

Mission:

To enhance the quality of life for all we serve

Vision:

Honor our heritage and be the pride of the community

Values:

- Integrity
- Compassion and Caring
- Trust
- Transparency
- Loyalty
- Honoring our Heritage
- Quality
- Fiscal Responsibility

March 8, 2013

House Finance Committee
907-465-6813

Honorable Members of the House Finance Committee:

I am writing this letter as a testimonial on behalf of Wrangell Medical Center in support of HB 65, authorizing recapitalization of the trauma care fund in 2014. I have worked with the trauma registry since its inception in 1991 as an abstractor of data for Wrangell Medical Center's participation in the trauma registry program.

Due to our remote location, we cannot always evacuate trauma patients immediately. This funding supports education and training for our staff, and helps provide needed equipment which improves patient outcomes and helps save lives. This program also supports our efforts to obtain Level 4 Trauma Designation.

Thank you for your time.

A handwritten signature in black ink, appearing to read "Cathy Gross".

Cathy Gross, RHIT
Director, Health Information Managemt

*Caring for
Southeast*

WRITTEN TESTIMONY

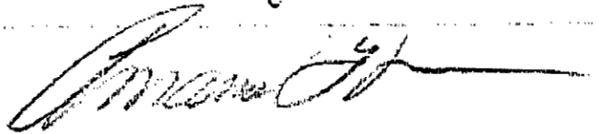
Name: + Address Amanda Moran 2130 Fristee Ct

Representing: _____

Bill No./Subject HB 65Committee: House FinanceDate of Hearing: 3/6/13

I am just writing this about the DBH Grant funding if it gets cut I think that would be the worst thing ever. This program has helped my two boys a lot and without this funding I won't be able to keep them in this program. My oldest boy Sean when he came to the center he was having major melt downs @ school where he would cry for hours and I was getting called all the time from school he wasn't able to learn due to his behavior getting in the way - Now he is getting A's and he is able to express his emotions and handle them in a way that don't take over from doing everyday things. My youngest boy is doing a lot better too, but he still needs this program and if the funding gets cut then I don't know what will happen. So please don't cut this and think of all the children and families this has helped.

Thank You for your time



Alaska Trauma Fund

Issues:

- The Alaska Legislature passed a bill in 1993 authorizing the Department of Health and Social Services to certify hospital trauma centers based on nationally recognized criteria.
- This legislation provided for voluntary certification, but it provided no incentives for hospitals to become certified and no disincentives if they didn't become certified.
- In subsequent years, 4 rural hospitals were certified as Level IV trauma centers (basic level), and the Alaska Native Medical Center was certified as a Level II trauma center (second highest possible level).
- Although seven other hospitals in the state were reviewed by teams from the American College of Surgeons Committee on Trauma, no additional hospitals achieved certification over the next 15 years.
- Three years ago, the Alaska Legislature passed a bill unanimously to provide a trauma fund to give hospitals financial incentives to become certified.
- Following passage of this legislation, a total of 12 hospitals have become certified or recertified as trauma centers - one-half of the 24 acute care hospitals in Alaska.
- Several other hospitals have had trauma center consultation reviews and some of them are in the process of applying for certification.
- Studies have shown that hospitals meeting national trauma center criteria can improve outcomes by approximately 15% to 25%.
- After his trip to Israel, Governor Parnell announced his support for improving trauma care in Alaska. His FY14 budget request included \$2 million for the Alaska Trauma Fund. We support this request.
- We have documentation for the record showing how these funds have been used by certified hospital trauma centers in Alaska. Examples include funds for trauma training of physicians and nurses, support for the trauma registry data system, and funds for equipment to help improve trauma care.
- Currently, Alaska is the only state in the nation that doesn't have at least one Level I or II trauma center serving most of the population and Anchorage is the largest city in the United States that doesn't have at least a Level II trauma center serving most of the population.

Submitted by:

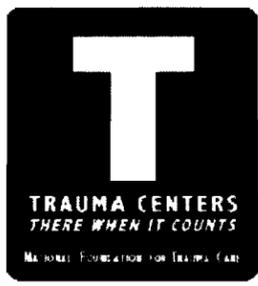
Mark S. Johnson, MPA

Member, Alaska Trauma System Review Committee

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Trauma Fact Sheet

- **A traumatic injury** is a blunt force or penetrating physical injury that requires surgical and other medical specialists to consult, observe or perform surgery in order to optimize recovery.
- **A trauma system** involves the coordination of trauma care delivery among trauma centers, ambulances, helicopters, state and local governments and other healthcare resources. Currently, only 8 states have matured trauma systems.
- **A trauma center** is a specialized hospital distinguished by the *immediate* availability of *specialized* personnel, equipment and services to *treat* most severe and critical injuries. This includes ready-to-go teams that perform immediate surgery and other necessary procedures for people with serious or life-threatening injuries, for example, due to a car crash, bad fall, or gun shot wounds. The mission of a trauma center is to ensure continuity and quality of care for injured patients from the scene of injury through treatment at the trauma center and ultimately physical rehabilitation. Currently, less than 10% of hospitals have a trauma center.
- **How does trauma affect people?**
 - Leading cause of death among children and adults below the age of 45, and is the 4th leading cause of death for all ages
 - Accounts for approximately 170,000 deaths each year and over 400 deaths per day
 - Affects mostly the young and the old
 - Kills more Americans than stroke and AIDS combined
 - Leading cause of disability
- **Trauma centers are classified by levels dependant upon the amount of equipment, staff, and care provided:**
 - **Level I:** Has a full range of specialists and equipment available 24-hours a day • Admits a minimum required annual volume of severely injured patients • Has a research program • Is a leader in trauma education and injury prevention, and is a referral resource for communities in neighboring regions • Has a required program for substance abuse screening and provides brief intervention to patients
 - **Level II:** Works in collaboration with a Level I center usually but may be the only resource in a rural state • Provides comprehensive trauma care and supplements the clinical expertise of a Level I institution • Provides 24-hour availability of all essential specialties, personnel and equipment • No minimum volume requirements • Provides an injury prevention program, as well as conduct substance screening, but not required to have an ongoing program of research or a surgical residency program
 - **Level III:** Has resources for the emergency resuscitation, stabilization, emergent surgery, and intensive care of most trauma patients • Has transfer agreements with Level I and/or Level II trauma centers to assure back-up resources for the care of patients with severe injuries • Has an injury prevention program • Does not have the full availability of specialists except surgery and orthopedics in most states
 - **Level IV:** Provides initial evaluation, emergency resuscitation and stabilization of trauma patients, but most patients will require transfer to higher level trauma centers • Has 24-hour emergency coverage by a physician

Field Triage Guidelines

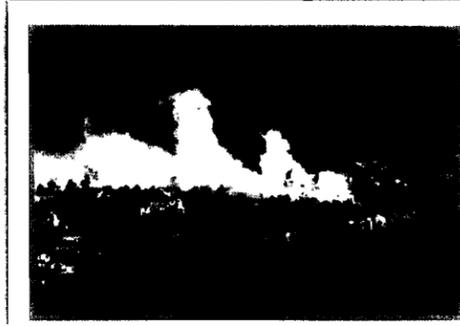
Prehospital emergency care and transport are integral components of getting a patient to the appropriate level of care needed. The Guidelines for Field Triage of Injured Patients, developed by an expert panel convened by the Centers for Disease Control and Prevention (CDC), the American College of Surgeons and the National Highway Traffic Safety Administration, are criteria for EMS providers to identify patients who need specialized trauma center care. These guidelines help EMS personnel accurately estimate injury severity to ensure that patients with the most severe injury are transported to the appropriate level of trauma care. Transporting all traumatic injuries to a Level I trauma center is unnecessary, and uses valuable financial and health care resources at a higher cost. Patients with less severe injuries are transported to the most appropriate facility for their injury.

A 2011 study found that adoption of the CDC's 2006 field triage guidelines can decrease by at least 12 percent the number of patients who are incorrectly triaged.⁸ Forty-two states have adopted these



guidelines to improve trauma triage accuracy. Twenty-nine of these states have modified the official guidelines to meet a unique geographic or population need within the state.

Emergency Preparedness



Preparing for and responding to public health emergencies require a coordinated effort between many local, state and national emergency service responders. The trauma system is an integral part of any public health emergency or natural disaster, and a well-functioning day-to-day trauma system

can be the foundation for a well-functioning emergency medical response following a disaster or mass casualty. Some states coordinate emergency medical preparedness resources, communication and planning to effectively and efficiently respond to emergencies. In many states, the trauma, EMS and emergency preparedness programs are housed in separate agencies, operate on separate state and federal funding streams, and rarely communicate. These disconnects can hinder emergency medical response in a large-scale emergency. Developing statewide emergency management plans, such as a disaster response or mass casualty event plan, is a strategy states can use to identify each agency's role and responsibilities during public health emergencies. The process of developing these plans varies from state to state. In some states, the legislature has initiated coordination of emergency preparedness activities.

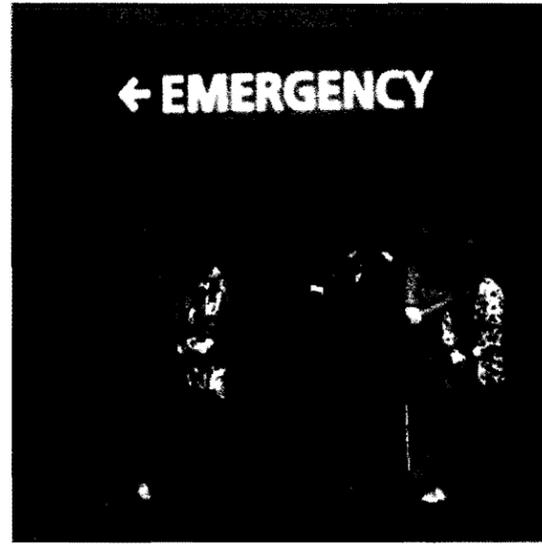
- Twenty-four states have identified a specific role for the trauma system in the state's disaster response plan.
- Nineteen states have identified a specific role for the trauma system in the state's mass casualty incident plan.

Trauma Designation



Dr. Steve Smith:

"Going through the process of Trauma designation has given PKIMC a much more active approach to trauma. In the past, we evaluated the patient in the ER then called personnel as deemed appropriate. This reactive approach could potentially result in a delay of needed care waiting for personnel to arrive. Now we are here as a cohesive unit waiting to care for the patient on arrival."



TRAUMA CARE FUND:

ALASKA NATIVE MEDICAL CENTER
LEVEL II TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT ANMC IN 2012:

Pending Redesignation: Level II Trauma Center November 19, 2012

- **24/7 Trauma Care Coverage** with enhanced neurosurgery capacity, with new staff neurosurgeon from Stanford University.
- **Acquisition of Cell Saver Equipment** training and support personnel. The Cell Saver is an intraoperative cell salvage machine that suctions, washes and filters the patient's blood, reducing the need for, and risk of, blood donation.
- **Advanced Trauma Life Support (ATLS) Training:** A systematic, concise approach to early care of the trauma patient. Simulation provides a common language, enhancing team communication and coordination for rapid, effective, life-saving patient treatment.
- **Trauma Nurse Care Course (TNCC)** provided enhanced clinical knowledge and psychomotor skills related to trauma.
- **Trauma Quality Improvement:** Collection of data through the Trauma Quality Improvement Program allows ANMC to use the National Trauma Data Bank (NTDB) to collect valid, reliable data that identifies characteristics associated with improved outcomes.
- **Trauma Center Association of American (TCAA)** utilization for up-to-date information on resources and sustainability.
- **Outreach and Prevention Programs:**
 - Southern Region EMS
 - Emergency Trauma Technician (ETT)
 - Alaska Injury Prevention Center



TRAUMA ACTIVITIES	TRAUMA COSTS
PERSONNEL	\$1,355,806
REVERIFICATION	\$13,000
EQUIPMENT	\$85,289
EDUCATION	\$46,138
REGISTRY / QI	\$14,000
OUTREACH	\$25,250
TOTAL ANMC COSTS	\$1,539,483
TCF PAYOUT	\$337,500
	456%

TRAUMA CARE FUND:

ALASKA NATIVE MEDICAL CENTER
LEVEL II TRAUMA CENTER

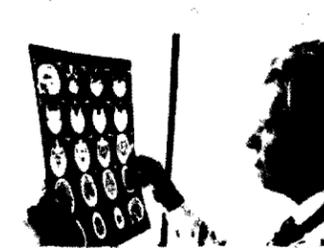
ACCOMPLISHMENTS

- Established a **THINKFIRST Chapter** to provide educational programs to schools and community groups on head injuries.
- Provided education in Neurotrauma to Critical Care Nurses at ANMC for clinical expertise.
- Upgraded angiography equipment for diagnosis and treatment of vascular injuries.
- Addition of 1 full time trauma registrar as recommended by the American College of Surgeons Committee on Trauma.
- Reverification visit successfully completed for Level II Trauma Center by the American College of Surgeons Committee on Trauma.
- Trauma Quality Improvement Program through the ACS-COT provides quarterly reports, external data validation, and annual training.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Only Orthopedic Surgeon currently in Alaska for complex orthopedic fractures and other major orthopedic injuries.

Over 900 Alaskans are hospitalized every year with head or spine injuries. Research has shown that outcomes can be improved and secondary injury decreased or prevented by prompt, evidenced-based management. As the only Level II state designated trauma center, ANMC serves as a reliable source of readily available neurosurgical care for Alaskans.



In the past 2 months, just looking at our trauma cases, we have saved a child who came in fixed and dilated from abuse, a GSW to the head who walked out of here, a number of acute as well as chronic subdurals and epidurals, not to mention some complex spine trauma. I haven't even started mentioning aneurysm, complex brain tumors, etc., etc., and the smorgasbord of Neurosurgery that has not been available in Alaska before.

Dr. Roland Torres
Chief of Neurotrauma

TO SECURE THE ECONOMIC VIABILITY OF AMERICA'S TRAUMA CENTERS AND FOSTER THE DEVELOPMENT OF A NATIONAL SYSTEM OF TRAUMA CARE SO THAT ACCESS TO EXCELLENT CARE FOR THE SERIOUSLY INJURED IS ASSURED.

TRAUMA CENTER ASSOCIATION OF AMERICA

TRAUMA CARE FUND:

BARTLETT REGIONAL HOSPITAL
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT BARTLETT REGIONAL HOSPITAL IN 2012:

Designated Level IV Trauma Center: May 14, 2012

April 1, 2010 to March 31, 2012: 14,500 Emergency Department visits. Of those, 164 were trauma-related.

- **Focused Assessment with Sonography for Trauma (FAST Scan).** Trauma Care Funding supported purchase of a portable ultrasound machine located in Emergency Department, provides rapid non-invasive assessment and diagnosis of Trauma patients.
- **Advanced Trauma Operative Management Course:** The Advanced Trauma Operative Management (ATOM) course is an effective method of increasing surgical competence and confidence in the operative management of penetrating injuries. The State of Alaska Section of Emergency Programs collaborated with the San Diego State University Medical Center to bring this unprecedented opportunity to train rural general surgeons in damage control surgery for mass casualty/medical surge. Four general surgeons from Bartlett Regional Hospital attended this training.
- **Spinal Cord Patients:** Orthopedic physicians are the capability of operating and stabilizing limited types of spinal cord injuries.
- **The Trauma Program Manager** serves as a clinical resource; assists with education of staff, data collection, entry and monitoring, along with Performance Improvement Programs. This specialist meets frequently with Emergency Department staff and EMS to create effective communication and team building to benefit patient care. The Trauma Program Manager ensures consistent, quality trauma patient care.
- **Trauma Registry:** A primary purpose of aggregating trauma related data across the nation and within a state is to provide data for research purposes and to have evidence to direct and improve treatment which can maximize positive outcome for the trauma population. Good data provides evidence for benchmarking and process improvement activities as well as a base from which to develop standards of care.
- **Outreach and Prevention Programs:**
 - Trauma Informed care (caring for emotional needs of trauma patients)
 - Annual Equipment Fair
 - Advanced Trauma Life Support
 - Advanced Trauma Care for Nurses
 - Alaska Injury Prevention Center
 - Trauma Nurse Core Course
 - Responder Ready (Disaster Preparedness course for the public)

TRAUMA ACTIVITIES	TRAUMA COSTS
EQUIPMENT	\$83,394
PERSONNEL	\$8,083
TOTAL BARTLETT COSTS	\$91,477
TCF PAYOUT	\$91,477

TRAUMA CARE FUND:

BARTLETT REGIONAL HOSPITAL
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Hosting Advanced Trauma Life Support Course with the first Advanced Trauma Care for Nurses Course in 2013.
- Purchased 4 dedicated carts for pediatric care and resuscitation including pediatric defibrillator.
- Focused Assessment with Sonography in Trauma (FAST) Scan in Emergency Department for rapid non-invasive assessment and diagnosis of trauma patients.
- Dedicated Trauma Manager and Trauma Registrar.
- In process of upgrading to a Level III Trauma Center.

We had been using a utility cart, which was inadequate, and due to a lack of space, often created chaos during trauma codes. Our new pediatric trauma cart has drawers and shelves, is neatly organized, and definitely improves the care of our trauma patients.



TRAUMA
CART

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Fiscal sustainability of Trauma Program.
- Education and Training of Prehospital and Emergency Room Staff.
- Centralized Air Medical triage and transport.
- Further integration with prehospital and disaster preparedness.

ATOM COURSE

The hands-on experience and use of new products in a non-emergent setting provided new tools to consider when time really matters.

Dr. Pamela Gruchacz

I learned new techniques and am better prepared to identify penetrating injuries.

Dr. Benjamin Miller

FAST SCAN



A 2011 STUDY FOUND THAT ADOPTION OF THE 2006 CDC'S FIELD TRIAGE GUIDELINES CAN DECREASE BY AT LEAST 12 PERCENT THE NUMBER OF PATIENTS WHO ARE INCORRECTLY TRIAGED

E.BROOKE LERNWER ET AL. "COMPARRISON OF THE 1999 AND 2006 TRAUMA TRIAGE GUIDELINES: WHERE DO PATIENTS GO?" EMERGENCY CARE 15 (2011):12-17

TRAUMA CARE FUND:

BRISTOL BAY AREA HEALTH CORPORATION
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT BRISTOL BAY AREA HEALTH CORPORATION IN 2012:

Designated Level IV Trauma Center: December 5, 2011

- **Video Laryngoscope** purchased with Trauma Care Funds provides practitioners with an enhanced view of the vocal cords with decreased time to intubation and increased success. The video laryngoscope is vital equipment for rural trauma centers with limited resources and transportation delays. It provides definitive airway management for compromised trauma patients.
- **Focused Assessment with Sonography for Trauma (FAST Scan)**. This newly acquired portable ultrasound machine rapidly identifies intraperitoneal or pericardial bleeding and pneumothorax in the acutely injured trauma patient.
- Each Bristol Bay Area Community Health Clinic is now equipped with a **full-body vacuum splint**. Patients with potential spinal trauma can be splinted immediately in a position of comfort.
- **Broselow cart** purchased for specialized age- and weight-specific pediatric trauma resuscitation.
- **Continued Professional Trauma Education**; multiple core courses for village Community Health Aides, nursing and physicians; formalized intubation training for Emergency Physicians with staff Anesthesiologists at Alaska Native Medical Center.
- **Screening and Brief Intervention of Trauma Patients (SBIRT)** alcohol intervention training for all point-of-care staff.



TRAUMA ACTIVITIES	TRAUMA COSTS
TRAUMA EQUIPMENT	\$99,084.42
TOTAL BBAHC COSTS	\$99,084.42
TCF PAYOUT	\$92,045.45
	107%

TRAUMA CARE FUND:

BRISTOL BAY AREA HEALTH CORPORATION
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Down rescue-wraps have been purchased to prevent hypothermia before and during air-medical transport.
- Trauma stretchers were purchased to optimize care and resuscitation of trauma patients.
- Video laryngoscope was purchased to for difficult airway intubations.
- Incorporating EMS and prehospital trauma training and education.
- Monthly Performance Improvement Trauma filter reviews with Trauma Committee.



BBAHC has committed to building a strong patient-centered trauma team with the focus on quality care, evidenced-based practice, complete and concise record keeping, with the goal of reducing the number of preventable injuries.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Continued support and resources to village communities.
- Centralize Air Medical resources to streamline patient triage and transport process.

Trauma patients injured in rural Alaska are transported long distances to receive specialized definitive care. Specialized equipment used during transport to the trauma replacement equipment is replaced and given to the crew so rural communities are continuously supplied and at a continual level of preparedness.



THE DEATH RATE FROM UNINTENTIONAL INJURY IS MORE THAN 50% HIGHER IN RURAL AREAS THAN IN URBAN AREAS

SOURCE: MEDICAL DISABILITY ADVISOR HEALTH RESOURCES & SERVICES ADMINISTRATION

**TRAUMA CARE FUND:
673RD MEDICAL GROUP
LEVEL IV TRAUMA CENTER**

The 673rd Medical Group is comprised of a combined DOD and VA workforce of more than 1,100 personnel in six squadrons who provide world class care to Alaska's past and present warriors and their families.

The 673 MDG delivers health care to twenty percent of the Anchorage population by providing over 221,000 outpatient visits, 3,300 surgeries, 444,000 prescriptions and 592,000 lab procedures annually. Staff is truly dedicated to the motto "finding ways to safely say yes."

ACTIVITIES THAT ENHANCED TRAUMA CARE AT THE 673RD MDG IN 2012:

Designated Level IV Trauma Center: February 13, 2012

In 2011: 32,536 Emergency Department visits. Of those, 12,000 were trauma patients.

- The Emergency Department is fully staffed 24/7 with a General Surgeon on call at all times.
- Radiology Department and staff are available 24/7/365. The Radiology department is just a short distance from the Emergency Department and is readily accessible.
- The availability of general surgery and operating rooms and Intensive Care Unit capability adds to the strength of the trauma program.
- **Spinal Cord Patients:** The hospital has the capability to stabilize and begin initial treatment of spinal cord or suspected spinal injuries.
- 673rd MDG has 8 bed Intensive Care Unit (ICU). The ICU has a total staff of 22 RNs and 6 Respiratory therapists. The average daily patient census is 5 patients/day. Length of Stay (LOS) is approximately 3 days.
- **Focused Assessment with Sonography for Trauma (FAST Scan)** exams are done in the ER and all emergency physicians and general surgeons are trained to provide this service.
- **The Trauma Program Manager (TPM)** is responsible for developing, implementing, and maintaining a cost-effective system of care for trauma patients throughout the continuum of care. The TPM serve as a clinical resource, assists with staff education, data collection, data entry and monitoring, along with Performance Improvement Programs.
- **Trauma Registry:** A primary purpose of aggregating trauma-related data across the nation and within a state is to provide data for research purposes and to have evidence to direct and improve treatment to maximize positive outcomes for the trauma population. Good data provides evidence for benchmarking and process improvement activities as well as a base from which to develop standards of care.

New Programs

The 673rd MDG is preparing to submit their trauma registry data to the **Department of Defense Trauma Registry (DoDTR)**. The Department of Defense Trauma Registry provides data that leads to improved care of wounded warriors from point of injury through rehabilitation. It also generates actionable medical information leading to advancements in trauma care.

RETURN ON INVESTMENT

TRAUMA ACTIVITIES	TRAUMA COSTS
PERSONNEL	\$100,000
TOTAL TRP COSTS	\$100,000
TCF PAYOUT	\$92,048
RETURN ON INVESTMENT	100%

TRAUMA CARE FUND:

673RD MEDICAL GROUP
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Currently evaluating the feasibility of becoming a Level III Trauma Center.
- Trauma education is fully funded by the 673rd MDG for all physicians, nurses, mid levels, and medics at JBER.
- Trauma Education is well-documented and frequently offered for all staff, who are encouraged to receive trauma-related training.
- 100% compliance in staff trauma education requirements.
- Strong Performance Improvement Program.
- The 673rd MDG has mental health services readily available, as well as clinical social workers available through the VA clinic. Critical debriefing is available.



The 673rd MDG is a leader in injury prevention through fall prevention, alcohol awareness, suicide awareness/prevention, seatbelt safety and bicycle helmet safety activities readily available.

Monthly staff education and daily reminders reinforce the importance of safety and injury prevention.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Continue process of evaluating the feasibility of becoming a Level III Trauma Center.
- Continue to evaluate ability to receive civilian patients.

Strong consideration s should be given to continue to grow the trauma program to a Level III designation status. By utilizing internal resources and care processes, adding additional staffing such as a regular full-time civilian trauma program service to its beneficiaries and fill a major gap of available trauma centers within the local community.
TSRC 2012 Level IV
Verification Review



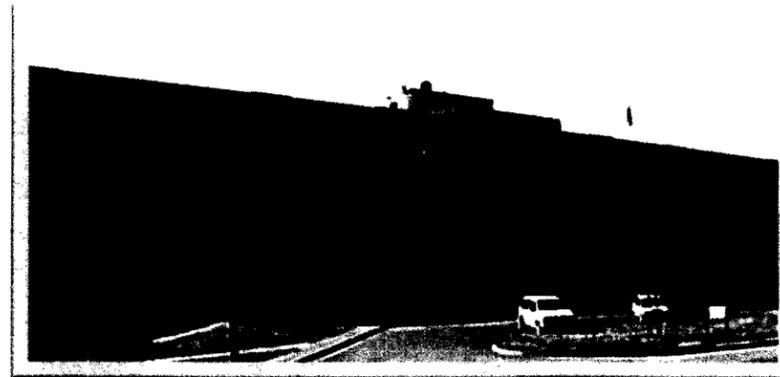
TRAUMA CARE FUND:

MT. EDGECUMBE HOSPITAL
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT MT. EDGECUMBE HOSPITAL IN 2012:

Redesignated as a Level IV Trauma Center: December 15, 2010

- Mt. Edgecumbe Hospital serves 18 Alaska Native villages and is a referral and treatment center for 12 area clinics. Mt. Edgecumbe Hospital covers all of Southeast Alaska (42,162 square miles).
- **Cervical Vacuum Immobilizer** is now available for providers to use in trauma care. The immobilizer limits cervical spine range of motion in forward flexion, extension, and lateral flexion. It can be easily placed on an injured patient and keeps the patient immobilized during transport.
- Funding for the **Advanced Trauma Life Support (ATLS)** program for physicians and mid-level providers offers systemic and concise training for the early care of trauma patients. This program provides participants with a safe, reliable method for immediate management of the injured patient and the basic knowledge necessary to: assess the patient's condition rapidly and accurately; resuscitate and stabilize the patient according to priority; determine if the patient's needs exceed a facility's capacity; arrange appropriately for the patient's inter-hospital transfer; and assure optimum care that does not deteriorate at any point during the evaluation, resuscitation, or transfer process.
- **Intraosseous (IO) Infusion** capabilities added this year provide an alternative route for the administration of fluids and medications when difficulty with peripheral or central lines is encountered during resuscitation of critically ill and injured patients. Data indicates that IO infusions using the intraosseous system may provide rapid, safe vascular access and may be a useful technique for reducing unacceptable delays in the provision of emergency treatment.



TRAUMA ACTIVITIES	TRAUMA COSTS
EQUIPMENT	\$70,009
EDUCATION	\$32,514
OUTREACH	\$250
TOTAL MEH COSTS	\$102,773
TCF PAYOUT	\$92,045
	117%

TRAUMA CARE FUND:

MT. EDGECUMBE HOSPITAL
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Mt. Edgecumbe Hospital has streamlined its transport process by utilizing the ED RN to make flight arrangements for transfer.
- Focused Assessment with Sonography for Trauma (FAST) scans support the appropriate timely transfer of trauma patients for further imaging or definitive surgical intervention, particularly in rural areas with limited resources.
- The majority of Intensive Care Nurses at Mt. Edgecumbe Hospital are crossed-trained to the Emergency Department.
- A new CAT Scanner is available for diagnostics of emergent patients.
- Pelvic binders purchased with Trauma Care Funds are force-controlled circumferential pelvic belts scientifically proven to safely and effectively reduce and stabilize open-book pelvic ring fractures.
- Practitioners were trained in: Advanced Trauma Life Support, Emergency Nurse Pediatric Course, Trauma Nurse Core Course, Sexual Assault Nurse Examiner Course, Alaska Trauma Registry training, and Certified Emergency Nurse Training.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Remodeling of ED to ensure optimal patient care and flow with a centralized nursing station in the ED.
- Participation in State Trauma or EMS Board.

The TNCC Course is designed to provide the learner with cognitive knowledge and psychomotor skills in the treatment of trauma patients. The course is for nurses with limited emergency nursing clinical experience or who work in a hospital with limited access to trauma patients.



DR. ELLIOT
BRUHL



The new Trauma Task Force – a multidisciplinary group working to streamline trauma care and process improvement – has positively influenced the care trauma patients receive at Mt. Edgecumbe Hospital.

SIXTEEN STATES REQUIRE TRAUMA CENTERS TO PAY A FEE FOR TRAUMA CENTER DESIGNATION STATUS

NATIONAL CONFERENCE OF STATE LEGISLATORS

TRAUMA CARE FUND:

PROVIDENCE KODIAK ISLAND MEDICAL CENTER
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT PROVIDENCE KODIAK ISLAND MEDICAL CENTER IN 2012:

Designation as a Level IV Trauma Center: May 11, 2012

In 2010, there were 3,860 Emergency Department visits. Of those, 1,269 were trauma patients.

- **Community Education and Outreach:** Providence Kodiak Island Medical Center partnered with the Bayside Fire Department on the purchase of a Hazard House/Hazard Kitchen Project. A Bicycle Rodeo that distributed 200 bicycle helmets was partnered with the Kodiak Area Native Association. PKIMC also conducted Fall Prevention education at the local Senior Center. Falls are a leading cause of injury for elders in their area.
- **Purchase of Lifesaving Resuscitative Equipment:** A glidescope for the Emergency Room assisted with rapid intubations, cervical spine collars, and traction splints.
- **Trauma Professional Nursing Education:** The *Trauma Nurse Core Course* and *Emergency Nurse Pediatric Course* enhanced the level of trauma care by the Emergency Department, Operating Room, and departmental Registered Nurses.
- **Prehospital Trauma Life Support** was provided as a community service for Prehospital Providers and Fire Departments.



TRAUMA ACTIVITIES	TRAUMA COSTS
TRAUMA PERSONNEL	\$138,008
EDUCATION	\$40,500
TRAUMA OUTREACH	\$21,980
TOTAL PKIMC COSTS	\$227,288
TCF PAYOUT	\$92,045
	247%

TRAUMA CARE FUND:

PROVIDENCE KODIAK ISLAND MEDICAL CENTER
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

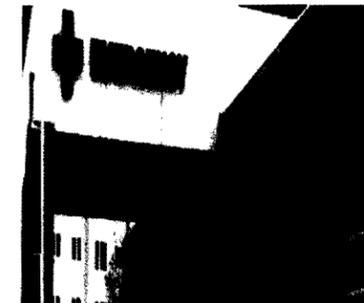
- Dedicated Trauma Coordinator position.
- In 2010, one third of the 3,860 Emergency Department visits were trauma patients.
- The Emergency Department now has a Rapid Sequence Intubation Kit.
- The PKIMC Trauma Program now provides EMS quality improvement data to improve patient outcomes.
- PKIMC has established transfer protocols for burn patients, spinal cord patients, and head injury patients.

The new Screening, Brief Interventions, and Referral to Treatment (SBIRT) forms now used in the Emergency Department provides an integrated approach to early intervention with at-risk substance users before more severe consequences occur.



ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Ability to sustain on-call physicians, subspecialitists, and nurses.
- Continue progress towards Level III Trauma Center.



Falls are the #1 presenting trauma to the PKIMC Emergency Department. By providing community education, PKIMC hopes to decrease the incidence of falls and associated injuries.

We don't heal in isolation, but in community.

— S. Kelley Harrell

TRAUMA CARE FUND:

PROVIDENCE SEWARD MEDICAL CENTER
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT PROVIDENCE SEWARD MEDICAL CENTER IN 2012:

Designated as a Level IV Trauma Center: March 30, 2012

- Three Emergency Physicians attended a *Difficult Airway Course* to improve critical intubation skills.
- Increased communication between PSMC and local EMS crews and Fire Departments resulting from trauma system activities has improved patient care and outcomes.
- PSMC maintains a staffing level for on-call nursing staff 24 hours a day, 7 days a week. A “back up” physician is available to respond to trauma or critical care needs.
- Emergency Department staff participates in the Regional EMS Council.
- Purchase of Pediatric Laryngoscope with Trauma Care Funds improves difficult pediatric airway management.

Outreach and Prevention Programs:

- “Trauma Nurses Talk Tough” to local area high schools students on risky behaviors
- Family and Friends CPR
- Kids Don’t Float
- Bicycle Rodeo
- Prehospital Trauma Life Support Course

TRAUMA ACTIVITIES	TRAUMA COSTS
PERSONNEL	\$9,762
EQUIPMENT	\$41,284
EDUCATION	\$50,569
OUTREACH	\$250
TOTAL PSMC COSTS	\$101,816
TCF PAYOUT	\$93,045
	110%



TRAUMA CARE FUND:

PROVIDENCE SEWARD MEDICAL CENTER
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- PSMC streamlined the processes surrounding a critically injured patient with strategic organization of two crash carts.
- Multiple warming techniques are now available for trauma resuscitations.
- PSMC now has monitoring equipment for safe and effective transport of trauma patients from the Emergency Department for procedures (CAT scan, Radiology).
- 100% of Emergency Department has required trauma training certifications.
- Trauma Medical Director participated in *Tactical Combat Casualty Care* Course.
- Integrated trauma education with EMS and Disaster Preparedness.
- Increased staff participation in Professional Organizations.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Air medical transport dedicated aircraft crews located in Anchorage can be problematic for delayed patient transport, consider alternative bases.
- Purchase of FAST scan for definitive rapid diagnosis of blunt injury trauma patients.

Airway management is one of the most critical and difficult techniques in the Emergency Department (ED). Three ED physicians attended a *Difficult Airway Management* course and learned a rapid and systematic approach to airway dilemmas. In the rural setting with limited resources, this education has proven lifesaving in at least three documented cases in the first six months since the training.

VIDEO
LARYNGOSCOPE



Trauma nurses work with patients of all ages, genders, and backgrounds. They decisively respond to problems and often assess, treat and stabilize patients within minutes. Trauma nurses work highly independently, are specialized, and are difficult to recruit, train, and retain, especially in rural communities. Funding staffed trauma nursing and provided on-call status for trauma activations.

TRAUMA CARE FUND:
 PROVIDENCE VALDEZ MEDICAL CENTER
 LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT PROVIDENCE VALDEZ MEDICAL CENTER (PVMC) IN 2012:

Designated as a Level IV Trauma Center: April 12, 2012

- Providence Valdez Medical Center is an 11-bed acute care facility with one ICU/monitored bed. The Med-Surg Unit has one negative pressure bed. The Emergency Department has access to five outpatient beds for Emergency Department overflow. There is one operating suite and the hospital has two ventilators. A 10-bed long-term care facility is located at PVMC.
- Protocols for trauma team activation are based primarily on prehospital information. Protocols help ensure that severely injured incoming patients receive multidisciplinary care immediately upon admission.
- The purchase of trauma-specific equipment through the Trauma Care Fund has significantly increased the opportunity for successful patient outcomes.
- The hospital allies with many community partners in community-wide prevention programs. Highlights include: Kid's Don't Float; car seat and bicycle helmet distribution; 1 Voice Youth Coalition; Sound Wellness Alliance Network; Healthier You, and multiple other community programs.
- Staff participated in collaborative simulation lab training with UAA. Additional training options included workshops such as trauma during pregnancy as one of the multiple educational opportunities.
- The revised PVMC trauma activation form allows for more consistent documentation of hourly vital signs, Glasgow Coma Scale (GCS), trauma team arrival times, and procedure times.



TRAUMA ACTIVITIES	TRAUMA COSTS
TRAUMA EQUIPMENT	\$13,520
TRAUMA PERSONNEL	\$77,105
LVL IV IMPLEMENTATION	23,050
TOTAL PVMC COSTS	\$113,675
TCF PAYOUT	\$92,045
	123%

TRAUMA CARE FUND: PROVIDENCE VALDEZ MEDICAL CENTER LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- From a prevention standpoint, the new focus on trauma has acted as the catalyst for renewed attention on community outreach and awareness.
- The collaborative effort between the Emergency Department and the Fire Department has led to smoother operational flow.
- Nursing and prehospital staff received Trauma Intravenous training.
- PVMC and its EMS prehospital providers communicate via a dedicated radio or cell phone service.

With limited resources at rural facilities, the early recognition of major trauma and expeditious transfer of patients from the trauma team improves patient outcome. Emergency Department physicians, nurses, and ancillary staff ensure best practice methods in the effort to improve trauma response, management, and accountability.



ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- One of the noted deficiencies of the facility during the trauma designation process was in respiratory therapy support, a vital function to the trauma team. The respiratory therapist assists with airway and ventilator management, including emergency ventilation, ventilator management, and pulmonary treatment.
- The Trauma Medical Director and multiple Emergency Department Physicians expressed some frustration with the transfer process of patients to Anchorage facilities. Concerns about "HIPAA violations" from receiving facilities affect their release of patient information and continuity of care. This issue is being addressed through continued education from the state office.



PVMC preparation for Level IV trauma center designation included staff education, trauma registry, performance improvement, and trauma committee meetings.

THE NATIONAL STUDY ON THE COSTS AND OUTCOMES OF TRAUMA (NSCOT) IDENTIFIED A 25% REDUCTION IN MORTALITY FOR SEVERELY INJURED ADULT PATIENTS WHO RECEIVED CARE AT A LEVEL I TRAUMA CENTER RATHER THAN AT A NONTRAUMA CENTER.

TRAUMA CARE FUND:

SITKA COMMUNITY HOSPITAL
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT SITKA COMMUNITY HOSPITAL IN 2012:

Redesignation as a Level IV Trauma Center: December 14, 2010

- Emergency Department modifications improved trauma care for rapid diagnosis and immediate treatment and stabilization of life-threatening injuries.
- SCH purchased multiple external warming devices for trauma patients. Actions to reduce cold exposure and prevent further heat loss are an important and integrated part of trauma care, along with immediate care for life-threatening conditions.
- A hospital paging system created for trauma activations increased the timely response of the on-call trauma team.
- An Intra-Compartmental Pressure Monitor System is now available for immediate or continuous reading of compartment pressure which can potentially save lives and limbs.



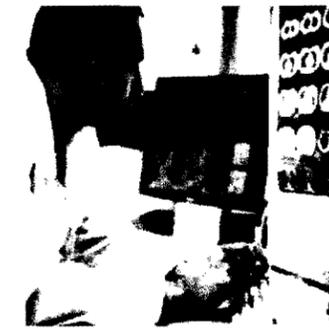
TRAUMA ACTIVITIES	TRAUMA COSTS
EQUIPMENT	\$92,748
EDUCATION	\$7,500
TOTAL SCH COSTS	\$100,248
TCF PAYOUT	\$92,045
	109%

TRAUMA CARE FUND:

SITKA COMMUNITY HOSPITAL
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Multiple advanced trauma course for nurses and physicians were offered to staff to reach 100% compliance
- Trauma Stretchers were purchased to deliver a secure, stable platform for assessing and attending to patient injuries.
- Small pharmacy annex created in Emergency Department to expedite the ability to administer life-saving drugs.
- Purchase of exam lights in the Emergency Department for correct lighting to reduce chance of error or omission, plus it extends the amount of time required to complete a procedure.

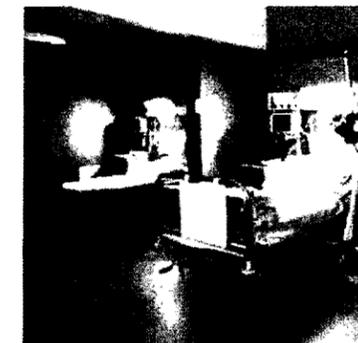


Sitka Community Hospital has begun to explore the possibility of starting a Regional Trauma Symposium. This would incorporate various trauma-related programs into a single venue.

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Ability of Emergency Department to handle patient loads and improve patient care by tailoring the limited space to patient needs.
- Continuing Trauma Education for staff.

Long range plans include working with Mt. Edgecumbe Hospital, Southeast Region EMS, and the University of Alaska Southeast Campus on training instructors and bringing more trauma-related courses to Sitka.



UNINTENTIONAL INJURY IS THE LEADING CAUSE OF DEATH FOR AMERICANS AGES 1 TO 44.

National Center for Injury Prevention and Control

TRAUMA CARE FUND:

SOUTH PENINSULA HOSPITAL
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT SOUTH PENINSUSLA HOSPITAL IN 2012:

Level IV Trauma Center designation: April 26, 2012

- **Purchase of a Glide Scope** for the Trauma Room. The day after this new piece of equipment was in place, the equipment was used successfully on a trauma patient that the physician was unable to intubate with the traditional equipment.
- **Procedural Sedation Certification** by nursing staff. SPH was able to offer financial support for nursing staff to complete an intensive on-line Procedural Sedation certification course, which has now been completed by 11 of 14 Emergency Department nurses
- **Improved Audio System with EMS and State Communications:** With four EMS services in SPH's catchment area, communications were not optimal. New systems put in place now allow infield communications between the Emergency Department and all EMS services.
- **Board Certification for ED nurses:** Encouragement for ER nurses to become board certified in Emergency Nursing (CEN) has resulted in an increase in nursing staff who undertake this professional step. Three nurses were board certified prior to Level IV designation; two more have completed certification, and two others are in the process of obtaining certification.
- **Improved Lighting in the Surgical Center/OR:** Improved lighting has greatly facilitated improved surgical processes.
- **Trauma Team Activation:** New policies have facilitated increased awareness and procedures for partial or full Trauma Team Activation. Recently, a severely burned patient was stabilized and then medevaced to Harborview Burn Center in Seattle. Within eight minutes of arrival at SPH, the patient had two large bore IVs placed, was sedated and intubated, and the surgeon was performing an escharotomy.
- **New RSI Policy in place:** Among other new policies, a *Rapid Sequence Intubation Policy* was implemented with approval by the Anesthesia Department and ER nurse training completed.
- **Trauma Coordinator position implemented:** Posted in December, 2012, a 0.3 FTE position was created for a Trauma Coordinator. This person will not only be responsible for gathering and entering Alaska Trauma Registry data, but will also be responsible for ongoing skill training with the ER nurses.

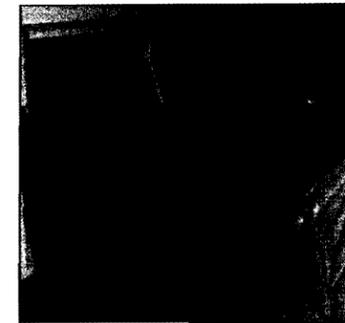
TRAUMA ACTIVITIES	TRAUMA COSTS
PERSONNEL	\$22,202.00
LEVEL IV OPREPARATION	\$6,500.00
EQUIPMENT	\$64,994.00
EDUCATION	\$6,301.00
TOTAL SPH COSTS	\$99,997.00
	\$92,045.45
RETURN ON INVESTMENT	108%

TRAUMA CARE FUND:

SOUTH PENINSULA HOSPITAL
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- 100% of Emergency Department physicians are *Advanced Trauma Life Support* certified
- Trauma Crash Cart age-appropriate equipment purchased
- Purchase of life-saving resuscitative equipment includes: Life Pak monitor, procedural head lamp, examination lights, EKG integration, Glidescope
- Continued robust Injury Prevention for community



DR. GREG
HOUGH

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Continued improved integration and communication of EMS and SPH
- Ability to maintain highly trained physician and nursing staff
- Support to system readiness
- Continued support of prevention programs



Emergency physicians also provide core trauma care functions within rural hospitals, as trauma medical directors and by participation on multiple trauma-related multi-disciplinary committees. While this requires substantial financial support initially, improved outcomes and increased patient and provider satisfaction should return at least a portion of the investment.

THE OPTIMAL CARE OF THE TRAUMA PATIENT IS BEST ACCOMPLISHED WITHIN A FRAMEWORK IN WHICH ALL MEMBERS OF THE TRAUMA TEAM USE A SYSTEMATIC, STANDARDIZED APPROACH TO THE CARE OF THE INJURED PATIENT.

EMERGENCY NURSES ASSOCIATION (ENA)

TRAUMA CARE FUND:

YUKON-KUSKOKWIM DELTA REGIONAL HOSPITAL
LEVEL IV TRAUMA CENTER

ACTIVITIES THAT ENHANCED TRAUMA CARE AT YUKON-KUSKOKWIM DELTA HEALTH CORPORATION REGIONAL HOSPITAL IN 2012:

Redesignated as a Level IV Trauma Center: June 10, 2010

- Medical Exam Lights now assist in performing in-depth exams and minor procedures that potentially remain in the Emergency Department without having to utilize an operating room and OR staff.
- Paging system update allows for group pages in mass casualty disaster notification.
- Video teleconferencing upgrades for direct consultation for trauma patients enhance patient outcomes.
- The Trauma Medical Director provides ongoing, real-time feedback with the Bethel Fire Department that has improved outcomes and patient care.
- Board certification is now required of physicians within 4 years of eligibility. This requirement will continue to ensure YKDRH maintains a staff of highly skilled physicians.
- Review of trauma processes in area villages includes assessment of their equipment, trauma resuscitation room, and practices.
- Robust Injury Prevention Programs include: Kids Don't Float; Gun Safe Project; FOCUS on Safety Deployment; Reflective Tape-Be Safe, Be Seen; and the Suicide Readiness Assessment.



TRAUMA ACTIVITIES	TRAUMA COSTS
TRAUMA EQUIPMENT	\$64,145
TRAUMA PERSONNEL	\$35,855
TOTAL YKDRH COSTS	\$100,000
TCF PAYOUT	\$92,045
	109%

TRAUMA CARE FUND:

YUKON-KUSKOKWIM DELTA REGIONAL HOSPITAL
LEVEL IV TRAUMA CENTER

ACCOMPLISHMENTS

- Cat Scanner in place and functional since June 2008.
- EMS has moved toward a policy of rapid transport.
- Trauma Education has included the Trauma Program Manager to shadow the ANMC Trauma Program Manager for training.
- Screening, Brief Intervention, and Referral to Treatment (SBIRT) of admitted trauma patients has been such a successful program that YKDRH is in the process of implementing screening for all admitted patients.



YKDRH has committed to building a strong patient – centered trauma team with the focus on quality care, evidenced –based practice, complete and concise record keeping, with the goal of reducing the number of preventable injuries

ISSUES AND AREAS FOR INCREASED INVOLVEMENT

- Provide sustainability of Trauma Registry through YKDRH staff rather than through contract with an outside entity to review, abstract, and submit data.
- Improvement of patient transport from village to Anchorage and expediting Bethel to Anchorage Medevacs.
- Continued training for village Community Health Aides.

Trauma centers must maintain a trauma registry. Trauma registrars collect, abstract, code, and report data on traumatic injuries. They review medical records and communicate with Trauma Team staff to identify reportable cases and collect data on severity and cause of injury, course of care and outcome, and code and enters data into the Alaska Trauma Registry database.



TWENTY-FOUR STATES HAVE IDENTIFIED A SPECIFIC ROLE FOR THE TRAUMA SYSTEM IN THE STATES'S DISASTER PLAN

NATIONAL CONFERENCE OF STATE LEGISLATORS



K-12 Robotics - STEM Workforce Development: \$400,000
Science, Technology, Engineering & Mathematics Skills for Alaska

Request: \$400,000 investment in targeted, cost-effective, high quality STEM education opportunities for Alaska students in K-12 Robotics.

Robotics has a proven track record in Alaska, engaging students, ages 6-18 in Science, Technology, Engineering and Mathematics fields. The flagship program, *FIRST* Robotics, has propelled Alaska to national distinction:

- **Alaska has the highest per capita participation in the nation for *FIRST* LEGO League** (ages 9-14) and ***FIRST* Tech Challenge** (introductory high school level)
- The gender gap is being closed with **45% of Alaska's *FIRST* LEGO League participants girls**, as compared with national average of 25-30% female
- There are ***FIRST* teams in 50 Alaska communities**, in 25 School Districts
- Over **2,000 students** are involved in this after school, competitive program
- ***FIRST*** has successfully tapped local volunteerism, with **over 4,000 volunteer hours** invested in hosting tournaments alone

A *FIRST* robotics motto is “the hardest fun you’ll ever have.” Like a team sport, it rewards excellence, perseverance, skill and hard work. Tournaments are designed to be memorable and exciting, and all the while students gain computer programming skills, researching real world problems, working together as a team, and presenting their findings to panels of adults; All this is done on a student’s own time, after school.

Alaska’s success with robotics relies on the commitment of coaches, mentors, and school districts, as well as a system of statewide coordination that makes the program accessible and possible. Since 2009 this infrastructure has been provided by STEM AK, a statewide program of the Juneau Economic Development Council, with funding from the U.S. Department of Defense, and state funding in 2011. With declining federal dollars, an ongoing commitment of state funds is needed to maintain these dynamic programs that prepare students for workforce challenges of the 21st century.

There is more to robotics than *FIRST* Robotics ---

Underwater robotics is another robotics strand with tremendous potential. Given Alaska’s extensive coastline, inland waterways, and reliance on the seafood industry for jobs in coastal areas, underwater robotics offers a meaningful hands-on engineering experience for students. As Alaska looks to develop offshore resources, including oil, gas, and minerals, underwater robotics are likely to play an important role in the development and extraction of these resources. Currently two underwater robotics

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programs are offered, targeting middle school ages -- SeaPerch ROV (Remote Operated Vehicle), and SeaGlide, an underwater glider being developed in partnership with the U.S. Navy. **Since 2009 the SeaPerch ROV project led by STEM AK has impacted 4500 students, with 1500 kits distributed, 170 teachers trained, and 2 regional competitions held.**

An area of growing interest is **Unmanned Aerial Systems (UAS)**, or “drones”. These **avionic robots** offer tremendous potential as research and search and rescue tools. Work is underway to develop curricula and materials to engage students in engineering UAS systems, for in-school and out-of-school learning times.

Background – STEM Education Imperative for Alaska:

At its simplest STEM is an acronym for Science, Technology, Engineering and Mathematics. At its most practical it represents skills critical to job opportunities and economic growth. On the individual level, it is about skills needed to gain access to living wage jobs and an array of career opportunities – whether a student’s postsecondary path is college, technical school, apprenticeship programs or directly into the workforce.

By 2018, the Alaska Department of Labor projects over 8,000 job openings in STEM related jobs in Alaska, not including the fastest growing occupational sector – health care – a STEM intensive field. All told, the future is bright for Alaska students who graduate from high school with a solid base of STEM skills.

Many Alaska students are ill prepared for the training required for STEM career pathways.

- Of college bound students taking the ACT test, 52% did not meet college-readiness benchmarks in mathematics, and 70% did not meet college-readiness benchmarks in science.
- In 2012 only 13 Alaska students took the AP subject test in computer science, despite the ubiquitous nature of computer technology and commensurate importance of computer science skills.

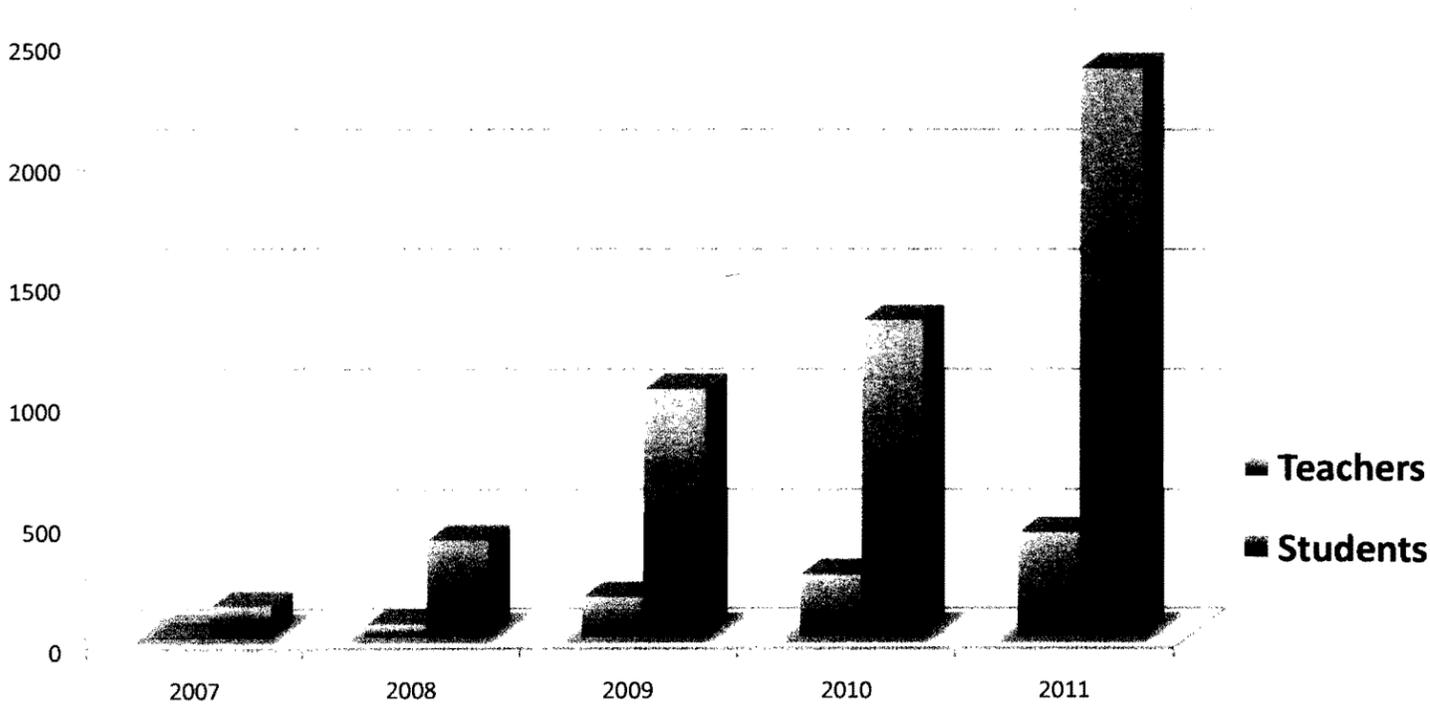
Increasingly, STEM skills are gatekeepers to economic opportunity and living wage jobs. This operating budget request reflects a targeted investment to increase the number of STEM capable students ready for postsecondary training, whether their path is to college, technical school, or on the job training.

Robotics is an effective, targeted investment in workforce development to complement and support the K-12 educational system.

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STEM AK - Building Momentum

Overall Impact (all funding sources, not cumulative)



FIRST Robotics – Geographic Reach



2007

2012





Science Technology Engineering & Mathematics (STEM)

“Look what we take for granted in our everyday lives: the Internet and cellphones, MRI scanners and microwave ovens... cancer treatments made from bacteria we've programmed for benevolence. All these American innovations and thousands more come to us from science, mathematics, engineering, and technology—no, let's rephrase that: They came to us from people schooled in those disciplines and from people associated with them who supplied the entrepreneurial energies and capital that the scientist, engineer, and technologist may have lacked.

The men and women who will make America's tomorrow are in school and college today. They are the human capital at the core of any productive economy. And here's a fact about them. There are too few of these people in the scientific disciplines. America, the leader, now lags.”

--Mortimer B. Zuckerman, editor in chief, U.S. New & World Report, September 27, 2011

What is STEM?

At its simplest, STEM education is an acronym for Science, Technology, Engineering and Mathematics; at its most practical, it represents skills critical to job opportunities and economic growth.

Why STEM?

- Jobs

By 2018 Alaska Department of Labor projects there will be over 8,000 job openings in STEM-related jobs in Alaska (2,700 new STEM jobs and 5,400 more openings as workers retire), and this data does not include the fastest growing occupation sector – health care. (Alaska Economic Trends, Feb. 2011)

In the health care sector, Alaska Dept. of Labor projects a 27.4% increase in health care practitioners and technical occupations -STEM intensive fields- by 2020. (Alaska Economic Trends, October 2012)

On the national level STEM professions are second only to Healthcare as the fastest growing occupational category in the U.S. economy. (Georgetown University Center on Education and the Workforce, *STEM*, 2011)

- Pay & Opportunities

According to the Alaska Department of Labor, STEM workers in Alaska earn an average of \$73,000 a year, \$28,000 more per year on average than non-STEM workers. (Alaska Economic Trends, Feb. 2011)

- STEM skills are in demand

STEM *skills* include critical thinking, complex problem solving, systems analysis, troubleshooting, application of math & science, design and application of technologies.

STEM *skills* are in demand across the entire U.S. job market and occupational sectors.

Individuals with STEM skills enjoy higher earnings, regardless of whether they work in STEM or non-STEM occupations. (U.S. Dept of Commerce, Economics and Statistics Admin, *STEM*, Oct 2011)



Nationally there are more STEM jobs than there are skilled workers: 1.7 STEM jobs for every 1 unemployed person; For non-STEM workers, there are 4.3 unemployed for every 1 job.

Are Alaska students prepared for STEM opportunities?

In 2012, 52% of Alaska students taking the ACT test did not meet college-readiness benchmarks in mathematics and 70% did not meet benchmarks in science.
(ACT benchmarks represent the level of achievement required for students to have a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in corresponding credit-bearing first-year college courses, ACT 2012)

In 2012, only 13 Alaska students took the SAT AP test for computer science; juxtapose that with the many career options that exist in computer systems design, & related fields. (AK Department of Labor, Industry & Occupational Forecasts 2010-2020)

Is STEM Education important for all K-12 students and schools?

STEM provides a framework for methodically analyzing and tackling problems; it offers a young person access to high-demand, lucrative jobs and future prospects - in Alaska and across the U.S. Given our changing economy, STEM skills are important for all students....

STEM policy and practical needs in Alaska:

- Elevate importance of science, technology, engineering, mathematics, and STEM in the formal education system.
- Invest strategically in STEM opportunities for Alaska youth through formal and informal education systems – both during the school day as well as during out of school times.
- Increase the number of highly skilled K-12 science, technology, engineering and mathematics teachers in Alaska.
- Track success and value of informal and formal STEM education investments to Alaska students and Alaska’s economy through longitudinal studies.

“Talent will be the oil of the 21st century.”
Deborah Wince-Smith of the Council on Competitiveness

“...the education level of our citizenry is inextricably tied to Alaska’s economic development.”
Alaska Legislative Task Force on College and Career Readiness, April 2011

Resources & References of Note:

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