# Emergency Medical Dispatch

**Objectives**

Upon completion of this article, you will be able to:

1. Identify key terms associated with emergency medical dispatch.
2. Discuss the history and development of emergency medical dispatch.
3. Identify and discuss the myths and misconceptions related to emergency medical dispatchers.
4. Understand the legal liabilities in relation to the emergency medical dispatcher.
5. Identify key concepts of emergency medical dispatch.
6. Describe the concepts of emergency medical dispatch protocols and computer-aided dispatch.

**Case Study**

You are wrapping up a Saturday morning tour of the station when, suddenly, the all too familiar alarm goes off. The dispatcher notifies you that there is a medical emergency at the local mall. You and your partner quickly turn the group over to your Lieutenant and respond to the call. While en route to the scene, the dispatcher advises you that a 53-year-old male has just collapsed in the food court, is not breathing and does not have a pulse. The dispatcher informs you that she has provided the caller with instructions to begin CPR and that the police department has an officer in the area attempting to locate the patient. Your partner looks at you and says, "Wow! How can one person gather so much information so quickly?"

**Introduction**

The emergency medical dispatcher (EMD) serves as the initial point of contact between the public and the emergency medical response system. The dispatcher is, in fact, the first medical responder in an emergency, and a well-trained, confident EMD may be the most important person in the entire emergency response system. EMDs perform an initial "triage" by selecting and dispatching the correct type of EMS response to the emergency scene. Simultaneously, the EMD provides invaluable emergency medical guidance to the 911 caller and other bystanders. The dispatcher also relays key information to responding EMS units and other first responders. This guidance and relayed information conveys life-saving measures to those who need it the most, when they need it the most. Over the course of this article, we will discuss the key terms and concepts of emergency medical dispatch; the history and development of emergency medical dispatch; the myths and misconceptions related to emergency medical dispatchers; the functions and responsibilities associated with the role of the EMD within the emergency response system; the legal liabilities pertaining to EMDs; and emergency medical dispatch protocols and computer-aided dispatch.

**History and Development of Emergency Medical Dispatch**

EMS has been around in one form or another since the beginning of civilization. In ancient times, when people became acutely ill or injured, their family members would often rush them to the village shaman or healer with the expectation that he or she would "treat" their loved one. Additionally, nearly every army ever fielded had a "medical corps" of one form or another, with the primary responsibilities of emergency treatment and transportation of the sick and injured. In the mid- to late-1800s, three cities – Cincinnati, New York, and Boston – began the first American civilian ambulance system. These systems focused on the rapid transport of the ill and injured to the local hospital for treatment. As these systems blossomed, the idea of having a local ambulance service grew across the nation. Often these "ambulance services" were staffed by ill-trained rescuers with good intentions. A hodgepodge of local police/fire departments, funeral homes, wrecker services, hospitals, and other associated non-governmental organizations; they were a "load and go" transportation service, often doing more harm than good.[9]

In 1966, the National Academy of Sciences completed an in-depth study on the state of American emergency medical services across the nation. This was published as a paper entitled "Accidental Death and Disability: The Neglected Disease of Modern Society." This paper proved to be the driving force in prompting the passage of the 1966 Federal Highway Safety Act. This legislation enacted guidelines and standards that was the basis for the EMS system we know today.

You'll find the definitions of new and unfamiliar words and phrases in the text in the section "Key Terms"

In 1972, the Heath Services and Mental Health Administration became the responsible agency for all emergency medical services. This event stimulated a rapid transformation of EMS. Over the next five years, two key concepts were born: the paramedic program and the emergency medical dispatcher. In 1974, Bill Tune, a Phoenix, AZ, paramedic who happened to be in dispatch, successfully provided pre-arrival instructions to a patient. Thus began the implementation of the Phoenix "Medical Self-Help Program or Lifeline" in which a caller could be talked through pre-arrival instructions.[9] Two years later, in Salt Lake City, UT, Dr. Jeff Clawson began to develop emergency medical protocols for dispatchers. These protocols concentrated on dispatching pre-arrival instructions and determining the level of response needed. Over the years, this process morphed into the emergency medical priority dispatch system or EMPDS.

In 1978, Karen Kabat and Robert Von Elling of the State of Illinois Division of Emergency Medical Services added the concept of the Medical Advisory Flip File. These "flip files" were a system of questions and answers used in conjunction with approved medical protocols and were the forerunner to the medical protocol cards used today. Then, in 1979, dispatchers in Utah were trained using Clawson's emergency medical protocols and EMPDS. Upon completion of training, the dispatchers were given the title of Emergency Medical Dispatchers.

In 1983, the United States Department of Transportation issued the first national-level curriculum to be used in the training of EMDs. This curriculum was based on Salt Lake City, UT, medical protocols, the State of Utah emergency medical dispatcher curriculum, and the State of Illinois Medical Advisory flip-file system. This curriculum, the basis for the one that is used today, is continually reviewed and updated to keep pace with evolving training and technology.

The next major advancement occurred in the mid-1980s, when computerized medical protocols were first introduced. These computerized protocols, when used in conjunction with computer-aided dispatch systems, ensured that medical treatment was started quickly, while simultaneously ensuring that necessary medical assets were dispatched to the scene. Then, in 1988, the National Academy of Emergency Medical Dispatch was formed and assumed the responsibility to act as the certifying and standards development organization for both the emergency medical dispatch protocols and its curriculum.

In 1989, the National Association of EMS Physicians published a position paper entitled "Prehospital and Disaster Medicine." The paper stated that pre-arrival instructions were a mandatory component of every emergency medical dispatch center, and that emergency medical instructions delivered by a trained EMD using approved emergency medical protocols were safe and effective. In 1996, the National Highway Traffic Safety Administration (NHTSA) developed the Emergency Medical Dispatcher Certification Course in an attempt to limit differences in EMD training courses across the nation.

Currently, to become a certified emergency medical dispatcher, the candidate must complete a 24 to 30 hour basic course, which consists of an introduction to the concepts of the EMD program, roles and responsibilities of EMDs, legal issues associated with EMDs, basic anatomy and physiology, and, finally, proper use of approved emergency medical protocols.[10]

**Myths and Misconceptions Related to Emergency Medical Dispatchers**

Few people realize the important life-saving role that EMDs provide. Here are ten of the most common myths and misconceptions about EMDs and their ability to play an integral role in EMS:[11]

1. Myth – Anyone can be an emergency medical dispatcher.

   Truth – Not everyone is suited to be an emergency medical dispatcher. EMDs must be able to remain calm and compassionate during stressful, life-threatening situations, while simultaneously providing useful information and reassurance to the caller.

2. Myth – Callers are too hysterical to provide relevant information to the emergency medical dispatcher.

   Truth – EMDs are trained in methods used to alleviate the hysteria that those involved in an emergency often fee Through these methods, EMDs are able to calm and reassure the caller that help is on the way. Dispatchers are thereby able to ascertain relevant information needed to assist the patient, the caller, and the responding resources.

3. Myth – Callers are unable to provide the emergency medical dispatcher with information that is necessary to adequately assess and dispatch the correct response resources for the emergency.

   Truth – The question-and-answer interview technique that EMDs learn is designed to elicit information that EMDs need to be able to accurately assess the situation, and to ensure that adequate responders are dispatched with the correct response code.

4. Myth – All EMS calls require an emergency response.

   Truth – The vast majority of medical calls for service are for non-life-threatening injuries or illnesses and therefore do not require an emergency response.

5. Myth – The emergency medical dispatcher is unable to adequately interview or provide pre-arrival instructions to the caller due to other duties.

   Truth – EMDs are trained in methods used to calm those involved in an emergency and to interview them in an effort to gather necessary information. Combined with basic medical training and an understanding of basic life support concepts and the pre-approved emergency medical dispatcher protocols, EMDs provide life-saving information to those involved.

6. Myth – The emergency medical dispatcher is not medically trained and therefore is unable to provide effective medical instructions to those in need.

   Truth – EMDs receive basic medical training and understand basic life support concepts. Along with the pre-approved emergency medical dispatcher protocols, EMDs provide life-saving information to those who need it most, when they need it most.

7. Myth – Pre-arrival instructions provided by the emergency medical dispatcher will actually place the patient at greater risk for further injury.

   Truth – EMDs are trained in the use of emergency medical dispatch protocols. These protocols are pre-approved and scripted by the agency of the medical director and are based on a logical and structured sequence of medical treatments designed to save lives.

8. Myth – Callers are unable to comprehend adequately the medical procedures that will aid the patient.

   Truth – Similar to Myth #2, EMDs are trained in methods used to alleviate the hysteria that those involved in an emergency often feel. Through these methods, EMDs are able to calm and reassure callers. Once the caller is calm, the EMD will use emergency medical dispatcher protocols to provide simple, specific instructions. The caller will then be able to aid in stabilizing the patient.

9. Myth – Emergency medical dispatcher protocols require increased time and resources to process calls for service.

   Truth – While it may be true that EMDs will spend more time per call for service with the initial caller than with a trained first responder, such as law enforcement or fire department, EMDs play an important role in the EMS system as a first responder. Additionally, the extra seconds or minutes that EMDs spend on each call actually reduces the overall burden on the EMS system by ensuring that the correct resources are sent to the scene and that these resources are not over- or under-dispatched.

10. Myth – The emergency medical dispatcher is a legal liability for the agency.

    Truth – Many feel that EMDs are a huge legal liability for the agency; however, that is untrue. A trained EMD using pre-approved emergency medical dispatcher protocols is actually able to reduce the agency's exposure to litigation through the use of sound medical procedures and prompt, proper dispatch of necessary medical assets.

**Key Concepts of Emergency Medical Dispatch**

There are four key concepts relating to emergency medical dispatch, as follows:

1. Early care and entry into the EMS system saves lives.
2. The EMD is the principal first responder in the EMS system.
3. Response time is reduced through proper dispatch and response of EMS resources.
4. The overall EMS system and patient treatment are improved.

The emergency medical dispatcher has two ultimate goals:

1. To ensure that proper medical assets reach the patient in a timely fashion; and
2. To ensure that a proper medical asset configuration is dispatched and that it is responding in the required response mode.[12]

Early care and entry into the EMS system saves lives. In a life-threatening emergency, those who receive prompt

definitive medical treatment have a significantly higher survivability rate that those who do not. As the initial point of contact at the public service answering point (PSAP), the EMD is the key to the delivery of prompt medical treatment.

Additionally, the emergency medical dispatcher serves as the principal first responder for an EMS system. EMDs are trained to assess adequately a potential emergency medical situation over the phone by direct, thorough questioning. Once the situation has been assessed, the EMD must utilize pre-existing emergency medical protocols to direct the administration of limited emergency care to bystanders prior to EMS arrival. The EMD must also decide which, if any, EMS resources are needed and should be dispatched to the emergency scene, based on the emergency, the level of care that the EMS units are capable of providing, and their proximity to the call, thus reducing response time. When a three concepts are taken into consideration, the overall result is improved patient treatment.

The roles and responsibilities of the emergency medical dispatcher are extremely complex and diverse. The EMD first serves as a call-taker and then as a dispatcher. In an emergency, the EMD provides medical guidance and instills a sense of order to a chaotic scene, while updating responding units on the status of the injured.

While an EMD's role is primarily to serve as the initial point of contact for the EMS system, there are several functions and responsibilities associated with this role. These functions include receiving the call for service, dispatch, response activities, and pre-arrival instructions and activities. While serving as the initial point of contact, the EMD provides a vital link between the public and responders of all types. The EMD assumes primary responsibilities associated with these functions, which include the following:

- Receive and process emergency medical calls for service.
- Determine proper levels of EMS response and identify other first responders.
- Dispatch and coordinate first responders.
- Relay updated information to responding units.
- Verbally provide guidance and direction to all parties involved in the incident.

**Receiving and Processing Emergency Medical Calls for Service**

Receiving and processing calls for emergency medical service are quite easily the most important aspects of the EMD' responsibilities. In this phase, the location of the emergency will be determined along with the nature of the call. Questions to ask the caller include the following:

1. Where is the medical emergency and what is the caller's phone number?
2. What is the problem?
3. How many patients are there?
4. Is/are the patient(s) breathing and conscious?
5. How old is/are the patient(s)?

The caller's responses to these questions will direct the EMD's next course of action. Once the call is initiated, the EMD will attempt to remain in contact with the caller until responders arrive.

**Determining Proper Levels of EMS Response and Identifying Other First Responders**

Using the information gleaned from the five simple questions listed above, the EMD should be able to determine the appropriate call classification. Is it a routine (non-emergency), an urgent (emergency, non-life-threatening), or a critical (emergency, life-threatening) call? What is the correct level or tier of medical services response, and what other first responders, such as fire, police, or HAZMAT units, are needed? The chart below provides examples of the EMS tiers; local tiers may vary by region.

| Medical Response Tiers | | |
|---|---|---|
| Tier | Level | Examples |
| 1 | First Responders | Responders trained in first aid |
| 2 | Basic Life Support | Generally, EMT-Basic with transport capabilities |
| 3 | Advanced Life Support | Generally, paramedics with cardiac life support capabilities as well as transport capabilities |
| 4 | Air Ambulance | Generally, flight paramedics and nurses, reserved for the most critical events due to limited resources |

**Dispatching and Coordinating Responding Emergency Units**

As the EMD is determining the proper level of response, the initial dispatch of required units will occur. Often the EMD

will over-dispatch response units, especially in developing incidents. It is less time-consuming to arrive on scene and cancel incoming units, whether they are EMS or other first responders, than it is to request additional units and have them dispatched to the scene.

**Verbally Providing Guidance and Direction to All Parties Involved in the Incident**

Once emergency response units have been dispatched to the scene, the EMD should then attempt to give the caller pre-arrival emergency medical instructions in accordance with locally approved emergency medical dispatcher protocols. These instructions serve four main purposes, as follows:

1. Provide life-saving measures when needed and provide comfort to the patient.
2. Reassure and calm the caller; advise which steps should be taken to treat the patient in order to reduce stress levels.
3. Allow the EMD to provide responding units with a "status" update on how the patient is responding to treatment protocols, which will give responders a clear picture as to the potential cause of the complaint.
4. Attempt to mitigate potentially hazardous conditions to the patient, the caller, and the responders.

Once the EMD has begun to provide the caller with these pre-arrival instructions, the EMD is then able to move to step five, which is to relay updated information to responding units.

**Relaying Updated Information to Responding Units**

As emergency units are responding, the EMD will attempt to gather additional information that may be valuable to emergency responders. Questions that should be considered are as follows:

- Is the scene safe for responders to enter? Scene hazard examples may include chemical spills, crash scenes, or domestic disturbances and riots.
- Is/are the patient(s) responding to the treatment being provided?
- Has any additional assistance arrived on scene, such as law enforcement or other medically trained personnel?
- Is there any additional information that will aid responding emergency units in locating the patient?

**Legal Liabilities and the Emergency Medical Dispatcher**

America, over the last several decades, has become a highly litigious society. People involved in any type of emergency response are not exempt from the efforts of those who would attempt to make a financial gain from even "trivial" error or oversight. What are the legal liabilities and risks that EMDs may face? Within the American legal system lie two basic legal systems: civil and criminal. The civil legal system, sometimes known as tort law, involves acts or perceived acts against another individual resulting in some kind of loss to that individual, whether it be life, limb, impairment, or monetary. The nature of "loss" is subject to a wide array of interpretations, which may expose emergency responders to legal actions. The criminal legal system involves acts against legal standards or laws of a society. Examples of criminal acts include murder, sexual assault, and theft.

Each legal system relies on considerably different standards of burden of proof for a finding of guilt. The criminal legal system relies on proof beyond a reasonable doubt. In criminal law, the defendant is presumed to be innocent until proven guilty. Therefore, the prosecution must overcome this presumption and then prove the criminal case beyond any reasonable doubt. In the civil legal system, both the plaintiff and the defendant begin the process as equal adversaries. As the lawsuit progresses, each side presents evidence in relation to the case in question. Once all of the evidence has been presented, the lawsuit is decided on the concept of "preponderance of the evidence," which means the evidence presented suggests that it is "more than likely" that an event either did or did not occur. At least fifty-one percent of the evidence must support either the defendant's or the plaintiff's argument in order to win the lawsuit.

The EMD faces complex, high-stress situations on a daily basis. He or she must remain calm and follow approved EMD protocols, ensuring that the caller is able to assist the patient as indicated. EMDs follow three basic principles: duty, liability, and causation[4]. Duty refers to the responsibility to act or perform consistently with the position that one holds in accordance to industry standards. In the case of EMDs, this means the accepted standards of care. Liability refers to the concept of being responsible for one's actions or inactions. Causation refers to a situation where a patient is further injured or suffers some other manner of damage as a result of another's action or inaction. This may occur if an EMD provides a caller with improper instructions regarding a patient, and additional injury occurs as a result of the improper instructions.

These principles are the basis of what a litigant will attempt to use in a civil lawsuit based on negligence, which is the most common type of civil action taken against all emergency personnel. Negligence is the failure to act or perform as a "reasonable" person with the same level of training or experience would act or perform in similar circumstances. There are two types of negligence: simple and gross. Simple negligence is the non-purposeful failure to exercise care to avoid injury or damage, meaning there was no intention to cause harm, yet it did. Gross negligence is the wanton,

reckless disregard for the safety of people or for property, meaning the dispatcher acted with the intent to cause harm or knew those actions or inactions could cause a certain outcome.

With a basic understanding of how exposure to negligence may occur, it is important to be aware of exposure reduction methods and protections that are available to EMDs. The best approach to limiting exposure to civil litigation is to conform diligently to training instructions and follow only approved emergency medical dispatcher protocols. Obtaining quality assurance (QA) is perhaps the most reliable method of liability reduction. QA is the systematic process of evaluation and oversight that is used to ensure that a product or service (in this case, patient care) is delivered to the proper standards of care. A properly run QA program will allow all involved to assess their system's strengths and weaknesses, allowing the system to develop procedures to respond and treat patients, as well as reduce EMDs' exposure to litigation and false allegations.

There are three primary legal protections available to EMDs – governmental immunity, the emergency rule, and the foreseeability rule – and one primary legal protection available to 911 callers – the Good Samaritan Law.

Among the most common protections utilized by governmental agencies is that of governmental or sovereign immunity. This legal doctrine was developed to allow governmental entities to perform their governmental activities without fear of nuisance lawsuits by disgruntled citizens. This "immunity" is not foolproof and generally does not apply in cases of gross negligence or malicious conduct. In cases where gross negligence and/or malicious conduct is proven damages paid by the governmental entity is limited compared to non-governmental entities.[2]

The emergency rule applies only in emergency circumstances, in which a responder's life may be placed in grave danger. The concept of this rule is simple: One cannot be held to the same standard of conduct that he or she would otherwise be held to when not faced with such a situation; therefore, he or she is not held to the same standard.

Foreseeability protection is based on the following concept: If adequate care was provided using approved standards and an unforeseen injury was incurred as a result of this care, then generally the care provider would be protected from litigation. In regards to the emergency medical dispatcher, the caller acts as the sole source of information during the interview process. Therefore, any injury associated with the directions given by the EMD during the interview process will not result in successful litigation because the EMD was relying on the caller for information. By relying on the caller's information, the EMD cannot be found negligent in placing the caller or others, including the patient, in further danger because he or she cannot have foreseen the outcome.

The 911 caller is under the protection of the Good Samaritan Law. This doctrine is designed to protect bystanders from litigation when they are acting to aid a person who is in danger or is injured. Three key elements support the Good Samaritan Law:

1. The care provided was performed as the result of the emergency;
2. The initial emergency or injury was not caused by the person rendering aid; and
3. The care provided was not given in a grossly negligent or reckless manner.[11]


**Concepts of Emergency Medical Dispatch Protocols**

One of the most critical duties that the EMD has is that of relaying necessary medical direction at the appropriate time Conducted correctly, lives will be saved. Conducted incorrectly, additional pain and suffering or death may occur. Similar to the EMTs and paramedics who work with the emergency medical dispatchers, EMDs practice medicine under the authority of the medical director, who is responsible for the training of all first responders within their scope of authority and for approval of all protocols that are used by his or her subordinates. These protocols are divided into treatment protocols, which are used by EMTs and paramedics, and emergency medical dispatcher protocols, which are used by EMDs. Emergency medical dispatchers use protocols that are sometimes known as flip cards, medical cards, guide cards, and scripts to relay medical instructions and guidance to the caller. As in the case of an EMT who deviates from any protocol, if an EMD deviates from emergency medical dispatcher protocols, he or she can be exposed to litigation.

A good emergency medical dispatcher protocol system is one that, when used properly, ensures that the injured or ill patient begins to receive life-saving care quickly and the required resources arrive on scene promptly, equipped with all available information. Therefore, a good emergency medical dispatcher protocol system must be relevant to those who will use it. It must be structured to ensure that it is easy to use, and it must be logically written so that it makes sense to both the EMD and the caller.

While there are several emergency medical dispatcher protocols already developed and available to those who need them, one must consider that guidelines for one system may not be appropriate for another system. Thus, to be truly effective, the protocols must be relevant for the system in which they are being used. Each EMS system should analyze the types of calls to which they commonly respond and uncommon events that may pose increased risk to responders

such as HAZMAT events, industrial accidents, and electrocutions. The medical director then identifies these events and develops protocols based on those calls. As the medical director develops each protocol, consideration should be given to the levels of training of the first responders within the system, as well as to the equipment and other resources available to these responders.

Customarily, emergency medical dispatcher protocols are scripted word for word in a question-and-answer format. Each question relies on a response that will dictate what the emergency medical dispatcher will do next. Additionally, EMD protocols are separated into the following four categories:

1. The initial survey or all-callers card
2. Medical emergencies
3. Trauma emergencies
4. Time/life-critical emergencies



Within these categories, each major type of emergency is cataloged and tabbed alphabetically for ease of use. Often this catalog is maintained on a computer terminal or network. However, it is recommended that each EMD retain a printed copy in the event of power failure or other emergency.

**Initial survey**: The initial survey card is more commonly known as the all-callers card because that is exactly what it is. Generally, there are five key questions associated with this initial survey. Each question is designed to elicit a response that will assist the EMD in determining his or her next action and the type of resources, if any, needed to be dispatched to the scene, as well as the response mode. The five questions listed below are examples of questions that comprise the initial survey; however, the local medical director may elect to use different questions.[14]

1. Where is the medical emergency and what is the caller's phone number?
2. What is the problem?
3. How many patients are there?
4. Is/are the patient(s) breathing and conscious?
5. How old is/are the patient(s)?

**Medical Emergencies**: Generally, medical emergencies involve an illness or condition that has become acute and now requires medical intervention. Examples of medical card topics include abdominal pain, airway obstruction, allergic reactions, back pain, behavioral emergencies, breathing problems, chest pain, childbirth, CPR, diabetic emergencies, headaches, poisonings/overdoses, seizures, sick person, stroke, syncope, unconscious unknown causes, and unknown problems. Often the medical emergency protocol cards are preceded by an information card that contains information such as background, common causes of the condition, frequent symptoms associated with the condition, and special considerations, such as pediatric and geriatric patients.

**Trauma Emergencies**: A trauma emergency in general includes everything that is not an illness or medical condition. Examples of trauma card topics include animal bites, assault, automobile crashes, back pain, bleeding, burns, falls, fractures, eye injuries, exposure, penetrating trauma, and sexual assault.

**Time / Life-Critical Emergencies**: Both medical emergencies and trauma emergencies can be classified as time/life-critical emergencies by the medical director. This decision is often based on the potential for loss of life if resources are not dispatched in emergency mode. Examples of time/life-critical events include cardiac arrest, choking, HAZMAT, industrial accidents, drowning, electrocution, unconscious unknown causes, and unknown problems. Often the time/life-critical emergency protocol cards associated with medical conditions are preceded by an information card that contains information such as background, common causes of the condition, frequent symptoms associated with the condition, and special considerations, such as pediatric and geriatric patients.

**Emergency Medical Dispatchers and Computer-aided Dispatch**

Throughout this topic, we have dealt with the skill and training of EMDs. This topic would not be complete, however, without a discussion on how technology assists the dispatcher in getting the job done.

Computer-aided dispatch (CAD) has evolved in various stages throughout the world. In the United States, some dispatch agencies are just now implementing technologies that have been in place elsewhere for 20 years. The
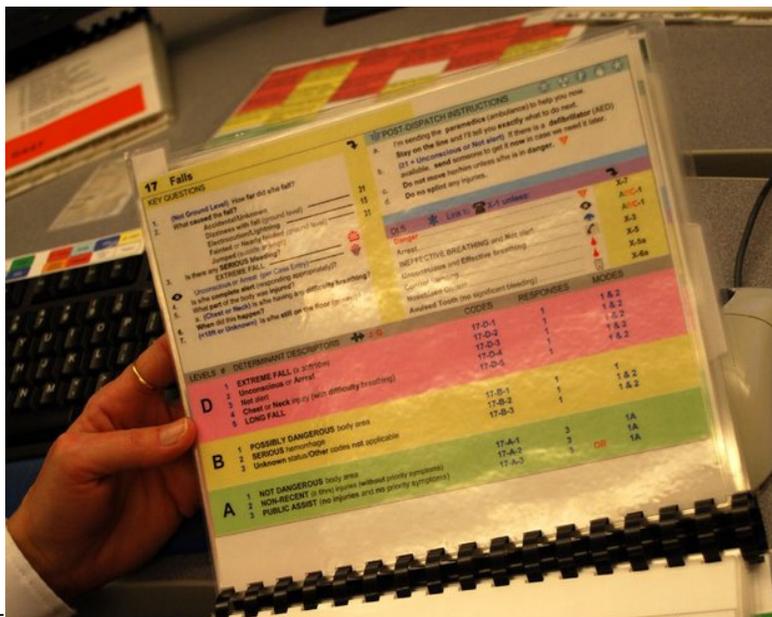
evolution of the computer and microprocessor has changed the way we work and live, including the way emergency dispatch is handled.

The Law Enforcement Information Technology Council (LEITSC) was created in 2002. With the events of 9/11 fresh in the minds of emergency responders, the goal was to create a standardized CAD system that would allow all responding agencies to be able to share information with one another. While LEITSC was created by law enforcement agencies, it mission clearly focuses on all responders, including fire and EMS.[16]

CAD systems allow dispatching operations and communications to be assisted and partially controlled by automated systems. CAD aids the dispatcher in collecting information, the interpretation of the information, and the proper sharing of the information to mitigate the call for service (CFS).

The traditional CFS is initiated by a telephone call to 911, but a CFS may come from a variety of sources, including the following:

- **Automated Alarm Systems**: Intrusion, fire, or medical alarms, which may be automated or may be relayed by an alarm system dispatcher.

- **Enhanced 911 Systems**: Traditional calls to 911 were very simple. Instead of calling a standard telephone number, the caller only needed to remember 911. The purpose of this number was simply to give universal access to the appropriate public service answering point (PSAP). Enhanced 911 (E911) combines this routing ability with the relaying of information from the telephone company to identify the caller, the caller's location, and the appropriate jurisdiction(s) in which the caller is located.

- **Direct Calls**: Calls to a 7- or 10-digit telephone number in the U.S. Many PSAPs maintain their 7- to 10-digit telephone numbers to serve as a "non-emergency" alternative to 911. In addition, many agencies, such as police, fire, and EMS stations, have their standard telephone number routed to the PSAP when the station is unattended.

- **Walk-ins**: Just as we have walk-in patients at police, fire, and EMS stations, civilians may also walk in to the PSAP.

- **CAD-to-CAD interfaces**: This interface occurs when a CFS is answered by one PSAP and is relayed to another

  ○ **Example 1**: A traveler driving on U.S. Route 32 in eastern Ohio may need emergency services. Cell phone towers along Route 32 relay information to the Ohio State Highway Patrol (OSHP). While the OSHP will respond to such a call, they would also need to route the call to the nearest local EMS agency. In this situation, this would most likely result in the routing of the call from the OSHP CAD to the closest county CAD system.

  ○ **Example 2**: Louisville, KY, and Clarksville, IN, are divided by the Ohio River. A cell phone call from one side of the river may be answered by a cell tower across the river. In this case, the PSAP must determine the proper location of the caller and then route the call appropriately.

  As described in both examples, cell phones are a problem for E911. A simple web search of "cell phone 911 locations" lists a myriad of newspaper articles describing these problems. Beginning in 1998, and updated in 2001, the FCC implemented regulations to make it easier for call centers to locate the wireless 911 caller. The 2001 regulations require the locating of a caller to within a 125-meter radius using triangulation from multiple antennas. The problem still exists in rural and variable terrain areas, where only one or no towers are available.[16]

- **Web-Based Systems**: While this system is seldom used for EMS, it is in place as a PSAP. For example, Seattle WA, has implemented a web-based system called CORP (Community Online Reporting Program). This PSAP is dedicated to the non-emergency reporting of property destruction, car prowls, auto accessories, theft of property under $500, and identity theft.[17]

Based on the multiple methods of access to the PSAP, the trained EMD may have to work with a variety of resources t perform his or her duty effectively. He or she may need to work without the benefit of E911, or may need to work through a neighboring CAD and dispatcher to manage the information. The EMD may even need to use a web-based PSAP to implement non-emergency calls for service.

CAD systems may also assist the trained EMD in gathering patient information. When properly implemented, "premise hazard and history" can give the EMD an idea of what has happened in the past at this particular address, or with this particular caller. Relevant historical information may be of assistance to the dispatcher and the responders. Irrelevant

premise history, on the other hand, may distract or misinform personnel. For example, a residence may be the location of a "frequent flyer," a male in his 80s who suffers from emphysema. A 911 CFS may originate from the residence for breathing trouble. Without asking the proper questions and interpreting the premise history, dispatchers and responders may simply assume that this is another frequent flyer call. With proper attention to the details given by the caller and the dispatcher, however, the CFS can be clearly identified as an asthma emergency by information provided by the caller, in this case the man's granddaughter.

The CAD system can also allow the EMD to properly locate and dispatch the appropriate units. An automatic vehicle locator (AVL), commonly referred to as AVL/GPS, is a system that relies on the transmission and tracking of a resource's location using a global positioning system. This helps to define not only the closest responders but also the most appropriate responders. For example, an AED-equipped police officer may be near a CFS involving a cardiac arrest. However, that officer may be currently assigned to another high priority detail. AVL/GPS may help the dispatcher to see that an ALS-equipped fire apparatus is also close to the call. By dispatching the fire company, the EMD not only keeps the police officer on the other detail but also is able to send a better-equipped group of personnel to the scene of the cardiac arrest.

In the case of a tiered EMS system, the CAD will also allow for efficient use of EMS units based on location and standard operating procedure (SOP). For example, SOP may call for a minimum of two paramedics and one EMT to be dispatched to a cardiac arrest. Should the EMD send two combination (one EMT and one paramedic) ambulances, an ALS ambulance with a paramedic chase car, or a combination ambulance with an ALS-staffed fire apparatus?

Are you confused by the examples? Try making all examples happen at the same time. You now have an idea of what the EMD must deal with on a regular basis:

- Multiple CFSs
- Multiple PSAPs
- Multiple agencies
- Multiple options

Can it get more complicated? Yes, it can, when one adds to the factors above the following situations:

- Extended time on scene
- Extended time at the hospital
- Multiple patients
- Mass casualties
- Multiple CFSs for the same incident
- Many other details

**Summary**

This article has discussed the key terms and concepts associated with emergency medical dispatch; the history and development of emergency medical dispatch; the myths and misconceptions related to emergency medical dispatchers; the functions and responsibilities associated with the role of the EMD within the emergency response system; the legal liabilities pertaining to EMDs; and emergency medical dispatch protocols and computer-aided dispatch.

The EMD serves as the initial point of contact between the public and the emergency medical response system, and is, in fact, the first medical responder in the emergency medical system. A well-trained, confident EMD may be the most important link in the entire emergency response system. EMDs act as a form of "triage" for the emergency medical system by selecting and dispatching the correct type of EMS response to the emergency scene. Simultaneously, they provide invaluable emergency medical guidance to the 911 caller and other bystanders, and they relay key information to responding EMS units and other first responders. This guidance and relayed information directly relates to life-saving measures provided to those who need it most, when they need it the most. Systems such as CAD, AVL/GPS, EMD cards, quality training, and great multitasking skills can help EMDs to perform their dedicated service to their community.

**Case Study Conclusion**

Once you have completed the call, you explain to your partner that the dispatcher is actually an emergency medical dispatcher, or EMD, and is truly the first responder in most emergency medical situations. In addition, you explain that EMDs not only are trained as dispatchers but also have completed the National Highway Safety Administration Emergency Medical Dispatcher course, which consists of the basic concepts of the EMD's duties and instructs how to assess a situation properly using a prewritten set of medical protocols that have been designed and approved for use by the medical director. You continue to explain that these protocols are similar to EMS treatment protocols but are called EMD protocols, and that these protocols are designed in a question-and-answer format, using elicit information considered necessary for the EMD to provide pre-arrival instructions and to coordinate responders being dispatched to

the scene. Your partner is stunned that the EMD has so many responsibilities and asks if you would mind stopping by the dispatch area so he can meet the EMDs.

**Key Terms Associated with Emergency Medical Dispatch**

Before we begin our discussion on EMDs, we will first review common terms associated with emergency medical response.

**Abandonment**: The act of leaving, or the failure to provide necessary medical assistance to, a patient under your care.

**Advanced Life Support (ALS)**: While the actual definition of ALS may vary from state to state, generally, ALS units are staffed by paramedics (EMT-P) or, at a minimum, Intermediate Emergency Medical Technicians (EMT-I). ALS units are able to perform at levels above basic life support and are generally capable of providing emergency cardiac care and drug therapy as required, as well as other life-saving interventions.

**Apparent Life-Threatening Event (ALTE)**: An event in which an infant patient appears to cease breathing and becomes cyanotic and flaccid; that is, the patient appears to have died.[1]

**Basic Life Support (BLS)**: The definition of BLS may vary from state to state. Generally, BLS units are staffed by Basic (EMT-B) and Intermediate (EMT-I) Emergency Medical Technicians. BLS units focus on the ABCs of emergency care and often have limited resources available to them.

**Breach of Duty**: The failure to perform duties, or the performance of duties below the accepted standards of care.

**Chief Complaint**: A patient's primary reason for calling the Public Service Answering Point (emergency medical dispatcher or 911).

**Consent**: The act of giving permission for a medical care act to occur. In EMS, there are two categories of consent: actual and implied.

- **Actual Consent**: Direct verbal or non-verbal communication between two people before care is administered; in the case of EMS, communication between the patient and the caregiver.

- **Implied Consent**: Occurs when a person in need of aid is unable to provide actual consent due to altered mental status or other inability to communicate. Children without an adult guardian present are included in the implied consent category.

**Damages**: A monetary amount awarded in a lawsuit after a finding in civil litigations. They are a form of reimbursement for loss of actual or projected income due to injury or death, or recovery of property costs, as a result of unlawful acts or negligence of another.[2]

**Detrimental Reliance**: Occurs when a person relies on someone who has a duty to perform in a certain manner but fails to do so. In the case of EMDs, this occurs when inadequate or improper medical instructions are provided, or proper medical assets are not dispatched, and the patient's condition becomes worse or additional injuries are sustained.

**Diligence**: The zealous, careful nature in which a person performs a task.

**Dispatch Life Support (DLS)**: The pre-arrival instructions provided by the EMD to the caller, with the goal of ensuring that the patient is stabilized until emergency medical responders arrive. These pre-arrival instructions are a representation of the EMD's skills and knowledge, and of accepted medical protocols used to care for the injured.

**Do-Not-Resuscitate (DNR) order**: A written document that states that the patient does not desire medical personnel to attempt resuscitation in the event of cardiac arrest or other potential life-ending events.

**Duty**: The responsibility to perform to the standards of an emergency medical position.

**Emergency**: A potentially life-threatening situation involving illness or injury in which immediate intervention is required.

**Emergency Medical Dispatch (EMD)**: An advanced form of emergency medical communication based on specific training and approved emergency medical protocols. The emergency medical dispatcher is a key component of the emergency medical response system.

**Emergency Medical Dispatch Protocols Reference System (EMDPRS)**: A set of emergency medical treatment guidelines that have been approved for use by the EMD's medical control officer. These emergency medical dispatch

protocols are a logical, structured sequence of questions and answers designed to illicit information needed to "triage" the patient. This triage will attempt to ensure that treatment is begun, that no further injuries are sustained, and that adequate medical resources are dispatched to the scene.

**Emergency Medical Response Configuration**: Works hand-in-hand with the emergency medical tier system and refers to a responding medical service's pre-existing procedures and types of EMS units available for each type of emergency call, ensuring that adequate medical assets arrive on scene quickly and safely.

**Emergency Medical Services**: Involves the coordinated medical response and efforts of all first responders with specialized medical training, and includes, but is not limited to, basic and advanced life support units, hospital emergency rooms, law enforcement, and fire and hazardous materials (HAZMAT) units.

**Emergency Response**: A simpler version of emergency response modes involving only two response types: "cold" and "hot."

- **Cold Response**: Non-emergency calls for service. Responding units are required to obey all traffic laws. This is also known as a Code 1 call for service.

- **Hot Response**: Emergency calls for service. Responding units are allowed to utilize emergency lights and sirens and to disobey some traffic laws, as authorized by state and local laws. This is also known as a Code 3 call for service.

**Emergency Response Modes**: More commonly known as response codes, these are broken down into four levels: non-emergency/no response, non-emergency/routine response (Code 1), emergency-immediate response (Code 2), and emergency-priority response (Code 3). Examples of each response mode are provided below:

- **Non-Emergency / No Response**: Rarely used under normal situations. Should a call for service not meet agency protocols for responding, emergency units may not be dispatched.

- **Non-Emergency / Routine Response (Code 1)**: Non-emergency calls for service; all traffic laws are obeyed.

- **Emergency-Immediate Response (Code 2)**: Emergency call for service. These calls commonly involve non-life-threatening injuries or illnesses. Generally, traffic laws are obeyed. At times, responding units may exceed posted speed limits and use emergency lights and sirens to proceed through intersections as needed.

- **Emergency-Priority Response (Code 3)**: Emergency call for service. These calls commonly involve life-threatening injuries or illnesses. Generally, emergency lights and sirens are used continuously, and responding units proceed quickly, yet safely, to the scene.

**Emergency Rule**: Applies in emergency circumstances in which a responder's life may be placed in grave danger. Responders faced with an emergency cannot be held to the same standard of conduct that he or she would otherwise be held to when not faced with such a situation.

**Emergency Medical Tier System**: A flexible, layered medical response system generally consisting of four distinct layers. This allows the emergency medical dispatcher to select one or more types of emergency medical response units that are best configured to respond to the emergency, as outlined below:[3]

**Tier 1** – First responders: Public safety units, such as law enforcement and highway or courtesy patrols, that have received some level of first-aid training, and are able to respond to the scene and begin patient treatment or stabilization before EMS units are able to arrive.

**Tier 2** – BLS units: Dedicated ambulances or fire apparatus staffed by EMT-Bs and/or EMT-Is who are able to perform basic life-saving procedures, focusing on the patient's ABCs. These BLS units are able to assist ALS units as needed.

**Tier 3** – ALS units: Dedicated ambulances that are staffed by highly trained paramedics and EMT-Is who are able to perform all BLS functions. Additionally, ALS units are capable of providing emergency cardiac care and drug therapy as required, as well as other life-saving interventions.

**Tier 4** – Air ambulance: Specially designated helicopters that are generally staged at a Level 1 hospital. Air ambulances are staffed by highly trained flight nurses and paramedics who are able to perform all BLS and ALS functions. Generally, there are a limited number of air ambulances within any certain area. Therefore, air ambulances are reserved for the most critically injured patients, or for locations to which traditional EMS responders cannot gain access.

**Foreseeability**: The information provided by the caller and the acts performed by the EMD who received the information. If the EMD cannot foresee the outcome of his or her actions, and is not negligent in placing the caller or others, including the patient, in further danger, then any injury associated with the directions given by the EMD during the interview process will not result in litigation.[4]

**Good Samaritan Law**: Designed to protect bystanders from litigation when acting to aid a person who is sick or injured, or is in danger of being injured. There are three key elements that support the Good Samaritan doctrine:

1. The care provided was performed as the result of the emergency;
2. The initial emergency or injury was not caused by the person rendering aid; and
3. The care provided was not given in a grossly negligent or reckless manner.[5]

**Liability**: Incurred as a result of failing to act in a specified manner. Mechanism of injury (MOI): Refers to the primary cause or circumstance of injury.

**Medical Director**: The EMS physician(s) responsible for the education, training, standards, protocols, and quality control of the pre-hospital EMS system.[6]

**Medical Priority Dispatch System (MPDS)**: A standardized system used to orchestrate an appropriate EMS response to an emergency medical scene, ensuring that the patient receives the quickest and best care available, while simultaneously ensuring that emergency medical assets are utilized to their fullest potential.

**Negligence**: The failure to act or perform as a "reasonable" person with the same level of training or experience would act or perform in similar circumstances. There are two categories of negligence, as follows:

- **Simple Negligence**: The non-purposeful failure to exercise care to avoid injury or damage.

- **Gross Negligence**: The wanton, reckless disregard for the safety of others or for property.

**Pre-arrival Instructions**: In-depth, structured instructions provided to the 911 caller by the EMD. The primary goal is to assist the caller in providing life-saving measures when needed and providing comfort to the patient, while the secondary goal is to offer reassurance to the caller that steps are being taken to treat the patient, thus reducing stress levels. This reassurance will allow the EMD to communicate more effectively with the caller and to learn more about the emergency and the patient. This updated information is then relayed to responding units, giving them a clear picture of what is transpiring prior to their arrival. Additionally, the EMD can attempt to mitigate conditions that are potentially hazardous to the patient, the caller, and the responders by providing simple, clear instructions.

**Proximate Causation**: The direct relationship between an action or inaction and an injury or damage suffered to another.

**Public Service Answering Point (PSAP)**: More commonly known as the 911 service. The PSAP is the primary point of entry for all emergency services, allowing the call-taker/dispatcher to send emergency service units as needed.

**Recurrent Hysteria Syndrome**: Occurs during a perceived emergency in which a person becomes irrational or hysterical but then regains composure for a brief time. When faced with the emergency, the person reverts back to his or her irrational/hysterical mode.

**Risk Management**: Also known as risk mitigation, this is the thorough, deliberate process utilized to evaluate an event or a procedure in order to take the steps necessary to reduce the danger of injury or damage occurring to those involved.[7]

**Standard of Care**: The level of care and treatment provided to another that a person with similar training and experience would provide under similar circumstances.[8]

**Quality Assurance (QA)**: The systematic process of evaluation and oversight to ensure that a product or service that is delivered is meeting specific requirements.

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