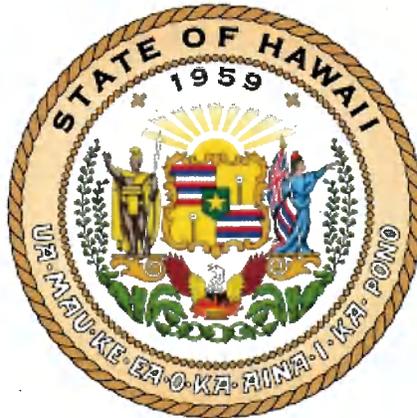


STATE OF HAWAII



A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

October 14 – 18, 2019

National Highway Traffic Safety Administration Technical Assistance Team:

Dan Manz
Curtis Sandy, MD, FACEP, FAEMS
Leslee Stein-Spencer, R.N., M.S.
Peter Taillac, MD, FACEP, FAEMS
Kyle Thornton, EMT-P, M.S.

Tour Team:

Curtis Sandy, MD, FACEP, FAEMS
Keith Wages

Dave Bryson, NHTSA Facilitator
Susan Gillies, Executive Support

TABLE OF CONTENTS

Subject	Page
BACKGROUND	4
ACKNOWLEDGMENTS	7
INTRODUCTION	8
A. REGULATION AND POLICY	10
<i>Standard</i>	10
<i>Status</i>	11
<i>Recommendations</i>	12
B. RESOURCE MANAGEMENT	14
<i>Standard</i>	14
<i>Status</i>	14
<i>Recommendations</i>	17
C. HUMAN RESOURCES AND EDUCATION	18
<i>Standard</i>	18
<i>Status</i>	19
<i>Recommendations</i>	20
D. TRANSPORTATION	22
<i>Standard</i>	22
<i>Status</i>	22
<i>Recommendations</i>	24
E. FACILITIES	25
<i>Standard</i>	25
<i>Status</i>	25
<i>Recommendations</i>	26
F. COMMUNICATIONS	27
<i>Standard</i>	27
<i>Status</i>	27
<i>Recommendations</i>	28
G. TRAUMA SYSTEMS	29
<i>Standard</i>	29
<i>Status</i>	29
<i>Recommendations</i>	30
H. PUBLIC INFORMATION, EDUCATION AND PREVENTION	32
<i>Standard</i>	32
<i>Status</i>	32
<i>Recommendations</i>	33
I. MEDICAL DIRECTION	34
<i>Standard</i>	34
<i>Status</i>	34
<i>Recommendations</i>	35
J. PREPAREDNESS	37
<i>Standard</i>	37
<i>Status</i>	37
<i>Recommendations</i>	39
K. EVALUATION	40
<i>Standard</i>	40
<i>Status</i>	41

<i>Recommendations</i>	42
L. CURRICULA VITAE.....	43

BACKGROUND

Injury is the leading cause of death for persons in the age group one through 44, as well as the most common cause of hospitalizations for persons under the age of 40. The financial costs of injuries are staggering, costing billions of dollars in health care and social support resources.

In 2014, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) reported the price tag for crashes was at \$871 billion in economic loss and societal harm. This includes \$277 billion in economic costs – nearly \$900 for each person living in the United States – and \$594 billion in harm from the loss of life and the pain and decreased quality of life due to injuries. Each year over 37,000 people lose their lives on the nation's roads. NHTSA is charged with reducing death and injury on the nation's highways. NHTSA has determined it can best use its limited Emergency Medical Services (EMS) resources if its efforts are focused on assisting States with the development of integrated EMS programs which include comprehensive systems of care.

To accomplish this goal, in 1988 NHTSA developed a Technical Assistance Team (TAT) approach which permitted States to utilize highway safety funds to support the technical evaluation of existing and proposed EMS programs. Following the implementation of the Assessment Program, NHTSA developed a Reassessment Program to assist those States in measuring their progress since the original assessment. The Program remains a tool for States to use in evaluating their Statewide EMS programs.

The Reassessment Program follows the same logistical process, and now includes areas of preparedness with updated standards. The Reassessment Program now reflects current EMS practice and supports the development of a comprehensive and integrated State health management system. NHTSA serves as a facilitator by assembling a team of technical experts who demonstrate expertise in EMS development and implementation. These experts demonstrate leadership and expertise through involvement in national organizations committed to the improvement of EMS throughout the country. Selection of the TAT is based on the identified needs of the requesting State. Examples of specialized expertise include experience in the development of legislative proposals, data collection systems, and trauma systems. Experience in similar geographic and demographic situations, such as rural areas, coupled with knowledge in providing EMS in urban populations is essential.

At the Legislature's request, the Hawaii Highway Safety Office and the Department of Health's EMS and Injury Prevention Systems Branch (the Branch) requested NHTSA's assistance with a reassessment.

The TAT and Tour Team assembled in Honolulu on October 14-18, 2019. The reassessment included in-depth briefings on the EMS system. Topics for review and discussion included the following:

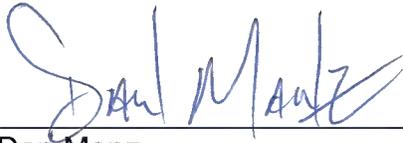
- Regulation and Policy
- Resource Management
- Human Resources and Education
- Transportation
- Facilities
- Communications
- Trauma Systems
- Public Information and Education
- Medical Direction
- Preparedness
- Evaluation

The forum of presentation and discussion allowed the TAT the opportunity to ask questions regarding the status of the EMS system; clarify any issues identified in the briefing materials provided earlier; measure progress; identify barriers to change; and, develop a clearer understanding of how EMS functions throughout Hawaii.

Because of the unique nature of the system, some members of the TAT traveled to each of the four counties to see first-hand EMS operations and meet with their staff.

Following the briefings and tours, the TAT sequestered to evaluate the current EMS system as presented, and to develop recommendations for system improvements. When reviewing this report, please note the TAT focused on major areas for system improvement.

The statements made in this report are based on the input received. Pre-established standards and the combined experience of the team members were applied to the information gathered. All team members agree with the recommendations as presented.



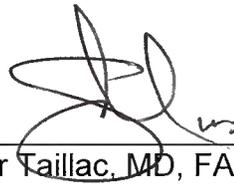
Dan Manz



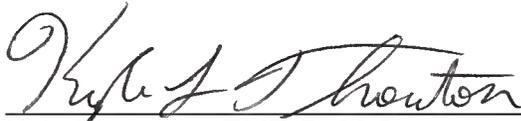
Curtis C. Sandy, MD, FACEP, FAEMS



Leslee Stein-Spencer R.N., M.S.



Peter Taillac, MD, FACEP, FAEMS



Kyle Thornton, EMT-P, M.S.

ACKNOWLEDGMENTS

The Technical Assistance Team (TAT) acknowledges the Highway Safety Office, Department of Health's EMS and Injury Prevention Systems Branch (the Branch) for their support of the assessment process.

The TAT thanks all of the presenters for being candid and open regarding the status of EMS in Hawaii and for their extraordinary efforts and well-prepared presentations. Each presenter was responsive to the questions posed by the TAT which aided the reviewers in their evaluation. Many of these individuals traveled considerable distance to participate.

Special recognition and thanks go to Alvin Bronstein, MD, Branch Chief, and the entire staff for their logistical support and gracious hospitality.

INTRODUCTION

Any understanding of Hawaii's EMS system should be grounded in the culture and history of this unique place. Aloha. More than a word, Aloha embodies the foundation of an EMS system. The literal meaning of aloha is "the presence of breath" or "the breath of life." We learned it comes from "Alo," meaning presence, front and face, and "ha," meaning breath. Aloha is a way of living and treating each other with love and respect. Its deep meaning starts by teaching ourselves to love our own beings first and afterwards to spread the love to others. Throughout the visit, the Technical Assessment Team (TAT) was impressed by the uniform respect, support, commitment and good humor of the array of EMS system stakeholders. The citizens, visitors and EMS patients in Hawaii can all rest easy in knowing how sincerely those charged with providing service live Aloha.

Another important Hawaiian word we learned was Haliola, meaning to lift up life. There is no higher calling in EMS than to lift up life. Sometimes that may be a state-of-the-art resuscitation effort for the patient in cardiac arrest. In other cases, Haliola may be done through a visit by an ambulance crew to an elementary school to explain and show what EMS does. In the near future, Haliola may be a Community Paramedic visiting a person in their home to monitor the progress of their recovery after hospitalization.

So much about Hawaii is unique. The separation of the counties by miles of water makes sharing of resources a particular challenge. The model of a State agency as the single payer for emergency ambulance services is unparalleled. A State EMS system that serves 1.5 million citizens and over 10 million visitors annually is also a rarity. The diversity of cultures, languages and traditions here is rich, but also makes it challenging to serve patients effectively.

Hawaii's stakeholders need to make choices about how they want their EMS system to evolve. Today, there is a strong emergency ambulance system that is highly regarded as serving patients well and providing uniform, high-quality care. With that said, emergency ambulances are but one piece of a comprehensive EMS system. The Hawaii Department of Health's EMS and Injury Prevention Systems Branch (the Branch) does not currently have the resources necessary to coordinate and nurture all of the elements in a comprehensive EMS system.

Growing and improving Hawaii's EMS system will require a common understanding of the forces that shape, support and stress it. All the system stakeholders must come together with focus and purpose. As deliberations about the EMS system unfold, there is reason to proceed with caution and avoid doing harm to what is working reasonably well today. The concept of evolution rather than revolution is in order here.

The TAT was privileged to travel to Hawaii to learn about and make recommendations for improving the State's EMS system. Our recommendations in this report are offered respectfully and in the spirit of both Aloha and Haliola.

A. REGULATION AND POLICY

Standard

Each State should embody comprehensive enabling legislation, regulations, and operational policies and procedures to provide an effective Statewide system of emergency medical and trauma care and should:

- Establish the EMS program and designate a lead agency;
- Outline the lead agency's basic responsibilities and authorities including licensure and certification including the designation of EMS regions;
- Require comprehensive EMS system planning;
- Establish a sustainable source of funding for the EMS and trauma system;
- Require prehospital data collection which is compatible with local, State and national efforts such as the National EMS Information System (NEMSIS) and evaluation;
- Provide authority to establish minimum standards related to system elements such as personnel, services, specialty care facilities and regional systems and identify penalties for noncompliance;
- Provide for an injury/trauma prevention and public education program;
- Integrate the special needs of children and other special populations throughout the EMS system; and
- Integrate pediatric EMS needs into State statutes, rules and regulations.

All of these components, which are discussed in different sections of this guideline, are critical to the effectiveness of legislation, regulations or policies/procedures which are the legal foundation for a Statewide EMS system.

Status

In 1978, the Hawaii State Legislature passed a law that charged the Department of Health with establishing and maintaining Emergency Medical Services (EMS) throughout the State. All licensing of EMS personnel that work on an ambulance is the responsibility of the Hawaii Department of Commerce and Consumer Affairs (DCCA) while the Hawaii Medical Board defines the scope of practice for EMS, different levels of practice and degree of supervision. The Department of Health's EMS and Injury Prevention Systems Branch (the Branch) approves the EMS education curriculum that is required for licensure as well as continuing medical education (CME); designates and manages the trauma and specialty centers; licenses ambulances; oversees communications; contracts for 911 emergency transportation; and, coordinates emergency medical and critical care services.

The EMS Administrative rules, written in 1985, remain unchanged today. These rules are outdated and need to be revised to reflect current standards. The Hawaii Department of Health (DOH) has statutory authority to establish, administer, and maintain the State's comprehensive EMS system (321-223, HRS). Statewide ambulance service is based on contracts for 911 Advanced Life Support Service with a single agency in each of Hawaii's four counties (321-228, HRS). The contracted providers are:

- 1) City and County of Honolulu: City and County of Honolulu Emergency Medical Services;
- 2) County of Kauai: International Life Support Inc. dba American Medical Response;
- 3) County of Hawaii: Hawaii County Fire Department; and,
- 4) County of Maui: International Life Support Inc. dba American Medical Response.

The contracts with these agencies provide for total cost recovery. Hawaii operates a billing and collection system for all emergency ambulance transports according to a State mandated fee schedule. The State mandates a single pre-hospital electronic patient care reporting (ePCR) system, medication formulary, and Statewide standing orders.

Paramedic training is centralized under the University of Hawaii Kapiolani Community College (KCC). Multiple agencies including KCC provide Emergency Medical Technician-Basic (EMT-B) training and CME courses. KCC also conducts Emergency Medical Responder (EMR) classes and is in the process of developing an Emergency Medical Dispatch (EMD) course.

The EMS legislation and regulations do not reflect current terminology for EMS personnel as well as language for licensure of EMS personnel.

There is uncertainty about the ability to license persons other than those working for an ambulance service. This issue has been referred to the Attorney General for clarification.

The current EMS system appears to be focused on the provision of ambulance transport. There are many more elements to a comprehensive EMS system and Branch authority should be expanded with inclusion of dispatch, first response and interfacility transport agencies. This does not suggest the State should be funding each of these elements, but there should be regulation and rule for each.

Recommendations

The Legislature should:

- **Update the existing statute based on input from the Branch and stakeholders.**
- **Allow licensed EMS personnel to work in non-ambulance health care settings using their State issued EMS license.**

DCCA and/or the Hawaii Medical Board should:

- **Include an Agency EMS Medical Director as a member of their delegated EMS committee.**
- **Issue a license to qualified applicants for EMS licensure (EMD, EMR, EMT-B, AEMT, and Paramedic) irrespective of whether they are employed by an ambulance provider.**
- **Update the State EMS scope of practice to reflect the most recent National EMS Scope of Practice Model for all personnel levels.**
- **Collaborate with the Branch to develop a scope of practice and licensure process for EMRs and EMDs.**

The Branch should:

- **Update the administrative rules to reflect current practice and national EMS standards.**
- **Develop a five-year Strategic Plan identifying short- and long-term goals in collaboration with key EMS system stakeholders. The short-term goals should include a plan to implement community paramedicine (HB1453 ACT140) and transport of patients to alternative destinations.**

- **Expand licensure of EMS agencies to include first responder and dispatch organizations.**
- Establish a robust quality improvement (QI) system for EMS with oversight by the agencies' Medical Directors. Reports should be made available to the State EMS offices.
- Identify yearly priorities for contracted EMS providers for EMS funding and share this prior to these agencies submitting a budget for funding.
- Modify EMS contracts to include provisions for BLS transports.
- Initiate legislation to identify EMS as an essential public service.

B. RESOURCE MANAGEMENT

Standard

Each State EMS lead agency should identify, categorize, and coordinate resources necessary for establishment and operation of regionalized, accountable EMS and trauma systems. The lead agency should:

- Maintain a coordinated response to day-to-day emergencies as well as mass casualty incidents or disasters and ensure that resources are used appropriately throughout the State;
- Have policies and regulations in place to assure equal access to basic emergency care for all victims of medical or traumatic emergencies;
- Provide adequate triage, including trauma field triage, and transport of all patients by appropriately certified personnel (at a minimum, trained to the emergency medical technician [EMT] level) in properly licensed, equipped, and maintained ambulances;
- Provide transport to a facility that is appropriately equipped, staffed and ready to administer to the needs of the patient including specialty care hospitals (section 4: Transportation);
- Appoint an advisory council, including pediatric EMS representation, to provide broad-based input and guidance to the State EMS system and to provide a forum for cooperative action and for assuring maximum use of resources; and
- Coordinate with State Highway Safety Agency and other State Agencies in the development of the Strategic Highway Safety Plan to ensure that EMS system information is used to evaluate highway safety problems and to improve post-crash care and survivability.

Status

Within the Department of Health's EMS and Injury Prevention Systems Branch (the Branch), the State EMS Director and State Medical Director positions are combined into a single position. This structure is a disservice to the EMS system.

The contracts the State has with private and public emergency ambulance providers result in an impressive day to day response capability for a State with Hawaii's geographic size and population. As expected, there is inconsistency between the call volume of individual units in urban versus rural counties. Hawaii's commitment to providing Advanced Life Support (ALS) service in the rural areas is to be commended.

While only four Public Safety Answering Points (PSAPs) exist, there is a concerning lack of consistency in the handling of request for service provided by these PSAPs. The lack of a comprehensive Emergency Medical Dispatch (EMD) / pre-arrival instruction program Statewide is a disservice to the residents of Hawaii. Actions by the Branch to address this issue are discussed more comprehensively in the Communications section of this report.

The billing structure utilized by the Branch assures the public they are not subject to over-billing or "surprise" billing for emergency transports, a benefit that is not available to many of the United States' residents. Additionally, along with the State contracts for the provision of EMS, the billing structure prevents the practice of an agency under-billing to seek higher volume and revenue at the cost of quality. These protections are a luxury that are likely unrecognized by the residents of, and visitors to, Hawaii.

While emergency preparedness is addressed elsewhere in this report, an impressive amount of resources are dedicated to emergency management and preparedness. The Hawaii Emergency Management Agency (HIEMA), the Hawaii Healthcare Emergency Management (HHEM), and the HHEM's umbrella organization, the Hawaii Hospital Education and Research Foundation (HHERF), are Statewide coordination and preparation organizations. Additionally, there are Hospital Emergency Response Teams, Incident Management Assistance Teams, Incident Specialty Teams and reportedly various strike teams throughout the State. The Technical Assessment Team (TAT) believes a review of the missions of these organizations may offer an opportunity for consolidation and new efficiencies.

The Branch should investigate opportunities for EMS funding that may exist in the Federal Public Health Emergency Preparedness (PHEP) grant, as well as the Federal Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program.

The TAT was informed that the HHEM is developing a new Statewide disaster plan that will include EMS. While the addition of EMS will be a positive development, it begs the question of how a plan was ever developed that did not include EMS. Any disaster operation plan that does not include EMS is not a functional plan and leaves the State at risk. Future discussions and planning of Hawaii's management of large-scale incidents must include representatives of the Statewide EMS system and the Branch.

Transport guidelines have been developed that encourage the transport of stroke and heart attack patients to facilities most capable of treating those conditions, very similar to the trauma care guidelines in place. The current and future development of systems of care for these and other time sensitive conditions is exciting, and Hawaii EMS is commended for the dedication it takes to develop these systems.

There is a difference in requirements for EMS personnel that staff ambulances compared to those that staff medical first response units. Emergency Medical Technicians (EMTs) and Paramedics staffing ambulances must be licensed through the Department of Commerce and Consumer Affairs (DCCA). There is no such certification or recognition of EMS personnel working for medical first responder entities. The potential liability for these medical first responder entities, the individuals, and even the State is significant. It should be a priority to establish rules that require licensure of all EMS personnel, to include those providing care on ambulances, rescue, ocean safety, fire first response, special event, or any other entity providing EMS care.

Part of the confusion that perpetuates the provision of EMS care by unlicensed personnel is the inaccurate idea that certification from the National Registry of Emergency Medical Technicians (NREMT) is a license to practice. The NREMT certification is an attestation that an individual has passed a minimum competency exam or submitted proof of a minimum amount of continuing education credits biennially. It is not a license to practice in Hawaii or any other State. The Branch should assure that this fact is well communicated to EMS system stakeholders and is part of the education offered by the approved educational institution. Also, the educational institution, Hawaii Kapiolani Community College (KCC), should cease teaching "National Registry" track courses, offering only the comprehensive licensing courses.

Rules and procedures should be developed to clarify the State's ability to investigate complaints against, or unprofessional/criminal behavior by, licensed EMS personnel and how disciplinary licensure action can be taken.

The TAT supports the Branch's assertion that a study for resource allocation should be completed to ensure the residents and visitors of Hawaii are receiving the emergency medical services for which they are paying. Additionally, the contractual EMS requirements should be examined for accuracy and credible evidence-based metrics. For example, response time criteria may not be the best reflection of how a system is performing.

The data submitted by EMS are an exciting addition to public health and epidemiology. The different aspects of what EMS data can tell us about health care are being discovered on a regular basis. A dedicated EMS data hire is critical to the accurate and timely collection of EMS data and is not present today. EMS data should include all facets of EMS patient care, including patient care reports from 911 responses and transports, cancellations, refusals, treatment without transport, non-emergency inter-facility transfers, special event care, and any other situations where response and/or patient care was requested.

The TAT is pleased to find that the Branch partners with the Hawaii Department of Transportation (DOT) on the highway safety plans and projects undertaken by the DOT. Data are often considered one of the most valuable contributions to these projects, and there are often DOT resources that can be made available to State EMS offices to help offset the cost of data collection. This possible avenue of funding should be investigated by the Branch.

The mental health of EMS personnel and other first responders is a national concern, as the scope of the problem has become clear in recent years. The Branch has an opportunity to impact this issue in Hawaii due to the statutory authority provided to the Branch by the legislature for this specific activity.

Recommendations

The Branch should:

- **Designate a separate EMS Branch Chief and EMS Branch Medical Director, rather than the combined position that currently exists.**
- Assure EMS participation in the development of State emergency management and disaster mitigation plans.
- Take the lead in establishing evidence-based critical incident stress management and peer support programs to educate EMS personnel about mental health issues, as well as develop a response mechanism for EMS personnel and other first responders seeking assistance.
- **Hire a dedicated EMS data manager.**

C. HUMAN RESOURCES AND EDUCATION

Standard

Each State should ensure that its EMS system has essential trained and certified/licensed persons to perform required tasks. These personnel include: first responders (e.g., police and fire), prehospital personnel (e.g., emergency medical technicians and paramedics), communications specialists, physicians, nurses, hospital administrators, and planners. Each State should provide a comprehensive Statewide plan for assuring a stable EMS workforce including consistent EMS training and recruitment/retention programs with effective local and regional support. The State agency should:

- Ensure sufficient availability of adequately trained and appropriately licensed EMS personnel to support the EMS system configuration;
- Assure an ongoing State EMS personnel needs assessment that identifies areas of personnel shortage, tracks Statewide trends in personnel utilization and which establishes, in coordination with local agencies, a recruiting and retention plan/program;
- Establish EMT as the State minimum level of licensure for all transporting EMS personnel;
- Routinely monitor training programs to ensure uniformity, quality control and medical direction;
- Use standardized education standards throughout the State that are consistent with the National EMS Education Standards;
- Ensure availability of continuing education programs, including requirements for pediatric emergency education;
- Require instructors to meet State requirements;
- Assure statutory authority, rules and regulations to support a system of EMS personnel licensure that meets or exceeds the national EMS Scope of Practice Model, new National EMS Education Standards, as they are available, and other aspects of the EMS Education Agenda for the Future; and
- Monitor and ensure the health and safety of all EMS personnel.

Status

There was a significant disparity reported between the numbers of nationally registered EMS personnel and State licensed EMS personnel. As of 2016, licensed personnel are required to maintain National Registry of Emergency Medical Technicians (NREMT) certification. The numbers of licensed EMS personnel do not accurately reflect the number of EMS personnel that are providing care in the pre-hospital setting. There were conflicting statements on whether or not there is a shortage of EMS personnel. Three of the counties appear to be at full staffing with Oahu being the only county reporting shortages.

Hawaii does not participate in the Recognition of EMS Personnel Licensure Interstate CompAct (REPLICA) which facilitates the day to day movement of EMS personnel across State boundaries in the performance of their EMS duties.

There are three active boards that are involved in EMS. These include the Emergency Medical Professional Advisory Committee, Emergency Medical System Advisory Board and the Paramedic Advisory Committee. Each board has active involvement by EMS system participants. It is unclear if each of these Boards is accomplishing their mission.

The training component of Hawaii's EMS system is provided through a contractual relationship with the Kapiolani Community College (KCC).

In addition to the Oahu campus, KCC utilizes training centers at Kauai Community College, Maui Community College, and Hawaii Community College. Students travel to Oahu for most clinical rotations. This places a burden on clinical resources and instructors and represents a bottle-neck in the throughput of students. Faculty members must meet certain minimum qualifications as determined by the University of Hawaii. These include post-secondary education credentials, minimum Emergency Service experience, American Heart Association instructor credentials, and National Association of Emergency Medical Technician (EMT) course instruction.

Appropriations from the State's general fund support the operation of three satellite training centers in addition to the KCC campus. Training centers are also funded through the Department of Health's EMS and Injury Prevention Systems Branch (the Branch) grants, tuition and student fees. KCC funds all permanent EMS program training staff Statewide.

EMT and Paramedic training program hours exceed the current National EMS Education Standard recommended hours. The length of the EMT Basic training program to achieve NREMT certification is 220 hours while the EMT Basic program for State licensure is 380 hours. This difference between the two training programs is to prepare the licensed EMT to work with a paramedic on an ambulance.

The paramedic training program is 1,598 hours of which 800 hours are clinical time. There is one paramedic class per year with 15 slots for students. It should be noted there is an excellent successful pass rate for paramedics taking the NREMT exam as they have one of the top 12 success rates in the country. KCC did identify that some of the reasons additional paramedic programs are not offered is due to identification of clinical sites, availability of ride along time on the ambulance and the cost of backfilling/overtime for EMTs that take the paramedic class.

KCC offers Emergency Medical Responder (EMR) classes and is in the process of developing an Emergency Medical Dispatch (EMD) program.

Continuing Medical Education (CME) is available in numerous formats (e.g., Target Solutions, satellite, on-line) and is offered through KCC at no cost to the student. Advanced Cardiac Life Support, Pediatric Advanced Life Support and various other CME classes are also offered. KCC is considering charging agencies or students for CME classes in the future.

Recommendations

The Branch should:

- **Conduct a comprehensive Statewide workforce study reviewing the entire EMS System, the status of the workforce and identify any gaps by county.**
- **Conduct a comprehensive cost analysis of the entire EMS System. Based on this analysis revise the system to include looking at identification of centralized purchasing and other possible cost-saving measures.**
- **Develop a five-year strategic plan using the results from the work force and cost analysis studies.**
- Identify an EMS physician and agency medical director as an active board participant if the Board of Medical Examiners is to function effectively as the review board for the EMS training and certification programs.
- Consider consolidating the three EMS advisory boards into one.
- Review and revise the rules to accurately reflect the EMS Advisory Board's responsibilities. Board members should be held accountable to meeting these tasks.
- Consider recruitment, retention and cost effectiveness when establishing additional training programs to include EMR and EMD.

- **Identify a sustainable funding source which may include the following: DUI, moving violation and tourism tax. This would be in addition to the tobacco tax, license plate fee and interest money from the State's assets that are already in place.**
- Implement a Statewide EMD program.
- Support the introduction of legislation to become a REPLICIA State.

D. TRANSPORTATION

Standard

Each State should require safe, reliable EMS transportation. States should:

- Develop Statewide EMS transportation plans, including the identification of specific EMS service areas and integration with regionalized, accountable systems of emergency care;
- Implement regulations that establish regionalized, accountable systems of emergency care and which provide for the systematic delivery of patients to the most appropriate specialty care facilities, including use of the most recent Trauma Field Triage Criteria of the American College of Surgeons/Committee on Trauma;
- Develop routine, standardized methods for inspection and licensing of all emergency medical transport services and vehicles, including assuring essential pediatric equipment and supplies;
- Establish a minimum number of personnel at the desired level of licensure on each response and delineate other system configuration requirements if appropriate;
- Assure coordination all emergency transports within the EMS system, including public, private, or specialty (air and ground) transport and including center(s) for regional or Statewide EMS transportation coordination and medical direction if appropriate; and;
- Develop regulations to ensure ambulance drivers are properly trained and licensed.

Status

Hawaii operates a centralized ambulance transportation system where the State contracts and pays for all 911 ambulance operations. The contracts are organized by county. This model gives the State strong control over the number of 911 ambulances and helicopters used for emergency transports and is unique among all the States. Hawaii's centralized 911 ambulance reimbursement model does not include payments for interfacility transfers, scheduled ambulance trips, medical first response costs and other costs typically related to a comprehensive EMS system. While it is difficult to make an objective "apples to apples" comparison of the cost of operating Hawaii's 911 ambulance transport system to other States, the model appears to offer cost saving economy of scale benefits including centralized management and eliminating retail competition.

The State has been categorized into three levels of response times for the 911 contracted agencies. These are: 10 minutes for urban areas; 15 minutes for suburban areas; and, 20 minutes for rural areas. These response time divisions appear to be convenient contracting benchmarks and have also been the significant driver for decisions about adding new staffed ambulances. Currently there is no standardized EMS system definition for measuring response times, and it has not been evaluated if the 10, 20 and 30-minute levels are actually meeting the needs of patients. For instance, a less than eight-minute EMS first response might support improved outcomes even if an ambulance does not arrive at a scene until 12 minutes.

The Department of Health's EMS and Injury Prevention Systems Branch (the Branch) is responsible for licensing all air and ground ambulance services. The licensing is a free service and the licenses are signed by the Department of Health Director. There are standards for the required equipment and medications that all ground ambulances must carry. There are also standards requiring replacement of ground ambulance vehicles by age and mileage. The Branch reports not having adequate staff to inspect the ambulance vehicles and equipment although no information was provided to suggest the non-inspections were a problem. The Branch would like to charge a fee to support this program in the future. The Branch is currently using a 1985 checklist for ambulance vehicles and equipment which is part of the State's original EMS administrative rules. When the administrative rules are next updated, the Branch plans to remove this list so it can be more easily amended to reflect the evolution of EMS.

There are two private, fixed-wing air ambulance operators servicing the interisland interfacility transfer needs from 11 air bases. Although the Branch licenses these private air ambulances, they are prohibited from regulating rates, routes or service because of the Airline Deregulation Act of 1975. Currently the Branch does not require the submission of patient information into the Hawaii EMS Information System (HEMSIS) by these private air ambulance agencies.

The Branch supports the costs for two 911 helicopters. One has been operated by Hawaii County Fire Department since 1994. It was reported this unit is older and maintenance costs are increasing. State funds are not available to replace it. Since 2004, the Branch also cost shares a second 911 helicopter with Maui County. This is a relatively new aircraft. The State bills for these 911 air transports but revenues likely are not close to meeting the costs of readiness and response.

Since 1991, 19 EMS ground ambulance units have been strategically added to meet identified areas of need (based on response time standards). Along with these added units, the State also implemented the two dedicated EMS rotor-wing programs in Hawaii and Maui counties. Molokai and Lanai have a single EMS resource to cover both 911 and interfacility transports.

The initial catalyst for forming an “EMS Cabinet” was an ambulance placement strategy to meet the 911 response time targets. This group included key officials from each county and came together to offer a united voice to the 2018 Hawaii Legislature on the priorities and needs for new staffed ambulance units. It was reported the only county not currently meeting the response time targets is Oahu. Improving response times can be achieved through a number of approaches. Therefore, before the State spends more money to place new units, other lower cost approaches should be investigated.

American Medical Response (AMR) provides non-emergency and interfacility transfers for all counties in addition to the State contracted 911 operations. In several cases it was reported AMR is called to supplement the 911 agency for mutual aid on an as needed basis. While AMR is State licensed for these operations, they do not enter information on non-emergency and interfacility transfers into HEMSIS.

During the course of the Technical Assessment Team’s assessment there were many references to ways the costs of 911 ambulance operations could be managed. One idea was through centralized purchasing of vehicles, medications and equipment. While in most systems these hardware and supply costs are relatively small compared to personnel costs, the idea may still be worth pursuing. For example, there may be ways to negotiate volume discounts on vehicle purchases from a single vendor without having to require each individual ambulance vehicle be built from identical specifications.

Recommendations

The Branch should:

- Regularly inspect and certify all types of vehicles used to provide EMS response.
- Assess the costs of an annual contract for 911 helicopter services, as part of a comprehensive cost analysis, versus replacing the aging helicopter.
- **Require all types of EMS agencies (ground and air) to report into HEMSIS for each patient encounter including first response, 911, interfacility, non-emergency and cancellations.**
- Establish a process for updating required medication and equipment lists as a policy document outside of statute or administrative rule so this list can be easily updated to reflect current EMS practice.
- **Assess options, other than adding new ambulance units, for improving 911 ambulance response times on Oahu to meet the 10-minute target.**
- Assess the importance of the 10, 20 and 30-minute contract response time targets to patient outcomes as a possible consideration in the construct of future contracts.

E. FACILITIES

Standard

It is imperative that the seriously injured (or ill) patient be delivered in a timely manner to the closest appropriate facility. Each State should ensure that:

- Both stabilization and definitive care needs of the patient are considered;
- There is a Statewide and medically accountable regional system, including protocols and medical direction, for the transport of patients to State-designated specialty care centers;
- There is State designation of specialty medical facilities (e.g. trauma, burns, pediatric, cardiac) and that the designation is free of non-medical considerations and the designations of the facilities are clearly understood by medical direction and prehospital personnel;
- Hospital resource capabilities (facility designation), including ability to stabilize and manage pediatric emergencies, are known in advance, so that appropriate primary and secondary transport decisions can be made by the EMS personnel and medical direction;
- Agreements are made between facilities to ensure that patients, including pediatric patients, receive treatment at the closest, most appropriate facility, including facilities in other States or counties;
- Hospital diversion policies are developed and utilized to match system resources with patient needs – standards are clearly identified for placing a facility on bypass or diverting an ambulance to appropriate facilities.

Status

Hospitals in Hawaii are classified through an attestation program which allows the hospital to declare their scope of services regarding trauma, ST-Elevation Myocardial Infarction (STEMI), stroke, obstetrics, and pediatrics. The trauma system requires a verification process through the State or American College of Surgeons (ACS) with plans to move to the ACS process exclusively for all future verifications.

There are hospital emergency medical services in all counties that provide trauma, STEMI and stroke services. The only Level I trauma center is on Oahu while each county has at least one Level III trauma facility that serves as the main ambulance receiving facility. Only Oahu has a cardiac catheterization lab for STEMI and thrombectomy services for stroke.

There is no formal verification process for STEMI or stroke center categorization and the hospitals are only required to periodically attest to their capabilities. Facilities can pursue additional verification as a STEMI or stroke center utilizing accepted national organizations such as The Joint Commission (TJC) and American College of Cardiology.

The Hawaii Stroke Coalition has led the development of a stroke system of care and has published criteria for Acute Stroke Ready hospitals though this is not encompassed in rule. Hospitals have used national accrediting organizations such as TJC for accreditation as a primary or comprehensive stroke center.

There are Statewide transfer agreements that are currently under revision. A separate transfer agreement with the military hospital is being developed as well.

The majority of the tertiary care is available on Oahu and requires air transport between islands. There are currently two private fixed-wing agencies available to perform these transfers. Interfacility transfers are considered outside the EMS system for funding, billing and HEMSIS reporting.

Bariatric transfers are performed by the Coast Guard with medical support from the State disaster assistant team. The activation of these resources is done on a case-by-case basis with direct District EMS Medical Director involvement.

Critical Access Hospitals (CAHs) are located on each island. Some have limited resources and primarily receive low acuity patients. The CAHs receive funding from the trauma system special fund to offset operational and educational costs although none are designated trauma centers.

There are both civilian and military hyperbaric chambers on Oahu.

Though diversion does not commonly occur, hospital diversion policies are under review.

Recommendations

The Branch should:

- **Develop designation criteria for STEMI and stroke centers.**
- **Develop a comprehensive quality improvement program for all patients requiring interfacility transfer with focus on timeliness of transfers and patient outcomes.**
- Analyze the appropriateness of the current categorization of hospital resources. Identify and support future verification needs to optimize the system for all time-sensitive emergencies.

F. COMMUNICATIONS

Standard

An effective communications system is essential to EMS operations and provides the means by which emergency resources can be accessed, mobilized, managed, and coordinated. Each State should assure a comprehensive communication system to:

- Begin with the universal system access number 911;
- Strive for quick implementation of both wire line and wireless enhanced 911 services which make possible, among other features, the automatic identification of the caller's number and physical location;
- Strive to auto-populate prehospital patient care report (NEMSIS compliant) with all relevant times from the public safety answering point (PSAP);
- Provide for emergency medical dispatch training and certification for all 911 call takers and EMS dispatcher;
- Provide for priority medical dispatch;
- Provide for an interoperable system that enables communications from dispatch to ambulance, ambulance to ambulance, ambulance to hospital, hospital to hospital and ambulance to public safety communications;
- Provide for prioritized dispatch of EMS and other public safety resources;
- Ensure that the receiving facility is ready and able to accept the patient;
- Provide for dispatcher training and certification standards;
- The Statewide communications plan includes effective, reliable interoperable communications systems among EMS, 911, emergency management, public safety, public health and health care agencies; and
- Each State should develop a Statewide communications plan that defines State government roles in EMS system communications.

Status

Hawaii has assured that Enhanced 911 (E911) is available in the entire State by landline, cell phone, and most recently, by text.

There is a Statewide Medicom System, but it does not allow for the counties to communicate with each other. This is problematic if cell phone systems are down, essentially isolating each county as far as medical communications are concerned. Interoperable communication from county to county should be a goal.

EMS is able to speak with fire and police entities within the counties via tactical channels.

There is a plan for the transition of the State radio system to one that each county maintains. If the communication system is ultimately transferred to the counties, interoperability should remain a goal. Each hospital should have communications capability with incoming ambulances and other hospitals.

Though Hawaii is making great strides to improve access to EMS care through the 911 system, the four dispatch centers continue to operate without standardized Emergency Medical Dispatch (EMD) training. There are no requirements for dispatch centers to have medical priority dispatch systems or utilize certified EMDs. The extent of medical director involvement with EMD systems is unknown.

The TAT received conflicting information regarding Hawaii's participation in the FirstNet project. However, according to the FirstNet website, Hawaii is listed as one of the 56 States and Territories that have opted to participate in the FirstNet project. A point of contact is listed on that website. The Branch should reach out to that person and collaborate with any FirstNet activities.

Recommendations

The Branch should:

- **Create a rule that establishes standards requiring PSAPs to have an emergency medical dispatch system and certified EMDs. The rule should also establish training and certification / licensing standards for EMDs and dispatch agencies.**
- Improve interoperability of radio systems including data transmission and integration of all participating hospitals.
- **Assure participation in Hawaii's FirstNet activity.**
- Support progression of Next Generation 911 systems.

G. TRAUMA SYSTEMS

Standard

Each State should maintain a fully functional trauma system to provide a high quality, effective patient care system. States should implement legislation requiring the development of a trauma system, including:

- Trauma center designation, using American College of Surgeons Committee on Trauma guidelines as a minimum;
- Trauma field triage and transfer standards for trauma patients;
- Data collection and trauma registry definitions for quality assurance, using American College of Surgeons Committee on Trauma National Trauma Data Standards, as soon as practicable;
- Systems management and quality assurance; and
- Statewide Trauma System Plan, consistent with the Health Resources and Services Administration Model Trauma System Planning & Evaluation Document.

Status

Hawaii established a comprehensive trauma system over a decade ago. During this time, multiple hospitals have been designated as trauma centers including one Level I facility and seven Level III centers as well as one pediatric facility. One of the Level III facilities intends to transition to a Level II facility and an existing acute care hospital intends to seek Level III verification in 2021.

There is also a military Level II trauma center on Oahu for military and Department of Defense personnel. This facility does participate in the Statewide disaster response system and could take civilian casualties during a disaster situation.

There is an adult burn center and pediatric burn center on Oahu. However, the adult burn center is not located at a designated adult trauma facility and patients suffering from both major trauma and burns are typically transported to the Level I Trauma Center on Oahu for treatment.

The State has two methods for trauma center designation: one is based upon a State verification and the other utilizes the American College of Surgeon (ACS) verification process. There are plans to transition to the ACS exclusively as the sole process for verification.

The Hawaii trauma system was last reviewed by the American College of Surgeons Committee on Trauma in 2017, and several recommendations were submitted. Many address the need for the strengthening and maturation of the trauma system oversight infrastructure with adjustments to the Hawaii Trauma Advisory Council and creation of a Trauma Registrar position. The Department of Health's EMS and Injury Prevention Systems Branch (the Branch) reports that 63 percent of these priority recommendations have been or are in the process of being addressed.

There is a dedicated trauma fund of \$7.4 million that is distributed to hospitals to support personnel, training and equipment needed to optimize trauma care. The critical access hospitals receive a portion of these trauma funds even though they are not designated facilities and rarely receive ambulance patients.

Trauma triage transport guidelines incorporate the Centers for Disease Control Field Trauma Triage Guidelines and are mainly used on Oahu for determination of transport to the closest appropriate facility based upon patient condition. The neighboring islands transport all trauma patients to the closest Level III facility.

The State trauma registry currently only receives data from the designated trauma centers. Annually, there are about 5,000 trauma patients that qualify for registry entry. The registry data can be manually linked with EMS data but was reported that it is not consistent. Registry data are used by various stakeholders and the Branch has completed several reports including motorcycle helmet usage and injury and patient outcomes at non-trauma verified hospitals. Starting in 2021, all facilities receiving trauma special funds will be required to submit data to the registry.

The system is involved in many public information, education and preventative measures including Stop the Bleed, traffic safety, senior fall prevention, and drowning prevention.

Recommendations

The Branch should:

- Continue to address the recommendations from the 2017 ACS system review.
- Continue to implement exclusive ACS verification for trauma centers.
- Develop verification criteria for Level IV trauma centers.
- Publish an annual trauma report outlining demographics, injury patterns, and outcomes.

- **Implement automated linkage of EMS, trauma registry, and hospital outcomes data and analyze these data for the purpose of trauma system performance improvement.**
- **Develop and publish Statewide quality and performance improvement metrics.**
- **Develop Statewide trauma clinical management guidelines for trauma center utilization addressing specific injury management. This would help limit the need for transfer to the sole Level I Center, e.g., head injury guideline.**

H. PUBLIC INFORMATION, EDUCATION AND PREVENTION

Standard

Public awareness and education about the EMS system are essential to a high quality system. Each State should implement a public information and education (PI&E) plan to address:

- The components and capabilities of an EMS system;
- The public's role in the system;
- The public's ability to access the system;
- What to do in an emergency (e.g., bystander care training);
- Education on prevention issues (e.g., alcohol or other drugs, occupant protection, speeding, motorcycle and bicycle safety);
- The EMS personnel's role in injury prevention and control; and
- The need for dedicated staff and resources for PI&E.

Status

Hawaii's citizens benefit from an impressive array of public information, education and injury prevention initiatives. Like so many effective programs in public health, these initiatives are shared between the Department of Health's EMS and Injury Prevention Systems Branch (the Branch), other offices within the Department of Health, EMS agencies, educational institutions, trauma centers and other hospitals, the military, ocean safety / lifeguards, fire departments and other public safety organizations. The synergy of all these groups is a force multiplier of which the State should be proud.

Areas of focus have included:

- Traffic Safety;
- Senior Falls Prevention;
- Suicide Prevention;
- Drowning Prevention;
- Centers for Disease Control CORE State Violence and Injury Prevention Program focused on intimate partner/sexual violence and child abuse and neglect;
- Hands only CPR;
- Stop the Bleed; and,
- Disaster Preparedness.

One landmark event was on May 15, 2019, when the State of Hawaii's first Stop the Bleed Day was memorialized by a Governor's Proclamation. At the University of Hawaii John A. Burns School of Medicine, a multidisciplinary health fair greeted attendees. The Hawaii DOH promoted the event through a media campaign. Participants included but were not limited to:

- Civilian EMS;
- Military EMS;
- Trauma centers (adult, pediatric, military, Level I, Level II, and Level III);
- EMS educators;
- Data registry managers;
- Researchers;
- Medical students;
- Public health agencies; and,
- Local news.

The Technical Assessment Team (TAT) was provided with an extensive list of public education and prevention activities being supported by EMS agencies at the county level. The commitment to delivery of these programs is impressive.

It was also reported there is evaluation of improved outcomes for at least some of the public information, education and prevention initiatives.

Recommendations

The Branch should:

- Advocate for mandatory motorcycle and bicycle helmet laws.
- **Continue building evaluation of effectiveness for all public information, education and prevention initiatives.**
- Publish and share success stories of these programs.

I. MEDICAL DIRECTION

Standard

Physician involvement in all aspects of the patient care system is critical for effective EMS operations. EMS is a medical care system in which physicians oversee non-physician providers who manage patient care outside the traditional confines of the office or hospital. States should require physicians to be involved in all aspects of the patient care system, including:

- A State EMS Medical Director who is involved with Statewide EMS planning, overseeing the development and modification of prehospital treatment protocols, Statewide EMS quality improvement programs, scope of practice and medical aspects of EMS provider licensing/disciplinary actions;
- Online and off-line medical direction for the provision of all emergency care including pediatric medical direction, when needed and the authority to prevent and EMS provider from functioning based on patient care considerations; and
- Audit and evaluation of patient care as it relates to patient outcome, appropriateness of training programs and quality improvement.

Status

The Chief of the EMS and Injury Prevention Systems Branch (the Branch) acts as the administrative head of the Branch, as well as the State EMS Medical Director, since these two positions were consolidated in 2006. There are four District EMS Medical Directors, each representing one county. Their responsibilities are outlined in Hawaii administrative rule §11-72-10 and include being “responsible for the off-line medical management of the EMS system in the county to include Medicom communications review, medical-surgical case reviews of ambulance patient care report forms generated in the county, monthly base station meetings to review selected cases, counseling of ambulance personnel in the county, and recommendation of continuing education programs for the ambulance personnel in the county; participation in continuing education programs in the county.” District EMS Medical Directors report to the Branch Chief.

Each EMS agency and fire first-responder agency has a medical director. The roles and responsibilities of these medical directors are not delineated by statute or rule and appear to be overlapping and somewhat redundant to those of the District EMS Medical Directors. These physicians were described to the Technical Assessment Team (TAT) as engaging in more day-to-day medical operations and agency-specific medical direction, including ordering of controlled substances.

Neither the District nor Agency EMS Medical Directors have statutory authority to remediate, restrict or remove EMS personnel from medical service if the director feels they are providing substandard or negligent medical care.

The Hawaii EMS Advisory Committee (HEMSAC), whose purpose and make-up are outlined in Hawaii code §321-225, is currently chaired by an emergency medicine physician experienced in EMS Medicine. This committee meets quarterly and is charged with providing advice to the Branch Chief regarding operations of the EMS system. The TAT was able to observe one of their meetings.

On-line medical direction is generally provided by the receiving hospital, although the agency medical director may be consulted for unusual circumstances. On-line coordination of the transportation of bariatric patients is done by the district medical directors.

The State Standing Orders are used by all 911 ground ambulance agencies in Hawaii. These are updated periodically by the District EMS Medical Directors. The most recent update was completed in 2018 and has still not been published. The make-up of the standing order revision committee is not formally prescribed and does not currently include agency medical directors or pre-hospital personnel (paramedics or Emergency Medical Technicians). The Branch now provides the standing orders in a smartphone and tablet app which makes it convenient for the field personnel to access. The Branch is considering utilizing a commercial product for pediatric drug dosing to minimize dosing errors in children.

Interfacility transports, both ground and air, are provided by private agencies. There is no requirement for these agencies to enter these patient encounters into HEMSIS, limiting the ability of State regulators to oversee the quality and quantity of such encounters.

Recommendations

The Branch should:

- **Separate the roles of Branch Chief and State EMS Medical Director.**
- **Replace the four District EMS Medical Directors with a single State EMS Medical Director with substantial EMS Medicine expertise with at least a 0.5 FTE minimum.**
- **Require each EMS and fire first-responder agency to have a physician medical director with experience in emergency care whose roles and responsibilities are clearly defined in statute or rule. Those roles and responsibilities should encompass the current roles and responsibilities of the District EMS Medical Directors.**

- Ensure appropriate compensation for Agency EMS Medical Directors.
- **Provide the authority, in statute or rule, for the Agency EMS Medical Director to remediate, restrict or remove patient care privileges from an EMS provider found to be providing substandard or negligent patient care.**
- Include Agency EMS Medical Director(s) and prehospital representatives on the committee tasked with regularly updating the State Standing Orders.
- Update the State Standing Orders at least every two years. The National Association of State EMS Officials (NASEMSO) Model EMS Clinical Guidelines should be used as a reference when these are updated.
- Develop a process whereby Agency EMS Medical Directors can seek State approval to alter or adjust State Standing Orders for their individual agencies.

J. PREPAREDNESS

Standard

EMS is a critical component in the systematic response to day-to-day emergencies as well as disasters. Building upon the day-to-day capabilities of the EMS system each State should ensure that EMS resources are effectively and appropriately dispatched and provide prehospital triage, treatment, transport, tracking of patients and documentation of care appropriate for the incident, while maintaining the capabilities of the EMS system for continued operations, including:

- Clearly defining the role of the State Office of EMS in preparedness planning and response including their relationship with the State's emergency management, public health and homeland security agencies;
- Establishing and exercising a means to allow EMS resources to be used across jurisdictions, both intrastate and interstate, using the Emergency Management Assistance Compact and the National Incident Management System;
- Identifying strategies to protect the EMS workforce and their families during a disaster;
- Written protocols, approved by medical control, for EMS assessment, triage, transport and tracking of patients during a disaster;
- A current Statewide EMS pandemic influenza plan; and
- Clearly defining the role of EMS in public health surveillance and response.

Status

On December 7, 1941, Hawaii experienced first-hand the devastating effects of a terrorist attack on Pearl Harbor that launched the United States into World War II. Since that time the State has undertaken initiatives to build and maintain preparedness capabilities to address violence, disease, weather, earthquakes, fires, tsunamis and other threats. This is an important area of work given the significant logistical challenges of moving resources between counties and/or into Hawaii from other States. Hawaii benefits today from excellent cooperation between the spectrum of partner organizations, comprehensive planning initiatives and ongoing exercises to measure and improve response, management and recovery for a broad variety of scenarios.

The Hawaii Emergency Management Agency (HIEMA), under the Hawaii National Guard, is responsible for Statewide disaster coordination. County disasters are managed by each county. HIEMA assistance is requested by county emergency operations centers (EOC) through the WEBEOC program. When approval is granted by the Governor, HIEMA can request assistance from the Federal Emergency Management Agency.

Each county EMS agency works with the county EOC and incident commander to coordinate EMS during a disaster. Each of the counties has a disaster plan that includes EMS.

The Department of Health's EMS and Injury Prevention Systems Branch (the Branch) works with the counties to assure proper service levels are in place. The Branch is involved throughout the disaster to facilitate supplies and approves transfer of EMS resources from one county to another. The Branch Chief is the emergency support function (ESF) 8 liaison to the State EOC at HIEMA. The State response plan ESF 8 documents currently do not mention EMS by name, but this gap has been identified.

Hawaii Healthcare Emergency Management (HHEM) coordinates and supports health care resources Statewide during emergencies. HHEM is also charged with coordinating response and recovery health care operations including patient movement. HHEM is funded through the Department of Health's (DOH) hospital preparedness grant using federal funds. HHEM also fields a disaster medical response team (Kalawao Rescue). HHEM has agreements in place allowing them to move medical personnel from facility to facility.

Hospitals work in conjunction with HHEM and have varying degrees of planning and response plans with county EMS. There is no direct connection between HHEM and the Branch although collaboration is increasing. HHEM is currently working with the American Red Cross to address family reunification challenges when patients move between counties during disasters.

The City and County of Honolulu EMS sent incident management team (IMT) personnel to Hawaii County during the volcanic eruption in 2018. Similarly, Honolulu IMT personnel were dispatched to Kauai during the 2018 floods. Honolulu EMS (Oahu) is responsible for storing the Strategic National Stockpile (SNS) Chempacks.

There is a Statewide Pandemic flu plan written in 2008. There is cooperation and ongoing dialog between pre-hospital personnel, DOH Disease Outbreak and Control Division, and private air medical personnel. Emerging infectious diseases are being addressed. During the Ebola epidemic, EMS dispatchers inquired about travel history and symptoms such as fever. Specialized Ebola ambulance units have been identified.

The Department of Transportation Airports Division contracts for EMS service at Honolulu International Airport with American Medical Response (AMR) Hawaii. In addition to responding to medical emergencies, the AMR medical unit can provide 24-hour surveillance screening of travelers arriving from outbreak zones with illness or fevers in collaboration with the Hawaii-based Centers for Disease Control (CDC) station. This service was used during the H1N1 outbreak. Hawaii County Fire and EMS conducted patient surveillance during the dengue fever outbreak in 2017. EMS visited remote areas and, in some cases, collected blood samples.

Recommendations

The Branch should:

- Update the State Emergency Response Plan, ESF-8 section to specifically include EMS.
- Update the Statewide Pandemic flu plan.
- Implement a family reunification process in conjunction with the American Red Cross for all types of disasters.
- **Continue to support a robust all-hazards exercise program that includes EMS.**

K. EVALUATION

Standard

Each State should implement a comprehensive evaluation program to assess effectively and to improve a Statewide EMS system. State and local EMS system managers should:

- Evaluate the effectiveness of services provided to victims of medical or trauma-related emergencies;
- Define the impact of the system on patient care and identify opportunities for system improvement;
- Evaluate resource utilization, scope of service, patient outcome, and effectiveness of operational policies, procedures, and protocols;
- Evaluate the operation of regional, accountable emergency care systems including whether the right patients are taken to the right hospital;
- Evaluate the effectiveness of prehospital treatment protocols, destination protocols and 911 protocols including opportunities for improvement;
- Require EMS operating organizations to collect NEMSIS compliant data to evaluate emergency care in terms of the frequency, category, and severity of conditions treated and the appropriateness of care provided;
- Assure protection from discoverability of EMS and trauma peer review data;
- Ensure data-gathering mechanism and system policies that provides for the linkage of data from different data sources through the use of common data elements;
- Ensure compatibility and interoperability of data among local, State and national data efforts including the National EMS Information System and participation in the National EMS Database;
- Evaluate both process and impact measures of injury prevention, and public information and education programs; and

- Participate in the State Traffic Records Coordinating Committee (TRCC) – a policy-level group that oversees the State’s traffic records system, to develop and update a Statewide Traffic Records System Strategic Plan that ensures coordination of efforts and sharing of data among various State safety data systems, including EMS and Trauma Registry data.

Status

In 2006, the Department of Health’s EMS and Injury Prevention Systems Branch (the Branch) deployed a Statewide EMS medical record system, called the Hawaii EMS Information System (HEMSIS). All EMS agencies responding to 911 emergency calls are required to submit standardized patient care reports into this system. This system is NEMSIS 2.0 compliant. It also captures dispatch data. The HEMSIS system is used for records review, quality assurance, and performance improvement for the Hawaii EMS system. Interfacility patient transport records are not currently entered into the system and are thus not available for State review and performance improvement efforts.

The Branch is planning to adopt a new Statewide EMS medical record which will be NEMSIS 3.4 compliant, allowing more robust data capture and analysis. This will enhance the ability of the Branch to evaluate the performance of the EMS system.

The Branch is very fortunate to have available the services of an epidemiologist who provides analysis of the EMS data collected. This is a remarkable asset for the EMS system, and his analyses have assisted the Branch to better tailor the system to serve the public’s needs. An example is the removal of cricothyrotomy as a permitted procedure by paramedics, a decision which was informed by analysis of HEMSIS by the epidemiologist.

The Branch contracted with the Hawaii Health Information Corporation to link EMS patient care reports collected in HEMSIS with hospital billing data for the period 2008-2016, thus allowing the Branch and the Hawaii EMS Advisory Committee (HEMSAC) to evaluate the outcomes of EMS encounters. This linkage allows far more clinically useful analyses to be made in order to improve the system both clinically and operationally. Unfortunately, this linkage process was discontinued in 2017. Efforts are underway to resume it when the new HEMSIS platform is in place.

The Branch also has the capability to link HEMSIS records to the State Trauma Registry by virtue of the EMS patient identifier being entered into the trauma registry record. This allows analysis of trauma patient outcomes for performance improvement purposes.

The capability to evaluate the full spectrum of emergency and trauma care of patients has been used for multiple quality assurance and performance improvement efforts to date and are extremely powerful tools for the analysis and improvement of the Hawaii EMS system, both clinically and operationally.

In addition to assisting the EMS system, HEMSIS and Trauma Registry data have been used to inform other State programs and initiatives, including the 2019 Hawaii Strategic Highway Safety Plan, as well as for analysis of the State's drug and opioid overdose rates.

Hawaii was one of the first States to begin Statewide participation in the national Cardiac Registry to Enhance Survival (CARES) which has allowed it to benchmark and dramatically improve the survival rates from cardiac arrest for its citizens.

Recommendations

The Branch should:

- **Continue efforts to provide ongoing, real-time, automated linkage between HEMSIS, the trauma registry, and hospital records.**
- Link registries of stroke and ST-Elevation Myocardial Infarction (STEMI) patients, when available, to evaluate EMS patient outcomes.
- Continue Statewide participation in the CARES registry.
- **Adopt evidence-based, nationally accepted performance measures, such as those promulgated by the National EMS Quality Alliance, to further benchmark and improve the emergency care provided to the citizens of Hawaii.**
- **Require interfacility transport personnel, both air and ground, to submit patient care reports for interfacility transfers to the HEMSIS system, in order to allow the Branch to better monitor, evaluate, and improve this sector of pre-hospital patient care. This is particularly important because of the unique island geography of Hawaii and its associated complex transportation arrangements.**

L. CURRICULA VITAE

DAN MANZ

National EMS Educator
Interstate Commission for EMS Personnel Practice
5010 E. Trindle Road, Suite 202
Mechanicsburg, PA 17050

Phone (833) 473-7542
Cell (802) 316-2126

Email: dmanz@emscompact.gov

ORGANIZATIONS/APPOINTMENTS

Vermont EMS Office, Retired Director
National Association of State EMS Officials
Past Program Champion
Past Program Manager
Past President
Past Treasurer
New England Council for EMS
Past President
Executive Committee
Vermont Ambulance Association, Past Vice-President
Vermont Public Safety Broadband Network Commission, EMS Representative
National EMS Compact Program, Facilitator for original legislation drafting and current national EMS educator
EMS Agenda for the Future, Original Co-Chair
EMS Education Agenda for the Future, National Implementation Team, Chair
FLEX Program, National Resource Center, Board Member
EMS Agenda for the Future Implementation Guide Committee member
National Registry of EMTs, Former Board Member
Essex Rescue, Retired Executive Director and AEMT Captain
Health Care Finance Administration Negotiated Rule Making, NASEMSO, Committee Member
National EMS Scope of Practice Model Project – Original Principal Investigator and Project Champion for the 2018 update
American College of Surgeons- Trauma System Assessment Team Member
EMSC Grant Review Team Member
USDOT, NHTSA EMS Assessment Program, Technical Assistance Team, Member, States of Delaware, Texas, and North Dakota

USDOT, NHTSA EMS Reassessment Program, Member, States of Colorado, Alaska, Ohio, Connecticut, Delaware, Mississippi, Oregon, Michigan, Kansas, North Dakota, American Samoa, Nevada and Oklahoma.

USDOT, NHTSA Pedestrian and Bicycle Safety Assessment Program, Technical Assistance Team, Member, States of Michigan and Washington

CURTIS C. SANDY, MD, FACEP, FAEMS

Medical Director,
Emergency Department and EMS
Portneuf Medical Center
777 Hospital Way
Pocatello, ID 83201

Chair,
Idaho EMS Physician Commission
Idaho Bureau of EMS and Preparedness
Boise, ID

208-705-7752

Email: ccsandymd@gmail.com

ORGANIZATIONS/APPOINTMENTS

American College of Emergency Physicians (ACEP), Fellow
President, Idaho Chapter 2004-2009

American Board of Emergency Medicine, Diplomate, EMS Sub-specialty
National Association of EMS Physicians (NAEMSP)
Fellow, Academy of EMS

National Association of State EMS Officials (NASEMSO)-Medical Director Council
Air Medical Physician Association

Idaho EMS Physician Commission, Board of Medicine Representative,
Chair, Idaho Time-Sensitive Emergencies Southeast Region Committee
Southeast Region Chair, Idaho TSE Council

Medical Director:

Bannock County Ambulance/Pocatello Fire, Pocatello, ID
Ft. Hall Fire and EMS, Fort Hall, ID
Bannock County Search and Rescue, Pocatello, ID
Bannock County Sheriff Tactical EMS, Pocatello, ID
Portneuf Air Rescue, Pocatello, ID
Bureau of Land Management, ID
Power County EMS, American Falls, ID
South Custer County Ambulance, Mackay, ID
Kooskia Ambulance, Kooskia, ID
Franklin County Fire Department, Preston, ID

Director of EMS, Portneuf Medical Center,
Tactical Physician, Bannock County Sheriff, Southeast Idaho STAR,
Affiliate Clinical Faculty: Idaho State University, Pocatello, ID
Associate Medical Director, NMETC, West Bridgewater, MA
Consultant, SafeTech Solutions, LLP –

- Principal Author – A Guide to Medical Direction in North Dakota
- Principal Author – A Guide to Medical Direction in South Dakota

PALS Training Center Development, Tblisi, Republic of Georgia, 2014
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team Member,
States of Oklahoma, Missouri, Ohio, Wyoming, Alaska, Iowa, Indiana and South
Carolina.

LESLEE STEIN-SPENCER R.N., M.S.

Acting EMS Chief
Illinois Department of Public Health
Springfield, Illinois 62701

Spencer Consulting Ltd
President
6310 N. Tripp Ave
Chicago, Illinois 60646
(217) 557-3911
Cell (773) 640-0649

Email: leslee.stein-spencer@illinois.gov, lesleess@aol.com

ORGANIZATIONS/APPOINTMENTS

Chief of EMS, Illinois Department of Public Health, Past Director
Director, Medical Administration and Regulatory Compliance, Chicago Fire Department
National Association of State EMS Officials
Current Program Advisor, Health and Medical Preparedness Council
EMSC Grant Review Team Member
USDOT, NHTSA EMS Assessment Program, Technical Assistance Team, Member,
States of Minnesota, Pennsylvania, North Carolina and Hawaii
Member: Illinois Stroke Advisory Board, Illinois EMS Advisory Council, Illinois Poison
Advisory Board
Member: Chicago; Region XI EMS Advisory and Trauma Board, Mayors office on
Mental Health and task force on Opioid Use.
Participated in the planning and participation of all Special Events in Chicago to include
the following: Chicago Marathon, NATO, Gay/Pride Parade
Team Member: Nationwide Plan Review Assessment Team, DHS

PETER P. TAILLAC, MD, FACEP, FAEMS

Medical Director, Utah State EMS
Bureau of Emergency Medical Services and Preparedness
Utah Department of Health

801-803-3217
ptaillac@utah.gov

Diplomate, American Board of Emergency Medicine
Fellow of the American College of Emergency Physicians

Board Certifications:
Emergency Medicine
Emergency Medical Services

Clinical Professor of Surgery
Division of Emergency Medicine
University of Utah School of Medicine

Past Chair, Medical Directors Council, National Association of State EMS Officials

NHTSA National EMS Advisory Council, EMS Medical Director Representative

Medical Director
West Valley City Fire and EMS

Colonel, Medical Corps (Retired)
Utah Army National Guard
Combat medical experience in both Iraq and Afghanistan

KYLE THORNTON, EMT-P, M.S.

Bureau Chief
New Mexico Department of Health, EMS Bureau

1301 Siler Road, Building F
Santa Fe, NM 87507

Office: 505-476-8205
Cell: 505-249-8630
Email: KyleL.Thornton@state.nm.us

ORGANIZATIONS/APPOINTMENTS

Bureau Chief, New Mexico Department of Health EMS Bureau
President, National Association of State EMS Officials
Member, National Registry of EMT's Board of Directors
Past Member, Commission on Accreditation of EMS Programs Board of Directors
Member, New Mexico Joint Organization on Education
Member, New Mexico Public Regulation Commission Ambulance Advisory
Member, New Mexico Medical Direction Committee
Member, New Mexico Trauma System Fund Authority
University of New Mexico EMS Academy Advisory Board
Member, Central Community College of New Mexico Advisory Board
Member, San Juan Community College EMS Program Advisory Board
Preventive Block Grant Coordinator, New Mexico Department of Health
Former Deputy Chief, Sandoval County (New Mexico) Fire Department
Former BLS/ILS Director, University of New Mexico, School of Medicine EMS Academy
Former member – New Mexico Instructor Association
USDOT, NHTSA, EMS Reassessment Program Technical Assistance Team Member;
States of Wyoming, Iowa, and Michigan.

KEITH WAGES

Immediate Past President
National Association of State EMS Officials
843 Highway 211 NW
Winder, GA 30680

770-601-4283

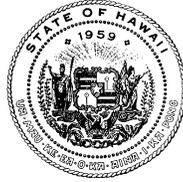
keith.wages@gmail.com

State EMS Director (ret.)
Georgia Office of EMS and Trauma
(2010- 2019)
(1990-1996)

Executive Director
Minnesota EMS Regulatory Board
(1996-1998)

Organizations/Appointments/Awards

National Association of State EMS Officials
 Immediate Past President 2019- Present
 Board of Directors 2011 –Present
 Executive Committee 2014-Present
 President 2016-2019
 President-elect 2014-2016
 South Region Chair 2011-2014
Federation of Association of Regulatory Boards- Member- 2014- Present
National EMS Museum- Board of Directors- 2018- Present
NREMT EMS Physician Fellowship Course Faculty - 2012 – Present
Interstate Commission for EMS Personnel Practice- Member- 2016- 2019
Joint National EMS Leadership Forum- Chair- 2016- 2019
Governor's Public Safety Award for Outstanding Contributions – 2013
Dr. John B. O'Neal, III Pioneer Award – 2007
Georgia Association of EMS Chairman's Award – 2008
USDOT, NHTSA, EMS Assessment and Reassessment Program, Technical Assistance
 Team Member, States of Tennessee, South Carolina, Ohio, Indiana, South
 Carolina (reassessment) and New Hampshire



STATE OF HAWAII
DEPARTMENT OF HEALTH
EMERGENCY MEDICAL SERVICES & INJURY PREVENTION SYSTEM BRANCH
LEAHI HOSPITAL
3675 KILAUEA AVENUE, TROTTER BUILDING
HONOLULU, HAWAII 96816-2333
Phone: (808) 733-9210
Fax (Administration): (808) 733-9216
Fax (Billing/Medical Records): (808) 733-8332

In reply, please refer to:
File:
EMSIPSB 20-008

January 9, 2020

TO: Hawaii Emergency Medical Services Stakeholder
FROM: Alvin C. Bronstein MD, FACEP
RE: NHTSA Report 2019

EMSIPSB is pleased to provide this copy of the 2019 NHTSA Reassessment of the Hawaii EMS System. The report is comprehensive with short range and long range recommendations. The following recommendation have been chosen by the Department of Health as initial priorities:

- EMS workforce study
- EMS system cost analysis
- Require all ground and air ambulance care document in the Hawaii pre-hospital record system (911 and interfacility transfers)
- License of all qualified EMTs and paramedics
- Make pre-hospital care licensure independent from employment
- Hire EMS data manager

Mahalo.