



Medical Director Guidebook

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FOREWORD

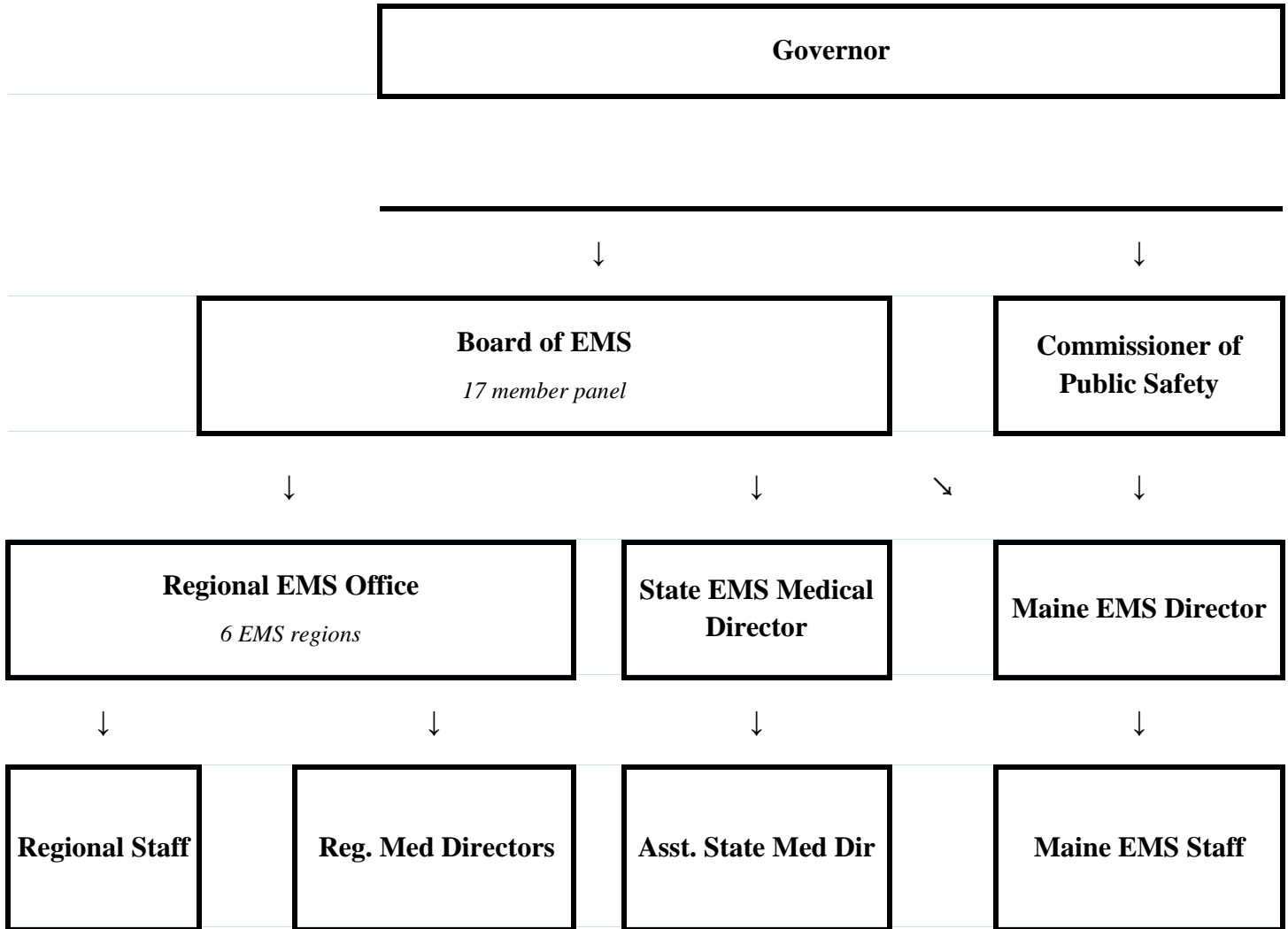
The *Maine EMS Medical Director's Guidebook* was designed to provide physicians and EMS services with direction on how to navigate the Maine EMS system. Our goal with this guidebook is to educate and inform all users of the system to the role of EMS physician medical direction.

In early 2010, the need to increase the involvement of physicians within the Maine EMS System was identified. For years Maine EMS has utilized a State EMS Medical Director and Regional EMS Medical Directors to provide medical direction for the system and individual agencies. As the EMS system has grown and matured, there is a need for service level medical direction, as well as for medical director oversight of the interfacility transfer (IFT) of patients.

With this need for additional medical directors, comes the need to ensure that medical directors understand what is expected of a physician within the EMS system. IFT services that participate within the paramedic interfacility transfer (PIFT) program are required to have service level medical directors to ensure quality patient care.

Maine EMS has a functional job description for EMS providers. This document clarifies the physical roles and responsibilities along with the cognitive skills necessary to act as an EMS provider. This job description can be viewed at the following link: <http://www.maine.gov/ems/publications/index.html#lrfpd>

MAINE EMS SYSTEM STRUCTURE



Maine EMS is a Bureau within the Department of Public Safety. Maine EMS includes a regulatory board, an Executive Director and staff, whose task is to establish and maintain the EMS system within the State of Maine. Maine EMS is responsible for the licensure of EMS providers, services, emergency medical dispatchers, dispatch centers, instructor/coordinators and training centers.

Maine EMS Board

The Maine EMS Board is responsible for the development and implementation of rules for the Maine EMS system. Members of the Board are appointed by the governor for three (3) year terms. The Board is designed to represent members of the public, hospitals and EMS services. The Board is comprised of the following positions:

- Emergency Medical Dispatch Representative
- Emergency Physician Representative
- Emergency Nurse Representative

- EMS Region I (Southern Maine EMS) Representative
- EMS Region II (Tri-County EMS) Representative
- EMS Region III (Kennebec Valley EMS) Representative
- EMS Region IV (Northeast EMS) Representative
- EMS Region V (Aroostook EMS) Representative
- EMS Region VI (Midcoast EMS) Representative
- For-profit Ambulance Service Representative
- Hospital Administration Representative
- Maine Fire Chiefs Association Representative
- Representative Fire Chief, or Deputy Fire Chief
- Municipal EMS Provider Representative
- Non-profit Ambulance Service Representative
- Non-transporting Service Representative
- Public Representative (1)

The Maine EMS Board has standing committees to provide input on specific aspects of EMS. These committees also identify areas within the system that may need to be addressed by the Board. The members of the committees are approved by the Chair of the Maine EMS Board.

The current standing committees and their functions are:

- **Medical Direction & Practice Board (MDPB):** Develops and approves patient care protocols, procedures, equipment, and performance improvement. The composition of the MDPB, is established in statute (32 MRSA § 83(16-AB) and consists of State EMS Medical Director, the Assistant State EMS Medical Director, the six regional Medical Directors, a Maine ACEP physician, an at-large physician, and a toxicologist/pharmacist. Meetings are held the third Wednesday of the month and are open to the public. Past minutes can be found on the Maine EMS website at: http://www.maine.gov/ems/boards/medical_directions_board/minutes.html
- **Data Committee:** Provides input regarding the Maine EMS Run Reporting System (MEMSRR). MEMSRR submits data to the National EMS Information System (NEMSIS). Committee members are appointed by the Board, and the committee meets as needed.
- **Education Committee:** Evaluates aspects of EMS education from initial licensure courses to continuing education. The committee also assists with the training center approval process. Committee members are appointed by the Board, and the committee meets monthly.
- **Emergency Medical Dispatch (EMD) Committee:** Evaluates all aspects of EMD within the State. This includes education, continuing education, licensing, and dispatch standards. Committee members are appointed by the Board, and the committee meets monthly.
- **Exam Committee:** Evaluates the processes used for the EMS licensure examination. Committee members are appointed by the Board, and the committee meets quarterly.
- **Investigations Committee:** . The committee reviews complaints regarding EMS and EMD practice and is comprised of members of the Maine EMS Board. Maine EMS Licensing Agents conduct investigation and

obtains counsel from the Office of the Attorney General. The committee makes recommendations to the Board about potential actions. The committee meets monthly.

- **Quality Improvement Committee:** Develops, collects, and evaluates statewide QI initiatives. The committee meets on the 3rd Wednesday of most months following the MDPB meeting.

Maine EMS Office

The Maine EMS office is comprised of a Director and six (6) staff members. The Office carries out the daily responsibilities of the EMS system as authorized by the Board. Through the Director, the Maine EMS office staff carries out the functions of licensure, testing, training center evaluation, management of the Maine EMS Run Reporting system (MEMSRR), investigations and inspections of EMS services, and coordinates licensing and quality improvement for emergency medical dispatchers and dispatch centers. The Maine EMS Office is currently staffed with the following positions:

- Director
- Data & Preparedness Coordinator
- Emergency Medical Dispatch Coordinator
- Training & Education Coordinator
- Licensing Agents (2)
- Licensing Assistant

The staff of the office also assists the Maine EMS Board with the various committees and projects as directed. Each staff member is assigned to committees of the Board.

Regional EMS Offices

Maine EMS has six regions whose activities are coordinated by a regional office. These regional offices are independent, 501(c)(3) corporations with whom the state contracts for services. The regional offices help to establish and support service quality assurance/improvement, initial and continuing education, and serves as a liaison between hospitals and EMS services within their respective areas. The regional offices also help provide public education about EMS.

The regional offices provide an information conduit to and from the Maine EMS office. The regional office staff varies, but each office has an executive director, administrative support, and a regional EMS medical director.

There are currently six EMS regions whose geographic boundaries are defined by the Maine EMS Board. The number of regions and/or the boundaries of the regions may be altered by the Board to best serve the system's needs. At present, the regional offices include the following six regions:

- **Region I:** York, Cumberland, and Sagadahoc counties
- **Region II:** Oxford, Franklin, and Androscoggin counties
- **Region III:** Kennebec and Somerset counties
- **Region IV:** Penobscot, Piscataquis, Washington, and Hancock counties
- **Region V:** Aroostook county
- **Region VI:** Lincoln, Knox, and Waldo counties

Training Centers

Centers are licensed to provide initial education, and both provide and approve continuing EMS education. Training Centers undergo a rigorous approval process and must provide annual reports on their progress. Training Centers are required to have a medical director to review educational materials and methods.

LEGAL ASPECTS & SYSTEM RULES

There are many legislative and legal issues that have an impact upon and guide the Maine EMS system and medical directors. It is important that EMS medical directors maintain an awareness of and involvement with issues at the local, state, and federal level. Physician involvement is critical for appropriate compliance and institution of these policies. In this chapter, state and federal legislative and legal issues will be presented. Medical directors must understand and address these issues proactively in the EMS system.

LEGISLATIVE ISSUES

Origins of EMS / Essential Components

Most EMS services can trace their origins to the Emergency Medical Systems Act of 1973. This Act required the establishment of an EMS system with 15 essential components. The components are:

- Provision of manpower
- Training of personnel
- Communication
- Transportation
- Facilities
- Critical care units
- Use of public safety agencies
- Consumer participation
- Accessibility of care
- Transfer of patients
- Standard of medical record keeping
- Consumer information and education
- Disaster linkage
- Mutual aid agreement
- Independent review and evaluation

Throughout the original act, medical direction was implied through several sections, but not specifically accounted for in the 15 essential components. However, as the system has grown and matured, the importance and value of EMS medical direction has become more evident. Throughout the late 1960's and early 1970's, the fields of EMS and Emergency Medicine evolved together. As both professions have grown, so has the field of EMS medical direction.

FEDERAL REGULATIONS

The following federal, state, and local regulations directly impact the EMS system:

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal law that was passed in 1990. This law was developed to eliminate discriminatory treatment of disabled persons, and is applicable to employment, public services, public accommodations, and telecommunications. A disability may be defined in the following ways:

- A physical or mental impairment that substantially limits one or more of the major life activities
- A record of such activity, and
- People regarded as having such impairment.

Discrimination may result from any situation where the disabled individual feels an adverse result occurred because of the disability. The most common situation is an individual seeking employment. It is advisable to obtain legal advice for any situation that may have ADA implications.

The ADA can be viewed in its entirety at the following link: www.ada.gov

OSHA/Bureau of Labor Standards

The Occupational Safety and Health Administration (OSHA) oversees the environment in which employees work. All departments must adhere to the strict guidelines that are established by OSHA and include:

- Documentation procedures for exposures
- Documented procedures to minimize exposures
- Engineered work environment to minimize exposures
- Proper warnings to notify employees of potential hazards
- Hepatitis B vaccines must be offered at no cost
- Personal protective equipment must be provided
- Mandated use of personal protective equipment, with a documented disciplinary system
- Prohibition of eating or drinking in areas where exposure is possible

Municipal, county and state services work place environments are regulated by the Bureau of Labor standards. The Bureau of Labor standards align with OSHA standards. The Bureau of Labor Standards can be reviewed at the following link: <http://www.maine.gov/labor/bls/>

OSHA standards may be reviewed in their entirety at: <http://www.osha.gov>

Local hospitals and community health departments are also resources for infection control and exposure prevention.

COBRA / EMTALA

The Comprehensive Omnibus Reconciliation Act of 1985 (COBRA) and the Emergency Medical Treatment and Active Labor Act of 1986 (EMTALA) protect patients from being turned away from hospitals or transferred to another hospital because they may not be able to pay for treatment. EMS may be impacted when a hospital or physician makes a decision to transfer a patient by an EMS service between facilities. COBRA/EMTALA requires the following:

- The treatment benefits to the patient at the receiving hospital outweigh the risks associated with transfer.
- If there is an emergency condition, care must be provided to the level that the medical staff and hospital are able. The patient must be stabilized prior to transfer, or the transferring provider must certify that the benefits of transfer to the receiving hospital outweigh the risks associated with the transfer.
- Women who are in active labor are protected from transfer if delivery is imminent, **except** if the transferring provider certifies that delivery at the sending hospital poses a greater risk to the mother or fetus than being transferred.
- If a transfer is necessary:
 - The receiving facility must be notified and accept the patient.
 - The sending medical provider must certify that the transfer is medically necessary.
 - Documentation of the patient's medical condition and copies of the medical record, laboratory studies, and radiographs should be sent with the mutually agreed upon transporting agency following appropriate instructions to the transporting personnel.
 - Decisions regarding the staffing of the ambulance for transport are the responsibility of the hospital that is sending the patient. Transporting a patient without the appropriate staff (e.g. paramedics, respiratory therapists, nurse, and/or physicians) may result in a violation of the EMTALA rule. The physician and hospital are ultimately responsible for the outcome of the patient.

Violations of COBRA/EMTALA are very expensive. Civil monetary penalties may range up to \$50,000 per physician and per hospital, per incident. Physicians and hospitals that violate COBRA/EMTALA risk losing the ability to participate in federal payment programs such as Medicare, Medicaid, or Maine Care. Receiving hospitals are also required to report violations of COBRA/EMTALA or risk sanction themselves.

EMTALA may be reviewed in its entirety at: <https://www.cms.gov/emtala/>

CLIA

The Clinical Laboratory Improvement Amendment (CLIA) of 1988 requires that clinical laboratories adhere to certain standards of quality. The CLIA program is financed through the collection of fees. Based on interpretation of this regulation, EMS agencies may be considered mobile laboratories. EMS agencies that utilize glucose or certain lactate monitors for basic blood chemistry, need a CLIA waiver. CLIA allows most of these agencies to obtain a waiver for performance of a "simple test" related to direct patient care.

CLIA may be reviewed in its entirety at: <https://www.cms.gov/clia/>

FLSA

The Fair Labor Standards Act (FLSA) was passed in 1938, but did not significantly impact EMS agencies until the 1985 amendment was added. According to this law, an individual who is paid to perform a service for a jurisdiction cannot volunteer to perform the same type of service for the jurisdiction. The Amendment to the FLSA enacted in 1985 permitted state and local government employers to compensate their employees' overtime hours with paid time away from work (compensatory time or "comp time") in lieu of overtime pay. It also included modifications to ensure that true volunteer activities were not impeded or discouraged.

FLSA may be reviewed in its entirety at: <http://www.dol.gov/whd/flsa/>

HIPAA

- HIPAA is the acronym for the Health Insurance Portability and Accountability Act of 1996. The Centers for Medicare & Medicaid Services (CMS) is responsible for implementing various unrelated provisions of HIPAA, therefore HIPAA may mean different things to different people. More detailed information is available on the CMS web site at www.cms.gov/hipaa.
- Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs. This now allows portability of health insurance coverage even if you have pre-existing conditions.
- The administrative provisions of HIPAA require the Department of Health and Human Services to establish national standards for electronic health care transactions. In addition, national identifiers must be established for providers, health plans, and employers. It also addresses the security and privacy of health data. The goal is to promote the widespread use of electronic data interchange in health care. It is anticipated, that by adopting these standards, the efficiency and effectiveness of the nation's health care system will improve.
- HIPAA requires the EMS provider to assure confidentiality of the patient's medical information. This includes spoken, written, electronic, and photographic information. It is appropriate to share necessary information with those involved in the direct care of the patient. It is not appropriate to discuss patient information with those extraneous to the patient's care. Information may also be shared for Quality Improvement and Quality Assurance purposes. Radio protocols should continue to use the same generic description of a patient's situation and condition. Reports written or given verbally should reflect the objective medical assessment and be given to those who are part of the patient's care team. This includes secretaries, administrators, technicians, nurses, and physicians who play an immediate role in the medical screening, stabilization, and disposition of the patient.
- Section 164.512(f) of HIPAA permits certain disclosure of protected health information to law enforcement officers. The Maine Freedom of Access Law permits law enforcement officers who are conducting a criminal investigation to obtain copies of run reports upon request. 1 MRSA § 402 (3)(H).
- Documents from the EMS-patient encounter must remain secure. This may require the shredding of or using HIPAA compliant trash disposal of any paperwork that does not become part of the chart. Electronic devices that store data must also have an inherent means to protect confidentiality.
- For a complete understanding of the HIPAA intent and process, a HIPAA in-service class is required. Most medical facilities offer these in-services to their employees. There are some private organizations that will contract with the EMS service to provide the training for a fee. Every EMS service must demonstrate HIPAA compliance.

HIPAA may be reviewed in its entirety at: <https://www.cms.gov/hipaageninfo/Downloads/HIPAALaw.pdf>

MAINE EMS LAW

The **Maine EMS Act of 1982(32 MRS) Chapter 2-B** established the Maine EMS system. The Act established the Maine EMS Office and the Maine EMS system.

What the Maine EMS Law does:

- Establishes the Bureau of EMS (Maine EMS) within the Department of Public Safety
- Establishes and defines the role of the Board of EMS
- Establishes the Maine Emergency Medical Dispatching (EMD) System
- Defines the Medical Direction and Practices Board (MDPB)
- Establishes Maine EMS' role in the Maine EMS Trauma System
- Establishes the Regional EMS Councils
- Establishes a quality assurance system
- Requires that ambulances, providers, and services within the system be licensed, and establishes the authority of Maine EMS to regulate those licenses.
- Provides immunity for physicians working within the On-line Medical Control (OLMC) System
- Provides immunity for physicians supervising persons who are receiving EMS training

The Board of EMS has the primary responsibility of interpreting the administrative aspects of the Maine EMS Law. This allows the Board to create rules and regulations. The Board is also the adjudicatory entity for Emergency Medical Services practice. In carrying out this function the Board establishes rules, conducts investigations and handles administrative licensing matters.

The Maine EMS Act may be viewed in its entirety at:

<http://www.mainelegislature.org/legis/statutes/32/title32ch2-Bsec0.html>

MAINE EMS RULES

The Maine EMS Rules establish how the EMS System within the State of Maine works in accordance with the Law.

The Maine EMS Rules:

- Establish the regulations for ground & air based ambulance services which include:
 - Licensing standards
 - Medication permissions
 - Equipment for ambulance services
 - Radio frequencies that are usable
- Establish the regulations for an Emergency Medical Dispatch (EMD) Center
- Establish the regulations for the licensure of:
 - EMS Providers
 - Emergency Medical Dispatchers
 - EMS Instructor/Coordinators

- Establish the regulations for the instruction and examination of EMS providers, EMDs and Instructor/Coordinators.
- Establish the regulations for the contracting and operation of the regional councils.
- Establish the regulations for the awarding of death benefits to EMS providers who sustain a line-of-duty death.

The EMS medical director should be familiar with the Maine EMS Rules. Every provider should adhere to the rules and regulations, and each system should have the ability to monitor its personnel and notify the medical director of any issues that may arise.

The Maine EMS Rules may be viewed at: <http://www.maine.gov/ems/publications/index.html#lrfpd>

DUTY TO TREAT

All Maine EMS protocols and standing orders related to the provision of patient care are developed and adopted by the Medical Direction & Practices Board (MDPB). It is wise to have periodic educational updates, review of patient care reports and evaluation/ testing opportunities to assure EMS providers' maintain effective decision making capacity. Once a patient assessment has been completed, EMS caregivers have a responsibility to treat any emergency condition they discover, provided that it can be done safely. Once treatment is initiated, all treatment should be continued until care is safely turned over to a provider who can provide an equivalent or higher level of care. Cessation of treatment without the patient's care being transferred may constitute patient abandonment. Exceptions to this include: if the patient refuses and is competent to refuse; if it is unsafe to continue care; or if the system is in mass casualty/disaster mode.

- Delays in treatment should very RARELY delay transport! This is especially true for trauma patients, patients with chest pain and patients with suspected stroke. IV's should be started enroute except in those situations where treatment at the scene is in the patient's best interest such as: shock, prolonged extrication, or a cardiac patient when full Advanced Cardiac Life Support (ACLS) care is available. Delays in transport should be discussed with OLMC.
- Inability to establish voice contact with OLMC. There are rare situations where the patient is unstable and delay in treatment threatens the patient's life or limb. If, after good faith attempts, an EMS provider cannot contact OLMC, then the EMS provider is authorized to use any appropriate treatment protocols as if they were standing orders. In such cases treatments must still be consistent with the EMS provider's training and licensure. Attempts to contact OLMC should continue and documentation of these attempts must be recorded on the patient care record.
- Treatments/drugs should be given in the order specified by protocols, however, the MDPB recognizes that often treatments are delivered simultaneously and more than one protocol may be used. OLMC may request treatments/drugs out of sequence for medical reasons.

PATIENT TRANSPORT

Policies for the decision to transport, the destination of transport and the level of care during the transport all require service & regional medical director involvement. All policies and procedures must comply with local laws and regulations. The capabilities of receiving facilities and transport times must be considered in writing transport policies. EMS personnel and the on-line medical control physician are responsible for the patient until s/he arrives at an emergency facility or an approved destination.

Every patient being transported requires appropriate assessments and management from the initial contact until arrival at the final destination. Complete documentation should be done on every patient and a copy left with the receiving facility. Patient preferences may not be possible if the transport to that facility would pose a risk to the life or safety of the patient. This should be explained to the patient.

MAINE EMS PATIENT TRANSPORT CONSIDERATIONS

- **Transports and transfers.** During transports and transfers, ambulance crews will follow the Maine EMS (MEMS) protocols, including use of only those medications and procedures for which they are trained and authorized by protocol.
- **Hospital destination choice.** If a patient needs care which the ambulance crew, in consultation with OLMC, believes cannot be provided at the most accessible hospital, the patient will be transported to the nearest facility capable of providing that care upon the patient's arrival. If, with OLMC consultation, a patient is believed to be too unstable to survive such a diversion, then the patient will be transported to the most accessible hospital with an emergency department. If OLMC contact is not possible, the ambulance crew is authorized to make this determination. OLMC cannot legally refuse these patients.
- **Regional destination.** Each region has the authority to develop policies that designate the appropriate destination for patients transported from the scene. Any such policy should be patient-centric and created exclusively to offer patients emergent care only available at selected regional sites. Examples of such protocols include the Maine EMS Trauma System.
- During transport, patients must be secured to the stretcher utilizing both lateral and shoulder straps.

AEROMEDICAL TRANSPORT GUIDELINES

A request for an air ambulance should be made by adequately trained prehospital care providers (either BLS or ALS) in accordance with protocol.

The following circumstances may lend themselves well to helicopter transport:

- Suspected serious trauma to a patient who will require an extrication time of longer than 20 minutes and has any of the following conditions:
 - Unsecured airway
 - Unconsciousness
 - Hypotension with tachycardia or inability to obtain venous access.
- Serious injury or illness in a patient who is not easily accessible to land vehicles, but where an adequate clearing for helicopter landing is nearby
- Situations involving multiple seriously injured patients

PATIENT REFUSAL OF CARE AND/OR TRANSPORTATION

An adult with decision-making capacity has the right to refuse care or transport even if the refusal goes against medical advice. Documentation is critical in this situation to protect the EMS provider and the medical director. A written policy should be in place that addresses the essential actions and documentation required of the EMS provider. These cases should be reviewed to assure consistency and accurate documentation. The patient, and family member if available, must be informed of the potential conse-

quences of refusal of treatment. Documentation should include the complete assessment, proof of decision making capacity, discussion of consequences of the refusal and after care instructions.

IMPAIRED PATIENT

There are times when EMS personnel will encounter patients who may be mentally unstable (*under the influence of drugs, violent, hypoglycemic, hypoxic or otherwise compromised*). These patients place the EMS provider in a very awkward position. These situations may result in litigation if not handled appropriately. The EMS provider must provide appropriate treatment and transport in these situations, and should not accept any refusal of care or transport from such decision-making impaired patients. It may be necessary to involve law enforcement to assure proper patient care and safety for all concerned.

MAINE EMS TRANSPORT DECISION PROTOCOL

Patient Sign-Off Situations

- If a patient refuses transport, and the provider agrees transport is not warranted, a sign-off is required. Patient initiated sign-offs should only be considered for patients who have decision-making capacity, with resources available to care for themselves and when non-transport is considered safe. These sign-offs in general, do not require discussion with On Line Medical Control (OLMC).
 - This situation may arise when an ambulance is requested by someone other than the patient (e.g. the police, a bystander). The EMS run report must always be completed.
- If the patient refuses transport, but the EMS provider does not feel this is safe, a sign-off is required. In situations in which the patient requests a sign-off, but the EMS provider feels this is not safe, s/he should refer to OLMC, especially when children are involved. Documentation of all refusal elements must be complete.
- If the patient requests transport, but the provider refuses (called an EMS System initiated sign off), a sign-off is required. EMS System initiated sign-offs are tremendously risky interactions and are generally not permissible. These sign-offs must be approved by OLMC and an alternative means of transport must be readily available.
- The service is expected to review all of these events through the service's quality assurance mechanism. Patient medical records must be completed for all of these interactions.
- Documentation must include:
 - Service(s) offered
 - Reason service(s) declined
 - Discussion of alternatives to service offered and potential consequences of declining offered service
 - Discussion with patient that EMS services may be accessed at any time and that the patient had decision making capacity
 -

TRANSPORT OF MENTALLY ILL PATIENTS

Maine EMS personnel are generally called to transport a mentally ill patient in one of two situations:

Emergency Transport

Safety for the patient and the crew is the primary concern in the transport of the mentally ill patient. Personnel should make sure they do a thorough evaluation of the patient to find and treat possible medical causes of the behavior. Refer to the Maine EMS Treatment Protocols for the Combative Patient Protocol.

Non-Emergency Transfer

Mentally ill patients who are being transferred usually fall into one of these categories:

Voluntary Committal – These patients have agreed to be transferred to a facility for evaluation and treatment of an underlying mental illness. It is important to get a thorough report on the patient prior to transport to avoid surprises en route. Voluntary committal patients can change their mind during transport. In this case, it is the responsibility of the EMS personnel to discharge the patient at a safe location, *preferably at the originating facility*. If it is not possible to return the patient to the originating facility, notify local law enforcement to meet EMS providers at their location.

Involuntary Committal – Patients who are being committed involuntarily must have committal papers (blue papers) completed prior to transport. Between the hours of 7 a.m. and 11 p.m. a judge must sign the committal papers. After 11 p.m. and before 7 a.m. the papers do not have to be signed except for Riverview Psychiatric Center. It is essential to be sure that the transporting service is listed correctly on the papers. According to Maine law, the patient must be transported in the least restrictive form of transportation available. Providers should get a thorough history to determine whether restraints will be necessary. *If the receiving facility refuses to accept the patient after evaluating them, the transporting service is required by law to transport the patient back to the originating facility.*

PATIENT RESTRAINT

EMS personnel are authorized under Maine law as physician extenders to physically restrain any patient who poses a threat to themselves or others. Providers are cautioned to use physical restraint as a last resort, preferably with the assistance of local law enforcement. Once the decision is made to restrain a patient, the patient should remain restrained until arrival at the emergency department, unless it interferes with the delivery of medical care. Patients will never be restrained in a face-down position.

TREATMENT/TRANSPORT OF MINOR

EMS personnel are routinely called to evaluate minors (*younger than 18 years of age*). Their responsibility is to carry out a complete evaluation, then perform any emergency medical treatment and provide appropriate transportation if needed. All calls should be rapidly and appropriately evaluated in a format that fulfills the usual department criteria. In any emergency situation, an EMS provider should make a good faith effort to contact a minor's parent or guardian. However, if the provider is unable to make contact with a parent or guardian, a minor can be assessed, treated and transported based on implied consent. In this situation, the EMS provider should evaluate whether a reasonable person would consent to the treatment and transport. If a minor is sick and in the provider's opinion needs evaluation at a medical facility, then it is reasonable to provide care. Specific service policies should be developed and followed.

Minors do have the ability to consent to medical treatment in certain situations. Minors can consent to medical services if the minor:

1. Has been living separately from parents for at least 60 days and is independent of parental support;

2. Is or was legally married;
3. Is or was in the U.S. military; or
4. Has been emancipated by a court.

If a provider believes that a minor may fall into one of these categories, the provider should take reasonable steps to ascertain that the minor is authorized to consent to medical care before administering such care. (22 M.R.S. § 1503-1504).

DOCUMENTATION

Medical directors should assure that all EMS providers document patient care in a concise, accurate, and complete manner. A narrative structure, such as a SOAP or CHART should be used. A patient record is required for all transported patients and must be completed in the Maine EMS Run Reporting System (MEMSRR) within one business day (ideally, this should be done in real time, before the crew leaves the hospital). This document is a legacy of patient care and holds information valuable to hospital providers. It is in everyone's best interest to have situations in which EMS personnel denied transport, or the patient refused transport, documented even more completely in the prehospital care report. It has been shown that a properly completed patient care report is the best defense against malpractice allegations.

Services are encouraged to leave a completed copy of the patient/run report at the hospital before they leave. In rare circumstances, when it is not possible to complete this record before leaving the hospital, the services may provide the hospital with a Maine EMS approved patient care summary. **THIS SUMMARY DOCUMENT DOES NOT REPLACE THE COMPLETED RUN REPORT.** Services must complete this report and make the report available to the hospital as soon as possible.

INTERFACILITY TRANSFERS

EMS personnel may be requested to perform interfacility transfers. COBRA/EMTALA legislation overrides all state or local rules regarding patient transfer. All patients must be thoroughly assessed and transferred in an appropriate manner following stabilization. Although EMS personnel are not directly involved in this process, they may be impacted by physician decisions. It is not in the best interests of the patient, and becomes legally precarious, for any EMS unit to transfer a patient if any non-EMS procedures, protocols or medications are needed in transfer. If the EMS crew is uncomfortable transporting the patient, their medical director should be contacted.

See also: Interfacility Patient Transport, p. 49 and Appendix F, p.93

PHYSICIAN ON THE SCENE

Occasionally, EMS providers are confronted by the patient's private physician, or other physicians wishing to direct the patient care at the scene. When EMS personnel begin assessment and treatment of a patient, they establish a physician-patient relationship between the medical oversight physician and the patient. If the medical care of the patient is directed by an on-scene physician who does not follow the EMS protocol, the on-scene physician should accompany the patient to the hospital. If the physician-on-scene does not assume control and assists with care that conforms to EMS protocol, s/he need not accompany the unit to the hospital.

TRANSPORT FROM A PHYSICIAN'S OFFICE

This represents a special case of the physician on scene having a pre-existing relationship with doctor-with the patient. It is appropriate to assist the physician with care being rendered if it is consistent with EMS protocols. If care is not consistent with EMS protocols, permission from on-line medical control is needed. It is often best to expedite transfer and provide care en-route if potential conflicts exist. If conflict exists between on scene EMS providers and the patient's private physician, on-line medical control should be contacted to interface with the private physician.

NON-EMS MEDICAL INTERVENTION

Once EMS personnel have arrived on the scene, they may interact with other medical personnel on the scene who are not a part of the organized EMS system. EMS providers should respond to such personnel as outlined below:

- Maine EMS licensees not affiliated with one of the responding services may provide care, within their scope of practice, only with the approval of the ambulance crew member in charge of the call.
- The patient's own physician, physician's assistant, or nurse practitioner may direct care as long as they remain with the patient (in their absence, direction of care is subject only to these protocols and OLMC). EMS providers may assist this person within the scope of their practice and the EMS prehospital protocols. Only a physician, physician assistant, or independent nurse practitioner may give orders outside of the MEMS protocols (refer to **PHYSICIAN ON THE SCENE**). Questions should be resolved by OLMC. Show the Protocol page "Black 1" ("Non-EMS System Medical Interveners") to assist with the explanation.
- Other unsolicited medical interveners must be Maine licensed physicians, nurses, nurse practitioners or physician assistants whose assistance is requested by the ambulance crew. Protocol page "Black 1" describes this, and should be shown to such interveners.

See: http://maine.gov/ems/documents/Protocols_maine_ems.pdf for the specifics of "Black 1" protocol.

- Other health care providers in the home: Other health care providers in the home attending the patient (e.g. R.N., L.P.N., C.N.A., Nurse Midwife, etc.) are bystanders who may be a valuable source of information. Any aid or treatment they wish to give outside of care as directed by the protocols must be authorized by OLMC. Any dispute over treatment/transport should be settled by OLMC.

MAINE EMS RUN REPORTING SYSTEM (MEMSRR)

A medical director and all emergency physicians and extenders have access to the Maine EMS Run Reporting System (MEMSRR) to review all patient care reports of the EMS providers that s/he directs. This web-based system allows the medical director to generate reports and quality assurance statistics from the patient care reports. MEMSRR can be accessed from any internet-connected computer. Maine EMS requires that all patient care reports be posted into the State database within one business day of a call. The medical director should have policies in place regarding the usage of the MEMSRR related to operational, HIPAA compliance, and quality assurance issues. Instructions for gaining access to the MEMSRR system can be found at: www.maine.gov/ems/providers/

In addition to the above, EMS services may consider developing other type of policies. See appendix F for a list of Recommended Service Policies.

DUTY TO RESPOND AND EVALUATE

The EMS system needs policies to maximize response to requests for assistance within their jurisdiction. Policies should be established which clearly delineate under what circumstances a service will, or will not, respond. This can be accomplished by outlining such issues as response area, response times, closest providers, and mutual aid. Once the provider has responded to the scene, there is a duty to evaluate the patient and/or the situation.

EMS SYSTEMS

An EMS system consists of a number of components that must be coordinated and integrated. The major elements are: access, personnel, training, transportation, facilities, public information, education, and public safety agencies.

ACCESS

The first aspect of the EMS system is access. The public must be able to access the system in a convenient manner with an easy to remember code, such as 9-1-1. Every town and city in Maine has 9-1-1 services. The 9-1-1 system makes provisions for individuals who have auditory handicaps or multilingual requirements. All 9-1-1 calls go to a Public Safety Answering Point (PSAP) where the 9-1-1 call is routed for EMS, law enforcement, or fire. All 9-1-1 PSAPs in Maine must have licensed Emergency Medical Dispatchers. After initially processing the call, the PSAP may transfer the information and/or caller to the local dispatch center, or they may dispatch the call to the EMS Service.

A central dispatch is critical for an EMS agency to coordinate and manage resources. This center allows for communication with public safety agencies, public utilities, and the multitude of other resources that may be required by the EMS service.

EMERGENCY MEDICAL DISPATCH

Traditionally, the physician medical director has oversight responsibilities for providers in direct contact with patients. With the emergence of Emergency Medical Dispatchers as the standard of care for pre-hospital dispatch and pre-arrival instructions, the physician medical director now may have oversight duties in the dispatch center. In Maine, all licensed Emergency Medical Dispatch (EMD) programs utilize the Medical Priorities Dispatching System, which has carefully developed and designed quality control procedures with properly trained, quality reviewed personnel. The steps necessary for ensuring quality dispatch and pre-arrival patient instruction can be easily accomplished. Common areas of focused EMD review include:

- Adherence to triage (*acuity of call*) protocols
- Adherence to pre-arrival instruction protocols
- Call processing time (*time of call being answered to EMS unit being dispatched*)
- Selection of proper call classification and EMS response

The physician medical director should maintain a close working relationship with the director of the communications center to ensure that quality review occurs in accordance with Maine EMS standards.

PERSONNEL

All aspects of the EMS system within the service region must be adequate to provide service 24 hours a day, 7 days a week. The system has many personnel components such as a medical director, Emergency Medical Dispatchers and EMS providers. In some areas, other agencies such as the fire and law enforcement may provide on scene support. Hospital staff may be involved in the interfacility transport of critically ill or complex management patients.

EMS medical directors should have knowledge of personnel issues, including their responsibilities. Key issues may include determination and evaluation of EMS providers and paramedics' skills, participation

in hiring and firing decisions, and involvement in disciplinary processes when related to patient care issues. The physician has medical oversight authority and responsibility for EMS system operations.

TRAINING

All personnel should receive appropriate training (*including clinical training*) and continuing education. Call takers, dispatchers, and other personnel must meet appropriate training and experience requirements.

TRANSPORTATION SERVICES

EMS service leadership should determine the number of necessary units to transport the patient population served. Consideration should be given to varying types of transportation, including ground, air, and water. Both the facilities and vehicles must meet appropriate federal and state standards related to location, design, performance, and equipment.

Maine EMS licenses both services and vehicles. Services may be licensed as Emergency Medical Responder, EMT, Advanced EMT, and Paramedic. An EMS agency is licensed at the level of care that they are able to provide on every emergency call. This means having all the necessary equipment and appropriately licensed personnel. Services may also apply for a permit to provide a higher level of care when adequate equipment and personnel are available. The permit is a helpful way for services to build their resources. However, services may not advertise their permit level, since it is not available on a full-time basis.

Maine EMS also allows for a Paramedic Interfacility Transport (PIFT) endorsement. This endorsement allows specially trained paramedics to transport patients between facilities that are classified by the sending hospital as “stable”, and may include medications and devices that are outside the normal scope of practice for paramedics in the prehospital setting. A prime example is a patient who is receiving an IV infusion of antibiotic and an electrolyte while they are being transported to an intensive care at a different hospital.

Maine EMS also licenses air ambulance services. Helicopter transport may be available as a primary response to the scene of an emergency and/or secondary response, such as transporting the patient after ground agency transport. Ideal distances for utilization of a helicopter are a 30–150 mile radius from the patient to the facility. The system should be designed to effectively utilize this resource, based on distance, resources, and patient complaint. Fixed wing aircraft are used most effectively for transfer of patients from greater than a 150-mile radius. The air ambulance service must have the personnel and equipment specified by Maine EMS for an air ambulance. Maine EMS air ambulance services may also use ground based ambulance services. Air ambulance services in Maine also utilize flight nurses, making them optimal for critical care transports between facilities.

Transport vehicles and equipment for water rescue should be based on regional needs and are not currently licensed by Maine EMS.

EQUIPMENT

The appropriate equipment should be available to providers. The Maine EMS Rules indicate the required equipment for all types of ambulances in Maine.

The Maine EMS Rules may be viewed at: http://maine.gov/ems/documents/16-163_C1-17_Effective100109&010110.pdf

The American College of Emergency Physicians has also suggested necessary EMS equipment in a 2008 ACEP Position Paper. The ACEP paper may be viewed at:
<http://www.acep.org/Content.aspx?id=29436&terms=EMS%20Equipment>.

The medical director should review the service and determine the specific equipment needs for all levels of ambulances and first response vehicles. An Advanced Life Support (ALS) ambulance performing inter-facility transports will require additional resources beyond those of a Basic Life Support (BLS) first response unit.

FACILITIES

An adequate number of easily accessible emergency medical facilities should be available and collectively capable of providing 24-hour services. Considerations within an EMS Region include the development of regional plans for: mutual agreement of facility categorization, critical care abilities, transfer, and resource sharing. Policies are also developed for diversion and bypass for all facilities in the region.

REGIONAL SPECIALTY CONSIDERATIONS

The EMS medical director may establish relationships with local specialists as resources and consultants in their specific areas. Contracts and transfer agreements with all appropriate subspecialty centers should be established and reviewed on an annual basis.

Individual specialties

- **Pediatrics** - The medical director should make sure the EMS providers receive special knowledge and resources to care for pediatric patients.
- **Trauma care** - The EMS medical director should have an awareness of the organized trauma system in the state of Maine. The EMS system should review the triage guidelines, have protocols which address utilization and develop Quality Assurance/Quality Improvement (QA/QI) programs which monitor performance.
- **Cardiac care** - The EMS medical director should be aware of local resources and have established policies.
- **Stroke care** - The EMS medical director needs to be familiar with resources in the local community and region. Policies should be established.
- **Specialty needs and technology-dependent patients** - The EMS medical director must understand resources available in the local community and region for patients with special health care needs, ventilator-dependent patients, and have established pre-incident protocols that address these needs.

PUBLIC INFORMATION AND EDUCATION

EMS providers are recognized as some of the most trusted professionals. As such, EMS can make significant community contributions, outside of responding to emergencies, through the program for public information, education and relations (PIER). PIER helps the community know about EMS, how to access the system and more. PIER can also provide information to the public on topics like CPR, first aid, car seat safety, and other safety and wellness programs that are available.

MUTUAL AID

Agreements should be established in writing between EMS services that describe who will do what to help, and when. These agreements should be re-evaluated and reviewed annually, and address the issues of service coverage, communication linkages, licensors, certification, and reimbursement.

RESPONSE PHASES

A complex series of events occurs when the EMS system responds to an emergency.

Pre-arrival/Access: The public must know how to access the EMS system, understand its appropriate use, and learn what can be done before EMS arrives. The first requirement is a universally recognized telephone number. Maine utilizes the 9-1-1 system.

Dispatch: The call taker in the PSAP receives the call for all 9-1-1 requests, but the system may take non-emergency requests, or the use of a 7-digit telephone number may still occur. Hospital facilities may be also responsible for dispatching EMS resources. There may be a separate dispatch center for EMS. In many municipal systems, the private ambulance companies are not included in the 9-1-1 system. Legislative or legal authority for EMS dispatch activities in each system must be understood. The State of Maine has a Statewide EMD system for all EMS calls dispatched through 9-1-1.

Emergency Medical Dispatch (EMD) programs: The Emergency medical dispatcher is the first EMS provider that a caller contacts and is trained specifically in communications techniques:

- To appropriately interview the caller.
- To determine the nature of the medical emergency.
- To dispatch the necessary resources.
- To provide instructions to the caller to care for the victim until EMS responders arrive.

Priority dispatching

The goal is to provide the medically necessary response (*type and level of service*) in an appropriate manner for the nature of the event. Decisions are made based on emergency medical dispatch protocols that have been reviewed and approved by the medical director.

Pre-arrival instructions

Protocols for pre-arrival instructions have been established and approved by the Maine EMS Medical Director. Maine EMS utilizes the Medical Priorities Dispatching System. This allows the dispatcher to provide instructions to the caller to begin care for the patient until EMS providers arrive. (*e.g., as simple as controlling bleeding or as complex as performing CPR.*)

Vehicle response: There are two different response patterns that are typically in place: the vehicles are based at stations or the vehicles are positioned at strategic places based on call patterns. The first option is better for personnel and the second option has been shown to improve response times. A third option would be a combination of the first two options, based on the time of the day and call patterns.

Scene response: If a municipality has a non-transporting (also known as “first responder”) service, it may consist of fire personnel and/or law enforcement officers. These personnel are usually licensed at an Emergency Medical Responder (EMR) or at the EMT level. A tiered response system should be availa-

ble consisting of BLS and ALS units. When a non-transporting service is dispatched, there must be simultaneous dispatch of a transporting (ambulance) service to avoid delays in patient care and transport.

Transport: As with all EMS providers, treatment must be in accordance with the Maine EMS Treatment Protocols. Policies for patient destinations should be in place to facilitate appropriate patient care and resolve conflicts. Policies should be in place regarding the transportation of minors and patient refusals.

Transfer of care: Patient data must be transferred to the emergency department staff in an accurate, concise format. This may take the form of a completed run report or a written report that meets the minimum state standards.

AEROMEDICAL TRANSPORT REVIEW

Consistent with other EMS performance improvement activities, the EMS medical director should review the use of air medical transport, looking for areas of under-utilization and over-utilization of air transport resources. A request for an air ambulance should be made by adequately trained EMS providers, either BLS or ALS, in accordance with protocol.

See also: Aeromedical Transport Guidelines, page 12

MAINE EMS MEDICAL DIRECTOR QUALIFICATIONS

In order for an EMS system to function in a safe and effective manner, active participation by physicians is crucial. The American College of Emergency Physicians (ACEP) Guidelines for Medical Direction of Prehospital EMS support the designation of a physician as EMS medical director who assumes primary responsibility to ensure quality medical care throughout the system. Under this model, full authority is given to develop and enforce patient care policies and procedures, as well as to modify system design, and regularly evaluate operations. Continuous evaluation of the system through an established QI program is necessary to ensure that EMS providers meet or exceed the standard of care in all patient encounters.

PHYSICIAN QUALIFICATIONS

Role of the EMS Medical Director

The medical director should have authority over all clinical and patient care aspects of the EMS system or service, with the specific job description dictated by local or regional needs. The job description should include, as a minimum, the following qualifications and responsibilities based upon state, regional, or service level directorship.

Essential Qualifications

- Licensed to practice allopathic (MD) or osteopathic medicine (DO)
- Familiar with local/regional EMS activity

Desirable Qualifications

- Board certification or board preparedness in Emergency Medicine and/or Emergency Medical Services (American Board of Emergency Medicine or American Board of Osteopathic Emergency Medicine)
- Active clinical practice of emergency medicine
- Completion of an EMS fellowship

Acceptable Qualifications

- Board certification or board preparedness in a clinical specialty, approved by the American Board of Medical Specialties or the American Osteopathic Association

Desired Formal Training or Demonstrated Continuing Education Activity

- Training or significant experience in the clinical practice of out-of-hospital emergency medical services, which should include knowledge of the principles of emergency medical dispatch, knowledge of federal, state, and local laws and regulations regarding EMS, and knowledge of local, regional, and state mass casualty and disaster plans.
- Training or significant experience in the provision of direct (on-line) and indirect (off-line) medical direction
- Knowledge of the design and operation of EMS systems

- Training or significant out-of-hospital clinical experience in utilization of emergency patient care equipment, the spectrum of out-of-hospital skills (BLS and ALS), and communication systems mechanism for the evaluation and management of occupational injury and illness
- NAEMSP Medical Director's Course, or its equivalent
- Training or equivalent experience in methods of education for out-of-hospital personnel (ACLS, ATLS, PALS, APLS, BLS at the instructor level)
- Training or equivalent experience in the techniques for medical audit and continuous quality improvement (CQI) of EMS systems
- Knowledge of emergency medical dispatch: caller inquiry, prioritization, tiered dispatch criteria and pre-arrival patient care instructions
- Awareness of basic principles of labor relations, management and fiscal oversight for health care organizations as described in this manual and the attached web-links
- Knowledge of public health education, injury prevention, and health promotion techniques
- Experience and/or training in out-of-hospital care research
- Involvement in local, regional, state, or national EMS organizations

Level of Functioning and Time Commitment

The general responsibilities of the medical director include the establishment and maintenance of guidelines for care. Each EMS system component has an important impact on patient care and the medical director must have a thorough understanding of each. Dispatch, first responders, EMTs, paramedics, and ambulance transport are publicly visible components, each of which requires regular direction. In addition, the EMS system's administration, education and quality improvement programs, while less visible to the general public, require active involvement. Depending on the state of evolution of an EMS system and its current level of sophistication, the medical director's role may range from solely offering medical direction to being responsible for operations and fiscal management. Each additional duty requires increasing levels of physician effort, time and investment of resources by the EMS system in its support for medical direction. Responsibilities of an EMS medical director, and the areas in which the medical director assumes leadership, may be categorized into three major areas: clinical care, administration, and public health.

CLINICAL CARE

Field Clinical Practice

The medical director should be involved in establishing:

- Periodic testing to verify skill proficiency for personnel involved in out-of-hospital care.
- Protocols for patient initiated refusals and EMS system initiated refusals with specific guidelines considering appropriate access to care, cost efficiency, and ultimately patient safety.
- Criteria for determining patient transport and destination.
- Continuous quality improvement program(s).

- Access to relevant records to accomplish CQI.
- A mechanism for the evaluation and management of occupational injury and illness.
- A system for Critical Incident Stress Management.

In addition, the medical director will need to:

- Set or approve medical standards for promotion of individuals to higher levels of patient care responsibility.
- Limit the medical activities of patient care providers for deviation from established clinical standards of practice, or for not meeting training standards.
- Evaluate new patient care technologies.

Physician Clinical Responsibilities

The medical director will:

- Maintain current knowledge and skills appropriate for the clinical practice of out-of-hospital emergency medicine.
- Participate in training and continuing medical education (CME) for base station and out-of-hospital personnel, in the classroom, and at the patient's side.
- Have knowledge of the Incident Command system.

Personnel Education

The medical director should be involved in establishing or modifying educational objectives, and should review and approve:

- Requirements for initial training and CME for out-of-hospital personnel.
- Educational curricula that reflect topics identified in local quality improvement analysis.
- Evaluation of medical competency of out-of-hospital providers to ensure maintenance of an adequate knowledge base and skill proficiency.
- Promotion of opportunities for additional education and advancement within the organization by establishing collaborative relationships with academic institutions.

System Evaluation

The medical director must be involved in the process of CQI. The CQI process must be integrated into the day-to-day operations of each distinct component, with data shared between these various agencies, and reported to a CQI office and the medical director.

The CQI process is a dynamic continuum. Evaluation of any shortcomings in patient care involves first looking at the protocol to ensure its appropriateness or need for updating. Second, the educational system must be responsive to the CQI office and keep personnel up-to-date through routine reviews and supplemental attention to identified problem areas. With this approach, feedback may go appropriately to the system as a whole or to individual personnel; frequent feedback of positive performance is essential.

The medical director, with or through the CQI, should:

- Establish measurable standards that reflect the goals and expectations of the EMS system and local community.
- Establish a mechanism for data collection that captures information reflecting standards.
- Establish and ensure compliance with written patient care protocols and standard operating procedures for emergency medical dispatch and clinical patient care.
- Operate closely with the educational system to relay appropriate feedback and stimulate necessary changes to accomplish common goals.
- Solicit and incorporate consumers' and other health care providers' input into the evaluation process.
- Provide positive reinforcement to individuals and the system as well as corrective instruction.
- Analyze system efficacy and cost-effectiveness with respect to patient outcomes.
- Ensure that clinical supervisors contribute to the CQI process.

EMS Research

Not all EMS systems will have the resources to participate in formal research. However, a solid CQI program will generate useful data that will be of benefit to the EMS system and may perhaps enlighten other EMS systems.

The medical director is encouraged to:

- Participate in, support, and encourage the application of research methods to improve patient care, cost-effectiveness, and system performance.
- Identify local health care and operational issues related to out-of-hospital care that are in need of scientific evaluation, and provide leadership to develop research in that area.
- Identify potential sources of funding for EMS research in the community, or at the state and federal levels.
- Establish collaborative relationships with academic institutions and other health care providers involved in scientific research.
- Incorporate basic principles of conducting research in the objectives for the local EMS provider CME.
- Assist the development of reliable methods for data collection.
- Investigate the effectiveness of EMS interventions, treatments and system design.

ADMINISTRATION

Patient outcome and the quality of care, depend on the care provided by EMS personnel at the scene of an emergency. The quality of this care is influenced by system wide policies, daily administrative and operational decisions, and interaction with other public agencies and health care providers. Issues such as public access to EMS, qualifications and utilization of personnel, mode of communication, financial planning, and system evaluation may have a profound affect in patient outcome. As an advocate for quality medical

care, the medical director must have the right and authority to provide input at every level of the decision making process within the organization.

Medical Director Liaison Activities

The medical director should demonstrate leadership through:

- The facilitation of information flow among the community of caregivers (from out-of-hospital, to emergency department, to inpatient care) with regard to goals, expectations and priorities of clinical care, and clinical outcomes.
- The facilitation of information flow among all EMS personnel.
- Establishing standards and requirements for concurrent direct (on-line) medical direction regarding base station education and physician field experience.
- Establishing minimal qualifications and training for the delegation of authority for direct (online) medical direction to surrogates (registered nurses, etc.)
- The resolution of disputes involving medical care occurring within the EMS system.
- The development of strategies for integration of out-of-hospital emergency care and the global health care delivery system.
- Interactions with national, regional, state, and local EMS authorities regarding standards, requirements, and resource utilization.
- Coordination of activities such as mutual aid, disaster planning and management, and hazardous materials response.
- Participation in national EMS organizations.
- Serving as an educator and liaison to local government.
- Serving as an educator and liaison to local medical community.
- The delegation of authority to other physician(s) as assistant medical director(s).
- Serving as an educator and liaison to the media.

Finance

The medical director should demonstrate leadership through:

- Budgetary, planning, and management issues.
- Participating in grant application processes for system funding, expansion, and research.
- Reviewing and making recommendations regarding EMS equipment.
- Establishing funding priorities regarding issues directly affecting patient care.

Public Access

The medical director should demonstrate leadership through:

- Collaboration with other health care providers and networks in the community to guarantee public access to EMS for the treatment of perceived medical emergencies.

- Collaboration with local agencies to ensure EMS access to all members of society regardless of socioeconomic status, age, language barriers, etc.

PUBLIC HEALTH

Because of frequent interactions in the community, out-of-hospital providers are able to evaluate many public health issues firsthand; their observations and insights should be a source of valuable information to other agencies and the community. The medical director should be aware of the community's health care needs and promote full integration of the EMS system as a public health resource.

Public Education

The medical director should demonstrate leadership through:

- Assisting in public education regarding appropriate utilization of the EMS system, health promotion, and the prevention of emergencies.
- Assisting in public education regarding prevention, initial approach, and basic management of common medical emergencies.
- Collaboration with other community providers and local authorities to assist in community health assessment and surveillance to determine public education needs.
- Promotion of public recognition of EMS personnel.

Prevention

The medical director should demonstrate leadership through:

- Promulgation of injury and illness prevention programs among out-of-hospital providers.
- Education of out-of-hospital providers in the principles of prevention as part of routine CME.
- Collaboration with other local health care providers and authorities in the assessment of the community's specific needs for prevention activities.
- Collection and analysis of data identifying factors that contribute to injuries and illness.
- Promulgation of public education on prevention of injuries and illness.
- Development of programs for injury or illness prevention.

Legislation and Regulation

The medical director should demonstrate active leadership through:

- Analysis of legislation affecting local and/or regional EMS practice.
- Participation in the development of legislation related to EMS, including articulating EMS positions, serving as an expert resource and soliciting support.
- Participation in local and national EMS organizations.

Integration of Health Services

The medical director should demonstrate active leadership through:

- Collaboration with other health care providers in the community to integrate EMS interventions as part of continued health care and to identify outcomes of patients accessing the system.
- Collaboration with other health care and social resources in data collection and transmittal of information leading to community's health needs assessment and surveillance.
- Developing innovative roles for EMS providers to participate in public health care issues responding to specific needs and resources within the community served.

Information Systems

The medical director should demonstrate active leadership through:

- Advocating adoption of uniform data elements and definitions within the EMS system consistent with nationally recognized standards.
- Working with health care administrators, health care organizations, agencies, and authorities to develop an integrated information system that would allow the exchange of vital information, while ensuring legal protection of all data related to CQI activities

OBLIGATIONS OF THE EMS SYSTEM

The medical director and EMS agency will need to discuss the following issues:

- Necessary material and personnel resources
- Compensation for services
- Liability insurance for duties and actions performed by the medical director

LEGAL ISSUES

Some legal issues have emerged due to the rapid growth and diversity of services. The medical director should be actively involved with many diverse activities such as medical care, personnel management and education.

Physician legal issues

- **Contract**

This document is an agreement between the EMS agency and the physician medical director. If written in accordance with "The Uniform Commercial Code" and state laws, it is enforceable by civil law processes.

- **Responsibilities**

The contract must delineate the job description and activities that are the responsibility of the medical director. These descriptions include the day-to-day activities (*quality activities, training, direct medical oversight*) and the position of the medical director within the system, especially for policy development. It is also necessary to define the medical director's role in operations, budget, staffing, and dispatch management. Equally important is an agreement on the authority of the medical director. Such authority must be sufficient to carry out the responsibilities of the position. The current status and structure of quality activities, meetings, participation, field activities, and special areas such as disaster planning and mass casualties, must be reviewed upon acceptance of the position.

- **Malpractice**

The medical director's liability coverage should be clearly identified. Liability issues include not only medical negligence, but also operational issues. Good Samaritan Laws may not provide protection, even if a medical director is not compensated. The medical director will be held to the standard of the law, despite the fact that s/he may be volunteering his or her time. There are two types of insurance an EMS medical director should consider. The first is malpractice insurance. The medical director may obtain a letter or binder from his or her malpractice carrier specifically identifying coverage for EMS activities. The second is director's or administrative insurance. This covers operational and administrative issues. EMS Agencies typically have this type of coverage and the medical director can inquire about falling under the EMS Agency's policy.

- **Indirect support**

Indirect support, such as secretarial support, computer access, emergency vehicle operations, (*if involved with scene response*) and specialized equipment (*where indicated*) may be necessary.

- **Compensation**

The services of an EMS Medical Director should be compensated. Some agencies may provide compensation at an hourly rate, while other systems may offer a compensation package.

MEDICAL OVERSIGHT

The Maine EMS system is an “independent practice” in which EMS providers hold an independent license to practice. In order to provide patient care, the EMS provider must be affiliated with an EMS service and must provide care in accordance with the Maine EMS Protocol and medical control orders. This is in contrast to states that follow “delegated practice” in which the EMS provider practices under the license of a physician.

Medical oversight can be divided into two categories: *on-line (direct or immediate)* and *off-line (indirect)*, which is further divided into prospective and retrospective phases. Each of these has specific requirements and duties for the physician and the EMS provider.

ON-LINE MEDICAL CONTROL

On-line medical control is defined as the interaction between a EMS provider and a responsible medical professional (defined as physician, independent nurse practitioner, or physician’s assistant credentialed to offer medical control by their hospital) by radio, telephone or in person. On-line medical control is unique in that the medical care is delivered through the EMS provider. Paramedics transmit information regarding patient evaluation to on-line medical control and then perform any further evaluation, procedures or treatments as instructed. The authority to provide on-line medical control is delegated by the receiving hospital. The EMS provider serves as an extension of on-line medical control. This arrangement establishes medical accountability.

DIRECT & INDIRECT MEDICAL OVERSIGHT

PHYSICIAN RESPONSIBILITY AND AUTHORITY

In performing on-line medical control, the medical professional establishes a physician/patient relationship with the EMS provider functioning as the intermediary. This relationship implies the same responsibilities for care as does the direct physician/patient interaction. It is therefore expected and required that the physician provide medical direction that is consistent with the current standard of care for emergency medicine.

Prior to participating in medical oversight, the physician must be instructed as to the proper operation of the radio or telephone system, as well as be familiarized with all existing treatment and general operation protocols of the EMS system. These prehospital protocols should be used to appropriately guide patient care. The physician is given the authority to deviate from standard protocol based on the patient's clinical status and the prehospital environment. Other items that must be within the authority of the physician include prescribing prehospital treatment for the patient, choice of receiving facility, and mode of transport.

DIRECT MEDICAL OVERSIGHT SYSTEMS DESIGN

There are three basic prototypes of on-line medical oversight systems.

Receiving hospital medical oversight allows the receiving facility to direct the prehospital care of incoming patients. This provides continuity of patient care, but will often compromise standardization of emergency medical care as this may vary according to the facility. This is the primary method utilized in the Maine EMS system.

In the *centralized* model, all on-line medical oversight is delivered through a single hospital regardless of the receiving facility. Standardization of care is maximized, quality assurance is facilitated and physician accountability is easily assigned. There is, however, a lack of interaction between physicians and EMS personnel.

In a *satellite* system, the base hospital, as well as associated hospitals, provides medical oversight and each squad is assigned to a particular oversight location. An advantage here is increased familiarity of physicians with EMS personnel, but standardization of care may be difficult despite the use of uniform policies and protocols in this model.

Hospital-based medical oversight units are required to oversee EMS system implementation and general operations, quality assurance and improvement. Added duties should include:

- Designation of a medical director
- EMS system and prehospital care education of the base hospital staff and EMS personnel
- Formation of a network of receiving hospitals
- Providing medical oversight to the receiving hospitals
- Direct contact with the receiving hospital regarding incoming ALS patients
- Daily run review
- Maintaining patient care records
- Training and certification of EMS personnel and medical oversight physicians

The American College of Emergency Physicians guidelines state that:

- Base hospital equipment and personnel for medical oversight must be located in the Emergency Department.
- All requests for medical oversight receive a prompt and educated response.
- Patient confidentiality must be assured.
- Regional EMS systems must participate in the collection of items necessary to allow quality assurance and improvement.
- Information to receiving hospitals must be transmitted in an accurate and timely manner.
- Continuing medical education must be provided for medical oversight and EMS personnel.
- Choices regarding referral hospital selection must be based solely on clinical grounds and not monetary gain.

REASONS TO OBTAIN MEDICAL OVERSIGHT

There are three major reasons to obtain medical oversight from a physician: to transmit medical information to the receiving facility, to get approval for treatments that are not in the standing orders, and to obtain assistance in decision-making. The usefulness of on-line medical oversight is directly related to the availability and ability of the on-line physician. With the increased numbers of incoming calls to 9-1-1 and EMS services, the following general guidelines concerning when to obtain direction have been established including:

- At the discretion of the EMS provider
- To get guidance about a choice of medical therapy
- If treatment needed is outside the established protocols
- If ALS intervention is required

- If there is a disagreement between EMS providers as to the appropriate therapeutic intervention

Other instances might involve:

- Cardiopulmonary resuscitation
- Death in the field
- Triage of multiple victims
- Physician or public service personnel intervention at the scene
- Childbirth
- Patients in shock
- Severe respiratory distress
- Pediatric patient care
- Chest pain/rule out MI
- Certain drug overdoses (e.g., tricyclics)
- Non-transport due to lack of medical necessity or patient refusal

UTILIZING STANDING ORDERS AND TELEMETRY

Maine EMS utilizes a statewide EMS protocol developed by the MDPB. All patients who are encountered in the field and transported to a hospital are treated using the protocols. During interfacility transports, the use of patient specific written orders in addition to the protocol is common.

Telemetry is not required in the Maine EMS system, but could have benefit to patient outcome. The medical director should evaluate the use of telemetry. The use of telemetry will not only require the EMS service to have specialized equipment, but the receiving facilities will also need to have proper equipment for receiving the telemetry. The medical director will need to ensure that any policy development around the usage of telemetry is done so with input from receiving facilities and other regional services.

INDIRECT MEDICAL OVERSIGHT

Indirect or off-line medical oversight consists of administrative and clinical duties of the EMS medical director throughout the EMS system. Indirect oversight can be further subdivided into prospective, immediate, and retrospective phases, each with specific tasks.

The actual decision to establish an EMS system is the first step in prospective medical oversight. The Maine EMS System is enacted by Law and regulated by Maine EMS. Maine EMS, the MDPB, regional medical directors, and service medical directors coordinate and oversee protocol development, personnel training standards, testing and certification, and development of operational policy and procedures. The activities require medical director input and review.

Protocols are clinical guidelines for the EMS provider, developed to assure consistency of care during every patient interaction, which encompass the medical conditions most likely to be encountered. These may be constructed using either symptoms (*e.g., chest pain*) or diagnosis (*e.g., MI*) in a simple algorithm. The advantage of symptom-based treatment protocols is the ability to use a stepwise approach to evalua-

tion and treatment. Protocols are developed by the MDPB, with input from regional and service level medical directors and EMS providers.

Prehospital care training programs based upon the National Education Standards, developed by the US Department of Transportation, serve as the standard method of EMS certification. ACLS, ATLS, ITLS, and PALS courses are used to supplement comprehensive training and update treatment protocols. The level of training and recertification will include comprehensive training and update of treatment protocols and will depend on the population served. In addition, maintaining proficiency in assessment techniques, procedural skills, and familiarity with medication regimens requires either practice in the field, or in-hospital hands-on review sessions and time spent in the emergency department. Training regarding response, transport, and scene time is also required and dependent upon the population characteristics of the community served. It is the duty of the medical director to decide what is necessary.

RETROSPECTIVE MEDICAL OVERSIGHT

The retrospective phase requires the combined efforts of the medical director and the EMS service. A medical audit in the retrospective phase includes formal examination of the management decisions by the medical director and his/her delegates. System-wide quality improvement evaluations of on-scene times, frequency of medical and procedural interventions, treatment deficiencies, EMT proficiency skills and patient transport refusals should occur to ensure compliance with the standards of emergency medical care as well as the EMS agency's policies. Protocol modifications, EMT counseling, remedial education, and recertification activities are also important components of retrospective medical oversight.

LEGAL CONSIDERATIONS

There are numerous legal considerations involved in providing prehospital care. To avoid litigation within an EMS system, careful consideration must be devoted to general organization and operation.

The medical director is assigned full responsibility for all aspects of medical care within the system. A contract or affiliation agreement fully defining the authority, duties, and limitations of the medical director is essential for promoting mutual understanding regarding respective roles. Depending on the actual system, this oversight will be assigned by an EMS Board, local or state agency. The relationship of EMS providers to the director should also be clarified in order to establish the lines of medical accountability. The medical director determines which EMS providers will be permitted to deliver patient care in the EMS system.

Medical oversight physicians may be at risk for both vicarious and direct liability. *Vicarious* liability is that which results from the acts or conduct of others for whom the physician has supervisory responsibilities, while *direct liability* involves the physician's own acts or omissions. Although the true definition of vicarious liability requires that there be a legal relationship between the involved parties, the fact that the EMS provider acts as an extension or agent of the physician guides accountability. Ultimately, it is the medical director who incurs liability for negligence in on-line medical oversight, and potentially for off-line medical oversight as well.

Quality improvement and risk management programs act as safeguards against legal risk. These must be designed in such a way as to effectively maintain the standard of care and protect the public from the inappropriate or inadequate delivery of prehospital care. The most common source of claims is risk-taking activity on the part of the provider, such as failure to immobilize the cervical spine despite mechanism consistent with possible injury, failure to operate the ambulance in a responsible manner or equipment failure due to neglect of routine maintenance guidelines. Abandonment, which is the refusal or failure to transport a patient who has summoned assistance, has resulted in numerous claims. One study noted an

approximately 20% paramedic triage error rate. For these and other reasons, protocols must be written so as to prevent haphazard deviation from proper treatment regimens.

Issues of consent are another potential source of litigation. In the initial assessment of a patient, the EMS provider must determine if the patient is able to give consent for treatment and transport. Under applicable state law, the patient must first be determined to be an adult and then must be determined to have the ability to understand to what they are or are not giving consent and the consequences of making that decision.

See also: MAINE EMS TRANSPORT DECISION PROTOCOL, page 13

Problems arise when the patient appears to be mentally unstable or impaired, with physical evidence of potentially life-threatening illness or injury, and the patient refuses treatment. Such issues can be managed prospectively with stringent protocols which include a mental status examination as part of the initial prehospital evaluation. Consent issues concerning living wills, do not resuscitate orders, and choice of receiving hospital must also be decided.

Legal issues dealing with EMS communication mainly center on dispatch and appropriate call response. Many EMS systems have instituted protocols requiring that all incoming 9-1-1 calls be given a response. Callers are then questioned in order to clarify the nature of the emergency and to determine an appropriate response level.

Pre-arrival instructions are then given and the squad dispatched. Systems with heavy call volumes have instituted "call screening." In these systems, the dispatch personnel decide if EMS will respond to the call. The risk of making an incorrect decision is high, and is therefore, not recommended.

CONCLUSION

EMS is in constant evolution due to the changing demands of the population as well as constraints due to decreased funding. Increased physician involvement has proven instrumental in maintaining high-quality EMS patient care including medical oversight, certification standards and the implementation of lifesaving therapeutics including AED use and early defibrillation. Continued physician involvement will not only ensure that the standard of care of patients within the EMS system is routinely met or exceeded, but will also promote the continued growth and advancement of EMS as a field.

EMS PERSONNEL & PROVIDERS

There are four (4) levels of EMS personnel in Maine: Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced EMT (AEMT), and Paramedic. Each of these has different levels of education and training, and subsequently differing skill levels and responsibilities. The state of Maine EMS Board has set up educational requirements, curricula, and a scope of practice range for each level of provider. There are variations in these guidelines and scopes of practice from state to state, which need to be considered if a provider was trained, or has been providing care, outside of Maine.

It is important as a medical director to be aware of the abilities of EMS providers as well as their educational training and requirements. Three-year continuing education cycles are expected for each level of EMS personnel. The medical director may be called on to assist in this.

See also: Education, p. 51

EMERGENCY MEDICAL RESPONDER (EMR)

A person licensed at an Emergency Medical Responder (First Responder) level may operate without the supervision of another Maine EMS licensee at the scene of a medical emergency until such time that a person licensed above the First Responder level arrives at the scene. Once on the scene, personnel licensed above the First Responder level are responsible for supervising First Responder licensed personnel, who may not operate without such supervision.

Final patient immobilization for transport, patient loading, and patient care during transport, must be directly supervised by personnel licensed above the First Responder level. Any basic emergency medical treatments not contained in the current First Responder standards approved by Maine EMS, may only be performed while assisting, and in the presence of personnel licensed above the First Responder level.

One EMS provider licensed at or above the EMT level must accompany the patient in the patient compartment of the ambulance during transport.

The EMR must complete continuing medical education every three (3) years to maintain their Maine EMS license. See <http://maine.gov/ems/documents/CEHRequirements.pdf>

EMERGENCY MEDICAL TECHNICIAN (EMT)

A person licensed at the EMT level may, in addition to basic emergency medical treatment, provide the following skills or treatments within the scope of their training, as defined by Maine EMS approved curricula, as permitted by protocol, and in accordance with this chapter of the Rules:

- IV maintenance (non-medicated fluids).
- Under direct supervision of an AEMT or above, set-up of intravenous administration equipment, and attachment of cardiac monitor leads to a patient.
- Assistance to a patient in the administration of the patient's own medication.
- Drug and medication administration, and procedures as approved by the MDPB and as allowed by Maine EMS protocol.

Any licensee certified as a Wilderness Emergency Medical Technician (WEMT), consistent with Chapter 2 of these Rules, may apply the principles for cardio-respiratory arrest, spinal injury, dislocations and wounds taught in the course, when in the context of delayed/prolonged transport, as defined in that course and as consistent with Maine EMS protocols.

The EMT must complete continuing medical education every three (3) years to maintain their Maine EMS license. See <http://maine.gov/ems/documents/CEHRequirements.pdf>

ADVANCED EMERGENCY MEDICAL TECHNICIAN (AEMT)

A person licensed at the Advanced EMT level may, in addition to all practices, skills and techniques authorized at the EMT level, provide advanced life support airway -IV/IO therapy, blood sampling, cardiac monitoring/counter shock (semiautomatic external or manual), drug and medication administration as approved by the Board and as allowed by Maine EMS protocol, and other techniques and practices approved and published by the Board.

The Advanced Emergency Medical Technician must complete continuing medical education every three (3) years to maintain their Maine EMS license. See <http://maine.gov/ems/documents/CEHRequirements.pdf>

PARAMEDIC

A person licensed at the Paramedic level may, in addition to all practices, skills and techniques authorized by the Board of EMS and the MDPB, provide medication administration, chest decompression, transtracheal insufflation, cricothyrostomy, and other techniques and practices approved and published.

The Paramedic must complete continuing medical education every three (3) years to maintain their Maine EMS license. See <http://maine.gov/ems/documents/CEHRequirements.pdf>

PARAMEDIC INTRAFACILITY TRANSPORT (PIFT) CERTIFICATION

This certification was developed by the Maine EMS Medical Direction Practice Board (MDPB) in response to an identified need to expand the capabilities of paramedic services, specifically in the area of interfacility transport. The certification is designed to be a supplemental education for paramedics. Paramedics who complete this certification will be able to transport “Stable” patients with specified medications and medical devices that are outside the normal scope of EMS practice.

There is no continuing medical education requirement for PIFT certification.

See also: Appendix E: Maine EMS Scope of Practice by License Level

SUMMARY

Medical directors must have a clear sense of the training and skill levels of their providers. This will determine what they can be reasonably allowed to do. In addition, the skill levels of the providers should be reflected in the protocols. An important function of any medical director is the direction of and assistance in the maintenance of continuing education for the EMS providers.

EMS OPERATIONS

EMS Medical Directors may be asked to intervene in system operational issues on occasion. **Any operational issue which impacts patient care comes under the role of the EMS medical director.** It is important for a medical director to be given the authority to influence operational issues in certain high-risk areas.

Common operational issues that will require medical director input include:

- Policy for dead on arrival (DOA)
- Do not resuscitate/comfort care guidelines
- Domestic violence – the role of EMS
- Non-system physicians on scene
- Patient refusal
- Critical incident stress debriefing
- Prehospital and emergency department infectious disease exposures
- Interfacility patient transport guidelines
- Media relations

The following pages outline some of these operational issues that require medical director foresight and oversight. The related policy statements, forms, and recommendations are from ACEP, Maine Chapter ACEP, individual departments and Regional Physician Advisory Boards. These documents may be used as templates for the medical director's own departmental policies.

DEATH SITUATIONS FOR EMERGENCY MEDICAL RESPONDERS (see Appendix D, p. 83)

DOMESTIC VIOLENCE - THE ROLE OF EMS

Domestic violence is part of a larger spectrum of family violence, which includes sexual assault, child abuse, elder abuse, and neglect. Also known as battering, spouse abuse, partner abuse, or interpersonal violence, domestic violence is the "leading cause of injury to women in the United States" as stated by C. Everett Koop, former U.S. Surgeon General. Domestic violence is characterized as a pattern of coercive behaviors including physical, sexual, and psychological abuse that adults or adolescents use against their intimate partners. Since 96% of victims of domestic violence are women, victims will generally be referred to as 'she.' Keep in mind, however, that not all victims are women. Domestic violence is a crime and the safety of EMS personnel, victims and their children must be a priority.

Recognition

Domestic violence crosses all boundaries, including age, race, education, socioeconomic class, and sexual orientation. Victims frequently do not admit to being abused. Domestic violence often, but not exclusively, occurs in low-income homes and minority households, and affects men and women between 18 and 30 years of age.

In 1997, Landis published an article that discussed the lack of education for EMS personnel in the identification, treatment and reporting of domestic violence. Paramedic textbooks included no specific information about domestic violence. He points out, however, that "EMS personnel have a unique and invaluable opportunity to identify these problems." EMS personnel are often the first medical care providers to

make contact with a victim and they are the only providers to enter the environment where the incident occurred. In addition, studies have shown that up to 30% of calls with issues related to domestic violence are 'no treat, no transport' or 'refusal to transport' calls. Thus, the EMS personnel may be the only providers to come in contact with the victim(s) of abuse.

Health care providers are legally bound to report certain types of interpersonal violence. According to the Maine Revised Code, medical personnel are required to report gunshot, stabbing, burn and all injuries causing serious physical harm, to law enforcement authorities and to record suspected domestic violence. Maine does not have a mandatory reporting law for domestic violence unless serious physical harm occurs. Child abuse, however, MUST be reported. Often there is overlap of these cases.

It is the responsibility of the police department to enforce the law

Treatment

Priorities at the scene:

- To ensure scene safety – involve law enforcement early; EMS provider safety comes first
- To assess and treat the trauma
- To recognize a domestic violence situation
- To prevent further injury to the victim

It is the responsibility of the police department to enforce the law

A safety plan is necessary for all personnel in caring for the physical and psychological needs of the victim. Police officers state that domestic violence scenes are some of the most dangerous calls to which they respond. This is no less true for EMS. EMS providers should:

- Use of extreme caution when intervening.
- Call for police backup if the scene is unsafe at the time of arrival, and do not enter until it is safe.
- Remove the patient from the scene as quickly as possible if the scene is identified as one of potential domestic violence
- Not leave EMS personnel alone in the house. Remember there is safety in numbers – the surest way to provide safety for everyone is to leave the scene.
- Not accuse or confront anyone and should remain non-judgmental at the scene.
- Not offer excessive sympathy in the presence of the attacker – it may cause the attacker to direct violence toward the EMS personnel.
- Explain his/her role as emergency medical personnel.
- Trust gut feelings.

Indicators of abusive personalities:

- Blaming others
- Exhibiting obsessive behavior
- Threatening
- Appearing paranoid or hypersensitive OR appearing disinterested concerning the injury

- Belligerent toward authority
 - Abusing illicit substances
 - Having access to weapon(s)

If a domestic violence situation is suspected, EMS personnel should act accordingly, even if the victim denies it. If children are present, EMS personnel should try not to let them leave with the batterer.

On scene

EMS providers should:

- Provide for the safety of EMS and the victim
- Assess medical needs
- Separate the victim from the abuser
- Assess the victim for possible self-harm
- Empower the victim – provide referrals to local domestic violence shelters or hot-lines. It is important to confirm to the victim that she is not at fault and does not deserve to be abused.

Clues from the physical exam

Central pattern to injuries (see below) to:

- Face
- Neck
- Throat
- Chest
- Abdomen
- Genitalia

It is important that EMS personnel examine the entire body looking specifically for:

- Injuries suggestive of defensive posture, such as to ulnar aspect of forearm
- Injuries in various stages of healing
- Injury during pregnancy
- Injury that does not “fit the story”

Recognition of pattern injuries

The most common pattern injuries include those that are the result of contact with:

- Linear objects.
- Hands.
- Fingers.
- Mouths.

Once identified, the physician must decide if these injuries are intentional or accidental in nature. EMS personnel can lend helpful information to the physician in these cases regarding the scene, the victim's affect, interactions at the scene, etc.

Preservation of evidence and documentation; domestic violence is a crime.

- The scene must be treated as a crime scene.
- adhere to standard precautions regarding preservation of evidence.
- EMS personnel must not cut garments through the areas of penetration with a foreign body (*gunshot wound or stabbing*).
- EMS personnel should encourage patients not to “clean up” before transport to the hospital or being interviewed by law enforcement.

Documentation should be comprehensive and exact.

EMS personnel should:

- Record the history, alleged perpetrator, and witnesses as stated by the victim, if possible.
- Use the victim's exact wording and quote it in the record.
- Carefully document all injuries identified and all patient complaints.
- Document patient's explanation for individual injuries as accurately as possible.
- Create body diagrams, 'maps' or take photographs.
- Have patient sign for consent for release of photographs.
- Document the behavior of the victims and others at the scene if they are present.
- Report cases to the hospital care providers, even if the victim denies abuse.
- If there is refusal to transport, notify dispatch, and document suspected interpersonal violence on the run sheet.

EMS and primary injury prevention

The EMS provider's scope of practice is expanding for a number of reasons and primary injury prevention is a venue that is being proposed by many groups. Screening for domestic violence in the prehospital setting may provide earlier interventions and result in less injury to victims in our communities. Screening does not have to be complicated or lengthy. Positive identification of victims is handled by referral to hospital staff or community agencies.

SEXUAL ASSAULT

EMS personnel must::

- Treat any life-threatening emergency first and according to the Maine EMS treatment protocols.
- Try to attend to maintenance of forensic evidence. Try not to cut through tears or stains in clothing and not cleanse any skin area more than necessary to provide immediate care.

- Advise the patient not to eat, drink, smoke, bathe, change clothing or go to the bathroom if at all possible in order to preserve any forensic evidence. If they must urinate, request that they do not wipe.
- Maintain privacy and confidentiality, use a landline for hospital reporting whenever possible and do not clarify the type of assault, only that a “victim of assault” is being transported.

In addition, EMS providers should be aware of the following:

- If the patient so desires and/or mandated reporting is indicated, police should be called if they have not already been notified.
- If no life-threatening situation is present, prehospital care may require waiting for police to secure the scene, which is a potential crime scene.
- Victims of sexual assault commonly have much guilt and may require psychological support. EMS providers need to respect the stress that the victims are experiencing.
- By nature of this event, any touch may be traumatic for this patient. EMS providers need to overtly and repeatedly explain what is being done to try to lessen the impact of procedures and touching.
- If the patient has removed any clothing worn in the assault, each piece of clothing should be separately bagged in paper bags and brought to the hospital with the patient.
- When transporting the patient, it is preferable whenever possible to have a same sex provider as the primary provider. If the assault is a same sex assault, than a provider of the opposite sex may be more comfortable for the patient.
- The patient should be encouraged to go to the hospital for a sexual assault forensic examination that would allow not only the option to have collection of forensic evidence, but also treatment of possible injuries and the chance to obtain pregnancy and sexually transmitted disease prophylactic treatment.
- If the patient refuses treatment and/or transportation to the hospital, EMS providers should document all findings and observations as completely as possible. When signing the patient off at the scene, EMS providers should try to have a police officer witness this sign off.

CHILD ABUSE MANAGEMENT AND REPORTING

- Child abuse and child neglect are sufficiently widespread to guarantee that virtually every EMS personnel will encounter them at least once during his/her career.
- It is estimated that approximately 2-3 million cases occur each year or approximately 11 cases per every 1,000 children within the U.S. Each year at least 2,000 children die from physical abuse.
- The most commonly identified forms of abuse by EMS personnel are physical abuse and severe physical neglect, although sexual abuse may on occasion be observed.
- The EMS personnel must at all times demonstrate and maintain a supportive and nonjudgmental attitude with primary caregivers. Accusation and confrontation delay immediate treatment as well as transportation to a definitive care facility.
- When abuse is a possibility, the healthcare professional has two major responsibilities: first, to provide medical care to the child; and second, to collect and document all information that may possibly establish the occurrence of abuse or neglect. EMS providers should refrain from asking the child too many questions and

specifically not ask any leading questions. Questions should be kept simple and open-ended such as: “What happened?” and “Are you hurt?”

- If there is “reasonable cause to suspect” that a child has been abused or will be abused, EMS providers must immediately report it to Child Protective Services. Failure to do so is punishable as a civil violation. It is not enough to tell someone else of suspected abuse. If a child is abused and unreported, there is a 50% chance that the child will be abused again and a 10% chance that the child will die from future abuse. (Title 22, Subchapter II, subsection 4011)

Possible Indicators of Abuse or Neglect

- Injured child under two years of age, especially hot water burns or fractures
- Facial, mouth, or genital injuries
- Multi-planar injuries (front and back, right and left) – especially when not over bony prominences
- Poor nutrition or poor care
- Delay in seeking treatment
- Vague, inconsistent, or changing history
- A comatose child, a child in shock, or a child in arrest. See “Pink 13”

See: http://maine.gov/ems/documents/Protocols_main_e_m_s.pdf for specific protocols.

Treatment of suspected child abuse in the field

EMS providers should:

- Suspect abuse, but not accuse the caretaker. Every time a child is encountered by a healthcare professional having a traumatic injury the question that should come to mind is, “Could this be abuse?” In most cases the answer will be an obvious “no” however, enough uncertainty will exist in some cases to warrant further assessment.
- Follow normal initial assessment priorities of the ABC’s and mental status when caring for the child.
- Provide the appropriate intervention procedures for any abnormal findings such as respiratory, trauma, or other medical emergencies, shock, or altered mental status.
- Assess environmental conditions and the observable interactions of family and child. Environmental signs of possible abuse or neglect may include but not be limited to: unsanitary conditions, garbage scattered about the house, and unsafe conditions such as open, unguarded windows or potentially dangerous objects within reach of children.
- Perform a detailed physical examination on any child in stable enough condition to allow for such. Examination should be made of all parts of the body for deformities, ecchymosis, lacerations, abrasions, punctures, burns, tenderness, and swelling. Prior to the initiation of resuscitation, it is vitally important that injuries of the mouth and sternum be observed in detail and documented.
- EMS providers must transport all children who have evidence of abuse or neglect because additional injuries may not be immediately obvious. Transport of potentially abused or neglected children ensures that they receive the appropriate and necessary social services. Assistance may be necessary from law enforcement, OLMC, etc.
- Convey impressions and information to the hospital staff.

- Write a detailed and descriptive report, which provides an accurate and clear record of all observations and treatment from the time of the initial call through transfer of the patient to the ED staff. EMS providers should not make a diagnosis of abuse and should refrain from including personal opinions, emotional overtones, or interpretations. Primary caregiver quoted statements must be documented as such with quotation marks and exactly word for word, as stated by the person. This legal document must also be legible.
- EMS providers must Contact Adult and Children’s Emergency Services at 1-800-452-1999 to make a report. This is a 24-hour a day reporting number. EMS providers are protected by law from civil liability for making such a report if made in good faith.

ADULT ABUSE

Title 22 MRSA, Chapter 1-A, Subsection 3477 states, “Reasonable cause to suspect, when, while acting in a professional capacity, an...ambulance attendant, emergency medical technician...suspects that an adult has been abused, neglected or exploited, and has reasonable cause to suspect that the adult is incapacitated, then the professional shall immediately report or cause a report to be made to the department.”

Call the Adult and Children’s Emergency Services: 1-800-452-1999 (24 hours a day). EMS providers will be protected by law from civil liability for making such a report if made in good faith.

NON-SYSTEM PHYSICIANS ON SCENE

Good Samaritan Physician

A Good Samaritan Physician is a physician on the scene who has no previous connection to the patient. This means s/he is not the patient's private physician. S/he shall be courteously told that to take any control of the scene, s/he must be approved by the medical oversight physician over the radio. For the Good Samaritan Physician to assume any responsibility s/he must:

- Submit proof that s/he is a physician
- Be willing to assume responsibility for the patient both at the scene, in transport, and until relieved by another physician in the Emergency Department.
- Not have the EMT perform any procedures or treatments that go against protocols or their specific training.
- Offer care only if the problem is within the physician’s area of specialty (an OB should not be telling EMS providers how to run a cardiac arrest).

If the physician on scene is unable to comply with any of these, then his/her help should be courteously declined.

Physician in his/her office, Urgent Care center or Industrial Physician

- The EMS service shall perform its duties in their usual manner under direction of Medical Oversight.
- If the physician in the office decides to provide management of the patient, there will be communication with the medical oversight physician to coordinate management and disposition.
- If the EMS provider is asked to do something that goes beyond his or her level of training or that is against written protocols, s/he will so inform the physician in his office. Under the circumstance, the EMS provider should NOT do the procedure as requested by the physician in his office. The EMS provider should assist the physician if the physician elects to do the procedure him or herself.

PATIENT REFUSAL

Permission not to treat or transport a patient must be established in the EMS agency's protocol or approved by the base station physician. A set policy or direct communication with the medical contact physician decreases the EMT's liability. Direct communication between the physician and the patient may resolve many questions and often convinces the patient of the importance of treatment and transport. The following is an outline of legal principles that may help the EMT to understand issues related to patient refusal.

Consent

- The patient has the responsibility and right to consent to or refuse treatment. If s/he is unable to do so, a legal guardian has this right.
- A durable power of attorney for health care allows the named individual to decide on health care issues for a patient no longer able to make those decisions.
- When waiting to obtain lawful consent from the person authorized to make such consent, would present a serious risk of death, serious impairment of health, or would prolong severe pain or suffering of the patient, treatment may be undertaken to avoid those risks without consent. In no event should legal consent procedures be allowed to delay immediately required treatment.
- In non-emergency cases, consent should be obtained from the patient or legal guardian prior to undertaking any treatment.
- AGE: Patient must be over 18 years of age, or between 14 and 18 years and "emancipated" (i.e., living apart from his parents) to be permitted to give consent or refuse treatment.
 - If the patient is under age, consent should be from a natural parent, adopted parent or legal guardian.

DECISION-MAKING CAPABILITY

A person has decision making capacity if s/he:

- Is capable of understanding the nature and consequences of the proposed treatment.
- Has sufficient emotional control, judgment, and discretion to manage his or her own affairs.
- Is oriented, has an understanding of what happened and what may possibly happen if treated or not treated, and has a plan of action—such as whom s/he will call for transportation home.

Patients with impaired cerebral perfusion; in shock, postictal or under the influence of drugs will be unlikely to fulfill these criteria.

If the patient is not mentally competent under these guidelines, consent should be obtained from another responsible party— who must also be mentally competent, and must be 18 years of age—in the following order of preference

1. Legal guardian
2. Spouse
3. Parent
4. Adult son or daughter
5. Adult brother or sister

- If the patient is not mentally competent and none of the above persons can be reached, the person should be treated and transported to a medical facility. It is preferable under such circumstances to obtain concurrence of a police officer in this course of action.
- If the patient himself is not competent to consent and a legal guardian as defined under section 5 is present, and if that person is competent, he or she has the same right to consent or refuse treatment as the patient himself. Those wishes cannot be ignored in a non-life-threatening situation.

NON-TRANSPORT FOR MINORS

If, after evaluation of a minor the EMT and medical oversight agree that the patient does not require transport, that minor can be left in the care of a responsible adult that is not the parent or legal guardian. The responsible adult may be a family friend, neighbor, school bus driver, teacher, school official, police officer, social worker or other person at the discretion of medical oversight and the EMT.

CRITICAL INCIDENT STRESS MANAGEMENT

The impact of critical incident stress, whether it is intermittent or cumulative, is becoming increasingly appreciated as a problem for EMS personnel.

Prehospital medical directors must realize the impact that events have on our EMS personnel and be able to recommend appropriate critical incident stress management and debriefing.

Potentially traumatic events may include severe automobile accidents with loss of limb or life, sexual assault or abuse, severe injury or death of a child, suicide, homicide, and injury or death in the line of duty of EMS personnel, or law enforcement providers.

Disasters such as the Oklahoma City explosion, earthquakes, hurricanes, tornados, fires, and floods that may be local or even community-wide disasters all take a tremendous toll on EMS personnel.

There are many common signs and symptoms of stress reactions that can be broken down into four major components: physical, cognitive, emotional, and behavioral. Some physical signs may include fatigue, nausea, chest pain and difficulty breathing, elevated blood pressure and heart rate, weakness, dizziness, profuse sweating, nausea, and vomiting. Cognitive signs and symptoms may include blaming, confusion, inability to maintain attention or make decisions, memory problems, and interference with either sleep or higher mental activities. Emotional reactions include anxiety, denial, guilt, grief, and panic reactions. This may lead to uncertainty and anxiety about future exposures in the prehospital environment as well. Often EMS personnel will feel overwhelmed and may display inappropriate emotional responses such as anger, agitation, and irritability. This may lead to behavioral changes such as emotional outbursts, withdrawal, abnormal stress handling modalities such as alcohol or drug consumption, and may even lead to an overall decompensation of the EMS personnel to the point where they are unable to perform at an appropriate level; they withdraw from the EMS service or injure themselves or others.

There are five incidents that mandate immediate CISM services:

- Line of duty deaths
- Serious injury to an EMS provider
- Suicide of an EMS provider
- Multi-casualty incident or disaster
- Police shootings/killings/serious injury of a patient or EMS personnel/police especially when it involves a threat to the safety of the provider

Involvement of the EMS personnel with a Critical Incident Stress Debriefing Team may help not only individuals involved in the specific critical incident, but help prevent Post Traumatic Stress Disorder. Critical Incident Stress managers and teams can often be identified and activated by contacting the regional EMS office. The numbers for the CISM Teams in Maine are as follows:

- Aroostook EMS: 207-227-0679
- Tri County EMS: 207-777-6000 (ask for CISM Coordinator)
- Southern Maine, Kennebec Valley, Northeast, and Mid Coast EMS: 207-877-0936

There is an International Critical Incident Stress Foundation that can be reached at 10176 Baltimore National Pike, Unit 201, Ellicott City, MD 21042 or by phone at (410) 750-9600. Their emergency number is (410) 313-2473.

There is an ever-increasing amount of literature that is available on critical incident stress as well as burnout. We, as medical directors, must be aware of the existence of critical incident stress as well as necessary interventions to minimize the effects of stressful events.

PREHOSPITAL AND EMERGENCY DEPARTMENT INFECTIOUS DISEASE EXPOSURES

Maine EMS requires that each EMS service has a designated infection control officer (DICO) in compliance with OSHA's blood borne pathogen standard. The DICO ensures that the exposure control plan and processes are current for the service. The medical director should review the exposure control plan for the service and ensure that appropriate resources are available for exposure determination and follow up. Annual training is required for all EMS personnel to ensure that they are clear about exposure control methods and the services' exposure control plan.

Blood borne pathogen standard 1910.1030

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

MEDIA RELATIONS

EMS agencies and/or the physician medical director may be required to have interactions with local media. This typically occurs during high profile incidents such as motor vehicle crashes involving numerous patients, industrial accidents or other large-scale events. There are a few key points the physician medical director should remember when dealing with the media:

- The Incident Command System (ICS) will typically designate a public information officer for coordinating all contacts with media and to ensure the correct flow of proper information to media outlets. The physician medical director should work in conjunction with their EMS agency and the public information officer when dealing with the media.
- The media can serve as a valued resource for helping to transmit critical information to concerned members of the community. It may be appropriate for either the physician medical director, EMS official, or city official to serve as the key contact or official spokesperson to represent the interest of the EMS agency and the public's well being. It is important to realize that lacking a credible source of information within the EMS agency, or city administration, the media may elect to use "non expert" spokespeople who are more willing to be interviewed. In this day of media saturation in many areas, it is important for the medical director to instruct all EMS personnel on the necessity for protecting patient modesty and patient confidentiality.
- The media can be a valuable partner in helping educate the community on many injury and illness prevention issues, including public access defibrillation, correct child safety seat usage, smoke and carbon monoxide de-

tector usage, and blood pressure screening. Inviting local media representatives to spend time observing on EMS runs may help establish a good working relationship for further community education projects.

EMS provides an invaluable service for the community that is frequently overlooked. Working with local media allows the public to have a greater sense of security and confidence in EMS personnel.

INTOXICATED DRIVERS

Title 29-A § 2405 (1) “Persons who may report if, while acting in a professional capacity a...emergency medical services person...knows or has reasonable cause to believe that a person has been operating a motor vehicle, hunting or operating a snowmobile, all-terrain vehicle or watercraft while under the influence of intoxicants and that motor vehicle, snowmobile, all-terrain vehicle or watercraft, or a hunter has been involved in an accident, that person may report those facts to a law enforcement official.”

Title 29-A § 2405 (2) Immunity from liability. A person participating in good faith in reporting under this section, or in participating in a related proceeding, is immune from criminal or civil liability for the act of reporting or participating in the proceeding.

Title 29-A § 2524 (1) Persons qualified to draw blood for blood tests. “Only a physician, registered physician's assistant, registered nurse, person whose occupational license or training allows that person to draw blood samples or a person certified by the Department of Health and Human Services may draw a specimen of blood for the purpose of determining the blood alcohol level or drug concentration.”

Title 29-A § 2528 Liability. “A physician, physician's assistant, registered nurse, person certified by the Department of Health and Human Services, hospital or other health care provider in the exercise of due care is not liable for an act done or omitted in collecting or withdrawing specimens of blood at the request of a law enforcement officer pursuant to this chapter.”

INTERFACILITY PATIENT TRANSPORT

An EMS service may be requested to facilitate the transfer of a patient from one hospital to another. As with all EMTALA transfers the sending physician and hospital are responsible for assuring that the patient is transferred in a method that is consistent with the stability of the patient.

INTERFACILITY PATIENT TRANSPORT GUIDELINES

The transferring physician is ultimately responsible for the patient until received by the accepting physician or his/her agent, i.e., nurse or covering physician.

EMS providers will be responsible for carrying out the transferring physician's orders. The provider must check, be completely familiar with and understand the transfer orders. Any questions or concerns, for example validity or specifics of DNR orders, medications or treatment(s), must be answered and clarified prior to departing the transferring hospital.

- If the provider does not understand or feel comfortable with the orders, then s/he must address these concerns with the physician or his/her agent, i.e., nurse or covering physician. If the concern(s) cannot be rectified, the provider should contact his/her medical director and not proceed with the transfer until said concerns are rectified.
- The medical director may need to directly, either by phone or in person, contact the physician or his/her agent to clarify or rectify any real or perceived concerns of the provider prior to initiating transfer.

In order to avoid any attendant delays in care and transport, said review and clarification should and must occur prior to initiation of transfer. Thirty to sixty minutes prior to transport is usually sufficient.

It should be documented in the transfer record that the receiving physician and hospital has been notified and has accepted the patient in transfer. Any equipment, airway management concerns, medication(s) or special needs must also be arranged for and available prior to the immediate transfer time.

Once en route if any problem(s) arises not previously considered or covered in the transfer orders, the provider(s) will immediately contact the transferring hospital, physician or his/her agent for direct online medical oversight. If the transferring hospital or the EMS department's own medical control cannot be accessed due to vehicle location, communication difficulties or acts of nature, the provider will follow protocols and written orders until such a time that the transferring, receiving or other nearest appropriate medical facility can be contacted and act as online medical oversight for this particular concern.

- On occasion, for example due to patient care concerns, patient status deterioration not covered in the transfer orders, or equipment failure, the transfer may require diversion to the nearest appropriate medical facility.

It is imperative that the most appropriate route(s) of travel, the locations of appropriate possible diversion medical centers and their phone or radio call numbers are made available prior to initiation of the transfer.

It is the duty of the EMS providers to familiarize themselves with this information prior to transport. The EMS provider will review the above directives and ensure all is in place prior to initiation of transfer.

See Appendix F: Maine EMS Interfacility Transport, p. 93

MAINE EMS PARAMEDIC INTERFACILITY TRANSPORT (PIFT) PROGRAM

The State of Maine EMS Board has created a service level and provider certification level to assist with the transfer of stable patients with low risk for deterioration from facility to facility. The PIFT program expands the scope of practice for paramedics with a PIFT service.

PIFT SERVICE ELIGIBILITY

There are several PIFT Service level requirements. A PIFT service must have a PIFT service license approved by MEMS. It must maintain satisfactory participation in service, hospital, regional, and state QI programs, including completion of PIFT QA Form for all calls. It must also have a service medical director who has knowledge of Maine EMS prehospital and PIFT protocols. The *service medical director* must review 100% of all PIFT transfers *within 1 month of the transfer*. (See below) To continue to be eligible to conduct PIFT transfers, a service must comply with hospital, regional, and state CQI programs.

A PIFT Service is required to have a physician medical director who is required to perform the following functions:

- The medical director is encouraged to be an ambassador to local hospitals, acute and chronic care facilities, and medical staffs, to help support and clarify the role of paramedics in these types of transfers.
- The medical director is expected to be able to offer support to the paramedics and provide educational or system support if issues of competency arise.
- The service medical director will review 100% of PIFT transfers.
- Discussions of “borderline” transfers may require the medical director to speak with the authorizing physician, and this is an expectation that should be offered willingly and easily.

To continue to be eligible to conduct PIFT transfers, a service must comply with hospital, regional, and state CQI programs. In addition, PIFT services must have an active in-house CQI program which includes the ability to review 100% of PIFT transfers. Prospective evaluation is a key component of the PIFT program. A MEMS approved PIFT quality improvement form must be filled out for each PIFT transfer.

Transport decisions are ultimately left to the discretion of the paramedic providing the PIFT level transfer.

The physician medical director for a PIFT service needs to be fully integrated into the operational, educational and quality assurance aspects of the interfacility transports. A PIFT service will require a medical director that is readily available to review patient care reports for accuracy and to receive questions from EMS providers who may have questions regarding stability and transfer of patients.

See also: Appendix F: Maine EMS Interfacility Transport p. 93

EMS EDUCATION

The Maine EMS Board has adopted the National Education Standards as developed by the United States Department of Transportation to be used as the template for all EMS training in the State of Maine. These various standards and instructional guidelines are routinely reviewed and updated by Maine EMS approved training centers to guide in the development of new curricula. Medical directors need to be aware of modifications in the initial training programs for EMR, EMT, Advanced EMT, and Paramedic training. (See also: **EMS Personnel & Providers**, page 38)

The Maine EMS Board also oversees the licensing of all training centers.

MAINE EMS TRAINING CENTERS

The Maine EMS Board designates which agencies may perform EMS education within the State of Maine through the Training Center Approval Process. An approved Training Center is the only agency that may deliver Emergency Medical Responder, EMT-B, Advanced EMT, Paramedic, and Instructor/Coordinator courses. Training Centers must have medical directors to review the curriculum and evaluate clinical education, teaching standards, and the quality assurance or oversight of the training program.

Maine EMS requires annual reports from Training Centers regarding activities, pass rates, and changes to the program or key personnel. Additionally a Training Center must do a complete self-study report and application to renew their license every 5 years unless required earlier by the EMS Board. Pass and retention rates are actively monitored by Maine EMS staff, and results are discussed with Training Centers to continuously improve the educational footprint.

NATIONAL EMS EDUCATION STANDARDS

In 2009, the National EMS Education Standards were established to move the education of EMS providers from a proscriptive curriculum to an educational standard that addresses the ever-changing world of medical evidence. Maine EMS has adopted these standards with some added state specific requirements. This adoption allows flexibility to the Training Centers to incorporate new teaching modalities while ensuring consistent standards are met.

EMERGENCY MEDICAL RESPONDER (EMR)

The primary focus of the Emergency Medical Responder is to initiate immediate lifesaving care to critical patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and to assist higher level providers at the scene and during transport. EMRs function as part of a comprehensive EMS response, under medical oversight. EMRs perform basic interventions with minimal equipment.

The training center providing an Emergency Medical Responder course must develop a curriculum from the National EMS Education Emergency Medical Responder Standard. The course can generally be completed in 60-80 hours. There is no required clinical component to the EMR course.

In order to receive a license upon completion of the course the student must successfully complete both the NREMT Emergency Medical Responder exam cognitive (computer adaptive test) and Maine EMS practical exams for Emergency Medical Responder.

EMERGENCY MEDICAL TECHNICIAN (EMT)

The primary focus of the Emergency Medical Technician is to provide emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Emergency Medical Technicians function as part of a comprehensive EMS response, under medical oversight. Emergency Medical Technicians perform interventions with the basic equipment typically found in an ambulance. The Emergency Medical Technician is a link from the scene to the hospital health care system.

The training center providing an Emergency Medical Technician course must develop a curriculum from the National EMS Education Emergency Medical Technician Standard. The course generally takes 3-6 months to complete and requires a small amount of observational time in the field and hospital settings.

In order to receive a license upon completion of the course the student must successfully complete both the NREMT cognitive (computer adaptive test) and Maine EMS practical exams for Emergency Medical Technician.

ADVANCED EMERGENCY MEDICAL TECHNICIAN-ADVANCED (AEMT)

The primary focus of the Advanced Emergency Medical Technician is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Advanced Emergency Medical Technicians function as part of a comprehensive EMS response, under medical oversight. Advanced Emergency Medical Technicians perform interventions with the basic and advanced equipment typically found in an ambulance. The AEMT is a link from the scene to the hospital health care system.

The Emergency Medical Technician-Advanced course may be delivered by an ALS Training Center. The Training Center must develop a curriculum from the National EMS Education Advanced Emergency Medical Technician Standard. In addition to the education standards the Training Center must include specific Maine EMS training that exceeds the standard. Advanced courses include hospital and field clinical work. It generally takes 3-12 months to complete Advanced education.

In order to receive a license upon completion of the course the student must successfully complete the NREMT Advanced Emergency Medical Technician exam.

PARAMEDIC

The Paramedic is an allied health professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients who access the emergency medical system. This individual possesses the complex knowledge and skills necessary to provide patient care and transportation. Paramedics function as part of a comprehensive EMS response, under medical oversight. Paramedics perform interventions with the basic and advanced equipment typically found in an ambulance. The Paramedic is a link from the scene into the hospital health care system.

The ALS training center conducting a paramedic program must develop the curriculum from the National EMS Education Standards. Paramedic education can range from 1-2 years based on the initial education of the provider and whether or not the program confers a degree upon completion. Paramedic education includes class-work, a significant amount of field work, and hospital clinical work.

In order to receive a license upon completion of the course the student must graduate from a CAAHEP accredited program and successfully complete both the NREMT cognitive (computer adaptive test) and practical exams for Paramedics.

INSTRUCTOR/COORDINATOR (I/C)

The following are the recommendations for EMS educators as established by the 2002 National Guidelines for Educating EMS Educators:

- At a minimum, the entry-level EMS educator should have successfully completed a course of academic study and gained clinical experience as an EMS provider, registered nurse, physician, or other allied health practitioner prior to entering the educator program. Though not always possible, the entry-level instructor should be educated to a level that is at least one level higher than the level of provider they intend to instruct. For example, an experienced AEMT could become an appropriate entry-level instructor for an EMT course. Professional knowledge is the foundation of teaching practice.
- The intent of the curriculum designers is to assist in the preparation of educators who are experienced EMS practitioners and enthusiastic role models for lifelong learning and professional standards. Participants who attend the entry-level EMS educator program should be instructor candidates who have proven their commitment to the profession through self-initiated field experiences and academic performance. Previous teaching experience is preferred.
- Another recommendation is that the entry-level EMS educator participates in a supervised teaching internship in an EMS program, working and learning under the shared guidance and expertise of experienced educators. During this internship it is recommended that the participant document their learning and professional growth through the development of a portfolio that should be reviewed by the experienced program educators.

The medical director for an education program should ensure that educators within the training center have the established clinical, academic and educational backgrounds to ensure quality education to future EMS students. The medical director should work closely with the Training Center program director on these issues.

Maine EMS licenses EMS instructors who provide initial and refresher EMS education. An I/C must be present to coordinate all aspects of EMS licensure education. An I/C must complete a course of classroom instruction as approved by the Maine EMS Board. Current requirements for this course include addressing the components of 2002 National Guidelines for Educating EMS instructors, having a secure, reliable written exam and providing examination results to Maine EMS. There are a number of nationally recognized programs that currently meet this standard such as the National Association of EMS Educators Instructor Course.

CONTINUING EDUCATION

Lifelong learning

The National EMS Standards emphasize the importance of lifelong learning. In addition to the NHTSA EMT, EMT-Advanced and EMT-Paramedic refresher courses, there are numerous other courses that provide additional sources of continuing education. These include Basic Life Support (BLS), Assessment and Treatment of Trauma (ATT), International Trauma Life Support (ITLS), Prehospital Trauma Life Support (PHTLS), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), and Pediatric Education for Prehospital Professionals (PEPP). Additional on-going education opportunities are available via the Internet, CD-ROM Educational Courses, textbooks, prehospital and Emergency Medicine journals, conferences, and in person trainings approved by Maine EMS.

LICENSE RENEWAL

All providers are required to complete continuing education to maintain their Maine EMS license. Licenses are good for three (3) years and each level has specific requirements as the amount of continuing education they must receive. Some providers also maintain a National Registry Certification. This certification requires 72 hours of continuing education every two (2) years. ALS providers who hold a National Registry certification are required to receive a medical director's signature for verification of skill competency to recertify. The National Registry is working to develop a comprehensive Continued Competency Program that will better keep with current trends in medicine and ensure providers are achieving knowledge to treat patients with contemporary medicine.

CAAHEP/CoAEMSP

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) through the Committee on Accreditation of Educational Programs for the EMS Professions (CoAEMSP) evaluates EMS programs to ensure that students receive a fair and appropriate education. EMS is one of the last allied health professions to not require accreditation. The role of accreditation is to protect students and ensure compliance with national education standards. Currently approval is only granted for Paramedic programs. Since 2013, the National Registry of EMT's has required successful completion of a CAAHEP accredited paramedic program to sit for the national exam.

Further information on CAAHEP can be viewed at <http://www.caahep.org/>

Further information on CoAEMSP can be viewed at <http://www.coaemsp.org/>

ADULT EDUCATION CONCEPT

Although initial Training Programs are effective at preparing the providers to enter the practice of pre-hospital patient care, daily patient contact is often inadequate to assure maintenance of critical knowledge and key skills. The EMS medical director should have a solid understanding of not only the requirements of continuing education to maintain certification to practice, but also to maintain the proper ability to provide quality care.

The medical director must realize that in any education program there may be multiple levels of providers in the audience. Medical directors should be familiar with the scope of practice of each level of provider and specific educational needs of each provider level. EMS provider education must be tailored to include all levels of providers present, paying particular attention to avoid talking "over the head" of the basic level providers. Learning objectives should include realistic expectations for all levels of providers, and educators should address critical knowledge needs for each level of provider. It is important to keep in mind that many EMTs and AEMTs will continue to advance their education towards paramedic certification.

GRANTS AND SYSTEM FUNDING

There are numerous ways to obtain funding or grants for EMS department(s). This section is a brief overview of funding possibilities and contact resources. These should not be considered as primary funding sources. The search for external funding sources can be time consuming and tedious, but the reality is that additional resources may be needed to enhance training programs and obtain sophisticated equipment.

FOUNDATIONS

There are many charitable foundations in Maine with grant programs. Unfortunately, very few EMS or fire departments have approached these organizations for financial assistance with special projects or programs. Once a need is identified, seek to find an appropriate foundation by researching its history of support to other community agencies. Most foundations can be approached by a phone call or a simple 2-3 page proposal letter. Once a foundation that may be interested is identified, it will provide applications and instructions.

There are numerous books at local libraries detailing the appropriate way to approach a foundation and to obtain funding.

FEDERAL GRANTS

Federal grants may be a great source of funding. Examples include the FEMA Assistance for Firefighters grant, which is also available to non-fire based services. All grants are designed to impact as many individuals as possible.

Forming a coalition with other EMS and Fire agencies may improve the strength of an application. Federal grants can be time consuming, and attention to detail is important. A successful grant must be clear in the explanation of the need, supported with data, and include measurable objectives. Information on available federal grants can be found in the Federal Register, a publication available at most local libraries. Online resources such as: www.grants.gov provide the ability to search for and obtain information on federal grant opportunities.

STATE/FEDERAL SURPLUS PROGRAM

This program can be used to obtain vehicles, office furniture and equipment, clothing and blankets, and other items targeted as surplus items. Many of the items sent to surplus are in good shape. Only volunteer departments can be directly involved in the federal surplus program. If a volunteer organization would like to be involved with the state surplus program, it must be affiliated with a municipality or tax-producing entity.

COOPERATIVE PURCHASING PROGRAM

Although not a grant program, the office can help an organization save a significant amount of money. Any political subdivision can join the Cooperative Purchasing Program. Check with city, township, or county clerks to determine if the organization is already registered. Everything from blankets and cars, to first aid and hospital supplies are included. Members of the Maine Ambulance Association are automatically members of the North Central EMS Cooperative, which offers many discounts.

Steps to having a successful funding program

- Do not depend on grants as a primary funding source.
- Always try local sources first (*e.g. municipal funding, donations, and fee for services, etc.*).
- Plan, plan, plan.
- Develop realistic goals.
- Develop contacts; network with everyone.
- Have a grants coordinator (or assign this function to someone on a part-time basis).
- Be persistent.
- Get on mailing lists of granting organizations.
- Be able to prove organizational credibility and worthiness of projects/programs.
- Keep trying!

QUALITY ASSURANCE & IMPROVEMENT

It is assumed that all health care providers want to give the best and most efficient care they can to their patients. The question is, how can we be sure that this is actually happening, and how can we improve it? The goal of the quality improvement process is to ensure that the patient is getting the best possible care, delivered in the most efficient manner. It does not matter whether this process is called “Total Quality Improvement” (TQI), Continuous Quality Improvement (CQI), or more recently “Performance Improvement” (PI), as the idea and principles are the same.

CHALLENGES

There are several challenges. The first is how to measure quality in health care, especially in the pre-hospital setting. Using an outcome such as death is not meaningful.

- Most patients survive regardless of care rendered. Similarly, many of those that die would have, irrespective of any interventions! Secondly, some interventions require the treatment of large numbers of people before a detectable change in outcomes is found.
- A new drug may show an improvement in one or two out of a hundred people treated.
- Many systems lack a sufficient number of transports to experience a change in their individual statistics. Rather than looking at a final outcome, most experts advocate evaluation of the process of delivering care. The assumption is that if appropriate care is delivered in a timely fashion, patient outcome will be improved.

The second challenge is that the process often proceeds in small incremental steps and rarely results in major revolutionary changes. Thus, the process needs to be continually applied and revisited. Positive feedback is important, lest people become discouraged because of a perceived lack of progress. Finally, it should be emphasized that the quality of care is dependent on the entire system and not just the provider, therefore, the whole system and process needs to be scrutinized, not just individual providers.

Thus, performance improvement is a joint effort between the field EMS provider, the medical director, operations, communications, and administration. The approach should be to emphasize what has been done well rather than simply point out what was done poorly.

The Performance Improvement process should be as objective as possible and avoid punitive implications. Although there are instances in which EMS provider’s actions may warrant disciplinary measures, there should be a clear policy on the purpose of Performance Improvement and the relationship between information gathered during the process and the disciplinary proceedings.

Another challenge is to recognize that most errors and problems stem from system problems, rather than individual issues and errors, and that people generally want to do a good job. However, an individual asked to perform the impossible, in impossible situations and conditions, without adequate preparation and training, is doomed to fail.

These then, are areas that need to be reviewed as described below and everything must be done to allow the individual to do the best job they can.

THE QUALITY IMPROVEMENT LOOP

The quality improvement process forms a loop. The loop generally starts with setting standards that will establish a uniform practice pattern. These include well established protocols and policies, as well as equipment, personnel, time, and training standards. Once the standards are set, an educational process is

needed so the expectations are clear to everyone involved in the process. The next step is to see if the standards are being met, and if not, why? Finally, one needs to determine how to correct the problem or redefine the standard. The process will be described in detail below and examples are used to illustrate it.

SETTING STANDARDS

One key step in prospective quality improvement is setting and implementing standards. These should reflect what EMS providers should do and how they should do it, and they must be clear and unambiguous. Merely stating we will do better is doomed to failure.

To set or review standards there are three important steps:

1. Determine if the standard is medically or operationally correct.
2. Determine if the standard is achievable and if it can be implemented.
3. Determine if the standard is worth implementing.

As an example of this process, let's see how it could be applied to the use of thrombolytic therapy for acute myocardial infarction in the field. First, consideration should be given as to whether or not thrombolytic therapy for acute MI is medically correct. Clearly, it is an appropriate intervention for properly selected cases.

The second consideration would be whether or not it can be implemented in the field. Again the answer is that in certain cases, thrombolytics can and are. Implementation requires EMS training in the recognition of myocardial infarction, recording, interpreting and possibly transmitting ECGs, and the use of thrombolytics, including indications and contraindications. It also requires stocking of thrombolytics, ECG reception equipment at the base hospital, and cooperation of the base hospital and physicians in interpreting the ECGs and ordering the treatment. Although this is clearly complex and cumbersome, it can be done. However, if the system lacks the resources to buy the equipment and provide the training necessary to use it, and/or is made up of all EMTs, it will not be a reasonable standard and will, in fact, not be achievable.

Assuming the necessary resources are available, the final consideration would be if the standard is worth implementing. This becomes the crucial question. This requires an assessment of the risks, costs benefits and the liability associated with not doing the procedure. It is expensive to provide adequate time, training, and equipment. If an ALS system has a large number of myocardial infarctions and long transport times to a hospital, it may be worth implementing. If there are few myocardial infarctions and short transport times, it is probably not worth the investment in resources. The procedure is also not without some risk. Is the organization, its individuals and the system willing and able to assume this?

After analyzing all of the data, a decision might be made to not implement the use of thrombolytics in the prehospital environment, but to require all patients with chest pain to have an ECG performed and to receive aspirin. Because the EMS agency is located in a community with a significant number of chest pain runs and a large retirement community, the service agrees to invest in a 12 Lead ECG-capable defibrillator.

It is evident that the process of determining a standard requires not only a goal, but also a large amount of data collection and analysis. The medical director should ensure that personnel involved in the quality assurance roles of the service have the necessary education and training to understand data collection and analysis methods.

PROTOCOLS AND STANDING ORDERS

Protocols are the guidelines or templates that guide the EMS provider's actions during certain situations, usually in the treatment of a patient. They should include those aspects of the history, physical examination, and treatment that should be documented and provided by the EMS personnel. Standing orders are specific instructions to the EMS provider that allow treatment to be given without a physician being present either in person or by radio communication. Examples are the immediate defibrillation of a patient in ventricular fibrillation, or the intubation of a patient in severe respiratory distress.

Having decided to include ECG and aspirin in the treatment of chest pain, this needs to be inserted in the protocol. It would certainly be appropriate to include this as a standing order. The standard criterion is then set for those who will receive an ECG and aspirin as patients over 40 years of age with chest pain.

See: http://maine.gov/ems/documents/Protocols_main_e_m_s.pdf for the specific protocols.

TREATMENT STANDARDS

Having placed aspirin and 12-Lead ECG in the protocol for chest pain, this now becomes the new standard. The providers need to be educated and trained to include this as part of their assessment and treatment of the chest pain patient. The new objectives will be included in any run review where the new protocol applies.

TIME STANDARDS

Time standards include time-to-dispatch, response times, on-scene times, time to patient, and return-to-service times. These can be dictated by law, policy, or contract, and also need to take into account the community and location of the service.

Appropriate times may differ significantly from a rural community with long response and transport distances, to a suburban community with shorter distances. Similarly, in an urban area with many high-rise buildings, although actual distances traveled on city streets may be very short, however patients may be difficult to reach. Analysis of these times can help determine whether the EMS system is providing the service needed by the community. Inadequate response times dictate a need to change the system. As part of the overall revision of the care provided to chest pain patients, on-scene times are examined, and in training sessions, the importance of time and impact of delays to treatment in the chest pain patient is emphasized to EMS providers.

Set a goal of on-scene time of less than 15 minutes.

EDUCATION, TRAINING AND TESTING STANDARDS

Having established what the new standards are, the EMS providers must be educated. A decision is made to emphasize several topics and points.

- Develop a better understanding of acute coronary syndrome and how aspirin effects clot formation and propagation.
- Recognition of the signs and symptoms of acute coronary syndrome, as well as risk factors for coronary artery disease.
- Review 12-lead ECGs and define when they should be obtained.

Skill standards must include the correct methods for their performance. The time allotted to accomplish the skill, the number of attempts permitted and the circumstances where skills should be provided must also be set as a system standard. Demonstration of EMS skills can be accomplished both in the field and in the classroom. The frequency at which each skill must be demonstrated should be determined and documented. In the PI review, a simple checklist for indications and obtaining an ECG is developed, and every EMS provider is required to demonstrate the skill and complete a short test.

EQUIPMENT STANDARDS

Equipment standards are also important. The medical director and EMS system must determine both what equipment is appropriate and necessary. It is important to correlate the quality of equipment to be acquired with the expense and the need for the equipment. Maintenance and repair must be considered. To accomplish this, it is important to get a consensus from field EMS providers, administration, and medical direction.

The service will need to ensure that cardiac monitors are capable of 12-lead ECG and that all appropriate personnel are trained in their usage. As part of initial and on-going training of personnel the acquisition and interpretation of 12-Lead ECG will need to be part of the service education program. Aspirin will need to be purchased for the ambulance and emergency medical responder units. If a method does not exist, a medication accountability policy will need to be generated.

IMPLEMENTING STANDARDS

Once these standards are set, they must be implemented. Education and training programs must teach the standards that have been set. Equipment must be purchased and maintained. It is unfair for a system to expect compliance with its standards unless all personnel have been taught those standards.

At this point, there have been several training and teaching sessions, including a few quizzes and some spot-testing. All providers, including the EMTs, understand the need for aspirin and paramedics have been trained in how to do a 12-lead ECG. It is determined that a six-month period is necessary prior to reevaluation of the standards, but questions can be prepared immediately.

DEVELOPING QUESTIONS

It is best to start with simple questions. In our example a decision is made to look at the following:

- Is aspirin being given to patients per protocol?
- Are all patients getting 12-lead ECGs per protocol?
- Are on-scene times less than 15 minutes?

TESTING THE STANDARDS

Data collection and analysis

The question asked determines the data that needs to be collected. If the standards are not being met, one must determine if the problem is with the standard, the system, implementation of the standard, the measurement of the standard or the individual EMS provider.

Here is an example of how to work through the data collection and analysis, and improving the system, using the sample standard. Discoveries stemming from data collection will be looked at, and their signifi-

cance will be discussed. In the example situation, 50 charts were collected over a 6-month period where the chief complaint was chest pain.

Is aspirin being given to patients per protocol?

Out of 50 patients with chest pain, 35 received it. Five of these were responded to by EMTs, all of whom gave aspirin. More troubling were the 15 patients who were transported by paramedics who did not receive aspirin, one of whom was having an acute event. This patient eventually went to cath. lab from the ED, but only after a significant delay. Closer scrutiny reveals that five of these patients did not meet age criteria greater than 40 years. If these were patients that truly had a coronary event, this would suggest a system problem. Either the age criterion has to be redefined or perhaps the EMS providers are not good at identifying younger patients at risk for coronary events. This can be remedied by education. The same two paramedics transported the remaining 10 patients. This suggests an individual problem.

Are all patients getting 12-lead ECGs per protocol?

Out of 50 patients, five were responded to and transported by EMTs.

They did not get ECGs because it was not part of their protocol. Of the remaining 45, the same patients that received aspirin also got a 12-lead ECG. The patient who experienced significant delays getting to the cath. lab had not received an ECG by the paramedics who transported him. In this case a prehospital 12-Lead ECG, if obtained, might have accelerated the ED response to the patient. More troubling was that the same two paramedics who hadn't administered aspirin, also hadn't obtained an ECG. This is a problem with individual medics rather than a system problem.

Are on-scene times less than 15 minutes?

Almost all the runs had on-scene times greater than 20 minutes. However, there was a trend towards shorter times in the later runs. After talking to a few of the medics, the medical director would realize that it was part of the learning curve and as they did more they got more comfortable and faster with the new protocols. At the next night of run review, the medical director should praise the squads for their efforts, noting that the on-scene times showed a steady decline and reminding them of the importance of rapid management to minimize the loss of myocardial tissue.

Following data collection, an analysis should be performed. It is immediately clear that the EMTs are giving aspirin per protocol and doing it well. They should be commended on this. However, if none or only some of the EMT units had been found to administer aspirin this would suggest a system failure, especially if a knowledge deficit is discovered when talking to the individual medics. An educational deficit was discovered when the age criterion was reviewed. Education was provided on the selective identification of patients under the age of 40 with chest pain and risk factors for ischemic heart disease, which should place these individuals into the category of ECG and aspirin administration. The medical director may also discover in other run reviews that several abdominal pain patients turned out to be acute coronary events. It is noted that all of these were diabetics and in speaking with individual providers, it is discovered that many didn't know that diabetics might present with atypical symptoms. Educating the group can fill this knowledge deficit. The global data analysis is concerning; a significant number of patients with chest pain are being responded to and transported by EMTs, and not paramedics. This indicates a system problem.

There may simply not be enough paramedics in the system, or dispatch may be inappropriately dispatching the units. If the system cannot be modified to increase paramedic coverage or change dispatch, then

the decision may be made to employ more paramedics or Advanced EMTs. As no interpretation is being asked of them, there is consensus from the others, and the EMTs agree to participate. This standard will then be reviewed in the next round of QI/PI run reviews.

On occasion, the problem is with the EMS provider and requires more than education and training. If discipline is required, it must be appropriate to the offense, consistently applied, and linked to a grievance process. In our example, the same two paramedics did not obtain an ECG or administer aspirin in the situation as defined by the protocols. Further review revealed that neither had been to the training sessions that covered the new material. One had had an illness and otherwise was a conscientious medic; the other, however, frequently missed scheduled continuing education sessions.

The first individual was offered remedial training and accepted it. The other went through a series of meetings, and following due process, was terminated from his position.

Extended response times usually indicate system problems such as inadequacy of personnel and equipment. The medical director may find that while the population of the service area has doubled in the last seven years, the size of the department has not changed!

Long scene times may suggest problems with training or a lack of appreciation for the importance of expedient and efficient care to maximize cardiac survival. This is a system-wide educational challenge and opportunity.

REDEFINING THE STANDARD

The “problem” medic is dealt with through a disciplinary process. Most of the providers know the protocol for chest pain in those older than 40, so no change is needed there. However, several atypical presentations were missed (*mostly in diabetics*) and a couple of younger patients were missed as well, mostly those with significant risk factors. Based on these findings, an educational session is developed dealing with atypical presentations, especially in diabetics. The protocol is modified slightly so that it draws attention to risk factors and alerts the providers to obtain a 12-Lead ECG in those younger patients with chest pain and risk factors as well as those older patients with significant risk factors and presenting with abdominal discomfort.

ADDITIONAL QUESTIONS

Additional questions that can be asked as part of this quality assessment, or in the next series of evaluations, might deal with the timing of the interventions.

Other questions that can be asked might be:

- Are all patients receiving nitroglycerin per protocol standards?
- When are the interventions being performed?
- Are vital signs being taken in a timely fashion?
- Are vital signs being repeated at scheduled intervals and especially after interventions?
- Did every patient with chest pain receive an IV?
- How many attempts were made by the ALS providers to start an IV?

It might be determined that the aspirin was administered just before arrival in the ED, a full 20-25 minutes into the patient encounter. So although the standard of giving the drug to all patients was strictly met, this was probably not optimal. It is probably a system error and may require some reeducation. A

time-to-drug goal may need to be specified in the service policies and would have to be checked in the next quality improvement process. This is an example of redefining the standard in response to the answer to a question worked through the QI Loop.

OTHER QI/PI QUESTIONS

Other questions might be:

- Did every seizure patient have his or her blood sugar determined by the service?
- Did every patient with a loss of consciousness get his or her glucose checked?
- Are patients with extremity fractures getting pain medication?

SUMMARY

Quality improvement is a continual process. It requires a commitment from the medical director, the EMS providers and administration. The focus is on what is done well and how to improve what is not. Ninety percent of the problems will be system based with only 10% personnel based. Discipline and loss-of-job are rare, but at times are necessary components. The quality improvement loop starts with setting system standards. These standards must be implemented, often through education. Specific questions must be asked to determine if the highest quality care is being provided. These questions suggest what data must be collected. The data is analyzed and the system changed to improve care. Once the changes are implemented, the question must be re-examined to assure that the system changes were effective. This completes the quality improvement loop.

GOALS OF QUALITY IMPROVEMENT

The ultimate goal of quality or performance improvement in EMS is to assure high quality, appropriate and efficient patient care by identifying and correcting those areas in which improvement can be made. Recognizing that many quality concerns arise from system problems, the medical director should consider these areas first.

Nonetheless, occasional individual or group issues may be discovered. Remediation is the planned, structured process by which identified weaknesses or sub-standard levels of performance are rectified and/or improved, through the use of various educational and training techniques. The remediation process may encompass a wide range of goals and objectives ranging from simple improvement of clinical assessment and procedural skills to disciplinary action for improper behavior and practice. Therefore, once areas of deficiency are identified, it becomes essential to use this information to construct a program of remediation, which will improve the quality of care given by the individual, service or system.

Remediation

Remediation programs and options may be pre-planned as an integral part of the entire quality assurance process or may be “tailor made” to cope with those problems identified in the retrospective, concurrent, and prospective analysis process. Examples of remediation are discussed below and might include additional reading assignments or courses, as well as time spent with the medical director in the ED seeing patients under his or her supervision. This is particularly helpful when knowledge and skill deficits are more global. Sometimes outside counseling is needed, especially involving emotional issues, or drug and alcohol related problems.

During remediation, the legal rights of the individual need to be considered. Careful attention must be paid to the concept of due process and the right of the individual(s) to file a grievance.

The due process component of the quality assurance plan and grievance procedures should be in place before issues arise. At times, however, some component may need to be negotiated during the formulation of the plan with those personnel who will be the object of, or involved in, the quality assurance loop.

Although seemingly cumbersome and often unnecessary, the remediation program needs to be documented in all cases. Even in the simplest cases, it is worth having some notes or record of the case. Unfortunately, issues will arise with individuals where all attempts at remediation eventually fail. In the event of further necessary disciplinary actions, especially job termination, having documentation of attempts at remediation can be extremely helpful.

Each service should have a process for grievances, discipline, job termination, etc. Discipline and QI should not be mixed. It is best for the medical director to have no involvement in the actual disciplining or firing process of an employee.

MAINE EMS PROTOCOLS AND STANDING ORDERS

Protocols are the guidelines or templates that guide an EMS provider's actions during certain predetermined situations. Standing orders are that part of the protocol which can and should be done quickly and independently by the EMS provider without on-line medical control or direct physician order. Protocols are a form of medical direction and help set the tone for the entire system. They are an indispensable part of any EMS system and are also important educational tools and quality improvement instruments as well. Thus, one of the roles of a regional medical director assigned to the Medical Direction Practice Board (MDPB) is to periodically review them and ensure that they are up to date and appropriate.

See: http://maine.gov/ems/documents/Protocols_main_e.ms.pdf for specific protocols.

PROTOCOLS

Most protocols address patient care issues. They act as the standards for patient care and direct the EMS provider's actions during the assessment and treatment of certain complaints such as chest pain, trauma, or seizure. The protocols should include those aspects of the history, physical examination, and treatment that need to be acquired and documented by the EMS personnel. Ideally, they should be developed in a presenting complaint oriented fashion rather than a diagnosis-based format. This allows the EMS provider to follow the protocol as the patient presents rather than first determining the diagnosis and then deciding which protocol to use. Additionally, protocols detailing procedures and individual medications are also useful and serve as excellent educational and reference tools.

It is imperative that the protocols accurately reflect the abilities of the providers and the resources available to them. It is imperative that protocols include levels of treatment based on the provider levels available.

It is desirable to have the protocols current, in order to provide the highest degree of medical care to the community. As newer defibrillators are purchased with 12-lead ECG capabilities, protocol changes or a new protocol, which addresses the indications and use of the new modality, should be strongly considered. As national organizations such as the NAEMSP come out with position statements supporting end-tidal CO₂ detection post-intubation, and other specialties, such as Anesthesiology, utilize them as a standard of care, it is worth considering the position for the system if it performs intubations. It is also worth considering such alternate methods of ventilation as noninvasive Bi-PAP or C-PAP.

Protocols need to take into account regional differences and requirements as well. For instance, in remote areas the protocols might include reduction of a shoulder dislocation if extrication and long transports are the rule. In an area where several hospitals are located within a confined area, protocols need to reflect the hospitals' capabilities. It is desirable to transport patients to the most appropriate facility. An example of this is the trauma destination protocols. Other situations in which a specific facility may be optimal include patients with burns, strokes or pediatric patients.

Protocols may also be written to address certain specific issues. Usually, these include special situations such as patient refusal, DOAs, "physician on scene" or DNR ("do not resuscitate"). With the recently publicized deaths of several people in custody, it is important to have a policy and protocol dealing with use of mechanical and chemical restraints. As these situations can arise at any time, it is useful to have protocols in place so that they are understood by all prior to the need arising.

Uniform protocols allow improved communication with the hospital or medical control. However, the protocols must be clearly understood by all parties. All hospitals need to have a copy of the protocols.

STANDING ORDERS

Standing orders are that part of the protocol which can be done independently and without delay by the EMS provider without on-line medical control or direct physician order. Examples are the immediate defibrillation of a patient in ventricular fibrillation, or the intubation of a patient in severe respiratory distress. Another example is the administration of benzodiazepines to a patient who is actively seizing or glucose to an unresponsive hypoglycemic patient. These situations are time sensitive and the delay associated with obtaining on-line medical control may be detrimental to the patient.

Similarly, it would be appropriate that a chest pain patient receive oxygen, aspirin, and nitroglycerin, and be placed on a monitor before communication is established with the hospital.

Certain interventions, however, may be left to the discretion of on-line medical control even though they are part of the protocol. Thus, a chest pain protocol might indicate narcotic pain management as appropriate for the chest pain patient, but specify it as a medical control order.

As a sign of increased acceptance of EMS providers and recognition of their ability to function independently in many instances, some areas are moving to allow their services to operate strictly under protocol without having to check with on-line medical control. This effectively makes the entire protocol a standing order. Medical control must be available to function in a consulting capacity and services typically notify the hospitals of their transports and the status of the patient to allow the facility adequate time to prepare. This has the added advantage of freeing up on-line medical control personnel.

QUALITY IMPROVEMENT

The goal of all EMS units is to provide the best possible patient care. Clearly, written protocols should have clear expectations. By describing a stepwise approach to problems, protocols help insure a uniform approach. This helps identify deviations more easily and facilitates the QI process. In addition, the QI process can use protocol deviations as an educational opportunity and tool for standardization of delivery of care.

For instance, the chest pain protocol should include the administration of aspirin to appropriate patients with this complaint. Run review may reveal that this is not being done, or that there are tremendous delays. Further analysis should indicate if this is an individual problem or a widespread system problem. Then intervention can begin.

Standardized protocols allow for testing of knowledge and decision making capacity by setting the minimum knowledge necessary to function effectively. They also form a useful framework around which to design a continuing education (CE) program. An effective tool is to build CE around the protocols and incorporate protocol testing into the educational process. One method is to develop a rotating 2–3 year curriculum that incorporates the appropriate protocols and includes periodic tests covering these protocols. The alternative is to have a periodic test that covers the entire protocol at one time. This helps ensure that the EMS providers are not only knowledgeable, but also familiar with the actions expected of them.

Many services in the state of Maine have low call volumes, or providers that do not frequently perform EMS care. These providers may be volunteers, per-diem or part-time employees that do not have frequent patient contact. Services and providers with low frequency patient contact would be at the most risk for knowledge and skill base deterioration. It should also be recognized that many large volume services may encounter similar issues with EMS providers who are assigned to administrative and non-ambulance duties.

See also: Quality Assurance & Improvement. p. 57 - 63

PROTOCOL DEVELOPMENT AND IMPLEMENTATION

Protocols are the templates that guide the EMS provider's approach to a particular problem. They are useful as training tools as well as instruments to assess quality of care. They are an indispensable component of an EMS system.

The problem frequently encountered by a new medical director is one of outdated protocols needing revision and new protocols needing to be written because of new approaches or technologies.

The developmental process requires several steps. Assuming the intervention is valid, establishing the need for a new or revised protocol is the first step. Next, the available resources need to be considered. This includes labor as well as financial considerations. Finally, the protocol needs to be checked through the QI (Quality Improvement) or PI (Performance Improvement) process to identify areas that require attention.

The easiest approach to protocol development is to borrow established protocols, i.e. those available through other EMS systems, which have already been extensively reviewed, and then modify them to address specific local requirements.

In the State of Maine the Medical Direction Practice Board is responsible for the development of the Statewide EMS Protocols. These guidelines specifically apply to the regional medical directors and the MDPB.

IDENTIFYING NEED

The first step is identifying the need for a new protocol. Sometimes it will occur because of stakeholder demands. A new technology or approach is "discovered" and either the EMS providers are asking to do it, or the community demands it. There may be pressure from professional organizations, such as the recent American Heart Association push for improved stroke recognition by the EMS community. Alternatively, the push may come from the legislative arena. An example of this is the State-mandated trauma system with designated trauma centers. Finally, as physicians, an awareness of issues and trends may identify a need.

ESTABLISHING VALIDITY

As medical directors, the first priority is to establish that an approach or intervention is valid, appropriate and truly needed. This is frequently self-evident, such as the case with improved stroke recognition or the use of aspirin in chest pain. Examples of more challenging issues are the use of CPAP or BiPAP in the field, the performance of 12-lead ECGs, the use of prehospital thrombolytics, the use of muscle relaxants to facilitate intubation or allowing BLS providers to place advanced airways. The introduction of new devices for IV access or cricothyrotomy will also require discussion and a decision of their appropriate place in the EMS environment. Prehospital termination of resuscitations is also a challenging issue.

Establishing validity may require some literature research, discussion with colleagues and community leaders, and last but not least, the EMS providers and administrators. There is a move to make EMS more of an evidence-based practice. Good examples of this are contained in the following web site, <http://www.gov.ns.ca/health/ehs>, which includes the protocols for the province of Nova Scotia, Canada. The unique feature of these protocols is that they are linked to evidenced based reports. Unfortunately, the process is hampered by the scant amount of good prehospital research.

The fact that the approach or intervention is valid in one setting may not mean that it is appropriate or needed in the system. For instance, it may be appropriate to teach responders how to reduce joint dislo-

cations if they practice in remote wilderness areas, but not in an urban area. It is generally a good idea to know the number and types of runs that the service makes. If there are only two runs a year that would require the use of a new piece of equipment or intervention, then it probably is not needed. This is especially true if it is expensive and does not prevent significant morbidity or mortality. If transport times are brief, many prehospital interventions are also probably not justified.

AVAILABLE RESOURCES

Providers

While emergency catheterization and angioplasty may be the optimal treatment for many heart attacks, it is clearly beyond the scope of practice of any EMS provider. The administration of aspirin is not. More challenging are issues such as the administration of thrombolytics in the field, for which there is some literature support.

All protocols must be developed with the training and education of the EMS provider in mind. While some procedures are clearly indicated for in-hospital only, other procedures, like thrombolytics, may be acceptable for the field. EMT & Advanced EMT providers have a specific scope of practice which would preclude them from thrombolytic administration. Paramedic education provides a much wider and deeper knowledge base that would allow for the usage of thrombolytics with additional and specific training.

It is important to assess the need for additional training, testing, and supervision for the use of any new medication or intervention. This is especially true for complex concepts and interventions. It is relatively easy to teach an EMS provider how to use a pulse oximetry unit, but somewhat harder for him or her to understand some of its limitations. A little more advanced and difficult are the use of capnography, and its correct interpretation, and the introduction of a 12-lead ECG program into the assessment of chest pain patients. If the interventions and equipment are not used frequently enough, it may be very difficult to maintain skill level and enthusiasm. Interest will tend to wane rapidly.

Medical Director

The medical director should be considered as a resource as well. S/he should consider the investment in time, energy, and money needed to make the intervention successful. The more complex the intervention or protocol, the more demanding it will be for the medical director. An inability to commit the necessary time and energy may doom the entire project, and any future ones, to failure. The medical director should also be careful not to make so many changes, that in the end, none get done!

Equipment

In addition to the cost of training and retraining, there are material and equipment costs. This has recently been an issue with amiodarone, which costs considerably more than lidocaine. It is certainly a consideration if prehospital thrombolytics are being considered.

Cost is also an issue with many of the newer defibrillators that can perform a 12-lead ECG. Although expensive, if an EMS agency transports many patients with chest pain, this may be a worthwhile investment. In addition, if there are long transport times during which the care provided might potentially impact subsequent ECGs obtained in the ED, it may be a very desirable purchase.

An emerging intervention is the use of BiPAP or CPAP in the field by EMS providers for pulmonary edema and respiratory distress. Use of these technologies requires additional equipment and training. Nonethe-

less, if there is a large nursing home or elderly population it may be a good investment, especially if there are longer transports during which the patient may derive benefit from the treatment.

BUY-IN AND IMPLEMENTATION

This process is easiest if there has been input from all of the participants (*EMS, financial representation and leadership*) prior to implementation. By instituting a partnership early in the process, the likelihood of success increases because of the ownership and vested interests of the participants. Implementation requires educating the EMS personnel to the new intervention or approach. The protocol needs to be clearly understood and the necessary skills need to be reviewed and tested before the new protocol is implemented.

REVISION OF A PROTOCOL

As stated earlier, it would be unusual to arrive in a situation where there are no existing protocols. While most of the above discussion revolves around developing new protocols or the introduction of new technology and medications requiring significant protocol changes, often the job is one of fine-tuning the existing protocols.

Another area in which an EMS system's protocols may be deficient is prehospital pain control. Recently, attention has been focused on the management of pain in the emergency department. EMS has not been spared this scrutiny either, and recently several articles have appeared in the literature emphasizing the need for prehospital pain control. Many areas are now adding or emphasizing better pain control in their protocols.

DISCONTINUATION OF A PROTOCOL

Periodically, as interventions and research attempts to determine efficacy come under scrutiny, a protocol may be deemed incorrect or actually potentially dangerous. This requires immediate attention by the medical director. Recent examples of this include the discontinuation of use of Procardia (nifedipine) to reduce blood pressure as well as the use of Military Anti Shock Trousers (MAST). The overuse of lights and sirens for emergency transports is another example.

Discontinuing an intervention is often more difficult than implementing a new protocol. In place of the enthusiasm that one might encounter with something new, there is often resentment and lots of questions. The discontinuation process should be the same as the implementation process with emphasis on education and QI.

SUMMARY

Protocols are an indispensable component of an EMS system. They are templates that guide the EMS provider's approach to a particular problem. Useful in training, they also serve as an instrument to assess quality of care. As new technology and medications become available, new protocols need to be written and old ones revised. This requires determining the validity as well as the utility of the intervention for the system.

Consideration of local needs, as well as local resources, is an important part of the procedure. Finally, the new protocol sets a new standard that needs to be tested through the QI or PI process.

Appendix A

DISASTER PLANNING

A medical disaster occurs when the destructive effects of natural or man-made forces overwhelm the ability of a given area or community to meet the demand for health care.

In the United States, we have been fortunate that large-scale disasters are relatively rare by world standards; however, natural disasters such as hurricanes, tornadoes, and earthquakes, as well as manmade and terrorist events such as 9/11, Oklahoma City and West Texas have changed our awareness levels. The number of casualties is less important than the surge in medical needs, which overwhelms local resources and is the focus of disaster planning.

Disaster planning is a multidisciplinary systems task that should involve the local Emergency Management Agency, fire department, EMS, hospitals, and law enforcement, as well as several state and federal agencies, depending on the incident. An all-hazards disaster planning approach is a complex yet absolutely necessary process. Plan flexibility must be maximized to address the many types of hazards and casualties that can be anticipated. Threat assessments should be undertaken by region, categorizing the most likely types of disasters to occur for a given area. Response plans should be tailored to those most likely scenarios. Secondary, less probable threats can be addressed as a next-order plan once the more probable disasters have been addressed. A key element of planning for disasters is the understanding of human, logistic and technical assets available within the regional infrastructure, and a sound understanding of the incident command system, which is implemented to effectively deploy those assets, in time of crisis. Additionally, regular familiarization with the disaster plan, and training in implementing a response is critical; studies consistently demonstrate the value of emergency preparedness, a priori planning, and exercise of disaster plans with continuous feedback and revision of the basic plans to ensure optimal response. Multi-agency training and coordination should be stressed and funding for such cross-discipline exercises must be appropriated.

CLASSIFICATION

Disasters are often classified by the resultant necessary response.

Level I – Local emergency response personnel and organizations are able to contain and deal effectively with the disaster and the recovery phase.

Level II – Regional support is required and coordinated with surrounding communities.

Level III – Local and regional resources are overwhelmed requiring state and/or federal assistance.

Disasters can also be classified based on whether they occur at a specific point of time and space (static) or if they are ongoing and changing (dynamic). They can also be classified as disruptive (interferes with ongoing routine operations, but operations can be restored with augmentation) or paralytic (the entire healthcare system must be reconstituted).

Mass casualty incident (MCI) versus disaster

Mass casualty incidents involve injury and death to people. Disasters involve both human morbidity and mortality and critical infrastructure damage or devastation, including building collapse, housing or transportation loss, food or water supply contamination or destruction, etc. By definition, disasters also overwhelm responding agencies, and disrupt public and private operations, and activities of daily living for a prolonged period of time. Most incidents in the U.S. are probably more technically MCI's as opposed to true disasters; however the planning and principles of response overlap significantly.

PHASES OF DISASTER RESPONSE

Mitigation

Taking preventative action before an event is the most important component of any effective disaster response. The destructive effects of many disasters can be mitigated before the actual event through forethought and preparation. Construction of earthquake resistant buildings, early warning systems for tornadoes and evacuation plans for hurricane-prone areas are examples where the reduction in overall risk of injury and destruction would be considered a part of the community's disaster plan.

Planning

Planning is crucial to any effective disaster response. The plan should be agreed upon by all participating response agencies and must address common goals and the specific duties of each agency. The plan must also include a description of how, when, and by whom the plan can be activated. Key considerations in planning include: identifying hazards in the community, such as manufacturing, storage and transportation of hazardous material; fire threats, and population base at various times of the day. The plan should include an inventory of resources that may be needed, including:

- Medical equipment and reserve supplies
- Patient movement: ground, air, water
- Heavy equipment, power generators, and lighting
- Communications and backup resources
- Law enforcement
- Specialized rescue services
- State and federal agencies
- Mutual aid agreements with neighboring resources

Response

Disaster response is a cyclic, not a linear process. Therefore, although the phases are listed in order, there is no "start" or "end" to the disaster planning process.

The response phases of disaster management can be broken down into activation, implementation, and recovery.

Activation: Notification

During the early response to a disaster, various organizations will need to be alerted to the event. Frequently it is advisable to place a number of agencies on "stand-by" in the event they are actually needed. This early warning may increase their response time to the scene. For some weather-related disasters (hurricanes) relief agencies can be alerted hours to days in advance, thus making them available almost immediately after the incident. In addition to notifying potential responding agencies, the plan should include a structure for notification of the general public and methods to direct individuals to areas of safety.

It is critical to incorporate a public information strategy and to plan media notification strategies to convey a clear, concise, and consistent public message to allay fear, direct and organize the populace, and provide timely and accurate updates on rescue and relief efforts.

Implementation: Scene assessment and Incident Command System

All major incident responses should follow the Incident Command System (ICS) structure (see page 84). Once the decision has been made to implement the plan, the prearranged command structure should be established and lines of communications opened. A rapid, initial scene survey is performed to determine what equipment and resources will be needed. Staging areas should be established and all incoming units directed to that location. The command center will then dispatch resources to the scene as needed.

Incoming units should limit their communication with the command center until called upon, so as to allow the command center to focus on the overall response. The Incident Commander must balance often competing priorities of preservation of life, scene safety, minimization of further damage or destruction, and above all, optimal safety for rescue personnel.

Implementation: Triage and stabilization

Triage involves categorizing patients based on their immediate and anticipated medical needs, and estimating survival probabilities. The fundamental precept of triage is that the needs of the many outweigh the needs of the few. One person should be assigned the job of Triage Officer, responsible for the rapid sorting of patients. Depending on the size of the disaster, the numbers of potential patients, and the geographical location, it may be necessary to divide this task among several individuals, all working under the oversight of the Triage Officer. All emergency rescue personnel should be trained in the principles of triage, so that regardless of who the first arriving units are, they will understand and initiate this process. Triage does not have to be performed by the rescuer with the highest level of training, and in fact it may be best to keep the more advanced level practitioners available to treat individual, critical patients. Triage must be a dynamic operation, repeated at every level, with patients receiving multiple evaluations during the response. The most reliable and reproducible method currently taught is the Simple Triage and Rapid Treatment (START) method which is the system used in Maine

See also : Triage p. 76

Implementation: Transport and Communications

The Transportation Officer has the overall responsibility for moving patients from the scene to the hospital. This person needs to be aware from the beginning, of the number of potential patients expected, the triage categories and the receiving facilities' capabilities. Communication between the Transportation Officer, Triage Officer and on-scene treatment unit supervisors is vital, and should be facilitated by a designated Communications Officer. The Communications Officer is also charged with the responsibility of notifying all potential receiving facilities of the incident type and expected duration of operations, ascertaining their immediate and anticipated medical support capabilities, and periodically updating these facilities and the Incident Commander, as conditions change. Dynamic, bidirectional communication between receiving medical facilities and the Communications Officer allow periodic re-evaluation of available assets and help to ensure that no single medical facility is overwhelmed.

When prioritizing transports, the Transportation Officer must remain flexible, sometimes assigning a critical with a non-critical patient in the same ambulance. It is not uncommon for the closest hospital to be overwhelmed with low acuity patients who self-evacuated prior to the arrival of EMS. It may be necessary, therefore, to bypass the closest hospital with critical patients.

Recovery

The recovery phase involves the returning of not only the rescuers to their usual state of readiness, but also the community to some semblance of normalcy. Utilities are restored, families reunited, cleanup operations are initiated and the infrastructure begins to operate effectively. Operations at a disaster scene can be very stressful, therefore Critical Incident Stress Management (CISM) teams or other psychological support systems should be activated early on in the response. For operations that will take a prolonged period of time, it may be necessary to bring CISM members to the disaster site to monitor for signs of a stress reaction in the rescuers. In addition, CISM members must be available afterwards to handle delayed reactions that may manifest themselves months and years after such a critical incident.

Mitigation

After recovery from the disaster, the lessons learned should be reviewed and applied in the renewed cycle of mitigation, planning, etc.

INCIDENT COMMAND SYSTEM

The Incident Command System (ICS) is a model system for command, control and coordination of a response involving multiple agencies as they work toward a common goal. ICS was developed in the 1970's in response to a series of wildfires in Southern California. At the time, multiple authorities from local, municipal, state, and Federal agencies were attempting to work together, but numerous problems were noted. These included ineffective communications, lack of a common command structure, lack of accountability, and the inability to coordinate the available resources. As a result of these problems, the Fire Resources of Southern California Organized for Potential Emergencies (FIRESCOPE) was developed. This was the first ICS and set the groundwork for current ICS structure. Despite the national success and acceptance of ICS, OSHA only requires its implementation for use at a hazardous materials incident.

The National Fire Protection Agency (NFPA) requires all departments to establish written procedures for ICS and that all departmental members shall be trained in and familiar with the system (Standard 1500). The Incident Command System has five major components: Command, Planning, Operations, Logistics and Finance/Administration.

Command

The Incident Commander is the person who has overall responsibility of the scene. The most senior first arriving responder will usually fill this position until a previously determined commander arrives. Depending on the size of the event, the Incident Commander may need to delegate authority for specific responsibilities to other members of the command staff. Among the responsibilities of the commander include: establishing command, ensuring responder safety, assessing incident priorities, developing operational objectives, managing resources, coordinating outside agencies, and authorizing the release of information. Unified Command allows for a lead representative of each agency to work together. The representative of the agency having the most prominent role (law enforcement, fire, rescue, medical, etc.) takes the lead until another agency becomes more prominent and takes over the lead role.

Planning Section

The Planning Section is responsible for collecting and evaluating information that is needed for the preparation and implementation of the action plan. They are also responsible for ensuring that all mutual aid agreements are activated. For smaller events, the Incident Commander is responsible for planning. For prolonged events (typically after the first 12 hours), the Planning Section is responsible for planning.

Operations Section

This section participates in planning, carries out the tactical objectives, modifies the plan as dictated by the conditions of the incident (*human, structural, weather, etc.*), and accounts for personnel. Operations may actually have several branches depending on the nature of the event including: EMS, fire, law enforcement, hazmat teams, specialized rescue, governmental entities, rescue and charitable organizations, etc. In a prolonged event, the Operations Section is typically executing plans written by the Planning Section during the last operational period.

Logistics Section

This section's main responsibility is to support the incident responders by providing supplies, equipment, facilities, and services as needed. This section must anticipate the needs of the responders. For events with extended operations, this section has a vital role in the supply of food, water, lighting, on-field communications, and health care for responders.

Finance/Administration Section

The tracking of costs for reimbursement is the main responsibility of the Finance Section. For large-scale events, especially where there is the possibility of a presidential disaster declaration, proper and accurate tracking of expenses is vital for appropriate reimbursement from federal sources. Cost accounting is also necessary for state reimbursement to local entities.

Through a well-defined and organized command structure, the ICS has proven to be very effective. Using common terminology, a modular organization, integrated communications, a manageable span of control and comprehensive resource management, the ICS can be applied to any type of disaster/mass casualty incident.

The basic tenets of the command structure can be applied at smaller mass casualty events up to the largest natural disasters. Its dynamic structure can expand as the incident unfolds.

NATIONAL DISASTER MEDICAL SYSTEM

The National Disaster Medical System was developed in the early 1980's to provide the nation with a federal response to disasters here in the United States. The system is a collaborative effort involving the Departments of Health and Human Services, Defense and Veteran Affairs, the Federal Emergency Management Agency, state and local governments and the private sector. There are three major components to this system:

1. Medical assistance to a disaster area in the form of Medical Support Units (MSUs), Disaster Medical Assistance Teams (DMAT), Special Teams, medical supplies, and equipment
2. Evacuation of patients to designated locations throughout the U.S.
3. Hospitalization of victims in a national network of non-federal medical facilities

The System was designed to care for as many as 110,000 victims, in more than 1,800 hospitals, during and after any incident that exceeds the medical care capability of an affected state, region or Federal health care system. Its intent is to respond to natural disasters, refugee influx or military casualties evacuated to the U.S. There are currently over 2,500 acute care hospital beds available in over 100 metropolitan areas.

DISASTER MEDICAL ASSISTANCE TEAMS (DMAT)

A DMAT team is a group of medical personnel and support staff, including administrative personnel, designed to respond to the site of a disaster. They are meant to be a rapid response team that assists local medical care until the situation is resolved or other contracted resources are mobilized. Each team has a sponsoring organization, such as a major medical center or public safety agency, which organizes the team, recruits and arranges training, and coordinates the dispatch of the team. When a team is dispatched to a site, they are expected to sustain themselves for 72 hours while providing care.

Their responsibilities vary depending on the nature of the disaster. Responsibilities include: triaging patients, providing limited on-scene medical care and preparing patients for evacuation. In addition, they may be needed to provide primary care or augment local overloaded health facilities, or to meet the on-site medical needs of the disaster/MCI responders.

In addition to DMAT teams, NDMS has developed specialized teams to respond to specific types of disasters. Examples include: Disaster Mortuary Operational Response Team (DMORT), Veterinary Medical Assistance Teams (VMAT) and teams specifically trained to deal with burns, crush injuries, search and rescue, etc.

MILITARY

The National Guard is a state asset that may be called into action in the event of a disaster, especially one that entails or involves Weapons of Mass Destruction (WMD's).

The Governor of the State of Maine has the ability to activate these forces, and use their assets for the betterment of the state. Soft assets such as personnel can include medical technicians, paramedics, nurses, physicians, and surgeons. Hard assets such as shelters, portable operating theaters, decontamination equipment, military ambulances, and even air transportation can be utilized if needed.

DISASTER DRILLS AND EXERCISES

Developing and maintaining a disaster plan, and knowing who to call for help, is essential in disaster preparedness. Equally important are periodic drills that allow the medical director to test the system and the plan. Frequently this will identify problems before a real disaster occurs and it gives responders a chance to drill together. Disaster exercises can and should take place at several different levels, from tabletop exercises to real drills involving the individual EMS service and regional drills involving hospitals. Hospitals are required by JCAHO to have two drills a year and at least one of these must involve an inflow of victims into the ED. If the community holds any EMS disaster drills, the hospital must participate in at least one a year as well. This is a wonderful opportunity to drill multiple units and the interface with the hospital. The FAA mandates that airports have periodic disaster drills, which is a great chance to work with different public safety agencies such as the police or FBI.

Such drills are most useful when they are realistic. Drills need to take place outdoors and in an environment similar to that in which responders will be working in a real disaster. As much as possible, real bodies should be physically moved, and equipment and pre-established communications networks used. Moulaged victims are better than uninjured victims with cards around their neck describing their injuries. Different EMS responders should be periodically rotated through different roles within the incident command system previously described. This familiarizes them with the responsibilities of that position, allowing them to serve in that role as needed and to interact with that position when serving in another.

The responsibility of the medical director is to encourage drills and practice, and to help create a convincing scenario with patients who have appropriate injuries. Ideally the medical director is present during

the drill to observe individual assessments, treatments, and the triage of victims. S/he can then provide meaningful feedback to the responders and get a better idea of the capabilities of their EMS providers and services.

TRIAGE

Triage is the process of sorting patients based on injury severity and the survival probability with fixed resources. Since this is one of the first actions taken at the scene of a disaster/MCI, all personnel must be trained in the principles of triage. Physicians, nurses, and other health care professionals should be discouraged from responding to the scene unless they have trained with field personnel and understand the local plan, ICS and their roles. The person in charge of triage does not necessarily need to be the person with the highest level of training on the scene. The triage officer, however, must have a strong medical background and understand the EMS system's limitations and the general survivability of injuries. In some systems, there may be the opportunity to activate a physician triage team from a local hospital, but once again, this may drain the local hospital of much needed resources. If this type of system is in place, initial triage should not wait until the arrival of this team.

A major component of triage is to label patients to assist in determining who receives care and in what order. Common triage categories include

1. Red - immediate care and removal
2. Yellow - delayed care until "reds" cleared
3. Green - "walking wounded" lowest priority
4. Black - dead at the scene or not survivable injuries based on current resource availability

The most widely used triage system is the **START** system, which stands for **Simple Triage and Rapid Treatment** system. This system focuses on:

1. Ability to walk
2. Respiratory effort
3. Pulses/perfusion
4. Neurological status

The initial step is to separate out the lowest acuity patients. Walking wounded patients are able to move on their own to the low acuity holding area. Typically, these patients (among those who have not already self-extricated or left to get help) will be given a "green" tag signifying "low priority" or "hold." Thereafter, the role of triage is to get those individuals who need immediate care to the high acuity area where life-saving intervention can be rapidly deployed. These patients are typically the "red" category. These patients will also be the first to be evacuated to tertiary care centers or the closest most appropriate facility. Patients are assessed initially on ability to breathe. If they are not breathing, open the airway. If respirations resume, they will be labeled "red" as a high priority. If they do not resume breathing, they are labeled "black" and are set aside. Any patient with a respiratory rate over 30 should get a "red" tag. Patients with a respiratory rate less than 30 need to have their circulation assessed. If there is no radial pulse or if the capillary refill is greater than 2-3 seconds, they will be assigned to the red category.

For those patients with a respiratory rate less than 30 with a palpable pulse, the next step involves a brief mental status and motor exam, having them squeeze the examiner's hands. If they can do this, they are labeled "yellow" for delayed transport, but if they are unable to, they should be labeled "red." Attempts

may be made to control life-threatening bleeding at any point during the triage process, but any technique used must be one such that the patient can be left unattended so that the triage process can continue.

One significant limitation of START triage and all other disaster triage processes is that they focus on traumatic injuries. Keep in mind that a patient involved in a Mass Casualty Incident (MCI) who can walk, but is experiencing an acute STEMI from the stress, still has a high acuity, time sensitive disease process, and is in fact likely a higher priority patient than any patient triaged yellow. Use the START process to do initial sorting, but be aware of the limitations of this type of tool.

Once patients are categorized, they should be moved to the appropriate holding/treatment area to begin treatment and await transportation to the hospital. Upon arrival in the holding area, each patient should be re-evaluated and his or her status changed, either upgraded or downgraded, as needed. Each treatment area should have a unit officer overseeing his respective area. This officer needs to be in communication with the Incident Commander and Transport Officer to ensure adequate supplies, personnel, and transportation is available.

Triage is a very demanding position where time is of the essence. For incidents where the casualty count is high, several responders may be needed to initiate triaging; however, there should always be one person who is recognized as the Triage Officer to whom everyone reports. In addition, numerous commercial tag systems are available to assist in labeling patients and keeping track of the number of patients treated. How patients are positioned in the holding area is also important. One effective method for placing patients is the CORE method (Casualty Orientation for Rapid Exam). This places the patients in a semi-circle with their head and torso toward the center of the circle. This method allows a single rescuer to evaluate a patient's airway and breathing rapidly, then move to the next patient in an efficient manner. It also allows prevents having to step over one patient in order to effect treatment or transport, as is the case when patients are stacked like dominoes.

MAINE EMS MASS CASUALTY/DISASTERS/HAZMAT PROTOCOL

GENERAL RESPONSIBILITY FOR DECEASED PERSONS: The Office of Chief Medical Examiner is responsible for deceased victims of mass disasters including identification and removal from the scene. The Office of Chief Medical Examiner (1-800-870-8744, restricted emergency call number) should be informed immediately of any multiple fatality situations.

1. **BODIES SHOULD BE LEFT IN PLACE AT SCENE** except when they must be moved to preserve them from destruction or when they block access. The resting place of the victim may be critical for identification of the body and/or reconstruction of the incident. They can be tagged as fatalities to prevent other medical personnel from repeating examination.
2. **IF DEATH OCCURS EN ROUTE TO THE HOSPITAL**, the body need not be returned to the scene, but can be brought to the hospital or other suitable storage place as determined by distances and needs of other patients in the ambulance. If the body is left anywhere other than the hospital or designated temporary morgue, the body should be tagged and the Office of Chief Medical Examiner should be advised.
3. **THE SITE A VICTIM IS REMOVED FROM SHOULD BE NOTED** on a tag, along with the name and agency of the person who removed him, whenever removal is needed and in cases of death after removal. Such information may be critical for identification of the body and/or reconstruction of the accident.
4. **IF AN IDENTIFICATION OF A PATIENT IS MADE**, a tag with at least the name and date of birth of the patient/deceased, along with the identifier's name, relationship, address, and where he/she can be located, should be put on the body.

5. **PERSONAL PROPERTY SHOULD BE LEFT WITH THE BODY** including clothing removed from a patient if the victim dies. Nothing should be removed from those already deceased.

Consistent with New England EMS Council MCI Management the action priorities for the first medical crews arriving on the scene are:

1. Assess and avoid exposure to existing dangers
2. Notify dispatch of type of MCI and estimate of number and type of patients
 - a. Request EMS, fire, police assistance
 - b. Request hospital notification
3. First ambulance or other vehicle with medical frequencies becomes EMS command vehicle – locate near fire and police command vehicles. Strip equipment/supplies – place in equipment area (near planned patient collection/treatment area).
4. Designate, in the following order, the following positions as qualified personnel become available:
 - a. **EMS CONTROL OFFICER** – Reports to Incident Commander. Responsible for overall patient triage, treatment, and transportation. Procures EMS back-up, supplies, equipment, transport vehicles as needed, supervises and assigns all other medical personnel.
 - b. **PRIMARY TRIAGE OFFICER** – Rapidly assesses all patients then assigns personnel to provide treatment to those patients in most need of immediate treatment who will most benefit from immediate care with the resources available. Treatment is limited to:
 - i. Bleeding – rapid pressure dressing or tourniquet if severe
 - ii. Airway – reposition patient
 - iii. Shock – Keep the patient warm
 - c. **SECONDARY TRIAGE OFFICER** – Rapidly tags all patients, or assigns personnel to do tagging (with METTAGS, SMART Tags, or other locally approved Triage System) and, supervises immobilization after classification, and oversees transfer to collection/treatment area.
 - i. Tag categories are:
 1. **RED (I)**: Conditions requiring immediate transport by ambulance to prevent jeopardy to life or limb and which will not unduly deplete personnel/equipment resources (examples: progressive shock, major blood loss, major multiple injuries, severe respiratory distress. Cardiac arrest – only if personnel can be spared).
 2. **YELLOW (II)**: Not requiring immediate transport to prevent jeopardy to life or limb, but eventually will require ambulance transport to hospital for attention.
 3. **GREEN (III)**: Minor conditions probably not requiring ambulance transport to hospital.
 4. **BLACK (O)**: Are obviously dead, or dying from lethal injuries, or requiring CPR when no personnel available to do so without compromising other patients.
 - d. **TREATMENT OFFICER** – Sets up / supervises patient collection / treatment area.
 - i. Reassesses and retags (if necessary) patients, assigns patients and personnel to treatment areas.

- ii. Prioritizes for transport.
 - iii. Coordinates with Loading/Transport officer to make single radio transmission to receiving facility (pt. ID#, METTAG priority, nature of injury, ambulance, and ETA ONLY).
- e. **LOADING OFFICER** – Stages ambulances in holding area.
- i. Instructs crews to put all available equipment in equipment area. Assigns patients to vehicles.
 - ii. Directs drivers to hospital(s).
 - iii. Instructs not to contact hospital unless OLMC required for condition change.
 - iv. Notifies hospitals, or coordinates communication with hospitals regarding arrival times, patient ID#'s, and destination of all transporting vehicles.

SUMMARY

It is important to realize that primary triage is a crude tool for initial sorting of patients. Secondary triage is very important as it allows a more refined categorization of patients, as well as movement of patients between triage categories.

There is often an emphasis on the speed with which MCI patients are transported from the scene, however it should be clear that the goal is not to simply move the disaster from the scene to the receiving emergency department(s). Thoughtful secondary triage, understanding the role of the transport officer in regulating the timing and flow of patients to prevent ED overload, knowing what hospital resources are available locally, and understanding the role of EMS in the greater healthcare system, will all contribute to creating an overall smooth and uniform transport and care process for patients. This in turn benefits EMS, hospitals, and most importantly, patients.

Effective disaster or MCI management starts with preparation, planning and practice. The debriefing or after-action report, which looks at lessons learned, is the best practice for process improvement. Once a plan is developed, there must be full cooperation from everyone involved, including the first responders, the hospitals involved in receiving patients, and state and federal authorities. This cooperation must be bidirectional and must continue even after the incident is declared “over” to facilitate analysis, future planning, and reimbursement for costs incurred in rescue and cleanup. The plan must be practiced frequently so that the plan developers and the responders are familiar with it. A careful drill and exercise of planned elements along with a commitment to process improvement will identify and rectify flaws in the plan.

Appendix B

Wilderness EMS

Wilderness EMS Medical Direction

The word “wilderness” may evoke images of vast, unspoiled forests, but from a medical perspective, wilderness is less about the setting and more about the time to definitive care, and the ability to bring medical care to the patient. Although distance may play some role in defining time to care, the fact is that a patient 100 feet into a cave right next to a hospital may take 24 hours to evacuate while a patient 100 miles from the nearest trailhead may be able to be extracted by helicopter and be at a tertiary care center in under two hours. Therefore, wilderness for the purposes of wilderness EMS is usually defined as any location where evacuation to the nearest vehicle accessible trailhead is greater than 1 hour. This definition takes into account both the potential difficulties in evacuation, and the potential challenges of bringing medical care (providers and supplies) to the patient, particularly if some supplies are not brought in initially.

Often times a physician will be asked to assist with a wilderness EMS program because that physician is known to love to hike, camp, spend time in the woods, etc. Having that background of an understanding of the local wilderness environment is highly desirable. Unfortunately, knowing the environment isn't the same as practicing medicine in the environment, so it is incumbent on physicians in that role to learn how medicine is practiced when everything is typically carried in. As important as large volume IV fluids for a burn patient may seem at first glance, the thought of having to hike in 10 liters of normal saline 20 miles into the woods makes aggressive ondansetron and oral hydration therapy look pretty attractive. It's also very difficult to bring in enough portable oxygen tanks to provide 15 LPM via a non-rebreather for a 6 hour carry out. On the other hand, for a patient with an open tib-fib fracture, a shot of IM cefazolin, a shot of IM morphine, and good splinting technique may turn a carry out into an assisted evacuation. In short, gathering a realistic perspective of the possibilities for the environment is a critical skill for the physician providing oversight for a wilderness medical team.

The role of the medical director in wilderness medicine depends almost entirely on the nature of the wilderness EMS service. Broadly, the three types of wilderness EMS services are: Search and Rescue (SAR) teams that provide wilderness first aid or wilderness first responder level care, traditional EMS services that also provide limited wilderness EMS response, and wilderness medical response teams that provide highly advanced life support levels of care.

For the SAR team that also serves as wilderness first responders, the role of the medical director is relatively straight-forward. From a legal perspective, these providers typically are not licensed at an EMS level and are not practicing as members of an organized EMS service. Most of them do not routinely provide medical care and rarely have a chance to practice their skills. Although basic, the skills are lifesaving and may markedly impact morbidity. Therefore, the most important roll for the medical director is to bring practical experience into the training and exercises for team members, set up realistic medical exercises and perform post-incident critiques. The team members are not primarily medical providers, even in their team roles, but want to do the best they can for the victims, so will generally appreciate any feedback if couched in a constructive and helpful way.

For the physician serving as a medical director for an EMS agency that performs wilderness EMS, this is also generally a relatively straight forward process, at least in Maine. For a provider to use the WEMS expanded protocols, the provider must have successfully completed one of the specific WEMS courses approved by MEMS. At that point, the provider may use those additional protocols (which are very limited) in the wilderness setting. Technically, no medical director is necessary. Nonetheless, the experienced WEMS physician can provide practical input into training scenarios and assist the providers in practicing skills that they will rarely use. Additionally, as with any EMS system, quality assurance oversight of these cases will improve future care.

EMS services may wish to provide more advanced care as a wilderness medical team. In this case, the medical director must be trained and experienced in providing medical care in austere environments and preferably in the wilderness environment. The medical director is also likely to be a clinical member of the team or at least to be available to provide response support. In Maine, any EMS service can expand its scope of practice through the specialty program process. The medical director plays a key role in this application process and must support the application, training, and quality assurance. If approved, the team will have the ability to provide sophisticated care in that wilderness environment. This care may include antibiotics, limited sedation for advanced orthopedic reduction techniques, invasive management of hypothermia, or beyond.

At the current time, wilderness medical directors in Maine will provide oversight to either wilderness SAR teams or EMS services providing WEMS care within the scope of the MEMS protocols. As such, the medical director must have a familiarity and comfort with WEMS care. There are a number of resources that may be useful. Taking a wilderness EMT class from an educator such as Wilderness Medical Associates (WMA), Stonehearth Open Learning Opportunities (SOLO), CDS Outdoor School, Wilderness Medicine Institute, Wilderness Medicine Outfitters, or any other reputable company is a good start and some offer training specific to the medical director for a WEMS provider. Participating in exercises, teaching and reviewing skills, and doing case presentations, are good ways to get to know the providers. In addition, honing current outdoor skills and developing additional proficiencies improves the medical director's general competence in the wilderness environment. Finally, the wilderness medical director needs to get out with the providers in the wilderness and develop a collegiality and mutual respect.

For the physician who enjoys the outdoor environment, becoming a wilderness medical director is one of the most enjoyable and rewarding roles possible. However, to provide good service to the WEMS providers and patients, the medical director must be proficient in wilderness medical care and comfortable in the wilderness medical environment. Of course, developing this proficiency and comfort is also a rewarding and enjoyable experience in and of itself.

Appendix C

Tactical EMS

The tactical EMS medical director should have authority over the clinical and patient care aspects of the tactical operation of the service, with the specific job description dictated by local and environmental needs, and participating public safety authorities. The job description should include those of the local medical director with the addition that the tactical EMS medical director should be aware of the environmental conditions and hazards of a tactical scene with the needs for personal protective equipment and prolonged duty of EMS, as well as police personnel.

By definition, many scenes will be related to terrorism, and there is a special need for knowledge of the weapons used by terrorists and weapons of mass destruction. Knowledge must be available to each provider on the hazards of WMD, and the basics for dealing with weapons such as biologic and chemical agents. The medical director will be expected to function as advisor to out-of-hospital personnel and as a resource to the community. Personnel must be able to function primarily by visual and offline control, and protocols must be established in advance for the care and evacuation of casualties, in scenes of various levels of security. Certain areas of expanded scope will be necessary and should be taught, tested, and approved by the medical director with concurrence of the regional or state director as well as the lead agency for the state. These areas of expanded scope should be encouraged, as the care will be emergent and, even in urban areas, assumed to be out of the scope of normal EMS service.

Appendix D

Death Situations for Emergency Medical Responders

PURPOSE: Development of DEATH SITUATION PROCEDURES by Emergency Medical Services.

PREPARED JOINTLY BY: Attorney General, Office of Chief Medical Examiner, and Maine State Police.

GENERAL AIM: Preservation of scene, including body as found, for investigative purposes, within practical limits consistent with the role and responsibilities of emergency medical care givers.

Death Situation Guidelines

- I. Preserve life: While forensic guidelines emphasize that the scene should not be disturbed, the first and most important course of action is to follow all usual procedures to ensure the preservation of life.
- II. Once Death is confirmed: If the decedent is clearly dead, the body should not be moved or disturbed unless there is a danger that the body may be lost or further damaged.
 - a. Maine statutes do not require a pronouncement of death.
 - b. The scene should be secured and left undisturbed.
 - i. If the police are present, they should take charge in order to determine whether the case falls under the jurisdiction of the Office of Chief Medical Examiner (OCEH) or may be certified by the private attending physician.
 - ii. If there is no police officer present, EMS should call the local police or call the OCEH directly to report the case, so that a determination may be made as to the need for further investigation into the cause and manner of death. OCEH emergency line to report deaths: 1-800-870-8744.
 - iii. If it is determined not to be an ME case, try to accommodate the family's request or contact OLMC for guidance.
 - c. Tubes and Medical Devices should be left in place. Certain reusable equipment may be removed to resupply the ambulance; however written documentation of any such action must be given to investigators.
 - d. Any clothing or property should be left undisturbed.
- III. What is a Medical Examiner (ME) case?
 - a. Any suspected HOMICIDE
 - b. Any suspected SUICIDE
 - c. Any death involving any ACCIDENT or INJURY
 - d. Any death of a CHILD

DOA – Protocol for dead on arrival

When a DOA is encountered, the EMS personnel on scene should avoid disturbing the scene or the body as much as possible, unless it is necessary to do so in order to care for and assist other victims. Once it is determined that the victim is in fact dead, the EMS personnel should move as rapidly as possible to transfer responsibility or management of the scene to law enforcement. The following may be used as guidelines to support the determination that a victim is DOA

1. There is an injury that is incompatible with life (*i.e.*, *decapitation or burned beyond recognition*).
2. The victim shows signs of decomposition, rigor mortis or extreme dependent lividity.
3. The patient is an adult with an unwitnessed cardiac arrest and is found in asystole.
- 4. If there are valid DNR (Do Not Resuscitate) orders, see DNR protocol.**
5. If the patient has a history of terminal disease, the family refuses resuscitation and a physician is willing to sign a death certificate.

DO NOT RESUSCITATE (DNR) GUIDELINES

- I. When to Start Resuscitation:
 - a. As soon as the absence of pulse and respiration is established.
- II. When Not to Start Resuscitation:
 - a. All Patients: Any patient displaying obvious and accepted signs of irreversible death such as rigor mortis, dependent lividity, decapitation, decomposition, incineration, other obvious lethal injuries, evidence of central freezing (such as ice in the airway), core temperature less than 50 degrees F, chest wall so stiff that compressions cannot be performed, or patients submerged in cold water (less than 50 degrees F) for greater than one hour.
 - b. All normothermic patients: Major blunt trauma victims who have no respiration and no pulse, no sign of life at the time of Maine EMS licensed personnel arrival, and whose cardiac monitor - if available - shows asystole or an agonal rhythm.
 - c. When a Do Not Resuscitate (DNR) order is presented in one of three forms:
 - i. EMS DNR orders from other state EMS/DNR programs. If the order or device (e.g., plastic bracelet, jewelry, or card) appear to be in effect, and understandable to the crew, follow the order's specific instructions. If there are no specific instructions beyond "DNR", follow Maine EMS Comfort Care/DNR Guidelines.
 - ii. Non-EMS actionable medical order (e.g. POLST/MOLST, etc.) - A written order executed by a patient's personal physician/PA/NP should be honored if it is understandable to the crew and if it is dated within 1 (one) year. Follow the order as written. If it is non-specific as to care to provide or withhold, follow the MEMS Comfort Care/DNR guidelines.
 - iii. Maine EMS Comfort Care / DNR Program - A Maine EMS Comfort Care/DNR order does not have an expiration date. Once activated, it remains in effect until the patient or someone acting on their behalf, as described and authorized on the Comfort Care/DNR form, cancels it. (Note: Although no longer distributed by Maine EMS, ex-

tant DNR/Comfort Care “orange” forms, wallet cards and plastic bracelets remain valid.)

- d. When a signed Maine EMS Do Not Resuscitate Directive form or Maine EMS-approved Do Not Resuscitate Directive jewelry is presented to EMS personnel. Once executed by the patient and signed by a physician, physician’s assistant or nurse practitioner, the Do Not Resuscitate Directive remains in effect until the expiration date on the form or, if no expiration date is noted on the form, until the patient cancels it.
- e. A photocopy is acceptable as proof of the existence of valid DNR Order or DNR Directive, provided that the photocopy is legible and understandable by EMS personnel.

III. Treatment/Comfort Care

- a. When treating a patient with a Maine EMS Comfort Care/DNR Order or Do Not Resuscitate Directive, the responding EMS provider should perform routine patient assessment and resuscitation or intervention until EMS personnel verify:
 - i. That an EMS Comfort Care/DNR Order or Do Not Resuscitate Directive exists; or,
 - ii. That a Maine EMS-approved EMS Comfort Care/DNR wallet card, plastic bracelet or Maine EMS approved DNR jewelry is presented, intact and not defaced. The plastic bracelet may be worn on the wrist or ankle or on a necklace; or,
 - iii. That Maine EMS-approved Do Not Resuscitate Directive jewelry is present, intact and not defaced; and,
 - iv. The identity of the patient through family or friends present, or with photo ID such as a driver’s license. A good faith effort only is required.
- b. Follow these EMS Comfort Care/DNR procedures in all cases:
 - i. These comforting interventions are encouraged:
 1. Open the airway manually (NO intubation, No BVM unless invited by conscious patient)
 2. Suction and provide oxygen
 3. Make the patient comfortable (position, etc.)
 4. Control bleeding
 5. Pain and other medications of comfort to a conscious patient only (ALS per On Line Medical Control)
 6. Be supportive of the patient and family
 7. Contact patient’s physician/PA/NP or On Line Medical Control if questions or problems
 - ii. Resuscitative measures to be avoided: (to be withheld, or withdrawn if resuscitation has begun prior to confirmation of EMS Comfort Care/DNR Order or Do Not Resuscitate Directive status).

1. CPR
2. Intubation (ET Tube, or other advanced airway management); surgical procedures
3. Defibrillation
4. Cardiac resuscitation medications
5. Artificial ventilation by any means
6. Related procedures per On Line Medical Control

IV. Revocation, Documentation & When to Stop Resuscitation

- a. Who may revoke an EMS Comfort Care/DNR Order or Maine Do Not Resuscitate Directive:
 - i. The patient (by destroying EMS Comfort Care/DNR Order Form, wallet card, plastic bracelet and DNR jewelry, or by destroying the Do Not Resuscitate Directive and DNR jewelry, or verbally withdrawing the order or directive);
 - ii. For the EMS Comfort Care/DNR Order form only:
 1. The patient's physician/PA/NP who signed the order
 2. The Authorized Decision-Maker for the patient who signed the order
- b. Documentation:
 - i. Use the Maine EMS patient/run report.
 - ii. Describe assessment of patient's status.
 - iii. Document which identification (i.e., form, wallet card, plastic bracelet or DMR jewelry) was used to confirm EMS Comfort Care/DNR or Do Not Resuscitate Directive status and indicate that it was intact and not canceled.
 - iv. Indicate the patient's physician/PA/NP name, on the patient/run report.
 - v. If the patient has expired on arrival, comfort the family and follow your EMS agency's procedure for death at home. A Maine EMS patient/run report still needs to be completed.
 - vi. If transporting the patient, EMS providers should keep the original EMS Comfort Care/DNR Order Form, wallet card, plastic bracelet, Do Not Resuscitate Directive Form or DNR jewelry with the patient.
- c. When to Stop Resuscitation: Resuscitation should be terminated:
 - i. Unwitnessed Arrest:
 1. When the patient regains pulse / respiration
 2. When the patient is in asystole or unresponsive to Advanced Cardiac life support efforts for > 20 minutes.

3. When irreversible signs of death, such as dependent lividity, pupils fixed and dilated, palpable hypothermia (not from exposure) and no audible heart sounds are noted in patient with unknown downtime or downtime > 20 minutes.
4. When the rescuers are physically exhausted or when equally or more highly trained health care personal take over
5. When it is found that the patient has a DNR order or other actionable medical order (e.g. POLST/MOLST.etc) form.
6. Continue resuscitation if conditions on scene are NOT amenable to cessation of resuscitation
7. Continuation of resuscitation beyond these protocols must be in consultation with OLMC

ii. Witnessed arrest:

1. When the patient regains pulse/ respiration
2. When the patient is in asystole or unresponsive to advanced cardiac life support protocols performed by Critical Care EMT/ Paramedic for >20 minutes.
3. In the absence of ALS, when the same Maine EMS licensed personnel has documented the absence of all vital signs for 20 minutes, in spite of BLS, except in the case of hypothermia.
4. When the rescuers are physically exhausted or when equally or more highly trained health care personal take over.
5. When it is found that the patient has a DNR or other actionable medical order (e.g. POLST/MOLST.etc) form.
6. Continue resuscitation if conditions on scene are NOT amenable to cessation of resuscitation
7. Continuation of resuscitation beyond these protocols must be in consultation with OLMC

V. Management of Bodies

- a. If resuscitation efforts are discontinued, arrangements should be made with On Line Medical Control with regards to disposition of the body. Contact should be made with local ED with regard to tissue donation options and procedures in advance.

Appendix E
Maine EMS Scope of Practice by License Level

Skill/Treatment	FR	E M T- B	E M T - A	EM T-P	PIF T
Blood glucose monitoring	N	Y	Y	Y	Y
Capnography & End tidal carbon dioxide (P _{ET} CO ₂)	N	N	Y	Y	Y
Carbon monoxide monitoring (SpCO)	N	Y	Y	Y	Y
Central line care (no access, existing line)	N	N	N	N	Y
Chest decompression	N	N	N	Y	Y
Chest tube maintenance	N	N	N	N	Y
Continuous positive airway pressure (CPAP) device	N	N	Y	Y	Y
Cricothyrotomy	N	N	N	Y	Y
Defibrillation, automated external defibrillator (AED)	Y	Y	Y	Y	Y
Defibrillation, manual defibrillator	N	N	Y	Y	Y
Dual lumen airway device	N	N	Y	Y	Y
ECG, 12 lead acquisition	N	N	Y	Y	Y
ECG, 12 lead monitoring & interpretation	N	N	N	Y	Y
ECG, single lead monitoring & interpretation	N	N	Y	Y	Y
Endotracheal intubation	N	N	N	Y	Y
Immobilization, femur traction splint	N	Y	Y	Y	Y
Immobilization, joint injury	N	Y	Y	Y	Y
Immobilization, long bone injury	N	Y	Y	Y	Y
Immobilization, pelvic splint	N	Y	Y	Y	Y
Immobilization, spinal, seated	N	Y	Y	Y	Y
Immobilization, spinal, supine	N	Y	Y	Y	Y

Appendix E
Maine EMS Scope of Practice by License Level

Intramuscular (IM) autoinjector	S	A	L	Y	Y
Intramuscular (IM) injection	N	N	Y	Y	Y
Intranasal (IN)	N	L	Y	Y	Y
Intraosseous (IO) access	N	N	Y	Y	Y
Intravenous (IV) access	N	N	Y	Y	Y
Intravenous (IV) fluids, 0.9% NS, LR, or D ₅ W	N	L	Y	Y	Y
Intravenous (IV) pumps	N	N	L	L	Y
Medication class, ACE inhibitors	N	N	N	N	Y
Medication class, antiarrhythmic	N	N	N	N	Y
Medication class, antibiotics	N	N	N	N	Y
Medication class, anticholinergics	N	N	N	N	Y
Medication class, anticoagulants	N	N	N	N	Y
Medication class, anticonvulsants	N	N	N	N	Y
Medication class, antidiabetics	N	N	N	N	Y
Medication class, antiemetics	N	N	N	N	Y
Medication class, anti-fungals	N	N	N	N	Y
Medication class, antihypertensives	N	N	N	N	Y
Medication class, anti-infectives	N	N	N	N	Y
Medication class, antipsychotics	N	N	N	N	Y
Medication class, anti-sepsis	N	N	N	N	Y
Medication class, anti-viral	N	N	N	N	Y
Medication class, barbiturates	N	N	N	N	Y
Medication class, benzodiazepines	N	N	N	N	Y
Medication class, bronchodilators	N	N	N	N	Y
Medication class, calcium channel blocker	N	N	N	N	Y

Appendix E
Maine EMS Scope of Practice by License Level

Medication class, cardiac glycosides	N	N	N	N	Y
Medication class, corticosteroids	N	N	N	N	Y
Medication class, diuretics	N	N	N	N	Y
Medication class, electrolytes	N	N	N	N	Y
Medication class, gastrointestinal agents	N	N	N	N	Y
Medication class, H2 blockers	N	N	N	N	Y
Medication class, mucolytics	N	N	N	N	Y
Medication class, narcotics (non-epidural)	N	N	N	N	Y
Medication class, over-the-counter (OTC)	N	N	N	N	Y
Medication class, parenteral nutrition	N	N	N	N	Y
Medication class, platelet aggregation inhibitors	N	N	N	N	Y
Medication class, protein pump inhibitors	N	N	N	N	Y
Medication class, sedatives	N	N	N	N	Y
Medication class, sympathetic agents	N	N	N	N	Y
Medication class, vaccinations	N	N	L	L	L
Medication class, vasoactive agents	N	N	N	N	Y
Medication class, vitamins	N	N	N	N	Y
Medication class, α -blockers	N	N	N	N	Y
Medication class, β -agonists	N	N	N	N	Y
Medication class, β -blocker	N	N	N	N	Y
Medication, activated charcoal	N	N	Y	Y	Y
Medication, adenosine	N	N	N	Y	Y
Medication, albuterol sulfate	N	A	L	Y	Y
Medication, amiodarone	N	N	N	Y	Y
Medication, aspirin	N	Y	Y	Y	Y

Appendix E
Maine EMS Scope of Practice by License Level

Medication, atropine sulfate	N	N	N	Y	Y
Medication, dextrose	N	N	L	Y	Y
Medication, dopamine	N	N	N	Y	Y
Medication, epinephrine 1:1,000	N	A	L	Y	Y
Medication, epinephrine 1:10,000	N	N	N	Y	Y
Medication, fentanyl citrate	N	N	N	Y	Y
Medication, glucagon	N	N	L	Y	Y
Medication, ipratropium bromide	N	N	N	Y	Y
Medication, magnesium sulfate	N	N	N	Y	Y
Medication, medical air	N	N	Y	Y	Y
Medication, methylprednisolone	N	N	N	Y	Y
Medication, midazolam	N	N	N	Y	Y
Medication, naloxone	N	N	L	Y	Y
Medication, nitroglycerin paste	N	N	N	Y	Y
Medication, nitroglycerin tablet/spray	N	A	L	Y	Y
Medication, nitrous oxide	N	N	N	Y	Y
Medication, oral glucose	N	Y	Y	Y	Y
Medication, oxygen	Y	Y	Y	Y	Y
Medication, sodium bicarbonate	N	N	N	Y	Y
Medication, tetracaine	N	N	N	Y	Y
Nasogastric tube	N	N	N	N	Y
Non-invasive blood pressure monitoring	N	Y	Y	Y	Y
Oral medication	N	Y	Y	Y	Y
Orogastric tube	N	N	N	Y	Y
Oxygen saturation monitoring	Y	Y	Y	Y	Y

Appendix E
Maine EMS Scope of Practice by License Level

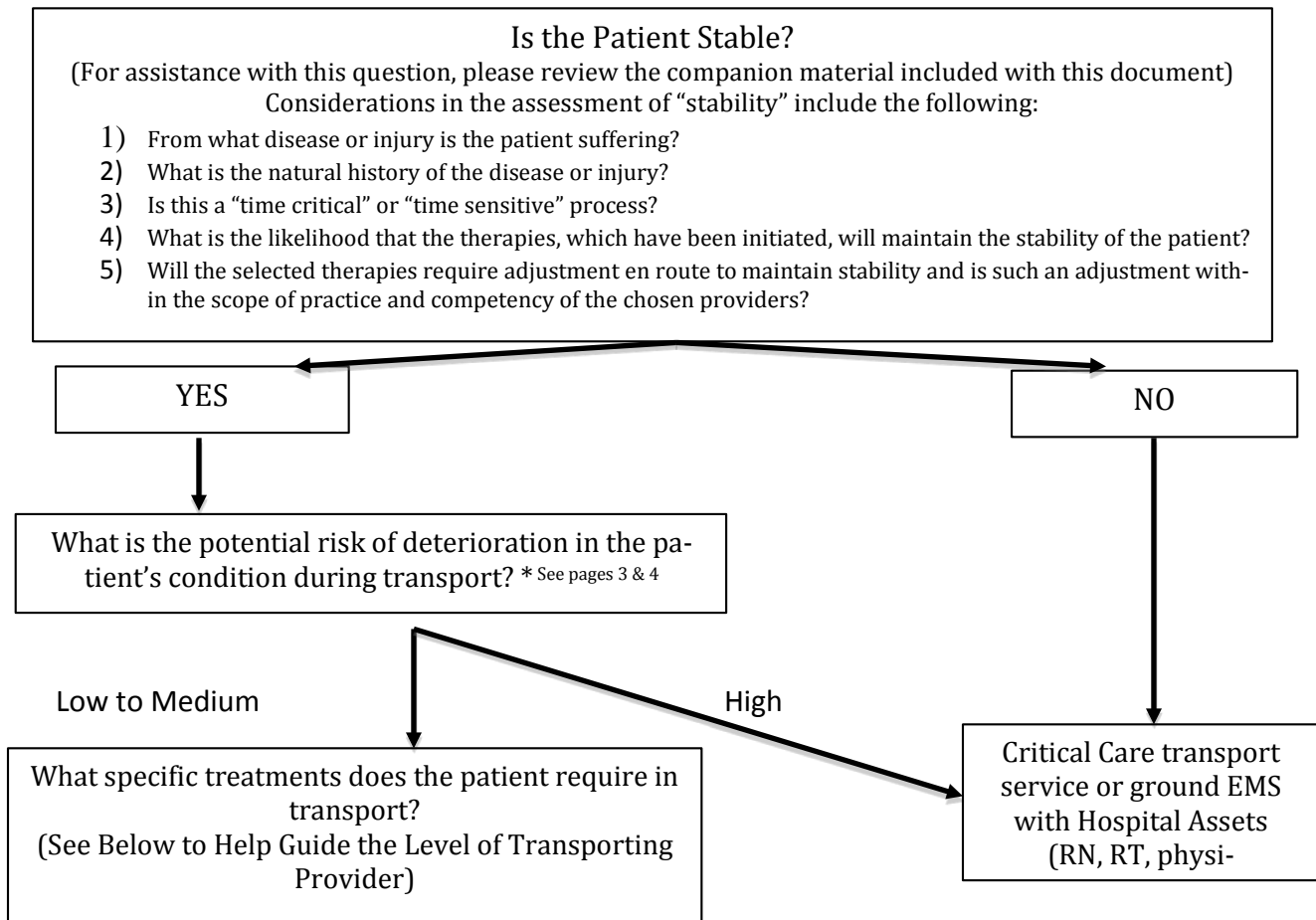
Medication pump, patient centered	N	Y	Y	Y	Y
Pharyngeal tube airway device	N	N	Y	Y	Y
Positive pressure ventilation, automated transport ventilator (ATV)	N	N	N	Y	Y
Positive pressure ventilation, bag valve mask (BVM)	Y	Y	Y	Y	Y
Subcutaneous (SQ) injection	N	N	N	N	Y
Supplemental oxygen, nasal cannula	N	Y	Y	Y	Y
Supplemental oxygen, non-rebreather mask	Y	Y	Y	Y	Y
Supplemental oxygen, partial rebreather mask	N	Y	Y	Y	Y
Supplemental oxygen, simple mask	N	Y	Y	Y	Y
Supplemental oxygen, tracheostomy mask	N	Y	Y	Y	Y
Supplemental oxygen, venturi mask	N	Y	Y	Y	Y
Supraglottic airway device	N	N	Y	Y	Y
Synchronized cardioversion	N	N	N	Y	Y
Transcutaneous pacing	N	N	N	Y	Y
Transvenous cardiac pacer	N	N	N	N	Y
Urinary drainage devices	N	N	N	N	Y

Y = Permitted by scope of practice, **L** = May perform with OLMC, **A** = May assist patient with their prescribed medication with OLMC, **S** = Self or force protection only, **N** = Not permitted

Appendix F

Maine EMS Interfacility Transport

Maine EMS Interfacility Transfer Decision Tree



NOTE: Also consider the need for rapid transport in Time Critical or Time Sensitive Illnesses, which may demand the needs of an air-medical transport.

When Arranging for EMS Interfacility transfer, the following information must be conveyed to the transferring service, preferably by the treating physician or a nurse involved in patient care.

- 1) Patient Age/Gender
- 2) Chief Complaint
- 3) Working Diagnosis
- 4) Current Vital Signs
- 5) Current Treatments
 - a. (IV, O2, Medications, Monitor, etc)
- 6) Potential Transport Orders
 - a. (Pain Management, IV Fluids, etc.)
- 7) Destination Facility
- 8) Brief History of Present Illness
- 9) Precautions Needed
- 10) Special Considerations
- 11) Time Frame for Transport

EMS Must Be Provided With the Following Information BEFORE Transporting Patients:

- 1) EMTALA Forms
- 2) Patient Demographics
- 3) Medication Administration Records for the current day
- 4) Transfer Orders
- 5) Involuntary Committal Papers
- 6) Appropriate Patient Records

The Following May Also Be Appropriate for the Receiving Facility: Copies of Chart/Radiographs, Patient Personal Items, etc.

Therapy/Provider Level Cross-Reference Matrix

(Refer to EMS protocol for additional medication specifics & procedure information)

Therapy	Basic	EMT-I	EMT-P	PIFT Paramedic
O2	X	X	X	X
Saline Lock	X	X	X	X
Non-medicated Fluid (NS, LR)	X <i>(KVO & on pump)</i>	X	X	X
Non-medicated Infusion pumps		X	X	X
ECG Monitor		X <i>(limited use)</i>	X	X
Advanced Airway			X	X
Medications <i>(see protocols)</i>			X <i>(see protocols)</i>	X <i>(see protocols)</i>
Anticoagulants				X
Anticonvulsants				X
Antidiabetics				X
Antidysrhythmics				X
Antihypertensives <i>(ace inhibitors, Ca channel blockers, diuretics, alpha & beta blockers)</i>				X
Anti-infectives				X
Antipsychotics				X
Cardiac Glycosides				X
Corticosteroids				X
Drotrecogin				X
GI Agents <i>(H2 blockers, PPI's, antiemetics, somastatin or its analogues)</i>				X
Medicated IV Fluids, Electrolytes <i>(dextran, albumin & hetastarch)</i>				X
Narcotics <i>(all routes except epidural)</i>				X
Parenteral Nutrition & Vitamins				X
Platelet Aggregation Inhibitors <i>(IIb/IIIa inhibitor)</i>				X
Respiratory Medications <i>(beta agonists, anti-cholinergics, mucolytics & steroids)</i>				X
Sedatives <i>(benzodiazepines, barbiturates)</i>				X

Vasoactive Agents (<i>antihypertensives, pressors & sympathomimetics</i>)				X
OTC (<i>as part of care plan</i>)				X
OG/NG to suction				X
*Wound Vac (<i>non patient centric</i>)				X
PCA	X	X	X	X
Continuous bladder irrigation				X
Chest tube to water seal or Heimlich valve				X
Central line				X
Transvenous pacemakers				X

Items that MAY NOT be transported by Maine EMS Providers without additional staff (RN, RT, etc)

- Ventilators
- Blood Products
- Anesthetic agents (i.e. propofol)
- Medication classes not listed on the MEMS formulary or PIFT list
- Other specialty devices not approved for the PIFT program by Maine EMS and the MDPB

Levels of Patient Acuity Guide

The following is from the DOT's National Highway Traffic Safety Administration's publication, *Guide for Interfacility Patient Transfer*.

“Levels of Patient Acuity – In order to provide safe and effective care, provider capabilities must match the patient's current and potential needs. It is important to have consistent terminology to define the levels of patient acuity. For each level, examples are provided of the types of needs the patient might have and the level of care likely to be required at each level. “ page 5, NSTHA's *Guide to Interfacility Patient Transfer*

NHTSA Term	Example Types of Need	Maine EMS Level of Care
Stable with No Risk for Deterioration	Oxygen, monitoring of vital signs, saline lock (basic emergency medical care)	EMT-Basic, EMT-I, or EMT-P (Depending on Patient Need)
Stable with Low Risk of Deterioration	Running IV, some IV medications including pain medications, pulse oximetry, increased need for assessment and interpretation skills (advanced care)	EMT-I vs. EMT-P (Depending on Patient Need)
Stable with Medium Risk of Deterioration	3-lead EKG monitoring, basic cardiac medications, e.g., heparin or nitroglycerine Medications in PIFT Formulary (advanced care +)	PIFT

Stable with High Risk of Deterioration	Patients requiring advanced airway but secured, intubated, on ventilator, patients on multiple vasoactive medication drips (advanced care +), patients whose condition has been initially stabilized, but has likelihood of deterioration, based on assessment or knowledge of provider regarding specific illness/injury	Critical Care Transport
Unstable	Any patient who cannot be stabilized at the transferring facility, who is deteriorating or likely to deteriorate, such as patients who require invasive monitoring, balloon pump, who are post-resuscitation, or who have sustained multiple trauma (critical care or available crew with time considerations)	Critical Care Transport

NOTE: It is recommended that each hospital identify individuals capable of assisting the sending physician with selection of the appropriate transport resource. Many institutions have on site physicians who are experienced in decision-making regarding Transport Medicine (Emergency Physicians or EMS/PIFT Medical Directors). If indecision persists after using this tool, please refer to your local physician support or discuss your concerns in consultation with the receiving facility.

The sending physician should document his/her medical decision-making regarding the level of care and the provision for providing on-line medical control during transport. These transports should be captured by the sending and receiving facility's quality improvement programs to ensure adequate provision of care.

Levels of Patient Acuity Guide, Examples

Unstable = Minimum definition: Requiring intervention to respond to and/or stabilize mental status or vital sign abnormalities within 2 hours prior to request for transfer. All patients in an emergency department requiring transfer should be considered unstable unless you can specifically convince yourself otherwise. Examples of classes that are unstable include but are not limited to: Status asthmaticus, COPD exacerbation requiring continuous nebulizer treatment, GI bleed with hypotension, tachycardia, or blood transfusion in response to vital sign changes, acute MI with cardiogenic shock or pulmonary edema, trauma patients requiring more than one fluid bolus to address a vital sign abnormality, any acutely intubated patient, toxic exposures with vasoactive substances and vital sign abnormalities, etc. Also consider the in-patient destination of the patient. A patient who will require ICU or step down unit care on arrival at the receiving facility will almost always be unstable by definition. However, do not assume that a patient whom you would admit to a floor bed is stable. In a hospital, the ability to rapidly move patients who decompensate to intensive care means that high-risk potentially unstable patients may be admitted to a floor bed. Always use your judgment and err on the side of patient safety.

* High potential for instability = Airway issues, labile blood pressure, ongoing uncontrollable bleeding, respiratory distress requiring support (CPAP / BiPAP, NIPPV), etc. Examples of high potential for instability include but are not limited to: Airway foreign body not currently obstructing but with potential for acute airway obstruction, acute MI with ongoing chest pain or ST-Segment elevation, multiple long bone fractures with any vital sign abnormalities, etc. Always use your judgment and err on the side of patient safety.

³ CCT = Critical Care Transport. Maine EMS does not currently define "Critical Care Transport" as all in-

terfacility transports are guided by EMTALA and the responsibility for choosing the proper team configuration lies solely with the sending hospital and clinician. However, Maine EMS does define (and oversee) all non--critical care EMS. Standard EMS crews (including single paramedic PIFT transports) are determined to be neither authorized nor appropriate to perform any transport of a patient deemed to be “unstable” or to have a “high potential” to become unstable.

- ⁴ Certain conditions that are time sensitive but do not cause instability such as digit amputations with a potential for reimplantation will benefit from the fastest transport possible.

Maine EMS Scope of Interfacility Transfer Practice by License Level

Skill	Basic	EMT-I	EMT-P	PIFT Paramedic
O2	X	X	X	X
Saline Lock	X	X	X	X
Non-medicated Fluid (NS, LR)	X (<i>KVO & no pump</i>)	X	X	X
Non-medicated Infusion pumps		X	X	X
ECG Monitor		X (<i>limited use</i>)	X	X
Advanced Airway			X	X
Medications (<i>see protocols</i>)			X (<i>see protocols</i>)	X (<i>see protocols</i>)
Anticoagulants				X
Anticonvulsants				X
Antidiabetics				X
Antidysrhythmics				X
Antihypertensives (<i>ace inhibitors, Ca++ channel blockers, diuretics, alpha & beta blockers</i>)				X
Anti-infectives				X
Antipsychotics				X
Cardiac Glycosides				X
Corticosteroids				X

Maine EMS Scope of Interfacility Transfer Practice by License Level

Skill	Basic	EMT-I	EMT-P	PIFT Paramedic
Drotrecogin				X
GI Agents (<i>H2 blockers, PPI's, antiemetics, somatostatin or its analogues</i>)				X
Medicated IV Fluids, Electrolytes (<i>dextran, albumin & hetastarch</i>)				X
Narcotics (<i>all routes except epidural</i>)				X
Parenteral Nutrition & Vitamins				X
Platelet Aggregation Inhibitors (<i>IIb/IIIa inhibitor</i>)				X
Respiratory Medications (<i>beta agonists, anticholinergics, mucolytics & steroids</i>)				X
Sedatives (<i>benzodiazepines, barbiturates</i>)				X
Vasoactive Agents (<i>antihypertensives, pressors & sympathomimetics</i>)				X
OTC (<i>as part of care plan</i>)				X
OG/NG clamped or to suction				X
*Wound Vac (<i>non patient centric</i>)				X
PCA				X
Continuous bladder irrigation				X
Chest tube to water seal or Heimlich valve				X
Central line				X
Transvenous pacemakers				X

Appendix G

Recommended Service Policies

1. ALS backup
2. Disaster Responses
3. Documentation
4. Drug box system
5. Duty to Treat
6. Emerging Infectious disease responses
7. Fireground operations
8. HAZMAT responses
9. High System Utilizers
10. Impaired provider policy
11. Infection Control
12. Interagency conflict
13. Junior Rescue Policy
14. Patient Confidentiality
15. Patient Destination
16. Reporting policy for Medication Diversion
17. Return to work
18. Riders
19. Special event coverage
20. Transport of Mentally Ill Patients
21. Vehicle operations
22. Workplace injuries

Appendix H

Checklist for New Medical Director

Have affiliation agreement reviewed by independent legal and tax advisors.

Negotiate final affiliation agreement.

Have agency orientation with emergency medical services (EMS) Command Staff members.

Meet with agency leaders and develop strategic planning.

Learn about dispatch practices and the Public Safety Answering Point (PSAP).

Attend provider training drills.

Attend agency orientation sessions.

Shadow outgoing medical director, if possible.

Become familiar with EMS oversight agencies (State, regional, and local).

Establish a comprehensive bottom-up quality management program that includes provider peer review activities with guidance by the medical director and explicit support from the agency's leadership.

Respond to and ride-along with EMS personnel to gain an understanding of capabilities, challenges, and opportunities for improvement for EMS providers. Do not operate in a vacuum. Be involved and engaged.

Train with EMS providers in the areas of confined space, trench rescue, extrication, and hazmat operations in order to develop or revise specialized EMS protocols and standing orders for the agency.

Initiate networking relationships with other medical directors in the region.

Attend appropriate National and State conferences and meetings to network with other medical directors.

Open lines of communications with receiving hospitals and local medical society.

Have orientation with personal protective equipment (PPE), communication equipment, and other agency-issued supplies.

From FEMA Handbook for EMS Medical Directors

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Glossary

ACEP - American College of Emergency Physicians	ICS - Incident Command System
ACLS - Advanced Cardiac Life Support	ICU - Intensive Care Unit
ADA - Americans with Disabilities Act	IFT - Interfacility transfer
AEMT – Advanced Emergency Medical Technician	JCAHO - Joint Commission on Accreditation of Healthcare Organizations
ALS - Advanced Life Support	MAST - Medical Anti-Shock Trousers
BiPAP - Bi-level Positive Airway Pressure	MCI - Mass Casualty Incident
BLS - Basic Life Support	MDPB - Medical Direction & Practice Board
CAAHEP - Commission on Accreditation of Allied Health Education Programs	MEMS - Maine Emergency Medical System
CCT - Critical Care Transport	MEMSRR - Maine EMS Run Reporting System
CISM - Critical Incident Stress Management	MOLST - Medical Orders for Life Sustaining Treatment
CLIA - Clinical Laboratory Improvement Amendment	MSU - Medical Support Unit
CME - Continuing Medical Education	NAEMSP - National Association of EMS Physicians
CMS - Center for Medicare & Medicaid Services	NDMS - National Disaster Medical System
CoAEMSP - Committee on Accreditation of Educational Programs for the EMS Professions	NEMSIS - National EMS Information System
COBRA - Comprehensive Omnibus Reconciliation Act	NFPA - National Fire Protection Agency
COPD - Chronic Obstructive Pulmonary Disease	NHTSA - National Highway Traffic Safety Administration
CORE - Casualty Orientation for Rapid Exam	NIPPV - Non-Invasive positive pressure ventilation
CPAP - Continuous Positive Airway Pressure	NREMT - National Registry of Emergency Medical Technicians
CQI - Continuous Quality Improvement	OCME - Office of the Chief Medical Examiner
DHHS - Department of Health and Human Services	OLMC - On-line Medical Control
DICO - Designated Infectious Control Officer	OSHA - Occupational Safety and Health Administration
DMAT - Disaster Medical Assistance Team	PIFT - Paramedic Interfacility transfer
DNR - Do not resuscitate	POLST - Physician's Orders for Life Sustaining Treatment
DOA - Dead on Arrival	PSAP - Public Safety Answering Point
EMD - Emergency Medical Dispatch	QA/QI/TQI/PI - Quality Assurance/Quality Improvement/Total Quality Improvement/Performance Improvement
EMR - Emergency Medical Responder (first responder)	SAR - Search and Rescue
EMS - Emergency Medical System	START - Standard Triage and Rapid Treatment
EMS personnel - Encompasses all levels of trained personnel	WEMT - Wilderness Emergency Medical Technician
EMT - Emergency Medical Technician	WMD - Weapon of Mass Destruction
EMTALA - Emergency Medical Treatment and Active Labor Act	
FAA - Federal Aviation Administration	
FEMA - Federal Emergency Management Agency	
FLSA - Fair Labor Standards Act	
HIPAA - Health Insurance Portability and Accountability Act	
I/C - Instructor Coordinator	

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