SPECIAL REPORT

Priority Dispatching Vs. Call Screening

by Jack L. Stout

"I saw what they did in Dallas. By God if I call for an ambulance, you'd better send it quick. No Questions." click...

Anonymous phone call to the offices of the Tulsa, Oklahoma, Ambulance Service System.

The unfortunate and highly publicized call screening incident in Dallas has caused both the news media and the public to focus upon and question the use of both priority dispatching and call screening. Newspaper and television reports clearly show that few reporters understand the critically important distinction between priority dispatching and call screening. And our own industry's confusion seems to contribute to the confusion of the press.

Tracy Skeen, this year's American Ambulance Association "Man of the Year," shares my concern regarding this matter, arguing persuasively that the credibility of our entire industry may be seriously damaged if the admittedly questionable practice of call screening is not clearly distinguished from the universally accepted advantages of priority dispatching.

Priority dispatching refers to a structured and pre-planned categorization of requests for ambulance service, so that when simultaneous demands upon the system compete for available resources, as will occasionally happen in any system, the remaining resources are allocated systematically and logically, rather than first-come, first-served, or by way of dispatch protocols invented "on the fly" by the individual dispatchers themselves.

Call screening, in contrast, refers to a process whereby certain requests for service are actually screened out, refused ALS service, and either referred to other providers or responded to by the screening organization's own BLS units. Call screening may be accomplished by way of highly structured telephone interview and dispatch algorithms or by relying upon the on-line judgment of dispatchers, telephone triage nurses, or supervisory personnel.

But by themselves, these two definitions shed little light upon the current confusion. Real understanding requires more than knowledge of these simple and seemingly straightforward definitions. America's best prehospital care systems can be divided into two fundamentally different types: all-ALS, full-service systems and multitiered systems using two or more types (i.e., clinical levels) of ambulances. Systems like those found in Syracuse, New York; Kansas City, Missouri; Tulsa, Oklahoma; and Fort Wayne, Indiana, are examples of all-ALS, full-service systems. Systems like Jacksonville, Florida; Houston, Dallas and Austin, Texas; New York City and hundreds of others are examples of multitiered systems.

The clinical assumptions underlying these two types of systems are vastly different, and this philosophical difference manifests itself most visibly in the operations of the dispatch centers. Specifically, both types of systems often rely heavily upon priority dispatching techniques, but while some form of call screening is used in all multitiered systems, call screening does not exist at all in the all-ALS, full-service systems.

Rationale for Multitiered Systems

The clinical assumptions that underlie the establishment of all multitiered systems may be generally stated as follows: It is assumed that certain patient populations require more advanced assessment skills and prehospital care procedures than do certain other populations of ambulance patients, and that it is possible to categorize such patients reliably, based upon information gathered over the telephone. Some multitiered systems assume that patients can be segregated reliably into two groups — emergency and nonemergency — while other multitiered systems go as far as to assume that patients can be segregated reliably into three groups — ALS emergency, BLS emergency and nonemergency.

All such multitiered systems further assume that it is possible (using telephone protocols, dispatch algorithms, priority dispatching, more highly trained dispatchers, telephone triage nurses or other techniques) to determine safely and reliably, *from information gathered via telephone,* the level of both assessment skills and procedural capabilities that will be needed by each patient.

I usually say it this way: The idea behind multitiered systems is to send the real-good ambulances to the real-sick patients, and the not-so-good ambulances to the not-so-sick patients. Proponents of multitiered systems usually argue that such practices save money and help to preserve the availability of the more expensive equipment and personnel.

Rationale for All-ALS, Full-Service Systems

The medical and financial assumptions that underlie the all-ALS, full-service systems are exactly opposite those that underlie multitiered systems. The medical assumptions that furnish the very foundation of the all-ALS, full-service systems may be generally stated as follows: Any patient who must be transported to or from a health care facility in a reclining position, i.e., an "ambulance patient," must be considered to be at some degree of risk. Even among nonemergency transport

patients, there are individual patients who occasionally require and always deserve the presence of advanced assessment skills and advanced prehospital procedures. It is assumed that the modest capabilities of a BLS crew, especially their BLS-level assessment skills, may be easily overwhelmed by potential at-scene or on-board complications, even in the context of a run originally and accurately labeled as nonemergency.

This underlying logic assumes that it is impossible, utilizing any combination of dispatcher qualifications and telephone interview protocols, to perform telephone assessments so accurately and consistently that the level of prehospital care can be routinely prescribed without significant and dangerous error.

Prescribing Prehospital Care by Telephone

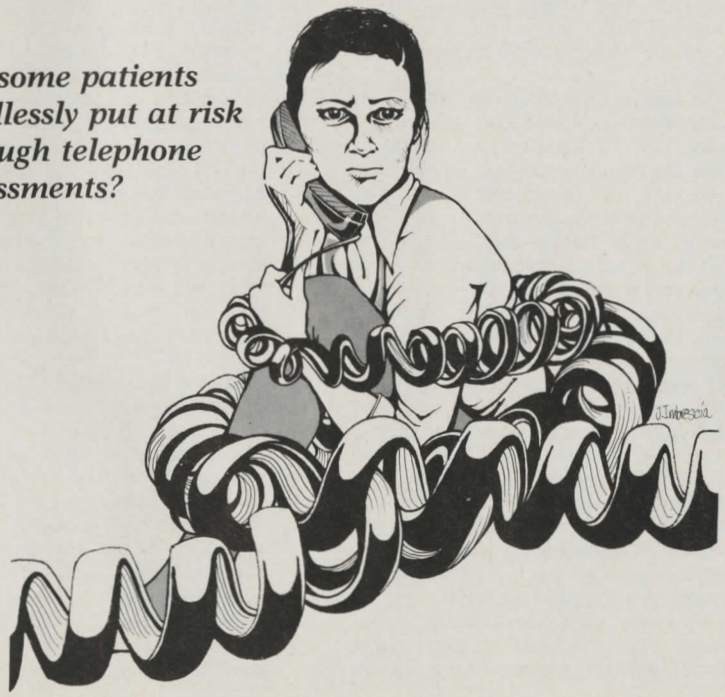
Dispatching ambulances in a multitiered system involves the uncertain practice of literally prescribing prehospital care by telephone. The decision to send a BLS ambulance, or not to send an ALS ambulance, has the same effect upon the patient: The system sends neither advanced procedural capabilities nor anyone capable of furnishing the more advanced patient assessment skills that, in some instances, might be necessary to correct an error in telephone "diagnosis."

The March 14, 1984, press release from the American Ambulance Association concerning the Dallas incident states the association's position as follows: "We also maintain that any emergency should be defined in the mind of the patient, and, as such, dispatch screening must be limited to determining an appropriate level of response, augmented with self-help instructions while awaiting life support assistance." This position correctly argues against refusing service to any caller, but continues to argue in favor of using telephone information actually to prescribe the level of care. (Sending an emergency ALS unit to the scene, *then* refusing service may not substantially reduce liability, since a duty has been even more clearly assumed in such cases.)

Risk to the patient may be further compounded by three-tiered systems where the crews responding to nonemergency requests are not only BLS crews, but BLS crews specializing in nonemergency transport. In such systems, risk to the presumptively defined — i.e., categorized by telephone — nonemergency patient population is even further increased by the presence of BLS crews having little if any routine exposure to emergency work.

Our industry's confusion over these matters is partially the result of the fact that most full-service systems rely heavily upon medically trained dispatch personnel and increasingly refined telephone protocols and priority dispatching techniques. In fact, when Dr. Clawson's priority dispatching cards first emerged, several of our own client systems — all-ALS, full-service systems — immediately adapted his work to their own dispatching procedures. Since then, we have modified and expanded Dr. Clawson's protocols several times and are currently integrating a hybrid version into our own computerized system status management software package.

Are some patients needlessly put at risk through telephone assessments?



Telephone Algorithms in an All-ALS System

The key to sorting out this confusion is to understand that, while both types of ambulance systems may use telephone protocols and priority dispatching procedures, the purposes of priority dispatching are entirely different. In the case of the multitiered system, telephone protocols and priority dispatching techniques are employed to refine the process of sending the not-so-good ambulance to the not-so-sick patient, while reserving the real-good ambulances for the real-sick patients.

In contrast, the all-ALS, full-service systems use similar telephone protocols and priority dispatching techniques, but for an entirely different purpose. In the all-ALS, full-service system, every ambulance, whether used for emergency or nonemergency purposes, is fully ALS capable. Thus, the dispatcher in the all-ALS, full-service system makes no attempt to prescribe BLS or ALS prehospital care from information gathered from the telephone. An ALS ambulance is always sent.

In the all-ALS system, the information obtained through telephone protocols and priority dispatching techniques is used to provide better information to crews en route, to allocate first responder resources, to provide superior prearrival instructions to the caller, to determine whether a multiple-unit response may be in order, to prioritize requests when competing demands upon the system make prioritization inevitable and to furnish updated information for system status management purposes — but not for call screening purposes.

Avoidable Error versus Unavoidable Error

No ambulance dispatching system can be made perfect; any system will be subject to occasional error. Every ambulance service system must, to some extent, prioritize resource allocation, using information gathered by way of telephone conversations, and this prioritization process will

inevitably be subject to error in any system.

However, prioritization for resource allocation purposes is subject to two kinds of error. First, if the system is multitiered, a mistake can be made in selecting the level of care necessary to that patient. Second, in all types of systems, mistakes can be made in prioritizing calls that place competing demands upon limited resources. Multitiered systems, by design, continuously risk error from both of these causes. The all-ALS, full-service system, in contrast, completely eliminates the possibility of error in selecting the level of care required and drastically reduces the probability of error in

Priority Dispatching After Dallas: Another Viewpoint

by Jeff Clawson, MD

Jeff Clawson, MD, full-time Fire Surgeon for the Salt Lake City Fire Department, originally developed the concept of medical priority dispatching in 1977.

Since its beginning, medical dispatching has lagged far behind other areas of EMS in terms of training, ancillary aids and relative funding. In other words, its importance has been significantly underestimated. From a national standpoint, it is remarkable that over 15 years of inadequate medical dispatching remained relatively unnoticed by many until a single dispatch screening anomaly surfaced in Dallas in January 1984 (see April *jems*, page 11). These inadequacies range from maximal vehicular response, to inappropriate use of red-lights-and-sirens, and inappropriate use of ALS personnel which may result in ALS vehicles being tied up on minor problems when a true ALS emergency presents itself. Why has emergency medical dispatching remained a weak-link in the EMS system chain of response? I suggest multiple reasons.

Since Salt Lake City began the integrated concept of medical priority dispatching in 1979, and first published material on the subject in February 1981 (*jems*), the program and associated concepts were evaluated, adapted and implemented by hundreds of U.S. communities and agencies over the intervening three years. Why? The "state of the art" of EMS dispatching had previously been to expect dispatchers to use "common sense" with minimal or at least quasi-applicable training in making critical decisions in times of crisis. One of our original tenets in pointing out the weaknesses of this previous non-system was that the EMS dispatcher was placed in the position of "re-inventing the wheel" every time the phone rang — hardly a good risk management concept. This "risky business" has gained increasing attention as EMS managers and personnel have had to come to grips with limited resources and tight economics increasing EMS abuse and employee burnout, and the concept of "tiered response." This changed the game for the dispatcher, whose main medical task at the point might have been to initially identify location of need and to "send the paramedics." Often, demands on dispatchers to make "appropriate" decisions significantly preceded any organized protocol system or training program needed to raise the medical competency of the dispatcher above the anecdotal level.

Medical Control in Dispatching

One of the most significant reasons for this lack of attention to dispatching is the lack of medical control at the dispatch level. Even today, emergency physicians and nurses commonly have no inkling as to the current pre-arrival state of affairs in EMS. That the closest ALS vehicle was tied up on a "cat bite" and a more distant unit was sent to the cardiac arrest call that you, as an ED physician or nurse, are now receiving is not questioned or even suspected. Unfortunately, in most systems, medical control only starts once the "biocom goes off" and inappropriate responses characterized by excessive red light and siren use, excessive numbers of responding vehicles, vehicles out of position or out of service unnecessarily continue to prevail throughout North America. Fortunately, previous experiences as EMTs has helped some of us avoid the same medical dispatch blind spot.

To look at it another way, the speed with which new concepts gain acceptance often is directly proportional to their Madison Avenue-type appeal. Certainly the ease of implementing a pre-arrival instruction program once a few medico-legal "boogie men" are put to rest is relatively simple compared to the very sticky and unpopular issue of call screening and appropriate response assignment. As antiquated as it now appears to EMS progressives, the concept of maximal response, categorized as either sending an ALS vehicle, or worse, always sending a first responder engine, plus paramedics and an EMT ambulance, is still countered religiously as the cure for the potential dispatch error of delayed or no response. We have, for years, created an ill-conceived, over-protective response practice that fails to survive the simplest logic applied against it.

We worry about the ultimate contingency, the "malpractice case" filed against dispatch personnel for an inadequately screened call but fail to admit to the disgrace of thousands of emergency vehicle accidents in the U.S. each year, many of which are totally unnecessary. Maximal response just trades the problem of the more highly visible delayed dispatch or "no-send" for a whole menagerie of less visible circumstances that we have previously described. Maximal dispatching remains a cop-out, not an answer to the problem, because it creates more problems than it cures.

What is the answer to dispatch risk reduction? The answer can be plainly derived from a statement made by medico-legal expert, James E. George, editor of the *EMT Legal Bulletin* in which he states "An 'up front' clearly articulated written policy in support of telephone screening of emergency calls, coupled with sound guidelines and protocols for use by dispatchers would provide a ray of legal light in an otherwise murky area of heavy potential liability. A reasonable system of call screening can provide a good legal defense for both the EMS dispatcher and his employer should a charge of negligent handling of emergency calls be raised by a plaintiff. EMS dispatchers must always avoid the appearance of responding to or categorizing emergency calls in a haphazard or arbitrary manner. A unified procedure will provide an excellent method of safeguarding against arbitrary decision making. Without a unified system, one dispatcher may decide that a crucial situation exists primarily on the level of emotion he detects in the caller's voice, while another may depend on his own 'gut' reaction, without being able to articulate a clear reason for his decision."

Prior to 1979, no well thought out, medically approved, or dispatch-specific protocols existed and dispatch "gut" reaction was the rule. To avoid this, the dispatcher must first be trained in medical dispatch priorities. EMT and paramedic training is heavily treatment oriented and not in and of itself directly applicable to the non-visual art of dispatch interrogation. The state of the art is now medical priority dispatching.

The minimal 25-hour EMD training course that has become the state standard for certifying dispatchers in Utah is

prioritization of competing demands upon ALS resources.

The complete elimination of error in level-of-care selection is easy to understand: The all-ALS, full-service system has no less-capable ambulances available, since their use is illegal in the communities served. And since none of the community's financial resources are being diverted away from the creation of ALS production capacity, the dispatcher in the all-ALS, full-service system often has more ALS resources available at any point in time, thereby reducing the risk of error from faulty prioritization of competing requests.

Thus, when Dallas reporters deluged the management of several all-ALS, full-service systems in recent weeks, they asked whether what just that — minimal. But it is effective and represents a solid start in the right direction, that is, dispatch-specific training for the weakest link in the EMS chain of response.

The course is built around the core concept of medically sound, unified protocols known as the Medical Dispatch Priority Card System. It consists of a short review of basic dispatch techniques, equipment, regulations and codes. The role of the EMD is explained and the Medical Dispatch Priority Card System introduced. At the system's core are the general concepts of *key questions, pre-arrival instructions,* and *dispatch priorities* broken down into both *determinant* and *response*. The "Four Commandments" of medical dispatch (chief complaint, age, status of consciousness and breathing) are reinforced as an absolute baseline of information obtained and relayed on every call. To be state of the art today, one must provide a pre-arrival instruction caller intervention service.

To prepare the EMD for the role of giving potentially lifesaving instructions to the caller, the trainees are first certified in basic life support on or prior to the first day of the course. The heart of the course is the review of each medical symptom or incident-type priority card. This includes a basic review of the problem involved, discussion of the *additional information* section of the cards, the significance of each *key question*, and an explanation of the appropriate *pre-arrival instructions*. The medical (as opposed to political or geographical) priorities of dispatching are stressed for each caller complaint. The introduction of the *non*-red-light-and-siren response concept for many calls previously felt to be dire emergencies by untrained dispatchers is an important learning experience for the EMD trainees. The importance of obtaining symptoms rather than diagnoses is stressed (e.g., chest pain vs. heart problem). The instructor discusses how to adapt and localize the *dispatch priorities* to meet different agencies' varied needs, and also demonstrates how to calculate and establish various levels of tiered response. A practical session of medical interrogation follows consisting of acted-out scenarios which result in actual use and application of the card system. A final examination is administered with successful candidates receiving state certification and an EMD uniform insignia. EMD regulations and standards in the state of Utah require recertification every three years.

The impact of medical priority dispatching is truly significant and appropriately safe. The results of a Salt Lake City study in which response practice before and after EMD training and dispatch protocol implementation were compared reveals that 33.4 percent of all emergency fire department responses in Salt Lake were not only unnecessary but were safely eliminated. The study pointed out that contrary to some local fears, no serious problems or citizen complaints have been received to date. Added benefits of the system are significantly better information being relayed to responding crews, reduction of emergency vehicle accidents (78 percent as reported by Salt Lake City fleet management), as well as ever increasing numbers of pre-arrival dispatch interventions ("saves").

EMS medico-legal expert, James O. Page, in a 1981 legal opinion aimed at skeptics to the implementation of priority dispatching in Aurora, Colorado, stated, "Throughout the U.S., we have spent billions of dollars constructing systems to respond to medical emergencies and we have done little to cure the deadly four-minute gap at the front of the system. While we range through city traffic to get to the scene, a brain dies for lack of CPR (oxygen). Frankly, I don't understand how any public safety or health care worker can accept these recurring tragedies without actively seeking a solution to the 'response time' problem which proves fatal in so many cases.

"...finally, communities such as Aurora are beginning to fill the deadly four-minute gap by providing invaluable medical self-help instruction via telephone.

"I have personally witnessed the innovative Phoenix 'Lifeline' system — and it is saving lives! I have investigated the Salt Lake City program and I feel it is a natural evolution of the Phoenix concept.

"In summary," reported Page, "I feel that the concerns which have been expressed over supposed legal hazards are little more than a 'red herring' issue. Of greater concern to me is the collective attitude which places such unwarranted fears on a higher plane than the compulsion for human service — especially saving lives."

Take the Test

As we must recurrently learn from the school of hard knocks, the solution to most EMS ills is encompassed by three basic areas — the problems of medical dispatch are no different. The generic ingredients to the solution are: improved training; effective, involved medical control; and adherence to intelligent, medically appropriate protocols and guidelines. The medical priority dispatch program integrates all three.

We have previously postulated that there exist at least seven misconceptions relating to medical dispatching. They are:

- The caller is too upset to respond accurately,
- The caller doesn't know the required information,
- The medical expertise of the dispatcher is not important,
- The dispatcher is too busy to waste time asking questions, give instructions, or flip through card files,
- Phone information from dispatchers cannot help victims and may even be dangerous,
- More personnel and more units at the scene are always better,
- It is dangerous not to maximally respond or to not respond red-light-and-siren.

Take the test. Can your agency own up to these serious misconceptions? Communities like Stockton, Aurora, Grand Island, Baltimore, Mesa, Calgary, Portland, and Salt Lake did and are now at the forefront of safe, efficient, and medically appropriate "state of the art" dispatching. You should be too!

Those interested in obtaining additional information or parts of the Medical Dispatch Priority Card System, the Utah EMD training program manual, or a pre-arrival instruction example cassette should contact the author at the Salt Lake City Fire Department, 159 East 100 South, Salt Lake City, Utah 84111. All items requested will be provided for cost and postage. □

Bibliography

Clawson J: "Dispatch priority training: Strengthening the weak link." *Jems* 1981; 2:32-36.

Clawson J: "The Red-Light-and-Siren Response." *Jems* 1981; 2: 34-35.

Clawson J: "Medical Priority Dispatch — It Works." *Jems* 1983; 2: 29-33.

George JE: "EMS Triage." *EMT Legal Bulletin* 1981; 4: 2-4.

Nelson L: "EMS 'Coaching' Saves Lives." *Fire Service Today* 1983; 12: 32-33.

Page J: "The EMT's Legal Check-Up." Solana Beach, California: Jems Publishing Company (1983).

St. John D, Shephard R: "EMS Dispatch and Response." *Fire Chief* 1983; 8: 142-44.

happened in Dallas could happen in Tulsa, Kansas City or Fort Wayne. The quick and completely accurate answer was no. Those systems *could* make an error in prioritizing ALS allocation among competing calls, but only during rare periods of system overload. And, of course, an error in level-of-care selection is impossible when only ALS ambulances exist. Even if an error in prioritization is made in the all-ALS, full-service system, the consequences to the patient are minimized by the fact that an ambulance is always sent, and that ambulance is always an ALS ambulance.

Long-range Consequences of the Dallas Experience

I am completely convinced that what happened in Dallas, or rather its tremendous exposure, has sounded the eventual end of multitiered systems. Even where priority dispatching is conducted in the best possible manner, it's application to call screening can no longer be effectively defended against a well-prepared and fully informed plaintiff's charge that no one, not even an emergency physician, can possibly learn enough in a telephone conversation to prescribe BLS care reliably and without *unnecessary* risk to the patient. The very presence of all-ALS, full-service systems destroys the argument that the increased risk of multitiered systems is inevitable and beyond the community's reasonable control. Such risk, however, is *not* inevitable and is *not* beyond the community's reasonable control.

False Economies

The primary argument usually raised in favor of the multitiered system is economic. But the underlying theory ignores our industry's economies of scale, extreme peak-load fluctuations and the advantages, even necessity, of fully centralized dispatching and centralized system status management. The economic concepts that gave birth to the multitiered systems can now be attacked not only theoretically but also empirically. If total system costs are compared — which they rarely are — and if equivalent clinical and response time standards are considered — equally rare — the all-ALS, full-service systems win hands down. And that even includes the Fort Wayne, Indiana, system which, until recently, was the nation's only large, *government-operated*, all-ALS, full-service ambulance system. *There is simply no sound economic or clinical justification to support the continued existence of the multitiered system, although it may be some time before that fact is widely understood.* The Dallas experience and its exposure will certainly accelerate the spread of this awareness.

But It Almost Always Works

While we're at it, let's put to rest another myth concerning multitiered systems. ALS providers in multitiered systems, especially the government-supported providers, often defend the lower tiers of service by arguing that there is little if any record of increased risk to the nonemergency patient population as a result of sending crews specialized in nonemergency BLS transfer service. The fatal flaw in this argument is that no large multitiered system in America provides expert and objec-

tive routine monitoring and auditing of large volumes of cases referred to or otherwise handled by nonemergency BLS providers.

It is argued that there are few complaints and that the BLS providers themselves claim a clean record. However, there are systems in America where *all* requests for ambulance services, both emergency and nonemergency, are received and processed by a single dispatch facility, and where ALS crews are regularly dispatched to large volumes of nonemergency requests. In such systems, and *only* in such systems, is it known how often a nonemergency request actually requires the appropriate use of advanced procedures at scene or on-board.

Unless an ALS crew is sent to the nonemergency scene, the assessment of the need for ALS procedure may regularly be deficient. And unless such nonemergency calls are regularly monitored and audited by an authorized, expert and independent entity, it is impossible to claim any worthwhile knowledge of the impact upon patient care of nonemergency BLS providers. (In a future "Interface" column, I shall attempt to shed some light upon this issue by describing, statistically and by case-study method, the experiences of ALS crews routinely sent to handle large volumes of so-called nonemergency transfer requests.)

Career Paramedics Rejoice

It's always hard to find the silver lining in anyone's misfortune, but if there is a silver lining to the cloud over Dallas, it has to do with the implications for accelerated evolution of the paramedic profession. In 1984, nearly half of this industry's job opportunities are filled by people who work for free: volunteers. Of the remainder of these positions, approximately 80 percent are occupied by persons trained at the BLS level.

In EMS, and only in EMS, the master craftsman and master craftswoman ironically must actually compete for jobs with people who work without compensation, and with people who have but a fraction of their skill, knowledge, training and investment in credentials. And the companies that employ these master craftsmen, in turn, must compete with those sharing the same commercial market, but which often employ no master craftsmen at all.

Short-Term Danger

Even in an all-ALS, full-service system, telephone algorithms and prioirty dispatching are important tools. In the Tulsa system, an ambulance may be alerted and given all necessary information by a touch of a button, meaning that the unit can be dispatched quite early in the sequence of a lengthy telephone algorithm designed to accomplish much more than call screening. The problem that the Dallas exposure has caused is that partially informed callers now sometimes refuse to continue through the telephone protocol. Several have even referred to the Dallas incident, angrily demanding immediate dispatch, not realizing that an ALS unit is already on the way.

Call screening practices must not be allowed to discredit the value of good telephone protocols and priority dispatching techniques. Now, we must teach the public to make the distinction, or risk losing important and valuable information that occasionally saves lives. □