**State of Alaska Pediatric Consultation and Transfer Guidelines**

**I. Introduction:**

Trauma is the leading cause of death among children in the state of Alaska. Many injured children can be successfully cared for by providers and staff in local hospitals. However, those that are severely injured may require specialized pediatric critical care services or specialized trauma services that are not available in local hospitals. In such cases, referral centers that provide specialized pediatric critical care services or trauma services are essential to the care of children who have sustained such injury.

The State of Alaska currently has two designated Level II trauma centers in Anchorage. All other hospitals with trauma designation in the state are currently Level IV. Local Emergency Medical Service (EMS) agencies and hospitals must be aware of, not only their local capabilities and services, but also referral services available to them.

The decision to seek consultation or to transfer a pediatric patient needs to be standardized, based on local needs and resources. However, children with certain categories of critical illness and injury are at high risk of death and disability. Therefore, early consultation and rapid transfer to a specialized hospital can improve the outcomes for these children. The attached guidelines are intended to be used by providers, hospitals, rural clinics, and EMS teams to identify critically ill or injured children who may benefit from consultation with critical care or trauma specialists or being transferred to a specialized referral center.

**II. Pediatric Consultation and Transfer Guidelines for Trauma and Critical Illness:**

The State of Alaska has multiple levels of trauma care. Alaska Native Medical Center (ANMC) and Providence Alaska Medical Center (PAMC) are currently Alaska’s only Level II trauma centers. PAMC is a Level II Pediatric trauma Center, currently the highest level of Pediatric trauma care in the state. All other hospitals with trauma designation status are currently Level IV trauma centers. In addition, there are several other hospitals in the state that do not have designation status. Harborview Medical Center in Seattle, Washington is used as the primary transfer center for Level I adult and Level I pediatric trauma center that requires care beyond that available in Alaska. Acutely injured children who do not require critical care management can be cared for in a Level IV trauma center. Only a critically injured child and/or a child whose level of care exceeds the local area capability should be transferred to a Level II or Level I trauma center. It is imperative that providers in each hospital are aware of their unique capabilities and resources so that pediatric patients can be transferred to the appropriate level of care in the shortest time possible. Weather and geographic challenges must also be taken into consideration at the time of injury. Therefore, excellent hospital-to-hospital communication and collaboration is important.

Pediatric patients with a non-traumatic illness can be cared for in regional facilities. However, patients should be transferred to a higher level of care when their medical and/or nursing care exceeds what is available in their community. Again, it is important for providers to be aware of their unique capabilities and resources.

The following contains guidelines of when to transfer the critically injured and/or ill pediatric patient. The guidelines serve as a resource for health care providers in the state of Alaska. If a provider is uncomfortable with the presenting patient for any reason, including conditions described below, a consultation may be appropriate.

**II.** **Pediatric Trauma Transfer Guidelines**

 **A. Physiologic Criteria:**

* GCS 8 or less, or deteriorating by 2, with mechanism attributing to trauma.
* Respirations > 60 or (<20in infant aged <1 year) respiratory distress, or need for ventilatory support.
* Clinical signs of shock (pale, cold, clammy, tachycardia with weak pulses, cap refill >2 seconds, etc.).
* Age specific hypotension: systolic blood pressure less than 70 mm Hg + (2 × age in years).
* Children requiring any one of the following:

 a. Invasive monitoring (arterial and/or central venous pressure)

 b. Intracranial pressure monitoring

 c. Vasoactive medications

 **B. Anatomic Criteria:**

* Intubated or inability to intubate due to facial or neck injury or unable to maintain patent airway.
* Suspected airway injury from facial burns, chemical or smoke inhalation.
* PT needing 2 fluid boluses or 40 ml/kg (20 ml/kg) fluid resuscitation from time of injury.
* Gunshot wound or knife wound to head, neck, chest, abdomen/torso or extremity above the elbow or knee or penetrating wound to 2 or more extremities.
* Chest wall instability or deformity
* Open or depressed skull fracture.
* Head injury when accompanied by cerebrospinal fluid leaks
* Significant, blunt maxillofacial injury.
* Known or suspected intracranial bleed.
* 2 or more fractures involving the humerus and/or femur.
* Pelvic fracture.
* Evidence of spinal cord injury or paralysis.
* Amputation, near amputation or degloving injury above wrist or ankle.
* Any injury requiring blood products.

**C. Mechanism of Injury:**

* Falls >10 feet or 3x patient’s height.
* Ejection (partial or complete) from a motor vehicle.
* Seatbelt marks on torso or known or suspected intra-abdominal injury.
* Unrestrained passenger in vehicle rollover.
* Extrication time > 20 min with an injury.
* Intrusion, including roof: > 12 inches occupant site; >18 inches any site
* Death in the same passenger compartment.
* Auto vs. pedestrian/bicyclist thrown, run over or with significant (>20mph) impact.
* Other motorized vehicle crash (ATV, snowmobile, etc.) >20 mph or ejection from vehicle.

**III.** **Pediatric Consultation and Transfer Guidelines for Burns and Burns with Trauma:**

For children who have sustained burn injuries, providers should follow the guidelines of the American Burn Association. Children with burn injuries should be transferred to a Level I or II Trauma Center, Pediatric Trauma Center, or Regional Burn Center per the following criteria:

**I. American Burn Association Transfer Criteria:**

* Second degree burns (partial thickness) of greater than 10% of the body surface area (BSA).
* Third degree burns (full thickness) in any age group.
* Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
* Inhalation injury.
* Burns with respiratory distress
* Electrical burns, including lightening.
* Chemical burns.
* Burns associated with trauma (such as a fracture) or complicating medical conditions. In this case if the trauma poses a greater threat, the patient may be initially stabilized at a trauma center prior to transfer to a burn center.
* Burned children in hospitals without the qualified personnel or equipment.
* Burn injury in patients who will require special social, emotions, or rehabilitative intervention.

**IV. Other Criteria for Transfer:**

* Children requiring close observation.
* Any child who may benefit from consultation with, or transfer to, a Pediatric Trauma Center or a Pediatric Intensive Care Unit (PICU).
* Pediatric patients with 20% burns with trauma will be transferred to a Level I or Level II Trauma Center for evaluation.

**V. Pediatric Non-Trauma Transfer Guidelines:**

Physiologic Criteria:

* Depressed or deteriorating neurologic status.
* Severe respiratory distress responding inadequately to treatment and accompanied by any one of the following:
	+ Cyanosis.
	+ Retractions (moderate to severe).
	+ Apnea.
	+ Stridor (moderate to severe).
	+ Grunting or gasping respirations.
	+ Status asthmaticus.
	+ Respiratory failure.
* Children requiring endotracheal intubation and/or ventilator support.
* Serious cardiac rhythm disturbances.
* Status post cardiopulmonary arrest.
* Heart failure.
* Shock responding inadequately to treatment.
* Children requiring any one of the following:
	+ Arterial pressure monitoring.
	+ Central venous pressure or pulmonary artery monitoring.
	+ Intracranial pressure monitoring.
	+ Vasoactive medications.
* Severe hypothermia or hyperthermia.
* Renal failure, acute or chronic, requiring dialysis.

**Other Criteria:**

* Near drowning with any loss of consciousness, unstable vital signs, or respiratory problems.
* Status epilepticus.
* Potentially dangerous envenomation.
* Potentially life threatening ingestion of, or exposure to, a toxic substance.
* Severe electrolyte imbalances.
* Metabolic disturbances.
* Severe dehydration.
* Potentially life threatening infections, including sepsis, meningitis, encephalitis, pneumonia, etc.
* Children requiring intensive care other than for close observation.
* Any child who may benefit from consultation with, or transfer to, a Pediatric Critical Care Center.

**VI. Guidelines to Interfaculty Transport: Transport Team and Method of Transport**

**I. Decision to Transport:**

The decision to transfer should be based on the above listed criteria, where the needs of the child are above the capabilities of the local hospital. Rural hospitals in the state of Alaska have 24-hour access to the on-call surgeon at the Level I or Level II Trauma Centers or the Pediatric Hospitalist or Pediatric Intensivist at ANMC or the Pediatric Intensivist at the Children’s Hospital at Providence. Life-threatening conditions identified during the initial evaluation should be addressed prior to transfer if there are resources available to do so. The referring hospital must have set protocol and procedure for initiating transfer and ensuring any necessary paperwork or imaging is received by the receiving hospital. A collaborative agreement between the local hospital and the closest receiving trauma center is important. The end of this document includes a list of phone numbers for receiving facilities as well as the 24-hour consultation number. It is important to note that southeast Alaska has an established relationship with Harborview Medical Center for higher trauma care. Any facilities in the southeast region requesting transfer to a higher level of trauma care should contact Harborview Medical Center, Providence Alaska Medical Center, or Alaska Native Medical Center with any pediatric trauma cases

**II. Method of Transport:**

The method of inter-facility transport is dependent on many variables. Alaska is a predominantly rural state, 75 percent of which is not connected by road to a community with a hospital. Additionally, Alaska has many geographic and weather challenges which will impact a provider’s decision to transfer a patient from a local hospital to the closest trauma center. The time and distance involved in the transport of an injured rural patient to a trauma center are associated with delays in definitive care. Therefore, a well-organized trauma system involving the coordination of trauma receiving facilities provide the best care. A local hospital should understand its resources and capabilities and have a plan in place for efficient transfer of patients when necessary.

 **A. Equipment:** Choosing a transport team can be a challenge given the state of Alaska’s rural nature and geographic obstacles. Listed below is a description of the different emergency technicians as described by the Alaska Department of Health and Social Services, Division of Public Health. The referring hospital must be aware of the capabilities of the emergency transport team and should provide any pediatric equipment the transport team may not have on board.

 **B. Communication:** Both the referring and receiving hospital should have policy in place regarding hospital-to-hospital communication. This should include any workup required prior to transport, method of transport and patient stabilization requirements for transport.

**VII.** **EMS Training Levels in Alaska**

 **A. ETT**

The Emergency Trauma Technician (ETT) training program teaches the basics of emergency medical care. It was first developed in Southeast Alaska for use in logging camps. The ETT course can be modified to meet the particular needs of the students or community.

 **B. EMT-I**

The Emergency Medical Technician-I (EMT-I) is equivalent to the National Standard EMT-Basic, as described in the United States Department of Transportation (USDOT) curriculum. The EMT provides basic life support such as splinting, hemorrhage control, oxygen therapy, suction, CPR and use of automated external defibrillators (AEDs). Under the direct or indirect authorization of a physician, an EMT-I may assist with the administration of the patient's own epinephrine auto injector, nitroglycerin, or hand held bronchodilator inhaler. The use of a manual external defibrillator requires separate **certification as a Defibrillator Technician.**

 **C. EMT-II**

The Emergency Medical Technician II (EMT-II) exceeds the National Standard Training Program EMT-Intermediate, developed by the USDOT in 1985. The EMT-II class prepares the student to initiate intravenous lines and administer fluids and certain medications.

 **D. EMT-III**

The Emergency Medical Technician-III (EMT-III) program is designed to add basic cardiac care skills to those the EMT has learned already. Also included in the training program is the use of morphine, lidocaine, atropine, and epinephrine.

 **E. MICP**

Mobile Intensive Care Paramedics (MICP) are licensed by the Alaska Department of Commerce and Economic Development. MICPs function under the direct or indirect supervision of a physician. Generally, paramedics are found in the most populous areas of Alaska, including Anchorage, Fairbanks, Kenai, Soldotna, Nikiski, Juneau, Sitka and Ketchikan. In some of these communities, all pre-hospital emergency medical care is provided by MICPs. In others, the MICP may act as a supervisor or EMS director.

 **F. Community Health Aide:**

Unique to Alaska is the Community Health Aide Program (CHAP). This was developed in the 1960s in response to a number of health concerns, including the tuberculosis epidemic, high infant mortality and high rates of injury in rural Alaska. The Alaska Area Native Health Service has the responsibility of providing medical and health related services to Indian Health Service beneficiaries residing in Alaska. These services are provided by tribal organizations within the Alaska Native Health Care System. The village based CHA/Ps are a vital link in the delivery system.

Community Health Aides/Practitioners (CHA/Ps) work in over 170 rural villages. CHA/Ps work within the guidelines of the 2006 Alaska CHA/P Manual, which outlines assessment and treatment protocols. CHA/Ps are part of an established referral relationship that includes mid-level providers, physicians, regional hospitals, and the Alaska Native Medical Center. In addition, providers such as public health nurses, physicians, and dentists visit villages to see clients in collaboration with the CHA/Ps.

**VIII. Transport Team Configuration**

In order to provide safe and effective care during interfacility transfer, the provider capabilities must match the patient’s current and potential needs. The following categories for risk are adapted from the National Highway Traffic Safety Administration (NHTSA) guidelines from April 2006.

 **A. Stable with no risk for deterioration**

* ETT or EMT I or commercial flight
* Oxygen, monitoring of vital signs, saline lock (basic emergency medical care).

 **B. Stable with low risk of deterioration**

* EMT II or EMT III
* IV, some IV medications including pain medications, pulse oximetry, increased need for assessment and interpretation skills (advanced care).

**C. Stable with medium risk of deterioration**

* EMT III or MICP
* 3-lead EKG monitoring, basic cardiac medications, e.g., nitroglycerin, dopamine, diltiazem,(advanced care +)

**D. Stable with high risk of deterioration**

* MICP with Pediatric Transport Team highly encouraged
* Patients requiring advanced airway but secured, intubated, on ventilator, patients on multiple vasoactive medication drips (advanced care +), patients whose condition has been initially stabilized, but has likelihood of deterioration, based on assessment of knowledge of provider regarding specific illness/injury.

 **E. Unstable**

* MICP with Pediatric Transport Team highly encouraged
* Any patient who cannot be stabilized at the transferring facility, who is deteriorating or likely to deteriorate, such as patients who require invasive monitoring, balloon pump, who are post-resuscitation, or who have sustained multiple trauma (critical care or available crew with time considerations).

**IX. The Method of Transport**

Given Alaska’s size and limited road system, air transport is typically the preferred, if not only, method of transport. Listed below are guidelines to help determine which type of transport method to utilize when transferring a critically ill or injured child. These are adapted from the NHTSA guidelines from April 2006.

* The availability of critical care and/or specialty care transport teams within a reasonable proximity.
* The modes of transportation and/or transport personnel available as options in the particular geographic area.
* Specific circumstances associated with the particular transport situation (e.g. inclement weather, major media event, etc.)
* Anticipated response time of the most appropriate team and/or personnel.
* Established state, local, and individual transfer service standards, and/or requirements.
* Combined level of expertise and specific duties/responsibilities of the individual transporting team members.
* Degree of supervision required by and available to the transporting team members.
* Complexity of the patient’s condition.
* Anticipated degree of progression of the patient’s illness/injury prior to and during transport.
* Technology and/or special equipment to be used during transport.
* Scope-of-practice of the various team members.

**State of Alaska Verified Trauma Centers**

**Level I Pediatric Trauma and Regional Burn Center**

Harborview Medical Center

Seattle, WA

1-888-744-4791 (Transfer Center)

**Level II Pediatric Trauma Center**

Providence Alaska Medical Center

Anchorage, AK

1-907-212-3111 (Emergency Department)

**Level II Trauma Centers**

Alaska Native Medical Center

Anchorage, AK

1-907-729-1729 (Emergency Department)

Providence Alaska Medical Center

Anchorage, AK

1-907-212-3111 (Emergency Department)

**On-call Surgeon and Pediatric Hospitalist at ANMC**

907-563-2662 (ask for surgeon or peds hospitalist on call)

(For medical questions and transfers, contact the hospitalist or intensivist on call)

ANMC Pediatric Intensive Care Unit: 907-729-1050

Intensivist on-call: 907-297-8809

**On-call Surgeon and Pediatric Hospitalist at PAMC**

PAMC: 907-212-3111 (ask for Surgeon or Pediatric Intensivist on call)

(For medical questions and transfers, contact the pediatric intensivist on call)

PAMC Pediatric Intensive Care Unit: 907-212-3133

**Verified Level IV Trauma Centers**

673 Medical Joint Base Elmendorf Richardson

Anchorage, AK

907-580-5555

Bartlett Regional Hospital

Juneau, AK

907-796-8427

Fairbanks Memorial Hospital

Fairbanks, Alaska

907-458-5555

Kanakanak Hospital

Dillingham, AK

907-842-9244

Ketchikan General Hospital

Ketchikan, AK

907-225-5171 ext. 5171

Norton Sound Health Corporation

Nome, AK

907-443-3203

 Mat-Su Regional Medical Center

 Palmer, AK

 907-861-6620

 Mt. Edgecumbe Hospital (SEARHC)

 Sitka, AK

 907-966-8431

 Providence Kodiak Medical Center

 Kodiak, AK

 907-486-9578

 Providence Seward Medical Center

 Seward, AK

 907-224-2846

 Providence Valdez Medical Center

 Valdez, AK

 907-835-2249

 Samuel Simmonds Memorial Health Center

 Barrow, AK

 907-852-9111

 Sitka Community Hospital

 Sitka, AK

 907-747-1701

 South Peninsula Hospital

 Homer, AK

 907-235-0282

 Yukon-Kuskokwim Health Regional Hospital

 Bethel, AK

 907-543-6395

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**Sample Transfer Report Sheet**

