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Future Directions for EMS and the EMS Agenda for the Future

In response to: <https://www.federalregister.gov/articles/2016/04/01/2016-06960/revision-of-the-emergency-medical-services-agenda-for-the-future-request-for-information>

Docket No. NHTSA-2016-0035

June 28, 2016

To Whom It May Concern:

Thank you for the opportunity to contribute to this EMS Agenda for the Future Request for Information. As a Blue Ribbon member of the 1996 Agenda for the Future¹ document I was very excited about how that work would shape the future of EMS. I am now, two decades later, equally excited about how this project will influence the next era of the EMS profession.

Since emergency medical services (EMS) personnel respond to about 31 million emergency calls for assistance per year² the workforce is a significant component of the U.S. healthcare system, as well as the medical, public health, public safety and disaster management systems.³ In addition to their emergency work, EMS personnel are increasingly involved with community health and injury prevention projects.⁴⁻⁶ We know that there are about a million EMS personnel in the U.S.; most are volunteers and about 20% are paramedics.²

Much has changed in the last 20 years. There are many accomplishments that can be celebrated by EMS professionals, partner professions and elected officials.

This document addresses many of the questions raised and makes suggestions for ways the profession might forge a path in to the future.

Questions on the Proposed Revision of the EMS Agenda

Responses to the following questions are requested to help plan the revision of the EMS Agenda. Please provide references as appropriate.

1. What are the most critical issues facing EMS systems that should be addressed in the revision of the EMS Agenda? Please be as specific as possible.

There are a number of critical issues facing EMS systems in the United States. They include culture, salaries, safety, new roles, technology and funding.

Culture. A current cultural issue is illustrated by an all too frequent statement: "You're never going to be able to do the new stuff until you do the old stuff well!" It's an old adage. Others include the term "mission creep". The adages tend to be used whenever an EMS professional suggests that we can do more than we do, we can do it differently or that we can make a bigger difference.

In emergency medicine or cardiology they don't call it mission creep when doctors test and implement new treatments or diagnostic tests. Instead they call it evolution. When emergency medicine wants to evolve they don't wait for cardiologists to let them – anymore. That is because emergency medicine physicians have taken control of their own profession. They decide how and when the profession will evolve. They decide how and when to implement new procedures.

Physicians and nurses have taken control of their professions. Nurses are not trained in hospital basements – anymore. Physicians are not trained in hospital basements – anymore. They realized that the way out of the basement was through academia. They realized that the only way out of the basement was through academia. Since then many physicians and nurses have become academics and their students go through nursing and medical school in university programs run by nurses and physicians.

EMS professionals must take control of the evolution of their profession. One of the key steps of that evolution will be when the profession decides that by January 1, 20xx the only way a person can become a paramedic is through a bachelor's degree program. It is not the only step we must take but it is a necessary step. Then we can then develop academic standards for programs such as community paramedics and extended care paramedics and other advanced paramedic clinicians.

Emergency medicine did not wait for cardiologists to decide that they were doing "the old stuff well". Instead they chose to become the masters of their own fate. In order for EMS to evolve we must choose to become the masters of our own fate.

Where we need to be: It is important to get input from other professions, and from the public; however, EMS will become a true profession only when it is led by EMS professionals. It is then that we will be able to develop a focused professional identity distinct from other professions.

Salaries. According to the Bureau of Labor Statistics, the average salary for EMS personnel in 2015 was \$31,980 per year.⁷ That compares to a median pay for all U.S. workers of \$36,200,

\$60,270 for policeⁱ and \$67,490 for nursesⁱⁱ. The low salaries have a devastating effect on the profession. Many very-dedicated EMS professionals find themselves forced to leave the profession when they need to be able to buy a home for their family or pay for their children's education. For those that stay in the profession, many are forced to work multiple jobs and very long hours in order to afford a decent life for themselves and their families. These long hours take a toll on the workers and may contribute to higher injury rates, high rates of medical mistakes due to fatigue and, ultimately to high turnover rates, stress and burnout.

Largely as a result of low salaries, only a tiny fraction of EMS personnel may stay in EMS for an entire career. Not only does this problem effect the quality of patient care, cost of service and operational readiness, it means that there are relatively few people working on long-term projects such as systems development, systems integration, disaster management, community health and other activities that improve services and also influence the advancement of the profession. Imagine the effect if only a small fraction of physicians, nurses or police stayed in their professions for more than five years; many of the specialists that society depends on would not even exist.

Where we need to be: Salaries for paramedics must be comparable to salaries for police and nurses.

Safety. EMS professionals in the U.S. have a fatality rate that is comparable to police and firefighters⁸ and an injury rate that is higher than the rates for other emergency service personnel⁹; about 12 EMS personnel are killed on duty every year¹⁰. In Australia, the only other country with research on national paramedic injury rates, there is no occupation with a higher injury rate and no occupation with a higher fatality rate than paramedics; the injury rate for paramedics is twice as high as the injury rate for police officers.¹¹ These high rates effect operational readiness, clinical quality and costs of service. In addition, these risks place an enormous burden on our personnel (and their families).

Driving. We need much more of a focus on driving safety.¹²⁻¹⁷ The risk of transportation-related injury is about five times higher for EMS personnel than the national average for all workers and there are, on average, ten fatalities among EMS personnel each year due to transportation events.¹⁸

EMS personnel are not the only ones at risk. About 70% of the people who die in fatal ambulance crashes are our patients, our passengers and our neighbors.⁸

Violence. EMS personnel face a significant risk of violence.¹⁹ There is, on average, an EMS homicide every year in the U.S.¹⁰ Over 100 serious injuries from assaults are reported by EMS personnel each year.¹⁰ For assaults that result in lost work days due to injury, the rate is 22 times higher for EMS personnel than the U.S. national average.²⁰

Anecdotal reports indicate that many, maybe even hundreds of, EMS agencies have instituted some measure to reduce these risks. However, there is not one paper in all the literature that describes the outcome of any such violence-reduction intervention. Therefore, agencies,

ⁱ U.S. Bureau of Labor Statistics. <http://www.bls.gov/ooh/protective-service/police-and-detectives.htm>

ⁱⁱ U.S. Bureau of Labor Statistics. <http://www.bls.gov/ooh/healthcare/registered-nurses.htm>

again and again and again across the country, reinvent methods to reduce this serious problem; all of these efforts are done without any evidence to support the effectiveness or even the possible dangers associated with any intervention.

Where we need to be: research, partnerships between EMS agencies and academics and the development and reliable testing of risk reduction interventions must be funded and pursued. The transportation risks alone may be influenced by a variety of factors including drowsiness, seatbelt usage and even driver training; there may be hundreds of ambulance driver training programs in the country and there is no research showing that any of them are effective.²¹

“Risk reduction requires research, resources and commitment from all levels of the EMS profession. The same methods that are used to ensure that the medications we give our patients are safe and effective, must be used to ensure that the safety interventions we deploy among our personnel are safe and effective.”²²

New roles. “The EMS mission must go beyond providing emergency services and getting the right patient to the right place at the right time. EMS must also function as part of an integrated healthcare delivery system to ensure the patient receives appropriate care (whether in a healthcare institution or at home). It also should include active involvement in the design and implementation of illness and injury prevention programs.”²³

Where we need to be: across the country, EMS professionals working with hospitals, public health officials, physicians, nurses, local elected officials and other professions to provide advanced clinical care and to reduce risks and improve the health of the community.

Technology. We are living in perhaps the most exciting time in human history. Almost every day there are reports of new technologies that may enhance our lives. Who would have thought, while watching *Star Trek* in the 60s, that a flip phone would be obsolete in our time? Google (and others) is working on driverless cars, Amazon is working on delivering books via drones and Elon Musk, among many other endeavours, is working on building a robot maid.

Where we need to be: imagine if millions of people with some basic medical training were connected to an emergency medical network that could alert them if a neighbor or co-worker was having a heart attack; imagine that they could provide care in seconds while waiting for the ambulance response. That and AEDs on dronesⁱⁱⁱ and 3D printing with virtual reality tools for training our paramedics^{iv} are all options for the future. If we have the time, support and manpower to devote to these exciting, and potentially lifesaving, endeavours.

Financing. There is likely no other issue more predictive of the future of EMS in the U.S. than financing. EMS agencies report that they have not benefitted from the Affordable Care Act and are suffering from diminished reimbursement from both Medicare and Medicaid.²⁴ Without a

ⁱⁱⁱ TU Delft's ambulance drone drastically increases chances of survival of cardiac arrest patients. <http://www.tudelft.nl/en/current/latest-news/article/detail/ambulance-drone-tu-delft-vergroot-overlevingskans-bij-hartstilstand-drastisch/>

^{iv} Central Queensland University. <https://www.cqu.edu.au/cquninews/stories/research-category/2015/can-3d-printing-and-augmented-reality-help-paramedic-students-visualise-skills>

significant change in funding, EMS agencies may be forced to revert to basic life support only, provided by minimally trained personnel who work at the EMS agency only while they wait for a better paid job.

Bellevue Hospital in NYC provided the first civilian ambulance service in the U.S. One of its main missions was reported to be to remove injured people from the street so they would not block traffic. Bellevue used “people from the penitentiary” as attendants who worked for food and lodging.^v Without proper funding will this be the future of ambulance services in the U.S.? Ironically, it is possibly the most expensive option in terms of community health.

Where we need to be: funding must be sufficient to allow EMS agencies to provide outstanding care. Sufficient funding for EMS will result in more effective and efficient care for our patients, longer careers for our personnel and improved health outcomes for our communities.

2. What progress has been made in implementing the EMS Agenda since its publication in 1996?

The 1996 EMS Agenda for the Future¹ created excitement about the future of the profession. Now, twenty years later, we have a mixed bag of accomplishments and not yet seized opportunities.

Let’s first focus on some wonderful accomplishments. The first is research.

Research.

A Medline search using the term “emergency medical services” with delimiters of “abstract available” and “English language” returns 26,667 papers. If we then limit it to papers published between 1939 (the earliest option) and 1996, we see 4,123 papers; that means that about 85% of all the EMS research has been published since the Agenda. Although it is not all U.S. research, 1,000 papers a year is a lot of EMS research.

Although we have no exact numbers, it is likely that in 1996 there may have been perhaps half a dozen paramedic Ph.Ds in the world; today, it seems likely that there are over 100 paramedics with doctoral degrees. Many of these researchers are creating new bodies of work that are advancing the profession.

That is all the good news related to research. The bad news is that there is almost no funding dedicated for EMS research. Therefore, the paramedics that do complete their doctoral degrees often discover that there is no way to support a career in EMS research. This reality greatly limits the number of paramedics pursuing doctoral degrees and, as a result, greatly limits the number of paramedic academics and researchers, as well as the number of EMS research projects.

In 1996, Dr. Daniel Spaite wrote: “The future of EMS is indelibly linked to the future of EMS research. This reality provides EMS with its greatest opportunities, its greatest risks, and its greatest single need to depart from the ways of the past. EMS must grasp this quickly closing window of opportunity.”¹ (pg 12) Hopefully the window has not yet closed but we need a much

^v “Bellevue Hospital” by Edwin M. Knights Jr., M.D
<http://www.nychealthandhospitals.org/bellevue/html/about/history.shtml>

more concerted effort, and substantial funding, if research will provide “EMS with its greatest opportunities”.

In addition to a great shortage of doctoral-level paramedics, we continue to face what was described in the 1996 Agenda as the “five major impediments to the development of quality EMS research:

- inadequate funding
- lack of integrated information systems that provide for meaningful linkage with patient outcomes
- paucity of academic research institutions with long-term commitments to EMS systems research
- overly restrictive informed consent interpretations
- lack of education and appreciation by EMS personnel regarding the importance of EMS research.”¹ (pg. 13)

Where we need to be: Dedicated funds for EMS research and educational scholarships are desperately needed to support the further evolution of the profession. EMS research agendas should be developed by EMS professionals.^{25,26} The research should address clinical issues,²⁷⁻²⁹ educational issues,³⁰ and disaster preparedness,^{3,31-34} as well as EMS systems issues.^{2,35-37} Since research is not a core function of an ambulance service, EMS research should be done through partnerships between EMS agencies and universities. Ideally, paramedic researchers will have joint appointments to university and to an ambulance service and will be able to provide the optimal research options.

A national database is needed in order to support quality research. A critical component of any such national database would be systems information such as “shared standard methods for collecting data and for describing (ambulance) crashes and risks.”²¹

Education Systems.

In 1996 we talked about Education Systems that “will make maximum use of technology to reach students in outlying areas and those who otherwise have difficulty reaching traditional classrooms.”

Where we are: Done. Since at least the mid-90s the EHS master’s degree program at UMBC^{vi} has been available on-line. In Australia, the paramedic program at Central Queensland University^{vii} currently has over 500 students pursuing their bachelor’s degree, about 80% of those students study online; the paramedic graduate programs at CQU are also offered online.^{viii}

Where we need to be: the next level of education development will depend on much greater integration and strong partnerships between EMS agencies and universities. All level of EMS education from basic EMT, to paramedic, to advanced paramedic clinician as well as continuing education and the preparation of paramedic clinical mentors, should all be done by education

^{vi} UMBC. Department of Emergency Health Services. <http://ehs.umbc.edu/>

^{vii} Central Queensland University. <https://www.cqu.edu.au/>

^{viii} Central Queensland University. Graduate Diploma of Paramedic Science Critical Care. <https://www.cqu.edu.au/courses-and-programs/study-areas/health/postgraduate/graduate-diploma-of-paramedic-science-critical-care>

professionals working for universities. Ideally, those education professionals will also be EMS professionals but, they will have university graduate degrees and be working within a quality university framework. An ideal integration will be for full-time paramedic academics to work on a regular part-time basis with an ambulance agency to provide clinical care, research support and consulting. This is a proven model of developing educational excellence and has been practiced by the medical profession for decades.

All universities teaching EMS programs must meet national standards for EMS education and ensure graduates meet the national scope of practice.³⁸ Universities will be able to add to that standard but the minimum standards will ensure that there is an agreed-upon level of proficiency across the country. These standards will also support the transition of military medics in to the civilian workforce.

Related to education systems is the issue of educational attainment. Today in Australia there are over 6,000 students enrolled in paramedic bachelor's degree programs.³⁹ It is likely that there are less than 600 paramedic bachelor's degree students in the entire U.S. The fact that a country with about one tenth the population of the U.S. has 10 times as many paramedic bachelor's degree students is a stark illustration of the enormous difference in EMS potential between the two countries. The bachelor's degree students of today will be EMS leaders, advanced clinicians, educators and researchers of tomorrow.

Some of the Agenda topics have not progressed as well.

System Finance

In the 1996 document David Miller wrote: "The future of EMS is indivisibly linked to how it is funded. In order to optimize the positive influence of EMS on community health we must move to a system of finance that is proactive, accounting for the costs of emergency safety net preparedness and aligning EMS financial incentives with the remainder of the health care system."

One of the most important ways we know if the system is adequately funded is by looking at the salaries of EMS professionals. Based on the Bureau of Labor Statistics data quoted above, we can see that the EMS system is grossly underfunded. This lack of funding threatens any attempts at advancing and improving the system.

Further, the current funding model not only does not support but actually impedes any efforts for EMS to assist communities in injury prevention and any home health care or community care that does not result in a transport to the hospital.

Ivory et al. share powerful examples of what can go wrong with system finances: paramedics having to spend hours trying to get an ambulance working; paramedics told to steal life-saving drugs from hospitals because the ambulance service could not afford them; paramedics wondering if they were going to have disinfectant supplies to deal with a suspected Ebola outbreak; and, ambulance services shutting down without a moment's notice due to bankruptcy.⁴⁰ Inadequate systems financing is at the core of these problems.

While patient billing will account for a necessary component of EMS funds for the foreseeable future, the optimal EMS system of the future will require dedicated funds beyond those received through billing. In Australia, for example, only 32% of ambulance funding comes from transport fees; government funding provides the majority of the money needed to provide the service.⁴¹

Where we need to be: Funding for EMS systems must provide for decent salaries, operating costs and for the costs of system readiness. In addition, funds must cover “ongoing training and education, as well as system development.”²³

Human Resources.

In addition to the salary and safety issues noted above, the paucity of career ladder options likely adds to turnover in the profession. The profession requires a variety of career ladders such as management, education, research and public health, as well as clinical ladders to advanced care paramedic practitioners, nursing, physician assistant and in to medicine. In other professions senior leaders must have master’s in business administration, or equivalent degrees, and those standards should also be pursued by EMS agencies.

Stress is a significant problem for EMS professionals. It can, in turn, lead to high turnover, high injury rates, poor patient care and even to suicide; the suicide rate for paramedics may be 20 times higher than the rate in the general population.⁴²

The high injury rates likely lead to many early career terminations. In many police and fire agencies when an emergency services professional is injured on the job and is unable to work any longer due to that injury, the person receives a pension and lifelong benefits including health insurance. Injured EMS professionals, on the other hand, may be terminated and left with no pension, no health insurance and no way to make a living.

For police and fire fighters it may be close to 90% of their personnel who make it to “full retirement”. For EMS professionals it may be closer to 5% of the workforce who make it to their “full retirement”.

Where we need to be: EMS human resources planning can no longer be predicated on the assumption that there will be a never-ending supply of 20 year olds willing to do the job for little pay. Instead we need salaries and job structures that will support professionals who wish to have a full career in EMS.

Also related to Human Resources is the issue of cleaning the ambulance. In many agencies today paramedics spend much of their on-duty time with mops and brushes to clean the ambulance, and in restock rooms restocking their equipment. This is an inefficient use of the paramedic’s time and, it may expose our personnel and our patients to risks of contamination.^{43,44} In a number of services around the world the EMS professionals return the ambulance to the station and it is taken by dedicated technical staff who clean the vehicle, restock it, refuel it and check it mechanically.^{ix}

Where we need to be: our EMS professionals should not be spending their valuable time mopping out and restocking ambulances. Instead, those activities should be done by a dedicated and specially prepared staff.

^{ix} South East Coast Ambulance Service. *Annual Report & Accounts, 2007/08* (pages 19 and 20) http://www.activesignaltech.com/text_files/SECamb%205-08%20Annual%20Rpt%20wBAM-FINAL%20MASTER%20DOC.pdf

Integration of health care services.

In 1996 the Agenda stated: “Research and pilot projects should be conducted with regard to expanded services that may be provided by EMS.”¹ (pg 12). Today there are growing number of community-paramedic and extended-care-paramedic programs. These programs provide great value to a community and allow EMS professionals to care for patients in their homes. Instead of bringing every patient to the hospital, patients with relatively minor conditions can be treated by the EMS team and referred to their physician for follow up. It is also easy to imagine the value to a family if, for example, the paramedics could help a palliative care patient at home; instead of spending the last few hours of their lives stuck in the hallway of a busy emergency department, the patients could spend the time at home with their family members.

Where we need to be: these models of expanded service require EMS professionals to have additional education. In some counties these practitioners must have graduate level and master’s degrees. The U.S. needs more paramedics with bachelor’s degrees who can then go on for graduate degrees in extended care.

Integration must also be pursued with other agencies such as public health and social services in order to provide optimal health care for the community.

Integration means partnerships with neighboring EMS agencies for mutual aid, disaster planning, sharing of resources, joint practice/drills/simulations, etc.

Integration means partnerships with hospitals so that problems such as extensive wait times at hospital emergency rooms can be anticipated and prevented.

Public Information.

There is tremendous room for improvement related to EMS and public information. We can do a much better job of educating each other about things like best practices and, we can do a much greater job educating the public about safety, health and injury prevention as well as about the great work we do. For example, in Australia paramedics have been rated the number one most trusted profession for over 10 consecutive years.⁴⁵

Prevention.

A turning point in EMS history came about in Pinellas County, Florida. There the paramedics began to notice that the number of pediatric drownings seemed to be increasing. They assembled a panel of EMS professionals, physicians and other experts to explore the problem. At any previous time in history, the panel would likely have come up with solutions such as “get there faster”, or would have looked at new tools or drugs. Instead, this panel asked: “how can we prevent these drownings”. As result, they cut the pediatric drowning rate by 50%.⁴

That is the wonderful news. However, there is still a great deal of opportunity for improvement in a myriad of endeavors such as cutting pediatric drowning, reducing falls among the elderly and preventing teenage crash fatalities.

Prevention efforts should also include our being involved with public health agencies and being able to help, for example, with vaccine administration.⁴⁶

The phrase “Prevention begins at home” was used in 1996 to describe how important it is for EMS agencies to be involved in prevention efforts within their communities. Today we can also use the phrase to emphasize the importance of EMS agencies being involved in prevention efforts within their own agencies; efforts to reduce injuries, fatalities and stress among our own personnel must be vigorously pursued.

Clinical Care.

Around the world EMS professionals are attending advanced educational programs in order to become advanced clinical practitioners. The ones who are doing these programs are paramedics who already have their bachelor's degree. It may be that there are not enough paramedics in the U.S. who have the bachelor's degree needed to pursue these higher education programs.

In Australia, extended care paramedics “are increasingly becoming first line primary healthcare providers”⁵ and, a national government report recommended extended care paramedics as a way to deliver efficient health care.⁴⁷

Where we need to be: scholarships and adjusted work schedules must be available for EMS personnel to pursue academic qualifications that will prepare them for additional clinical care opportunities.

Optimal clinical care requires the use of a full range of clinical options. These include telephone triage (where some callers will be directed to drive themselves to a clinic and some callers will receive care instructions over the phone), low acute care (provided by an EMS professional who may arrive within a few hours of the call), immediate emergency care as well as a range of extended care options.

Information systems.

We continue to have a difficult time convincing some politicians that EMS is better than Uber.

Where we need to be: our in-house information systems must be robust enough for detailed research. In addition, we need partnership arrangements to be able to access hospital records in order to do research that includes long term patient outcomes.

We must also work toward standard definitions. While some of that is being addressed in some areas, other information systems such as workplace injuries, continues to suffer from a lack of common definitions. The lack of common definitions in turn makes it very difficult to compare systems and outcomes.

Evaluation.

To follow up on the statement about not knowing if we are better than Uber, we cannot prove that we are more cost-effective than Uber. Today there are a myriad of EMS system configurations including: independent government run EMS services, hospital based services, fire based services, private for-profit services, volunteer services and many more.

Many services can report their response times but few can report on clinical outcomes.

Where we need to be: Over 30 million people a year call EMS for help. We need robust evaluations to determine how those system designs effect patient care, disaster response, community health and injury prevention. In addition, the research should include cost-benefit analyses of each design.

We need reliable on-going research to test how well our systems are meeting the needs of our consumers and the needs of our workforce. The needs of our consumers should be measured in ways such as satisfaction and clinical outcomes. The needs of our workforce must be measured in a few ways including salary and career-length; if only a small fraction of our personnel are making it to retirement we need to understand the reasons and develop solutions.

Only this type of rigorous evaluation will allow us to prove to our communities (and to ourselves) that we are providing reliable, effective and efficient services.

4. As an EMS stakeholder, how might the revised EMS Agenda be most useful to you?

The revised Agenda can influence our culture and lay out a strategic plan for the development of the industry and the profession over the coming decades.

14. How could the revised EMS Agenda contribute to improved coordination for mass casualty incident preparedness and response?

EMS involvement in disaster preparedness depends upon funding that is sufficient to allow for planning and preparedness. The Agenda document might help emphasize to politicians the need for sufficient EMS funding. Disaster preparation is more than showing up for an occasional drill. Disaster preparation requires dedicated and educated professionals who work together over long periods of time to develop the structures needed for effective and efficient disaster management. It requires sufficient funding to attract and keep such dedicated and educated professionals.

22. Are there additional EMS attributes that should be included in the revised EMS Agenda? If so, please provide an explanation for why these additional EMS attributes should be included.

As difficult as it will be, the EMS profession in the U.S. must address the issue of consolidation. Today, there are an estimated twenty-one thousand EMS agencies in the U.S.⁴⁸; there may be 70 independent ambulance agencies operating in New York City alone. While we have been very responsive to community needs, the large number of agencies decreases our effectiveness and our efficiency; in addition, it harms our profession. Each agency, again and again and again, reinvents operating manuals, clinical protocols, purchasing procedures, uniform designs, billing procedures, etc., etc., etc., instead of focusing on how to improve EMS services. Some other professions may be happy for us to continue to play in our little sand boxes while they sit at the adult table and decide how to spend the money, but we have to change. Consolidation will not be easy but it can be done. They have been working on it in Canada.^x In England “urgent and emergency healthcare and patient transport services are provided by 11 regionally-based ambulance trusts”.^{xi} In Australia, a country with some states that are three and five times larger than Texas, there is now just one emergency ambulance service for each state.⁴¹

Where we need to be: We may never get to the time where 911 EMS service in the U.S. operates at a state level with a single 911 EMS provider for each state, but perhaps we can agree that 1,000 agencies, CEOs, boards of directors, etc., should be sufficient?

^x Review of Operations of Ground Emergency Medical Services in Alberta.

<http://www.health.alberta.ca/documents/EMS-Review-HQCA-2013.pdf>

^{xi} Transforming NHS ambulance services. <https://www.nao.org.uk/wp-content/uploads/2011/06/n10121086.pdf>

24. What are your suggestions for the process that should be used in revising the EMS Agenda?

This is a good start. Invite input from EMS professionals, related professions and from the community. Some meetings in a few different parts of the country, and at different times of the day, with online access, will also be important in order to get input from a large range of stakeholders and from the public.

25. What specific agencies/organizations/entities are essential to involve, in a revision of the EMS Agenda?

EMS professionals.

Other organizations that would be valuable include representatives from physicians, nurses, firefighters, police, public health and researchers as well as from private ambulance agencies, hospitals, community members, public interest groups, government and elected officials.

26. Do you have any additional comments regarding the revision of the EMS Agenda?

In 2015 the NYC Fire Department reported that there were 1,670,644 ambulance responses for the year^{xii}; in 1998 (the first year of available data) there were 1,247,188^{xiii}; a 33% increase in just 17 years. Across the U.S. demand for EMS services may rise dramatically over the coming decades. We cannot have a system that simply takes everyone to the hospital. Instead we must develop new ways to effectively, efficiently and safely care for a growing population, a growing elderly population and for a myriad of yet-unknown situations such as disasters, pandemics, terrorism attacks, global warming, refugees, hurricanes, etc. etc. etc. Without sufficient investment today, the EMS infrastructure may simply crumble under the weight of ever-increasing demands.

Summary

There are about a million very dedicated and capable EMS personnel in the U.S. Working together, a million people can make a big difference. However, without a significant change in funding, EMS agencies across the country may be forced to revert to basic life support only, provided by minimally trained personnel who work at the EMS agency only while they wait for a better paying job.

The new EMS Agenda for the Future will not only influence EMS across the U.S., it may also influence EMS around the world. Ideally that influence will be on ways to offer outstanding

^{xii} FDNY. http://www.nyc.gov/html/fdny/pdf/stats/2015/ems/cw/ems_cwsum_cy15.pdf

^{xiii} FDNY. http://www.nyc.gov/html/fdny/pdf/stats/1998/ems/cw/ems_cwsum_cy98.pdf

EMS services and not as an example of how EMS in the U.S. has fallen far behind the standards of clinical care, educational attainment and human resources support that have already been achieved in many other countries.

Our efforts here may help ensure that EMS is recognized as an integral component of the U.S. health care system. Our efforts here may help ensure that the next generation of EMS professionals are well paid and have a safe and long career. Our efforts here may help ensure that the millions of people who depend on EMS have the best possible care and achieve the best possible outcomes.

About the author:

Dr. Brian Maguire is a professor in the School of Medical and Applied Sciences, Central Queensland University, Australia. He has a doctoral degree in public health from the George Washington University in Washington, D.C. and a master's degree in health administration from Central Michigan University. He is a 2009 Senior Fulbright Scholar and has presented his research in nine countries. His dozens of publications have been cited over 700 times.

For about a decade he held the roles of Clinical Associate Professor, Graduate Program Director and Research Center Director, in the Department of Emergency Health Services, University of Maryland, Baltimore County. For three years he worked on a bioterrorism preparedness program for the U.S. Department of Homeland Security.

His U.S. federal committee membership experience includes membership on the CDC's National Occupational Research Agenda (NORA), Public Safety Council as well as numerous NHTSA emergency medical services (EMS) committees including: a national EMS safety committee; Ground Ambulance Safety Committee; EMS workforce injury and illness surveillance system committee; and, the EMS Agenda for the Future.

For two decades he worked in the New York City health care system. His positions included: agency president, administrator, board member, chair of the city-wide ambulance administrators' association, coordinator of the city-wide paramedic training program, field operations supervisor, educator and paramedic.

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