

Physician Medical Direction of Emergency Medical Services

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ABSTRACT

Emergency medical services (EMS) bring the practice of emergency medicine directly to the homes of patients. Physician guidance of system development and provider practice can enhance the quality of care. This article provides an overview of issues in the development of EMS system oversight in the United States in general, and in Rhode Island.

KEYWORDS: Medical director, emergency medical services, ambulance

INTRODUCTION

The introductory article for this issue outlines the aspects of physician oversight of emergency medical services (EMS) in the United States and the variations in system evolution that influence the form this involvement takes for individual regions. A common aspect is the recognition that prehospital care is the delegated practice of medicine. EMS providers (EMTs) are the “eyes and hands” of the physician in the field, with physician judgement expressed through system design, guidelines and protocols, and medical control. Physician oversight is partitioned into real time, or direct on-line medical control and off-line, or indirect administrative medical control. Both aspects will be discussed and their Rhode Island expressions described.¹

On-Line Medical Control

On-line medical control consists of direct communication via cellular telephone or radio between an EMS provider (EMT) and a physician or designee, either in a designated role or the receiving emergency department, to consult about the care of a specific patient. The scope of practice of EMTs is defined by regional or state protocols, standing orders, or a combination. In the protocol system, providers attempt to fit a patient presentation into a predetermined symptom/sign complex and are authorized to progress to a certain point in the care plan that best seems to fit the clinical presentation. Depending upon provider sophistication, they are then required to seek on-line medical control to perform further intervention. In the standing-order system, progression through an entire evaluation and management sequence can occur without on-line medical consultation

unless desired by the EMTs. The latter option can be an advantage in low-volume systems with basic provider skills, or in very busy systems with trusted paramedics who need very little routine oversight. The former option allows atypical situations to be discussed and appropriate interventions performed with the potential enhanced safety of immediate and specific on-line physician judgement.^{2,3} This on-line control may be supplanted or augmented by organized, or sometimes serendipitous, physician presence at the scene of the call. Such organized physician scene responses have been employed in Pittsburgh, Seattle, and Houston, but are the exception in the United States. Serendipitous presence of an on-scene physician allows medical control to be transferred from the remote on-line physician only if authorized by the latter after direct discussion with the on-scene physician, who often must agree to accompany the patient to the receiving facility.^{2,3} Some systems also have “default” provisions for those instances when medical control is unavailable.⁴

Beginning in the 1960s, a national effort to improve trauma care spurred EMS system evolution, organized trauma care, and resulted in consensus field triage guidelines that are applied by EMTs to assist with trauma patient destination decisions. On-line medical control may be required for decision support, but experience has demonstrated that EMT destination judgment is excellent.⁵

Early improvements in cardiac care also helped drive development of EMS systems, and rhythm telemetry to the hospital for cardiac staff interpretation was routine practice until it was determined that EMTs had reached a level of sophistication such that there was no value added by this practice. The development of emphasis on emergent interventions in ST elevation myocardial infarction and availability of 12 lead EKG acquisition and transmission from the field has created a similar situation. System practice varies, from passive transmission, reliance on computer interpretation, provider interpretation, or both to alert the receiving facility emergency department staff, or in some systems, direct notification of interventional cardiology staff. The development of specialized hospital systems for cardiac, and increasingly, for stroke care, has created field destination decisions that are analogous to those for trauma care. On-line medical control continues to play a variable and evolving role in these care systems, but in many cases serves primarily to provide early notification about impending patient arrival.^{2,3}

To summarize, on-line control may offer little added value in some cases, but a great deal in others. Physicians familiar with the EMS system are able to assist with patient-care decisions, validate destination choices, and activate specialty teams for certain types of patients through on-line medical control. Patient transport refusals represent both medical and legal hazards for EMTs, and are another example of the benefits of on-line medical control.^{6,7}

In Rhode Island, on-line medical control is available to supplement the State of Rhode Island and Providence Plantations Department of Health Division of Emergency Medical Services Prehospital Care Protocols and Standing Orders (RI EMS Protocols), which define the practice parameters for RI EMTs at all practice levels. This hybrid of two approaches (protocols augmented by on-line medical control) melds the distinct advantage of both. The RI EMS Protocol document provides a shared-care model, and undergoes periodic revisions based upon new developments in medical care, resource availability, and overall system changes. In general providers are required to notify the receiving hospital when there is vital sign abnormality, altered mental status, poisoning or overdose, suspected ST elevation myocardial infarction, or suspected stroke, and encouraged to do so when the prehospital caregivers feel a need for additional informational or judgment support. Other cases require routine notification to the receiving hospital emergency department, now performed through a computer system (Patient Tracking System). Many RI EMS Protocols require medical control consultation before advanced treatment occurs, with this requirement occurring earlier at more basic EMT levels. This feature provides physician judgement support as the EMT approaches the upper limits of training sophistication in assessment and intervention. Thus, paramedics (the highest EMT level) are able to deliver care with considerable autonomy, while basic EMTs must seek advice at much lower intervention risk levels. Contact with the receiving hospital is strongly encouraged, but EMTs may request control from any Rhode Island hospital; this provision both provides potentially needed alternatives and allows access to the additional pediatric expertise available from Hasbro Children's Hospital emergency department staff and the OB/GYN staff at Women & Infants Hospital. Communication from field to hospital is predominantly by cellular telephone. The ability to transmit 12 lead EKGs is available in many ambulances. Backup communication systems exist in case of equipment failure, overload, or in a disaster.⁸ In addition to EMS hospital contact for mandated or elective medical control, hospital notification occurs via a custom computerized patient tracking and system status management system installed after the Station Fire disaster and the Rhode Island Disaster Initiative project.⁹

Off-Line Medical Control

Off-line medical control encompasses the breadth of physician engagement in the community/EMS/hospital interface.

In some areas, this participation has been as extensive as complete EMS system design; more commonly, it includes setting practice parameters, educational oversight, quality assurance activity, and disciplinary action involvement. The role may be more extensive and advisory for a larger scope of authority, for example, that of a state medical director, or limited, depending upon the overarching administrative structure of an EMS agency. The American College of Emergency Physicians, the National Association of EMS Physicians, and the National Association of EMTs have position papers defining the optimal scope of authority and support for medical direction. The minimum qualification criteria for the position include direct experience in prehospital care delivery, familiarity with EMS system design, operation, and administrative and legislative issues, active involvement in training, quality assurance improvement, and on-line medical control.^{10,11} This threshold sets a high bar in practice for both initial and ongoing demands for the designated physician. The current specialty organizations have promoted ambitious comprehensive oversight recommendations, further enhanced by the EMS Agenda for the Future.¹² The development of specialized additional post-graduate EMS fellowships has been recently formalized to include an AC-GME accreditation process and the first subspecialty examination in emergency medical services for physicians will be offered this year by the American Board of Emergency Medicine.¹³ As discussed in the introductory article, the original Emergency Medical Services Act created 303 regions with initial development of medical control left to these local jurisdictions, with further disparate evolution of physician oversight as the funding and local authoritative structure changed.^{2,3,14} It remains unclear whether the increasing financial challenges faced by responsible municipal or other governments can sustain, much less, expand, support of physician oversight sufficient to implement the vision.

The state of Rhode Island Department of Health engages an experienced EMS physician consultant to the Division of Emergency Medical Services. Rhode Island, in keeping with its tradition of the 'Independent Man,' independently licenses EMTs at their respective certification levels.¹⁵ This division encourages the involvement of physicians by strongly advising each of the licensed ambulance services to appoint a medical director and requiring identification of a supervising physician for each state-approved educational activity or training endeavor. While in the vast majority of cases this physician involvement is voluntary, and often nominal, in some cases extensive ongoing participation in quality assurance and other areas occurs. Several physicians, representing various specialty fields, serve voluntarily by appointment of the governor on the Rhode Island Ambulance Service Advisory Board. A relatively new state mandate that each service develops a quality-improvement process encourages further physician engagement. Federal and state laws regarding prescription drugs and controlled substances carried in ambulances also imply that the service is arranging acquisition of

these supplies under the license of the medical director. It is likely that this process will evolve toward both greater individual service autonomy and accountability in the future. Also, anticipated regulatory changes would extend the legal immunity protection enjoyed by ambulance services to their medical director. This evolution should support further physician oversight.¹⁶ Many physicians participate in EMT training, as is discussed in the companion article. (Personal Communication. Jason Rhodes, MPA, EMT-C, Chief, Division of EMS, Rhode Island Department of Health. August 27, 2013) Increasingly, national certification bodies in trauma care, cardiac care, and stroke care mandate close liaison with EMS agencies, including outcome feedback.^{17,18,19} The Brown University Department of Emergency Medicine fellowship in Emergency Medical Services is currently applying for ACGME accreditation, bringing a new level to EMS physician training in Rhode Island.²⁰

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