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FACILITATING EMS TURNAROUND INTERVALS AT HOSPITALS IN THE FACE OF RECEIVING FACILITY OVERCROWDING

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ABSTRACT

The escalating national problem of oversaturated hospital beds and emergency departments (EDs) has resulted in serious operational impediments within patient-receiving facilities. It has also had a growing impact on the 9-1-1 emergency care system. Beyond the long-standing difficulties arising from ambulance diversion practices, many emergency medical services (EMS) crews are now finding themselves detained in EDs for protracted periods, unable to transfer care of their transported patients to ED staff members. Key factors have included a lack of beds or stretcher space, and, in some cases, EMS personnel are used transiently for ED patient care services. In other circumstances, ED staff members no longer prioritize rapid turnaround of EMS-transported patients because of the increasing volume and acuity of patients already in their care. The resulting detention of EMS crews confounds concurrent ambulance availability problems, creates concrete risks for delayed EMS responses to impending critical cases, and incurs regulatory jeopardy for hospitals. Communities should take appropriate steps to ensure that delivery intervals (time elapsing from entry into the hospital to physical transfer of patient care to ED staff) remain extremely brief (less than a few minutes) and that they rarely exceed 10 minutes. While recognizing that the root causes of these issues will require far-reaching national health care policy changes, EMS

and local government officials should still maintain ongoing dialogues with hospital chief administrators to mitigate this mutual crisis of escalating service demands. Federal and state health officials should also play an active role in monitoring progress and compliance. **Keywords:** 9-1-1 systems; emergency medical dispatch; EMD; emergency medical services; EMS; hospital overcrowding; Emergency Medical Treatment and Labor Act; EMTALA; ambulance diversion; regulatory violations; access to care; patient choice.

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OVERVIEW

Emergency medical services (EMS) systems have always placed a great deal of emphasis on response intervals, largely because of the direct association with a patient's chance of survival following out-of-hospital cardiac arrest and other emergencies.¹⁻⁷ In turn, response intervals often drive EMS system configuration, resource allocation, deployment strategies, and service delivery models. Response intervals are also pivotal in terms of decisions regarding the number of available EMS response crews, their travel times, system capacity considerations, and even public expectations.¹⁻⁹

Although focusing primarily on response intervals can be considered overly simplistic, in general, they have become both a contractual and perceptual basis for 9-1-1 system performance, especially in the eyes of public advocates such as elected officials and even the media.^{1,10} As a result, many logistic (staffing and deployment) considerations and dispatcher functions have become highly scrutinized in order to capture any additional time savings whenever (and wherever) possible.^{2,11,12} Such scrutiny can also include the time spent "out of service" (not available for the next response), and especially the time spent on scene or even the time spent at a hospital emergency department (ED) following patient transport.^{12,13}

Nevertheless, to date, discussions and considerations regarding the optimization of response intervals generally have not addressed the amount of time that ambulance EMS crews spend waiting for hospital personnel to assume care of the patient. This factor has not been focused on traditionally because it has not been perceived to be a particular problem, at least in terms of the hospital's role in facilitating transfer of patient care. However, in recent years, the escalating problem

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of extremely high inpatient occupancies has resulted in EDs' becoming saturated with patients, including those patients who have been admitted as inpatients but are still waiting for available inpatient beds. Many EDs have become so congested with admitted patients "boarding" alongside the other patients who have come to the ED seeking acute care, that paramedics are now often required to remain in the EDs, monitoring their patients for extended periods of time, until extremely busy ED personnel directly assume responsibility for these patients.¹³ In fact, in some situations, the EMS-transported patients remain in the ED on the ambulance stretchers for lengthy periods because paramedics are unable to transfer care for something as rudimentary as the lack of an available ED stretcher or an available space in the ED to place the stretcher.^{13,14}

During a recent meeting of most of the jurisdictional EMS medical directors for the nation's largest cities (Appendix A), it became apparent that this problem has now become significant in the nation's most populous U.S. municipalities (combined daytime U.S. populations of about 50,000,000 in these jurisdictions alone). In some cities, it has been a spiraling problem for several years. It has also been perceived to be one of the more subtle sequelae of the longstanding, complicated, and often ineffective practice of receiving facility personnel requesting that ambulance crews divert to other facilities when they find their hospital beds filled to capacity.

Recognizing that detaining EMS crews can have a significant adverse impact on ambulance availability, and even response intervals, this national consortium of U.S. metropolitan municipality medical directors began a dialogue that addressed some of the root factors, and, in turn, they made recommendations to help mitigate the problem. These factors and recommendations are discussed in the following text.

DEFINITION OF THE ISSUES

The EMS turnaround interval at hospitals is defined as the time interval that begins when an ambulance arrives at the ED door and ends after the patient-transporting paramedics, or emergency medical technicians (EMTs), have transferred care of their patient to ED staff and, in turn, become fully available for their next response.¹³ This time span includes: 1) the "delivery interval," which includes the time elapsed from crossing the ED entry point until physical transfer of care occurs (physically moving the patient from the ambulance stretcher onto the ED stretcher); 2) the "verbal report interval," which includes the time taken to give a verbal report about the patient to the ED staff (usually the triage, charge, or team nurse); 3) the "written report interval," which includes the time required to complete the written ambulance medical report that would be left with the hospital); and 4) the "recovery

interval," which includes the time spent cleaning the ambulance and restocking any used equipment.¹³ Thus, the actual turnaround interval at a hospital is defined as the time period from the actual arrival of the ambulance at the hospital door until its actual departure from the hospital.¹³ Nevertheless, the focus of this discussion does *not* include the recovery (restocking-cleaning) interval or the written report interval; instead, it focuses on the delivery and verbal report intervals.¹³

Nationwide, oversaturation of inpatient hospital capacities and the accompanying dilemma of overcrowded EDs have received a great deal of attention in both the medical literature and the lay press as an evolving crisis across the United States.¹⁴⁻²³ This critical health care predicament appears to be just as severe, if not worse, in Canada, where the government directly monitors and provides national health care coverage.¹⁹ When paramedics transport a patient to an overcrowded ED, they are often confronted with a lack of available ED stretchers and available staff because those nurses and doctors are already focused on patients whose illness and injuries are more acute and require more paperwork, special procedures, and documentation than ever before. With increasing frequency and duration, paramedics must now wait in the ED with the patient on the ambulance stretcher until an ED stretcher and/or staff member becomes available.¹⁴ Traditionally, such a transfer of care would be almost immediate. Today, these waits can vary from a few minutes to even several hours in some cases, a clear imposition on the EMS system and one that could deprive the next critical emergency of a timely response from a medical rescue crew.¹⁴

If it were one ambulance, on one odd occasion, that was imposed upon (for some good reason), it might be deemed acceptable by the stakeholders in the EMS system. However, when multiple ambulances (or the only paramedic ambulances in a particular area) are out of service (unavailable for response), there is significant potential for negative impact on the ability to provide emergency medical services to the community, and lives may literally be put at risk.

One could always argue that the next 9-1-1 call is not necessarily imminent and that the chances that such a response will be for an impending critical emergency is less than one in ten.⁸ Therefore, it follows that the priority should be the very sick ED patients who are a "here-and-now" reality for the ED staff. However, in a large city, ten consecutive or concurrent delays at a multitude of EDs essentially guarantee that a critical delay will occur. Likewise, even in a small town, such continuous delays can be catastrophic if they involve the only advanced life support (ALS) response unit in a particular area.

It could also be rationalized that, in the ongoing disaster conditions (outstripped resources) of the modern ED, paramedics should become "de facto" ED

staff, since they are capable of monitoring their patients, and thus should assist the ED staff under those conditions. Sometimes they may even be called upon to provide treatment while they are within the confines of the hospital. EMS personnel, out of a sense of public service and continuity of care for their patients, may even accommodate the ED staff accordingly. However, as stated before, such behaviors, on a routine basis, may have detrimental impact. Consequently, in reaction, some EMS jurisdictions have even entertained the concept of billing the receiving hospitals for the EMS personnel's time, charging the hourly wages paid to the ambulance crews. Obviously, this situation has become complicated, and there is now need for intervention.

SCOPE AND ROOTS OF THE PROBLEM

Hospital Overcrowding and the National Health Care Crisis

As stated previously, oversaturation of hospitals with admitted patients and, in turn, related backlogs of patients in their respective EDs have become widespread problems across North America.^{22–26} The problem has been cited more and more as having reached crisis proportions in both lay and medical publications.^{15–26} In addition to caring for an increasing number of acutely ill and/or injured patients, EDs have become the nation's medical safety net in that they ensure that emergency medical care is available to all people around-the-clock, regardless of their ability to pay and their socioeconomic status, race, creed, color, sexual orientation, or any other factor.²⁴ For many millions of patients each year, especially the underinsured, the ED serves as a "provider of last resort."²⁴

Specifically, annual ED visits in the United States have steadily increased from 90 million in 1998 to 110.2 million in 2002, despite respective decreases in the number of available EDs.^{24–27} In some EDs, the majority of patients treated lack health insurance. According to available data, 43.6 million Americans (15.2% of the population) currently lack health care insurance.²⁶ Consequently, EDs collectively lose hundreds of millions of dollars each year in resource utilization, including personnel costs, pharmaceuticals, and equipment.²⁷ Although it is estimated that up to 80% of all Medicaid and uninsured-patient visits to EDs could have been treated in a non-emergency care environment, patients still tend to use EDs.^{22,23} In turn, these patients contribute to overall ED crowding, slow patient flow, and exacerbate hospital financial losses. Therefore, it must be recognized and emphasized that the health care reimbursement crisis affects all patients, rich or poor, insured or uninsured, young and old, who anticipate that they will receive rapid and focused treatment when they experience their own true emergencies.^{20,24}

The negative impact stemming from a lack of inpatient beds, particularly monitored and intensive care unit beds, cannot be overstated. Patients are presenting more and more to EDs with higher acuity. As recently reported, critical visits per ED in California increased by 59% during the past decade, while the number of staffed critical care beds decreased by 4%.^{22,25,27} During the same time period, the number of licensed EDs in the state decreased by 12%, while the total number of ED visits increased by 12%, resulting in a 27% increase in the total number of visits per ED.²⁷ In Los Angeles County, California, alone there has been a 21% decrease in the number of functional EDs during the past decade.^{14,22,25,27}

As hospitals have become more and more saturated with admitted patients, the phenomenon of ED "boarders" has taken root. So-called boarders are those patients who have already been officially admitted to the hospital, but who are taking up ED beds due to the lack of open inpatient hospital beds. These boarders can occupy a sizable percentage of ED beds or stretcher space, thereby decreasing the number of new patients who can be safely evaluated and treated. Furthermore, admitted patients are, de facto, likely to be the sicker patients, and they require more focused and ongoing nursing care. In turn, this additional load of ED boarders precludes ED nurses from seeing as many new patients as they would otherwise be able to manage. In fact, regardless of the boarder phenomenon, ED nurses today are already spread thin in terms of responsibilities, particularly in large urban centers. The boarder phenomenon only compounds their stress and further dilutes their medical care focus.

Temporizing Solutions: Their Limitations and Their Sequelae

Over the past three decades, a controversial strategy, called "ambulance diversion," was conceived to relieve strain on oversaturated EDs. Specifically, over the years, administrative and/or medical personnel at hospitals have adopted a pattern of actively asking ambulance crews and EMS supervisors to divert away from their doors and to transport inbound patients to other facilities, regardless of patient preferences.^{28–31} In general, this custom has led to exacerbation of crowding at the other facilities and, as a defense mechanism, a domino effect has generally ensued, often leaving ambulance crews with the dilemma of searching for any open door for their patients.³¹ Considering that nearly 80% of urban hospitals have described their EDs as routinely being "at" or "over" capacity on a typical day, it would not be a surprise that EMS systems find themselves continually challenged to facilitate one of their basic functions, expeditious patient transport.^{22–24} Therefore, while diversion has been used as a potential solution for a given hospital to relieve its crowded EDs, the neighboring

EDs are quickly forced to do the same, and the problem of delays in emergency patient care and ambulance availability for service and response are compounded.

At the same time, it is also the general policy in most EMS systems to have their personnel grant the hospital destination request of the patient and/or patient's family unless there is a true "disaster" or infrastructure problem (loss of power, flooding, collapse, etc.). If the patient or family members insist on transport to a given hospital despite admonishments about the overcrowded conditions and/or notification that the hospital has made diversion requests, the medics usually override the hospital requests. Coupled with suboptimal communication and misunderstandings about the nature of diversion requests, the arrival of an ambulance may be met with surprise and even hostility when the stressed ED personnel thought that they were placed on a general "drive-by" status and expected relief from additional patients. As a result, such misunderstandings can create friction and often an evolving resentment on both sides of the transport agency-receiving facility interface.

In essence, EMS diversion policies, originally acknowledged by EMS systems as a potential benefit for patients or as a professional courtesy for fellow health care colleagues, have generally been a suboptimal temporizing measure and one that has often resulted in adversarial relations for two key groups of patient advocates.

EMS System and Regulatory Reactions to Hospital Diversion Scenarios

Recognizing the limitations and potential impositions of diversions, many EMS systems have entirely eliminated the practice of diversions, excluding well-accepted destination policies such as those associated with trauma center designations. This type of policy is strengthened by the fact that the EMS regulatory agencies in most states actually consider diversion requests a "courtesy" or a "medical judgment consideration" that *may* be of benefit to the affected patient if it is truly believed that the diversion from the reportedly "oversaturated" facility could, in good faith, result in expedited care for that patient. However, if a patient's records and physicians are at the "diverting" hospital, particularly those records and clinicians related to an acute and worrisome situation, most policies would still support override of the diversion request if the patients (or family members) so insist. For example, when transporting a patient with crescendo angina whose personal cardiologist(s) and records are at the hospital requesting diversion, the EMS crews would likely honor the patient's request accordingly.

Therefore, the underlying issues still remain. The entire health care system is challenged—and it is becoming increasingly challenged. Furthermore, use of tem-

porizing methodologies such as asking for ambulances to divert elsewhere have generally created false expectations of relief and they have often only engendered tensions between very dedicated groups of strong patient advocates. Moreover, this long-entrenched custom may have indirectly exacerbated such tensions by creating a now somewhat-ingrained mentality that the ED facilities may no longer have a universal obligation to care for all incoming patients, especially if one takes the position that it is "not safe to take on any more patients" in an ED already rife with acutely ill and injured patients. In sympathy, EMS personnel may also take on the philosophy that the EMS system is also besieged by persons who are "not true emergencies" and not therefore not deserving of EMS response and transport to crowded EDs. Regardless of the ethical and philosophical considerations, such rationalizations may put the EMS system at risk of liability if, as a result, transports to hospitals are declined or patients are discouraged from going to the hospital.³²

The Escalating Phenomenon of Patient Parking

More pertinent to this discussion is a kind of secondary fallout of both fulfilled and unfulfilled diversion requests and the derivative mentality that the ED may not necessarily have a universal obligation to immediately care for all EMS-transported patients, especially those who may be deemed to have less acute conditions. Most relevant to the issue of hospital turnaround time intervals is a problem with contingency planning for those situations in which all ED beds are occupied. When paramedics do transport a patient to an ED that is already overcrowded, there still may not be an open bed for the transfer of patient care. Paramedics must then wait with their patient "parked" in the ED hallway until a hospital stretcher becomes available,¹⁴ a phenomenon paralleling the hospital boarder concept. In most EMS systems, the prehospital care crews must then notify their dispatchers that their ambulance will need to remain "out of service" and that they are unable to respond to additional calls until further notice. This consequence of ED crowding on EMS systems has already been reported in the literature.^{13,14,31}

While recognizing the plight of the stressed ED staff, this scenario may still create a professionally awkward situation for the EMS personnel who, as public servants and advocates for expeditious care, may feel strained by the impasse. Depending on the individual paramedic or EMT, this may kindle defensiveness, impatience, and/or a sense of inadequacy in terms of providing the best care possible to the patient and the potential patients awaiting them. At the same time, the ED staff is experiencing their own sense of vulnerability and concern over their patients' safety when resources and personnel are scarce. The result can often

be confrontational and, in the middle of this tension, the patient may be either an instigating force or an embarrassed and vulnerable bystander.

Looking at this more objectively, however, the “parked” patient may indeed not need emergent and immediate care and, therefore, the delay may not be deemed a true problem, and thus a delay in transfer of care could be justified. Nevertheless, as outlined previously, such delays further impair the entire system of emergency care and, therefore, such delays need to be recognized and addressed. More importantly, while it is not a universal pattern found in all hospitals, overall, it still is becoming an escalating problem nationwide based on the experience in the nation’s largest cities. As reported by Eckstein and Chan, paramedics in Los Angeles must declare themselves as “out of service” for the next response while awaiting an open ED stretcher in one out of every eight transports.¹⁴ Of these detentions, almost 10% involved waits in excess of one hour. In essence, the paramedics are still assuming continued care of the patient even though they are doing so in the ED, be it active or monitoring care.

These kinds of extraordinary delays not only are a problem in terms of their negative impact upon the 9-1-1 system’s operation and EMS response intervals, but also are now attracting scrutiny by regulatory agencies. One major regulatory issue is that paramedics cannot assume the role of hospital staff in the ED. According to the Centers for Medicare and Medicaid Services (CMS), “Under the Emergency Medical Treatment and Labor Act (EMTALA), a patient is considered to have ‘presented’ to a hospital when a patient arrives on hospital grounds and a request is made on the individual’s behalf for examination or treatment of an emergency medical condition. A patient who arrives via EMS meets this requirement when EMS personnel request treatment from hospital staff. A hospital’s refusal to ‘accept responsibility’ could be a violation of EMTALA. Additionally, delaying care of a patient (by forcing the patient to wait with EMS in the hospital) could also be a violation of EMTALA.”³³ In essence, once patients are brought into the ED, they are the responsibility of the hospital and, notwithstanding the impact on the 9-1-1 system, there is a federal regulatory expectation that all EDs must have policies and procedures in place to *immediately* receive and assume care of the patient.³³

RECOMMENDATIONS

The ultimate potential solutions to the issue of ED and hospital overcrowding are numerous and they are broad in scope. More importantly, they are unlikely to dissipate in the near future. Accordingly, this aspect of our health care crisis endangers every single person in the United States since it threatens each of our chances of getting expedited and focused medical care

at the time of our own emergency. If one now extends this discussion in terms of preparing for terrorism, a major transportation mishap, a pandemic, or other natural disasters, it is clear that we have no such surge capacity accommodations within the current system. Since health care system problems are so widespread and complicated, most meaningful long-term solutions eventually need to involve action at the federal level or, if necessary, at the election booth.

Nevertheless, the crisis remains a “here-and-now” dilemma, and stakeholders should still attempt to act locally. In examining the sequence of events and confounding factors that lead to “patient parking” and ED “boarding,” they include saturation of hospitals, frequent use of the ED, and overutilization of the 9-1-1 system. Therefore, several potential action items are listed below. Recognizing that many of these procedures are already in place in most communities, they are still put forth as concepts that should be considered by all EMS and hospital managers.

EMS System Actions

Many EMS systems have examined methods to screen patients at the dispatch office, but occasional bad outcomes and the associated risk-management challenges have made this politically unpalatable.^{34,35} Likewise, mechanisms that might diminish transports to hospitals after paramedics or EMTs arrive on scene and perform their evaluation, even with built-in quality assurance programs (clearance through medical control or supervisors), often fall short of expectations. Decisions not to transport patients also continue to be the number-one cause of risk management threat for EMS systems.³² In addition, the yield from such initiatives is probably only a small percentage of patients in most communities. Still, a prospective, community-wide debate and consensus may be worth pursuing on all of these load-reducing concepts.

Finding our citizens alternative numbers to call, especially “after hours,” or alternative places of appropriate medical care (e.g., shuttle transport to nearby clinics), might also be helpful. Finally, the strategy of public service announcements that discourage citizens from calling 9-1-1 except in “emergencies” has often backfired, with observed increases in calls to 9-1-1.³⁴ Nonetheless, it is still recommended that EMS systems continue to explore, re-explore, and retest such concepts, perhaps with innovative strategies to achieve some relief for the emergency care system.

Hospital Actions

In terms of hospital saturation, ED managers must work with hospital administrators and the respective physician leadership of each receiving facility to better

ensure maximal hospital efficiencies. Patient throughput times must be continuously monitored, and any correctable areas of delay need to be identified. Effective triage and bed utilization are a critical focus, as is the use of fast track, acute care clinics, observational units, and other types of overflow areas, assuming they can be made available. Chief of service participation is key to ensure the involvement of all of the hospital's physicians and administrative staff. It is also important in terms of leading the decision-making process in such difficult areas as resource utilization, early discharges, and round-the-clock attention to expediting patient diagnostics and procedures. Use of innovative concepts, such as a 24-hour-a-day discharge holding area, could free up scarce, coveted hospital beds.

Emergency Department Actions

Mandatory nurse-patient ratios, which are often enforced on inpatient hospital wards, but not necessarily in the ED, need to be re-evaluated and re-prioritized to ensure compliance with such patient safety staffing in the ED. So-called "safe" nurse-patient ratios, which are deemed to be the minimum staffing ratios for good patient care in other critical care areas of the hospital, should also apply to the ED. This approach could also be configured to allow overflows of patients to be managed collectively in the hospital, rather than just being held in the ED by default.

In addition, every hospital should create a mechanism to provide rapid access to additional stretchers and a written plan to address overcrowding. Additional supplies of ED stretchers or litters must be available when ED crowding results in a lack of open stretchers, even if these additional patient placements may conflict with fire marshal concerns about egress, access, and fire hazard precautions. Such plans are more acceptable when one specifically addresses the contingency as it would relate to rapidly releasing EMS provider crews in a disaster situation (i.e., a situation in which resources are outstripped by demand).

In fact, such planning, equipment access strategies, and related policies would be consistent with disaster planning needs and budgetary considerations. In the current climate of focusing on homeland security, such budgetary justifications would be seem more palatable. Furthermore, there should be a renewed focus and pervasive philosophy that emphasize the enabling of paramedics to immediately transfer care of their patients to ED staff. Delivery intervals should be limited to a few minutes and, even during busy periods, they should not exceed 10 minutes. This facilitated transfer could include prompt triage systems that could enable stable patients to go to fast track, acute care, or other areas, as applicable.

Community-Wide Initiatives

Clearly, these previous recommendations constitute just a few proposals that may or may not be immediately feasible. Also, it is clear that conscientious, creative EMS and hospital managers have even better recommendations from their own experiences and individual circumstances. These concepts should be actively shared and cross-examined at the highest levels of management across the hospital and EMS system, particularly considering the relative lack of cooperation or full understanding of the issues at some facilities. Therefore, it is strongly recommended that EMS and local government officials initiate ongoing dialogues at the highest levels of hospital management to mitigate this mutual crisis of escalating service demands. State health officials and federal regulatory agencies should also play an active role in monitoring progress and compliance of action plans. It could be agreed upon that a person serving as a designated community monitor should be assigned to help ensure compliance across the system.

In the meantime, EMS personnel need to have contingency plans in place. Considering that rapid turnover of patient care is not only critical to the 9-1-1 system as well as a regulatory issue, a recommended action matrix for EMS providers and their city/county leaders to approach and mitigate the problem of "parking" EMS-transported patients is shown in Table 1. Recognizing that this matrix calls for very assertive actions,

TABLE 1. Suggested Actions to Mitigate Prolonged Patient Delivery Intervals at Receiving Facilities Based on the Severity and On-Going Nature of the Problem *

Stage	Action
Initial	Emergency medical services (EMS) leadership documents the problem and extent of EMS "patient parking" and meets with emergency department (ED) medical director, administrative director, and nurse managers to resolve the problem
Secondary	If problem persists, EMS leadership meets with hospital administration and presents data from documentation before and after the initial action (meeting with ED staff), and do so along with local and/or state health officials and/or federal regulators, if feasible
Tertiary	If problem persists, EMS leadership meets with city leaders, health directors (city, county, state), and risk managers, and with their approval, meet with applicable elected officials and media representatives to warn about impending quaternary actions
Quaternary	EMS carries spare stretchers/litters and informs hospitals in advance that, after 10 minutes, the patient and the stretcher may be left at the triage area or ED hallway, with the understanding that patient responsibility begins once the patient and EMS crew arrives at the hospital

*These stages can be acted upon over several weeks or months depending on the circumstances and severity of the problem.

all efforts should be taken by EMS medical directors and their EMS administrative colleagues to first work closely and diplomatically with receiving hospital administrators and their ED staff members. It is hoped that this team effort will work to ensure that policies and procedures are in place to facilitate the ED turnaround period and to ensure that the delivery and report intervals will last no more than a few minutes (and almost always less than 10 minutes). These intervals should be monitored and tracked using a 90th percentile fraction methodology, just as other EMS response intervals are assessed.¹

CONCLUSIONS

As hospital and ED crowding continues to worsen, ambulances are being detained from 9-1-1 responses for extended periods of time while waiting to transfer care of their patients to the ED staff. The EMS community must work with the hospital community so that appropriate steps are taken to ensure that the delivery interval elapsing from entry into the hospital to physical transfer of patient care from EMS providers to ED staff is extremely brief (less than a few minutes) and that it rarely exceeds 10 minutes. All of the stakeholders in the health care system must work together to achieve effective, long-term solutions to the hospital and ED crowding issue, a critical problem that adversely impacts all members of the community at large.

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APPENDIX A

U.S. Metropolitan Municipalities' EMS Medical Directors Consortium ("Eagles" Coalition)
(Core Group, Associate Members and Guest Faculty for February 16-19, 2005, Coalition Meeting, Dallas, Texas)

**New York City**

Bradley J. Kaufman, MD—Division Medical Director for the Fire Department of New York; Assistant Professor, Emergency Medicine, State University of New York Health Science Center at Brooklyn; Kings County Medical Center, Brooklyn

City of Los Angeles:

Marc Eckstein, MD—Medical Director, Los Angeles Fire Department; Associate Professor of Emergency Medicine, Keck School of Medicine of the University of Southern California

City of Chicago:

Paula J. Willoughby, DO, MPHE—Medical Director, Chicago Fire Department; Assistant Professor of Medicine, University of Chicago; National President, American College of Osteopathic Emergency Physicians

City of Houston:

David E. Persse, MD—Physician Director, City of Houston EMS and Public Health Authority, City of Houston Department of Health and Human Services; Associate Professor, Department of Emergency Medicine, University of Texas Health Sciences Center at Houston

City of Philadelphia:

C. Crawford Mechem, MD—Medical Director, City of Philadelphia EMS, Philadelphia Fire Department; Associate Professor, Department of Emergency Medicine, the University of Pennsylvania

City of San Diego:

James Dunford, MD—Medical Director, City of San Diego EMS and Professor of Clinical Medicine and Surgery, Department of Emergency Medicine, University of California, San Diego

City of Dallas:

Paul E. Pepe, MD, MPH—Director, City of Dallas Medical Emergency Services and Medical Director, Dallas Metropolitan BioTel (EMS) System; Professor of Medicine, Surgery, Public Health and Chair, Emergency Medicine, the University of Texas Southwestern Medical Center and the Parkland Health and Hospital System, Dallas

City of San Antonio:

Donald Gordon, PhD, MD—EMS Medical Director for San Antonio and Leon Valley Fire Department and the First Responder Network; Professor, Emergency Health Sciences Department, University of Texas Health Science Center, San Antonio.

City of Indianapolis:

Michael L. Olinger, MD—Director, Division of Out-of-Hospital Care, Department of Emergency Medicine, and Associate Professor of Clinical Emergency Medicine, Indiana University School of Medicine, Indianapolis

City of San Francisco:

S. Marshal Isaacs, MD—Medical Director, City of San Francisco EMS, San Francisco Fire Department; Associate Clinical Professor of Surgery, the University of California, San Francisco; Attending Physician, San Francisco General Hospital

City of Columbus:

David Keseg, MD—Medical Director, Columbus (Ohio) Division of Fire: Chief Development Officer, Premier Health Care Services; Clinical Instructor, Ohio State University

City of Austin:

Edward M. Racht, MD—Medical Director, City of Austin and Travis County EMS; Associate Clinical Professor of Surgery, University of Texas Southwestern Medical Center at Dallas; Chair, Governor's EMS and Trauma Advisory Council, Texas Department of State Health Services

City of Louisville, KY:

Neal J. Richmond, MD—Chief Executive Officer, Louisville Metro EMS

City of Milwaukee:

Ronald G. Pirrallo, MD—Milwaukee County EMS Medical Director; Associate Professor of Emergency Medicine, Medical College of Wisconsin

City of Boston:

Peter H. Moyer, MD—Medical Director, City of Boston EMS; Past-Chair and Professor of Emergency Medicine, Boston University School of Medicine

City of El Paso:

James R. (Randy) Loflin, MD—Medical Director, City of El Paso EMSS; Associate Professor, Emergency Medicine, Texas Tech University Health Science Center, El Paso

City of Seattle:

Michael K. Copass, MD—Medical Director, Seattle Medic I Program, City of Seattle EMS, Seattle Fire Department; Professor of Medicine and Neurology, University of Washington, and Director of Emergency Services, Harborview Medical Center, Seattle

City of Fort Worth:

John Griswell, MD—Medical Director, MedStar (City of Fort Worth EMS)

City of Nashville:

Corey M. Slovis, MD—Medical Director, Nashville EMS, Nashville Fire Department; Professor and Chair of Emergency Medicine, Vanderbilt University, Nashville

City of Portland:

Jonathan Jui, MD—Medical Director, City of Portland Fire Bureau, Multnomah County EMS; Professor of Emergency Medicine, Oregon Health and Sciences University, Portland

City of Tucson:

Terence Valenzuela, MD, MPH—Medical Director, Tucson Fire Department, Professor of Emergency Medicine, University of Arizona, Tucson

City of New Orleans:

Juliette M. Saussey, MD—Director of EMS, City of New Orleans; Clinical Instructor, Louisiana State University School of Medicine, Section of Emergency Medicine, New Orleans

City of Cleveland:

Thomas E. Collins, MD—Medical Director, City of Cleveland EMS

City of Atlanta:

Eric Ossman, MD—Medical Director, City of Atlanta—Grady Memorial Hospital EMS; Assistant Professor, Department of Emergency Medicine, Emory University, Atlanta

City of Miami:

Kathleen S. Schrank, MD—Medical Director, City of Miami Fire Rescue and Professor of Medicine, Emergency Services, University of Miami—Jackson Memorial Hospital, Miami

City of Richmond:

Joseph P. Ornato, MD—Medical Director, Richmond Ambulance Authority, City of Richmond EMS; Professor of Emergency Medicine and Internal Medicine (Cardiology) and Chair of Emergency Medicine, Virginia Commonwealth University, Richmond; American Editor for Resuscitation

**Federal Agency Medical Directors/Medical Officers***Federal Bureau of Investigation:*

William P. Fabbri, MD—Medical Officer, Federal Bureau of Investigation (FBI), Washington, DC

United States Secret Service:

Nelson Tang, MD—Medical Director, United States Secret Service and Assistant Professor, Department of Emergency Medicine, the Johns Hopkins University, Baltimore, MD

U.S. Department of Homeland Security

Jeffrey A. Lowell, MD—Senior Advisor to the Secretary for Medical Affairs, U.S. Department of Homeland Security, Washington, DC; Professor of Surgery and Pediatrics, Washington University School of Medicine, St. Louis, MO

The White House

Richard J. Tubb, MD—Colonel USAF, MC, CFS, Physician to the President; Medical Director, White House Medical Unit, Washington, DC

James McLeod, SMSgt. USAF—Training Director, White House Medical Unit, Washington, DC

ACEP–NAEMSP National Presidents

Robert E. Suter, DO, MHA—President, American College of Emergency Physicians; Clinical Associate Professor of Emergency Medicine, University of Texas Southwestern Medical Center at Dallas, and Attending Physician, the Parkland Health and Hospital System Emergency–Trauma Center, Dallas TX

Robert E. O'Connor, MD, MPH—President, National Association of EMS Physicians; Director of Research and Education, Department of Emergency Medicine, Christiana Care Health System, Newark, DE

Special Guest Faculty

Raymond L. Fowler, MD—Past-President and Co-Founder, National Association of EMS Physicians; Inaugural National Program Director, Basic Trauma Life Support; Associate Professor, Emergency Medicine, University of Texas Southwestern Medical Center and the Parkland Health and Hospital System; Deputy Medical Director for Operations, the Dallas Metropolitan BioTel (EMS) System, Dallas, TX

Lori Moore, DRPH, MPH—Assistant to the General President, Technical Assistance and Information Resources, International Association of Firefighters; Commissioner, Commission on Fire Service Accreditation International, Washington, DC