 90 mmHg, which is below the threshold, indicates transport to the major Trauma Receiving Hospital is necessary.

Penetrating Injuries

- Patients with penetrating injuries to vital areas such as the chest, neck, head, abdomen, groin or proximal extremity above the knee or elbow have a high probability of serious internal injury.

Two Proximal Long Bone Fractures

- Patients who have suffered two or more proximal long bone fractures have generally absorbed enough force to cause serious internal injuries that may be hard to detect initially. For this reason they need to be triaged to the Trauma Receiving Hospital.

Flail Chest

- Patients with flail chest invariably have underlying serious pulmonary or cardiac injuries such as pulmonary contusion, pneumothorax, cardiac tamponade or aortic injury. Flail chest is a triage criterion for major trauma and appropriate transport.

Major Amputations

- Patients with major amputations proximal to the knee or elbow are triaged as major trauma.

Burns

- Second or third degree burns with airway compromise, or significant body surface area (BSA) affected, are classified as major trauma victims. Significant BSA is >10% in ages <10 and >50 years of age, and 20% for all others. 5% BSA is major at any age if the burn is full thickness, as are second and third degree burns to the face, neck, hands, feet or groin areas.

- High voltage electrical burns, including lightening strikes, significant chemical burns and/or inhalation injury also constitute a major trauma.

Limb Paralysis

- Any traumatic limb paralysis and/or neurological deficit are cause for a high index of suspicion for a spinal cord injury, and these patients require transport to the Trauma Receiving Hospital.

Pregnancy

- If a Trauma Patient is of twenty weeks or more gestation, and is exhibiting abdominal pain or tenderness and/or bleeding from the vagina, she is to be classified as a major trauma.

REMEMBER:

If any of these criteria are met, patients **must** be transported to the major Trauma Receiving Hospital **as soon as possible** provided that the Hospital is within the geographical guidelines and/or transport time frame. In order to properly triage the Trauma Patient, one must consider the mechanism of injury in addition to the physical findings of the patient. It is critical that the Trauma Patient must be constantly re-assessed as the physical findings may not be evident at first.

MECHANISM OF INJURY

Assessing the mechanism of injury constitutes the second step in the proper triage of the Trauma Patient. A large force transmitted to the patient can often cause serious internal injury, which may not be immediately apparent; thus the mechanism of that force plays an important role in proper triage of the Trauma Patient.

Accidents that involve a high risk of serious injury are:

- Severe deceleration injury
- Falls greater than 20 feet
- High speed Motor Vehicle Incidents (MVI)
- Roll-over MVI
- MVI with person thrown from a vehicle
- MVI involving a pedestrian hit at 10 kph or more
- Bicycle/motorcycle accident greater than 10 kph

All Trauma Patients who meet these mechanisms of injury criteria must be carefully assessed and will likely need to be transported to the Trauma Receiving Hospital. If after careful assessment the Paramedic is quite certain that the patient has not suffered a major injury, and there is reason to transport to a Treatment Center other than the Trauma Receiving Hospital, this may be done after consultation with an Emergency Department physician.

In all cases involving transport of a major Trauma Patient the receiving Hospital must be:

- NOTIFIED OF THE TRANSPORT

- M - mechanism of injury

- I - description of injuries

- V - vital signs

- T - treatment given

- Estimated Time Of Arrival

After consultation with the receiving Hospital Emergency Physician and the decision is made to transport the patient to an alternate facility, the destination Hospital must be notified.

An exception to the trauma triage guidelines is made for traumatic arrests and airway/breathing compromise. These patients are to be taken to the nearest treatment facility.

SPECIAL CONSIDERATIONS

Pregnant Trauma Patients

Injuries:

- For the purposes of the Elk Valley Protocol, pregnant patients are to be managed in the same manner as all other patients except that if she is of twenty weeks or more gestation, and is exhibiting abdominal pain or tenderness and/or bleeding from the vagina, she is to be classified as a major trauma.

Mechanism:

- Because injuries to the fetus are virtually undetectable in the field, all pregnant patients of twenty or more week's gestation who have suffered any of the mechanisms of injury criteria must be transported to the Trauma Receiving Hospital, even if the mother appears uninjured.

Pediatric Trauma Patients

- In the Elk Valley Protocol the time limits and the boundaries are the same for children as for adults, however, Paramedics must be aware that transport times are even more critical for children than they are for adults. Children may also initially appear more stable than adults but they can decompensate very quickly. On scene and travel time must be kept to an absolute minimum.

Traumatic Arrest

- When faced with a traumatic arrest or airway obstruction that you are unable to manage you should go to the nearest facility and contact them while on route.

Intoxicated Patients

- Trauma Patients with a GCS of 13 or less require transport to the Trauma Receiving Hospital even if they are obviously intoxicated and the altered LOC seems directly related to drug or alcohol use.

ESSENTIAL TREATMENT WHILE ON ROUTE

Using the criterion that has been outlined in this protocol, you can now identify the major Trauma Patient. You know that the **appropriate Trauma Receiving Hospital in the Elk Valley Corridor is Crowsnest Pass Hospital, Elk Valley Hospital or East Kootenay Regional Hospital.** You are also aware of the significant time frame that emphasizes the limits of the *"golden hour"*. Given the time constraints of that hour, it is imperative that Trauma Patients that meet the triage criteria receive only essential treatment at the scene. All other treatments, although important, must be performed on route to the Hospital. Do not delay transport of a seriously injured patient for any reason. The following constitute essential treatments:

- Clear an obstructed or partially obstructed airway
- Supplemental oxygen by mask for all seriously injured patients
- Ventilation with supplemental oxygen using bag-valve-mask or pocket mask as required
- Seal an open sucking chest wound if present
- CPR if in cardiac arrest (pulseless; apneic)
- Control life threatening hemorrhage with pressure
- Cervical spine immobilization
- Limited immobilization for major open fractures or dislocations

All other pre-Hospital Protocols such as IV Therapy or Entonox treatment must strictly follow current Protocols. If they are done they must be done on route.

COMMUNICATING WITH THE EMERGENCY DEPARTMENT

The BCAS has provided all crews in the region with cellular telephones so that they can have direct communication with the Emergency Department (ED) staff and if necessary the Emergency Department Physician. Use the cellular telephone to notify the Trauma Receiving Hospital that you have a Trauma Patient on route that meets the trauma criteria. If cellular coverage is unavailable, relay the information through the Dispatch Centre.

The content of a notification to a receiving Hospital is meant to be a one-way transfer of information to the ED. The ED staff will not request excessive patient information. Hospital notification forms that outline the key information that is required will be provided to all crews and ED staff.

ESSENTIAL INFORMATION REQUIRED

- **M** - **MECHANISM** OF INJURY
- **I** - DESCRIPTION OF **INJURIES**
- **V** - **VITAL SIGNS**
- **T** - **TREATMENT GIVEN**
- **Estimated Time Of Arrival**