

EMS Education – A Fragmented System

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Introduction

To become a barber in most states one must complete between 1,500 and 1,800 hours of training at an accredited training program. The educational process includes classroom and practical education, and generally last between nine months and two years. Upon completion graduates may be awarded a diploma, technical certificate, or associate degree depending on the type of institution they attended. In addition to these training requirements most states require the successful completion of a licensing exam which includes written, oral, and practical assessments. Finally, some states require licensure which mandates an apprenticeship period before the graduate can become a licensed apprentice (Barber Education, n.d.).

To become a Paramedic in the state of Colorado one must completed 1,086 hours of training at a state approved training program which includes 436 hours of classroom and lab activities, as well as 150 hours of clinical experience, and 500 hours of field experience (HealthONE EMS, n.d.). The process takes 6 months and results in a certificate of completion of the program, as well as eligibility to take a national certifying exam. After completing this exam, and applying for state certification, the certified Paramedic is allowed to function without any further educational requirements. However it should be noted that national certifications are valid for two years, and Colorado certifications for three. If the Paramedic wishes to remain certified beyond this time they must complete required continuing education.

When presented with this comparison many people are baffled at the educational differences between these two occupations. After all, if a mistake is made by a barber

the result is a bad haircut, on the other hand, if a mistake is made by a Paramedic lifelong disability or death could occur. One would think that the educational requirements would be more stringent and rigorous for the Paramedic.

History

Emergency Medical Services (EMS) has a relatively short lifespan as compared to other allied health and public safety occupations. Although there were a few sporadic services in the country in the 1950's, it was not until 1966 that true interest in the establishment of an EMS system surfaced, and not until the early 1970's that they became common in the United States. Since this time, 1971 for EMT and 1977 for Paramedic, the National Highway Traffic Safety Administration (NHTSA), an agency within the U.S. Department of Transportation (DOT) has published curricula, recommendations, and guidelines for all levels of EMS education (Aehlert & Vroman, 2009). However, without a foundational base, EMS education started out as a mixture of many disciplines without clear direction regarding what information should be included, or how such information should be delivered.

Because the DOT publications were, and continue to be, guidelines, individual states can choose to adopt or reject any portion of the recommendations. This approach has led to a wide variety of EMS education methods, certification levels, and state to state differences in EMS education that do not exist in other areas of healthcare. Because of this fragmentation, in 1996 NHTSA published the *EMS Agenda for the Future*. Written by EMS leaders, this document established a strategic plan for the future of EMS, including an educational agenda. Additionally it was found that over 44

levels of EMS provider existed in the U.S., despite the 1991 *National EMS Education and Practice Blueprint*, also published by NHTSA, recommending only 4 four recognized levels of pre-hospital provider (NHTSA 1996). Table 1 provides a chronological outline of NHTSA EMS education publications.

Date	Publication
1971	First EMT curriculum developed
1977	First Paramedic curriculum developed
1977	EMT curriculum updated
1985	EMT and Paramedic curriculums updated EMT Intermediate curriculum introduced
1991	National EMS Education and Practice Blueprint
1994	EMT curriculum updated
1996	EM Agenda for the Future
1998	Paramedic curriculum updated
1999	EMT Intermediate curriculum updated
2000	EMS Education Agenda for the Future: A Systems Approach
2005	National EMS Core Content
2007	National Scope of Practice Model
2009	National EMS Education Standards

Table1: NHTSA publications related to EMS education

Started in 1998 and published in 2000 the *EMS Education Agenda for the Future: A Systems Approach* (Education Agenda) proposed five components for a successful

EMS education system. These are listed in table 2 (NHTSA, 2000). As seen in table 1 only three of these components have been addressed, and only recently. The final two are in progress, but not without contention as will be addressed later in this paper.

National EMS Core Content
National EMS Scope of Practice Model
National EMS Education Standards
National EMS Education Program Accreditation
National EMS Certification

Table 2: Education Agenda Key Components

Current State of Education

On the surface it would appear that all the work and publications by NHTSA would homogenize EMS education in this country. This however has not been the case. As stated earlier NHTSA can only make recommendations, it is up to each state to determine how, or if, they will implement those recommendations. This has resulted in a very fragmented system of education for EMS providers, and programs that have been established without clear goals and direction. This was addressed in the *Education Agenda* with the statement “the absence of a structured education system has resulted in considerable state-by-state variability in EMS education and licensing standards and a lack of clear-cut future direction” (NHTSA, 2000, p. 5).

Those recommendations found in the *Education Agenda* that have been completed have only recently been done so. As a result they have yet to be implemented, and the system is in fact in the same state it was in when the Agenda was

written in 1996. This is evidenced by the fact that in 2005 there were still 39 different levels of EMS provider between EMT and Paramedic, and this remains today. This variance in provider leads to public confusion, difficulty when moving from one state to another, limited professional mobility, and in many cases duplication of educational effort and dollars. The *National EMS Scope of Practice Model* reiterates the need for four levels of EMS provider (NHTSA, 2007). In addition to the number of distinct certification and licensure levels, the manner in which education is conducted is just as varied.

Educational Methodology

Educational Options

The introductory section of this paper identified the requirements of Paramedic education in the state of Colorado. However Colorado is not unique in this approach as it is used by several states in the U.S. Conversely, several states have very different educational models.

There are two educational methods in which one can become a paramedic. Courses may be offered as a standalone entity encompassing all the objectives and requirements needed to be eligible for certification exams. In general these programs, referred to as certification courses, are not affiliated with an educational institution, do not grant credit for the education, and often address the minimum requirements needed to prepare learners for their credentialing examination. Currently the 1998 National Standard Paramedic Curriculum states that all educational outcomes should be competency based rather than hours based. However they also recommend a minimum

of 1,000 – 1,200 hours for a Paramedic course. Most certification programs structure their class to fall within this time frame.

An academic course of study resulting in eligibility for Paramedic credentialing exams is another option for one who desires a career in EMS as a Paramedic. Degree options are available at the Associate's, Bachelor's, and Master's levels. The Associate's degree provides the core content of the Paramedic course of study along with additional general education requirements, such as math, English, social sciences, and pure sciences. This level of program is widely available through the community colleges in the nation.

The baccalaureate option allows for significant expansion and depth of the core Paramedic content, and requires many more hard science courses than the Associate's degree. Additionally there are two years of general education that are the basic requirements of all baccalaureate degrees. Finally many programs at this level include concentrations in education, management, or science allowing for future promotions, changes in medical careers, or advanced education. At this time there are approximately fourteen universities offering this option including Western Carolina University and the University of Maryland – Baltimore Campus (UMBC) (CAPEMS, n.d.).

The availability of Master's level programs is even less than that of the baccalaureate. These programs generally concentrate on management or education and are designed for those who wish to move into these areas as opposed to continuing to work as a field Paramedic. The only schools I am aware of that offer this level of

education in EMS are Western Carolina University, UMBC, and George Washington University.

Educational Requirements

Within these methods of education, which are not unique to EMS, there remains a wide variety of program requirements, length, and content inclusion. Paramedic programs in the US range from 270 hours to 2,000 hours (Emergency Medical Services, 2007) As mentioned in Colorado a certificate program can be completed with 1,086 hours of training, of which 436 hours are spent in the classroom, 150 hours in the clinical setting, and 500 in the field setting. In Indiana however the minimum hours for a Paramedic course of study is 1,250 hours, of which 600 hours are spent in the classroom, 300 hours in the clinical setting, and 350 hours in the field setting (EMS Cert Levels, n.d.). Oklahoma on the other hand requires 1,050 hours as the minimum length of a Paramedic course. Of this time 658 hours are spent in the classroom, 212 in the clinical setting, and 180 in the field setting. Unlike Colorado and Indiana, Oklahoma does require Anatomy and Physiology as a pre-requisite to a Paramedic Course (EMS Paramedic 2004, n.d.).

A course in Anatomy and Physiology is strongly recommended by the National Standard Curriculum, and the EMS Education Guidelines. Not all states have opted to follow this recommendation. It has in fact been an issue of heated debate in Colorado since the 1998 Paramedic curriculum was adopted in 2000. Recently the Paramedic programs in the state, which includes college based and non college based institutions, decided they would not require Anatomy and Physiology to issue a certificate of

completion. This decision was made outside of the EMS discipline committee of the Colorado Community College System (CCCS), and the results of this decision have yet to be discussed. However, the CCCS still requires these classes as part of the Associate's degree in EMS.

Implications

Individual Implications

These differences in educational requirements can lead to difficulties in reciprocity, the recognition of EMS credentials from another state, for those who wish to move at any point in their career. Because each state has different educational requirements and processes they may not accept a credential that was not obtained in their state. This is one of the reasons the *Educational Agenda* lists accredited EMS programs and national certification as two of the key components for a successful EMS educational system. While there is a National certification option available, not all states recognize or accept that credential, and not all providers opt to take this exam. Furthermore this certification is gained through a private company, the National Registry of EMTs (NREMT), rather than a governmental organization. Even states that do recognize this credential may impose additional requirements. Washington State for example does recognize certification from the National Registry of EMTs for part of its reciprocity process, but the individual also has to show completion of state specific training before they may become certified in that state (Reciprocal Certification, n.d.).

Furthermore, the lack of consistent educational modalities and requirements may go so far as to prevent an individual from gaining reciprocity in a specific state, or limit

their function in a state. It is becoming more common for states to require a minimum of an Associate's degree to become a Paramedic, much like what has happened in the nursing profession over the years (EMS – Wake, n.d.). Oregon for example has required since 1999 that anyone applying for initial Paramedic certification must possess a minimum of an Associate's degree in EMS (Oregon EMT, n.d.). Although it is possible to be a certified Paramedic in Texas without a degree, in order to be a licensed Paramedic one must possess an Associate's degree in EMS, or a baccalaureate degree in any field of study (Health and Safety, n.d.).

Success rates on National Registry exams have suffered significantly for all levels of EMS provider over the years. In 2008 the success rate for the EMT exam was 67%, and the Paramedic exam was 68% (NRF-P2008-2, n.d.). There are two identified reasons for this phenomenon, but it is possible there are more. One is the variety in EMS education programs and the quality of education provided. Students from different programs in the same state may have very different results when taking the exam. Those from one school may have a pass rate of 90%, while those from another may only have a 40% success rate. Additionally there is wide state variance in success rates. The second reason, according to Bill Brown, executive director of the NREMT, is attributed to the decline of the compulsory education system in the U.S. "Our K-12 system is not providing enough well-qualified people who want to be in EMS". He goes on to state that most EMT students ranked in the lower one-third of their high school class (EMS Insider, 2003)

Healthcare Implications

The effects on individual providers notwithstanding, there are also potential effects on patients. When seeing a physician, nurse, or any other healthcare provider one can safely assume a certain level of education, certain knowledge, and certain abilities. This is not the case in EMS. The ability, knowledge, and skills of a Paramedic can change not only from state to state, but even from county to county, or city to city. This is a direct result of the differing views of what the role of the Paramedic is, which in turn has resulted in the inconsistencies created by local influence on the education of EMS providers in the U.S. This is addressed in a 2006 Institute of Medicine (IOM) Report which states that there are no nationwide standards for the training and certification of EMS personnel. Furthermore the report highlights the fact that the EMS system itself is poorly coordinated. Multiple agencies with multiple views and goals do not act cohesively, even when working within a single population center (Emergency Medical Services, 2007).

There are also potential implications upon the healthcare system as a whole. One statement made by a professor in my undergraduate education remains vividly in my mind. At the time the elderly population made up 12% of our population, and the baby boomers made up 33% of our population, yet our healthcare system has been struggling to meet the medical needs of the community. As the boomers now begin to move into the elderly population we will see ever increasing requirements of the healthcare system. Emergency Department and hospital overcrowding is already an issue, and many times ambulances are either turned away, or the patient remains in the care of the paramedic while waiting for a bed in the emergency room. In some cases

this wait may be hours and patients could require care that is currently not able to be provided by a Paramedic (Eckstein et. al, 2005; Segal, Verter, Colacone, & Afilalo, 2006).

It has been predicted that by the year 2020 the U.S. will require 200,000 more physicians that it will have secondary to both the retirement of physicians in the boomer generation, and fewer new physicians to replace them. This will only serve to increase the stress on the healthcare system as a whole, and on the incidence of Emergency Department diversion. These changes in the healthcare system will likely result in a new role for the Paramedic. Rather than the current model of treat and transport, we are likely to see more treat and refer programs, extended care programs, and increased time spent with patients by Paramedics (Croom, 2008).

The concept of expanded role Paramedics, treat and refer programs, and other community based initiatives for EMS services is not new. The 1996 *EMS Agenda for the Future* addressed these issues. It described the current state of EMS at that time to be one that was created to meet the immediate needs of the acutely ill and injured, and to provide stabilization and transportation. It met, and continues to meet, those needs in isolation from other health care and community resources. It was noted that EMS providers do not have a working knowledge of the practice and abilities of other community healthcare providers or the policies of healthcare organizations. As a result there was the inability to integrate their care with appropriate sources for the patient's continuing health care (NHTSA, 1996).

The vision of the desired state of EMS, for patients and the community as a whole, was one in which EMS practitioners provide care and service that would be integrated into the overall health care system and with community health resources. One of the stated goals was that out of facility care would be considered an integral component of the healthcare system, working with other healthcare providers and organizations to ensure the patient's needs are met in the best possible manner. Several options are available in this model. Examples include, but are not limited to, transportation to a hospital, transportation to a facility other than a hospital, referred to a primary care physician, or referral to another community health resource. The key is that EMS is an integral part of community health care and is able to initiate appropriate follow-up care for patients whether they are transported to a hospital or not. (NHTSA, 1996)

Despite these admirable goals, the educational requirements were not in place to achieve them, nor have they been put into place since. The 1998 Paramedic curriculum was being written at the same time as the *Agenda for the Future*, but it [the curriculum] did not include any required education or training to meet the goals stated in this document. To this day we continue to educate Paramedics based on the 1998 curriculum, and therefore have as of yet to aspire to the goals of the *Agenda for the Future*. Studies of the ability of EMS providers to engage in treat and refer/release programs have shown dismal and dangerous results (Hauswald, 2002; Silvestri et. al, 2002). There are a few exceptions to the findings of these studies, such as the program in Orange County NC and Seattle WA (Rea & Plorde, 2003). However it should be noted that the academic preparation in areas with successful programs far exceeds

minimum Paramedic requirements. Due to employer requirements and the EMS culture of these locals, most Paramedics have a minimum of an Associate's degree in EMS.

Although new EMS Education Guidelines have replaced the 1998 curriculum, they will likely not be implemented for another 3 – 5 years. Even then this issue will not be addressed. One of the shortcomings of the curriculum model is that it was very prescriptive and did not allow instructor flexibility or easy adaptations to changes in medicine. The new guidelines is much less prescriptive and does allow flexibility and adaptation, however the content and scope has remained largely unchanged and is unlikely to provide progression towards the goals outline in 1996.

Proposed Corrective Actions

National Credentialing

As mentioned earlier the *Education Agenda* included five recommendations for the EMS education system, the final two of which were national accreditation for EMS education programs and a national credentialing process. As of yet these recommendations have not been implemented, yet they are in process. The only national certification that currently exists for EMS professionals is the National Registry of EMTs. This is a private company located in Columbus Ohio and was formed in 1970 as an independent source of examination for EMS providers.

Most states maintained their own testing procedures, and many still do today. As a result registration, or taking the Registry's exam, was largely a voluntary procedure by individual providers. With the increased cost of providing examinations, as well as the problems associated with validating their content, keeping them current and secure, and

maintaining records, many states have opted to require the National Registry certification when applying for initial state certification, and a few require maintenance of national certification for continuing state certification. It is important to note that regardless of National certification requirements, all states issue state credentials allowing practice in that particular state. National certification does not grant any authority to practice; it simply indicates an entry level of competency. (NREMT, n.d)

Although this option is currently available it is not truly a national credential as recommended by the *Education Agenda*. Because the National Registry is a private corporation rather than a governmental organization its scope is limited. Each individual state can determine if they will recognize national certification or not in the current system. Table 3 lists states that do not currently recognize certification with the National Registry, or have limited recognition (NREMT, n.d.)

Limited Recognition	No Recognition
Alaska – Paramedic only	Illinois
Florida – EMT only	Massachusetts
Indiana – Intermediate and Paramedic	New York
New Jersey – Paramedic only	North Carolina
New Mexico – Paramedic only	Wyoming
Pennsylvania – Paramedic only	
Utah – Paramedic only	

Table 3: States with no, or limited reciprocity with the National Registry of EMTs

Further contributing to the issue of a current national credential is the fact that the National Registry administers exams at four provider levels that are consistent with NHTSA recommendations. However, as mentioned earlier there are 39 different levels of EMS certification in the country. In addition to NHTSA recommendations, among the recommendations contained in the IOM report *Emergency Medical Services at the Crossroads* one is that national certification be accepted for state licensure, and common EMS certification levels should be adopted by all states (Emergency Medical Services, 2007). The goal of NHTSA was that by 2010 national EMS certification would be conducted by a single, independent national agency (NHTSA, 2000). If this recommendation was implemented it would resolve the issues surrounding reciprocity as EMS professionals move from state to state. Additionally a common licensure exam would result in a common minimal level of competency among all EMS providers at their respective levels.

National Accreditation

National accreditation of EMS educational programs is another recommendation of both the *Education Agenda* and the IOM. The goal of the *Education Agenda* was for this to be in place by 2010, at which time students would have had to have graduated from an accredited program to be eligible for national credentialing (NHTSA, 2000, Emergency Medical Services, 2007). It was mentioned in the introduction of this paper that those who wish to become a barber must attend an accredited school; this is not the case for those entering EMS. Currently only 28% of states require national accreditation, and only 31% of Paramedic programs in the country are accredited (CoAEMSP, n.d.).

It is felt that the accreditation process will cause EMS education programs to constantly assess themselves and the quality of education provided. Additionally adhering to national accreditation standards will ensure minimum student resources, learning objectives, competency based outcome standards, financial stability, adequate faculty support, and faculty qualifications are met. Accreditation also ensures current and potential students that the educational program is not only one of quality, but has been reviewed by an outside and independent source to ensure this quality. This is not unlike the accreditations required for institutions of higher education. This requirement will have a dramatic impact on several current Paramedic programs as they do not meet the requirements for accreditation. Often these are certificate based programs that are conducted by a single individual without any academic support or background. It is another example of the wide variety in the quality of EMS education programs.

Accreditation is required in most, if not all, areas of medicine outside of EMS. In fact EMS is the only allied health specialty that does not require accreditation of its educational programs on a national level, although some states do require accreditation for Paramedic programs as seen in table 4. Programs in these states must seek accreditation, while it is a voluntary process for programs in other states. Between 2003 and 2007 the number of accredited programs increased by 39% with an average increase of 7% each year (CoAEMSP, n.d.a; CoAEMSP, 2007).

Alabama	Minnesota
Arkansas	Mississippi
California	New Mexico
Colorado	New York
Indiana	Utah
Kansas	Virginia
Maryland	Washington

Table 4: States Requiring National Accreditation of Paramedic Education Programs

Obtaining accreditation is not an easy process. Having experienced the process I can say that it is time consuming, and expensive, even in an established program that is being reaccredited. It commonly entails one year of preparation and requires a detailed self evaluation of program policies, objectives, and outcomes. The challenges for a program gaining new accreditation can appear overwhelming when one completes the required self studies and goes through the site visit component of the process. However, the process is well worth the effort as attaining this status assures effective educational programs, and in turn effective graduates. “The ultimate purpose of accreditation of medical education is to improve the quality of healthcare” (Davis & Ringstead, 2006, p. 306).

Cusick and Adamson (2006) argue that accreditation is needed to ensure accountability, ensure competence of graduates, and increase professionalism. Furthermore the process and requirement of accreditation is often a landmark event in a profession’s development (Cusick & Adamson, 2006). Using medical schools as an example, because of national accreditation and certification all medical schools teach

from a common curriculum, are ensured to have met common competencies, take the same exam, and upon completion are eligible for licensure in all states (Matarazzo, 1977). EMS should aspire and desire a similar model of education, certification, and recognition.

The link between program accreditation and student outcome has been established based on an evaluation of results of the NREMT Paramedic exam in 2002. When reviewing 12,733 candidates who completed the exam it was found that those from accredited programs were more successful with a 65% pass rate, while those who were not had a 53% pass rate (Dickinson, Hostler, Platt, & Wang, 2006). Additional studies not only support these findings, but also found that students with academic degrees performed better on the exam (Fernandez, Studnek, & Margolis, 2008). When faced with this data, many who oppose accreditation state that indicates individuals from these programs simply knew how to pass the test, and that it does not indicate clinical competency that is the assumed outcome of accreditation. This is a plausible argument and further study is needed to determine if competency does exist. However, given the assurances of educational quality that are inherent in an accredited program, this is still a valuable aspiration for the profession.

Personal Proposals

The final corrective action that I would propose, that is not included in any of the documents afore mentioned documents, is the increase of educational requirements, specifically at the Paramedic level. It is my feeling that a minimum of an Associate's degree should be the minimum entry level for a Paramedic, similar to the other allied

health professions. In addition to bringing EMS to the level of other allied healthcare providers this course of action would allow the time needed to include content required to meet the goals of the *Agenda for the Future* and *Educational Agenda*.

Many of the students taking Paramedic classes today lack basic academic skills including reading comprehension, writing, proper use of grammar and sentence structure, critical thinking skills, basic math skills, and the broad base of knowledge required of a healthcare professional. These observations are consistent with what employers have noticed in high school applicants, and under the current educational model most Paramedics are just that, high school graduates with one additional technical course (Casner-Lotto, Barrington, & Wright, 2006).

The allotted time for most Paramedic courses barely provide enough time to teach the content related to the practice of emergency medicine. Since the 1998 curriculum was published with its recommendation of 1,000 – 1,200 hours, there have been many additions to the practice. However course lengths have not increased accordingly. In fact here in Colorado the courses have been 6 months in length since the mid 1970's when they were approximately 400 hours in length. Although many instructors do attempt to address the academic skills students' lack, there is only so much time available.

The additional academic and basic science courses would provide this knowledge, further strengthening the student's skills as a Paramedic. One example of this is critical thinking and clinical decision making as it pertains to patient assessment. This skill is paramount to effective treatment. In the current non academic programs

patient assessment is approached from an algorithmic view in which items are checked off a list, but often without a true understanding of what is being evaluated.

Another example can be found in math skills. When administering medications math skills must be employed to ensure the correct dosage is given. In a 2000 study Hubble, Paschal, and Sanders found that the medication calculation skills of practicing Paramedics was inadequate. When provided with sample medication calculations that would be commonly encountered in the clinical setting the correct answers were provided 51.4% of the time when looking at the study participants as an entire group. It was also noted that those with college degrees performed much better than those without. The majority of errors were not in basic math functions, but rather conceptual errors, or the inability to correctly set up a mathematical equation (Hubble, Paschal, & Sanders, 2000). Not only do EMS instructors rarely have the time to teach basic math skills, this is also not their area of expertise. It is better to allow those who teach math perform that function, and within the Paramedic program the student is shown how those principles apply to medication calculations. Essentially a greater knowledge base provides a greater depth of experience and ability upon which to base medical decisions. It is for this same reason surgeons do not simply learn how to cut a patient, but are expected to have a broad knowledge base in and outside of medicine.

I am not alone in this belief however, in fact as mentioned earlier, the state of Oregon mandated all initial Paramedic applicants possess a minimum of an Associate's degree in EMS starting July 1, 1999. Other EMS leaders also support the idea of requiring such a degree as the minimum entry level for Paramedics.

Individuals identified as emerging leaders in EMS by EMS Magazine over the last few years provided the following responses when asked for their thoughts about educational opportunities and requirements for EMS providers.

“An associate's degree should be the minimum level of education for all paramedic-level EMS providers. First, I believe the students who are obtaining this education should receive college credit for all of the long hours and hard work they put forth. Second, many non-college-based programs do not offer any type of financial assistance, which would be available through a college-based program. Last, I believe this profession will truly earn the respect that we both want and deserve from other healthcare professionals when we make an associate's degree a minimum standard for our profession.

I support having at least a bachelor's degree, but highly recommend a master's degree for those choosing to pursue EMS administration or EMS education as a career. Both of these degrees make for a more marketable and well-rounded individual. Also, both degrees enhance critical-thinking skills, which are imperative in both professions” (Amanda Cotter in Natarajan & Barishansky, 2005).

“Formal education is of incredible importance to EMS leaders and providers alike. While college and graduate-level education might not increase your proficiency in starting an IV in the back of an ambulance, it makes you a well-rounded individual who has a better capacity for

meeting the demands of today's complex world. It also puts you on a more level playing field with the people with whom we must interact. I am encouraged by the proliferation of EMS degree programs, both at the undergraduate and graduate levels. My hope is that an associate's degree will become a requirement for obtaining certification as a paramedic. As EMS leaders, we should strive to remove the two biggest barriers for EMS providers who desire to further their education: the cost of tuition and the availability of flexible work schedules that can accommodate a course load” (Noah Reiter in Natarajan & Barishansky, 2005).

“Formal education for all EMS providers, regardless of position or rank, is a must. I am a proponent of an associate's degree as the minimum requirement for any entry-level paramedic, a bachelor's degree for supervisors and other middle-management positions, and a master's degree as a minimum requirement for executive-level positions. If EMS is ever to be recognized as a career profession equal with other healthcare professions, we must continue to move forward in this area” (Steven Cotter in Barishansky, 2007)

“I believe that one of the ways EMS providers can earn the respect of healthcare professionals is to continue our formal education. Education is never wasted. EMS providers in general should obtain a bachelor's degree, and those who look to advance into administration should have *relevant* management education as well” (Paul Misasi in Barishansky, 2009)

Academic degrees can also provide career opportunities for those in EMS. Most promotions require a minimum of an Associate's degree and in many cases a Bachelor's degree or higher. Most people find they cannot continue to work on an ambulance their entire career. This may be due to injury, the shift work, or any other number of reasons. Academic preparation allows other pursuits such as management and administration, education, other healthcare careers, or careers outside of medicine. (Barishansky & Kirkwood, 2010)

Expected Resistance and Philosophical Impact

Individual Resistance

Resistance cannot only be expected to the ideas proposed above, but is in fact occurring. One is forced to ask why changes that would benefit the individual, profession, and most importantly patients, would be opposed. If this were to be answered in one word it would be, change. Within the culture of emergency services change is often feared by many. Two comments often heard are “change is bad”, and specific to the fire service “the fire service represents 100 years of tradition unimpeded by progress”. While these comments are often made tongue in cheek, there is an [unfortunate] truth to them. A common fear of those whose path to their career did not follow many of the recommendations above is that they will become obsolete. They will be passed over for employment or promotion for someone who did attend college, has a national certification, or brings something to the table they do not.

One only has to visit the websites for the two trade journals of the EMS profession, the *Journal of Emergency Medical Services* (www.jems.com) and EMS

Magazine (www.emsresponder.com) and search for the word *degree* or *educational requirements*. The amount of discussion regarding these topics is immense, as are the passionate views for and against the idea of requiring degrees or increasing educational requirements. Those who support these ideas make many of the same statements that have already been addressed in this paper. Those against argue that it would make becoming a Paramedic too hard, that increasing educational requirements would result in a shortage of Paramedics because not everyone would pass, and that it would not change what can be done.

The last statement is probably the most telling when it comes to resistance of higher education in EMS. To be honest EMS is in a state of identity crisis. There is uncertainty and disagreement regarding what it does, and where it belongs. Is it part of healthcare, part of emergency services, or is it healthcare provided in the emergency services setting? There is as much disagreement on this topic as any other (Fire Chief, 2006). Additionally most EMS personnel have always viewed themselves in terms of what they can do as opposed to what they know. This is evidenced when hearing conversations comparing EMS providers to nurses. A common statement is “I can do X and a nurse cannot”. However, unless the Paramedic completed an associate or baccalaureate program there is no comparison between the two in what is known.

These views and disagreement of the role of EMS providers has direct correlation when it comes to discussions of degrees or increased educational requirements. When preparing this paper I posted a question to an EMS discussion group asking “Should an Associate’s degree be the minimum entry requirement to be a Paramedic?” As with the forums for the trade journals, the responses were fast and

furious with over 120 responses in two days. The most common reasons against such an idea were based on the fact that we have not needed one yet, so why do it now, and that it would not change any of the skills, or what can be done. While it indeed may not change the physical skills that can be performed, an academic background significantly increases knowledge and the ability of the EMS provider to function as part of the healthcare system. Something I believe will be essential in the future.

Interestingly, but no surprising, responses to my question followed the academic background of the poster. Those with no collegiate education were very against the idea, whereas those who had any form of higher education recognized its value and were supportive of the concept. However there were exceptions. A few people stated things such as “Yes, and that comes from someone without a degree”, or “I used to think not, but now I do believe it is needed”.

Organizational Resistance

Personal views of these topics aside, there is a more powerful cause of resistance, one that can only be understood with insight into the inner workings of EMS in this country. In addition to the role identity crisis, there is also furious debate over where EMS belongs, and who should control it. Currently EMS in this country is provided by municipal agencies, referred to as third service agencies, private agencies, both for profit and non-profit, hospitals, and fire agencies. Each of these entities has a different perspective and different goals regarding the role and function of EMS. They also have different representative agencies which appropriately reflect the views of its members. These views and goals, as well as their mission statements and policies are

often in direct opposition to the others however; this leads to further confusion, stagnation, and infighting when it comes to the leadership of EMS in this country. (EMS Insider, 2009) In addition to policy differences, each group has undertaken research, created white paper reports, and created public media in attempts to discredit the effectiveness of the others. While all these reports have been unsubstantiated propaganda, it does represent the current state of EMS leadership in the country (EMS Insider, 1997a; EMS Insider, 1997b; IAFF, 1997; IAFC, 2007).

For example, the IOM report recommended that a federal agency be established for the leadership of EMS in the country (Emergency Medical, 2007). A study conducted by George Washington University for the Homeland Security Policy Institute made the same recommendation in 2004. Currently direction for EMS comes from several areas with no true cohesion or focused efforts. This includes NHTSA, the Department of Homeland Security (DHS), and the Department of Health and Human Services (DHHS). Discussions soon followed for a U.S. EMS Administration that would be equal with the U.S. Fire Administration. While the Fire Administration located within the DHS, suggestions for an EMS Administration have placed it in the DHS, and also in the DHHS. This further reflects the disparity and disagreement of the role of EMS, public safety or healthcare organization.

The representative organizations of the fire services fought strongly against the creation of any such department. Their position statement is that EMS only belongs in the fire service and there is not the need for another model of service (IAFF, 2005; IAFC, 2009). The National Association of EMTs (NAEMT) on the other hand issued a position statement endorsing diversity in EMS models (NAEMT, 2000). Based on these

positions it is to be expected they will have different views of a federal EMS agency. The fire organizations feel there is not the need for any additional federal representation that is outside of the fire service, and such an agency would be competitive to the mission of the fire service (Moeller, 2007). Other agencies representing an interest, such as the National Association of Emergency Physicians, National Association of State EMS Directors, and the NAEMT either presented their own conflicting position statement, or no statement whatsoever. In fact the NAEMT chose to support the current system despite the majority of its members supporting the IOM recommendation (Fire Chief, 2006; Johnston, 2007).

With this limited backdrop of competing interests in one can begin to understand how this would also affect organizational views on EMS education. The *Agenda for the Future* envisions expanded roles of EMS in the healthcare setting. In the introduction of this document a system is described that utilizes what it called at the time Community Health Advanced Medical Practitioner, predicted to be in place by 2009. This level of licensure would be beyond that of what we currently know as a Paramedic, and would involve a minimum of baccalaureate academic preparation.

When the first draft of the new EMS Scope of Practice was drafted it included a level called Advanced Practice Paramedic in an attempt to meet this goal. This licensure would require an appropriate bachelor's degree, and the abilities of this provider would be greater than the current Paramedic level. Also some of the practices currently performed by paramedics would have been moved to the Advanced level. The nomenclature of Paramedic would apply to those who completed an Associate's degree or certification class, but the practice would be limited based on the lesser education.

The increased educational requirement and the fact that some skills were “being taken away” from paramedics caused a great amount of distension among several representative organizations, yet was supported by others. Many of these agreements and disagreements were formed based on local perceptions as opposed to national view. More of a “we do not have a need for that, so it is not valid” perspective. In addition to the new level of practice, the required educational hours for each level were increased to account for the changes and advances in medicine since the 1998 curriculum. These recommendations were met with similar responses, one of the common arguments being that it would be too hard for departments to fill their positions as not everyone would be capable of becoming an EMT or Paramedic if stringent educational requirements were implemented. (IAFC, 2004; MSRB, 2004; Fritz, Gonzales, & Harris, 2005; Miller, 2005) As a result this level of practice, as well as any significant increase in educational hours for any level, was left out of the final document. Similar arguments against collegiate education and increased hours were made when the first draft of the education standards were released. This included the recommendation, not requirement, for an Associate’s degree for the Paramedic level (Ludwig, 2007).

In short the new core content, scope of practice, and educational standards did nothing to change the face of EMS or EMS education. They merely represent a rewording of the older documents with an allowance for a bit more instructor flexibility. Perhaps Dr. Byran Bledsoe, a former Paramedic and now well known EMS physician and author said it best when he wrote:

“Perhaps the biggest disappointment in this document is the fact that there's no mandate for paramedics to hold a degree or for paramedic programs to be college-based. In a sell-out to the big fire departments, certificate programs for paramedics will be allowed. The future of EMS as a profession is based on education. A two-year associates [sic] degree should be the very minimum for paramedics. A lot can be gained from a college- or university-based program. As EMS education evolves, the resources of the college (e.g., library, media center, laboratories, cadaver labs, and so on) are invaluable” (Bledsoe, 2007)

That is not to say all hope is lost as some local communities have implemented the ideas of the *Agenda for the Future*. Wake County EMS in NC is known as one of the most progressive EMS agencies in the country. In January 2009 they implemented their Advanced Practice Paramedic Program and have had great success (Wake County, n.d.). Similarly these programs have been in place for years in the UK, Australia, and Canada. However the educational requirements in those countries are not only much longer than EMS programs in the US, the equivalent of an EMT in Canada is 1,000 hours of training as opposed to 110 in the U.S., but academic degrees are also required for the higher level of practitioner in these countries (Garcia, 2007).

Organizational disagreement also surrounds the recommendation that all EMS educational programs be accredited. The benefits of accreditation were discussed earlier in this paper. In November of 2007 the National Registry of EMTs voted that beginning June 1, 2013 only graduates of accredited Paramedic programs will be eligible to take their Paramedic exam (Accreditation, 2009; NREMT, 2009). This

decision was in direct response to the recommendations of the *Education Agenda* and the IOM report.

As with the idea of increased educational requirements, organizations and individuals have different views of this issue. On one side the NAEMT is in full support of accreditation. On the other side the International Association of Fire Chiefs (IAFC) appears not to have issued a formal position statement, but their publications indicate a tentative position. While they support the overall goal of accreditation, their concern is the increased requirements of educational programs to become accredited. Their main fear is that many fire department based programs will not be eligible for accreditation and subsequently their graduates will not be eligible for the certification exam (Bersche, 2008; NAEMT, 2008).

Currently the only accrediting body for Paramedic programs is the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP), is one of 17 committees of the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Like the NREMT this is a private organization, and becoming accredited is a costly and time consuming process. Initial accreditation and re-accreditation costs approximately \$4,500, and continuing accreditation is \$1,200 annually. Each accreditation period is 5 years. (CoAEMSP, n.d.b). Accreditation standards are stringent, and specific faculty requirements must be met. Program directors must have a minimum of a bachelor's degree, the program must show how it determines its goals and outcomes, how it measures the success of those goals and outcomes, interaction with an advisory committee, and that it has the faculty support needed for the program. Additional requirements include, but are not limited to,

adequate clerical support, financial support, curriculum, classroom and lab facilities, hospital and field internship affiliations, and adequate reference materials. Having been through this process twice I can say that it is a very intensive and very scrutinizing evaluation of an educational program. (CAAHEP, n.d.)

One can imagine based on the above requirements that many certificate programs will have difficulty meeting these requirements, and this is indeed the case and one of the IAFCs concerns with the mandate for accreditation. The other concern however is that in order to meet these standards CoAEMSP requires accredited programs be within with an accredited post secondary institution, a foreign post secondary institution acceptable to CAAHEP, an accredited hospital or other medical facility that is affiliated with an accredited post secondary institution or an accredited graduate medical program, or a branch of the U.S. Armed Forces or other governmental education or medical service that is affiliated with an accredited post secondary educational institution (CAAHEP, n.d.)

As one can imagine, many certificate programs, including those found in most fire agencies, do not meet these qualifications. There is however an alternative which is to create a consortium agreement with a sponsoring institution that meets one of the above requirements (CAAHEP, n.d.). In the past these agreements were very detailed and complex. They included organizational charts showing the relationship between the organizations, required meetings between all members, significant input from the sponsoring institution, and resulted in a shared control of the educational program, an option that historically has not been viewed well by stand alone programs. Even in the

setting of a consortium agreement all the resources mentioned above must be present at the educational program.

The last updates of the accreditation standards were done in 2005 which continued to include the consortium option. However, soon after CoAEMSP recommended that Paramedic education be accredited only through accredited post secondary institutions, and this was accepted by the standards project team. This would eliminate hospital based programs and consortium agreements with stand alone programs. As noted by the IAFC this modified requirement would eliminate many fire academies from conducting in house Paramedic training. Not long after this recommendation was made and accepted the IAFC negotiated for two seats on the CoAEMSP board, the first time they have requested to be involved since the accrediting body was created in 1978. Since then the proposal to require Paramedic education to be conducted only in accredited post secondary institutions has been dropped (Bersche, 2008; Croom, 2009a; Croom, 2009b;).

Instructor and Institution Resistance

In addition to organizational resistance, there is evidence of instructor and institution concerns over this requirement. In a study of program director attitudes and barriers to accreditation it was found that in addition to the concern of the expense of accreditation, many people disagreed with the majority of assumptions regarding the value of accreditation and felt it was not only redundant to current state mandated requirements, but also should not be required for state certification or reciprocity. Interestingly though the majority of participants agreed it will improve an educational

program, has benefits to both student and the profession, and is a positive move for Paramedic education (NREMT, 2009). Results can be seen in table 5.

How much do you agree/disagree on the following? A single national EMS paramedic education accreditation...		
N=518	Strongly Disagree/Disagree	Strongly Agree/Agree
improves a paramedic program	31.5%	68.5%
has long term benefits for students	26.1%	73.9%
will benefit the EMS profession	21.4%	78.6%
is worth the cost	47.7%	52.3%
safeguards the time and money commitment of students	41.9%	58.1%
is a positive move for paramedic education	23.0%	77.0%
is redundant to our state approval process	50.0%	50.0%
will improve public recognition of paramedics as allied health professionals	49.0%	51.0%
will improve peer recognition of paramedics as allied health professionals	42.9%	57.1%
should be required for eligibility of national certification	49.8%	50.2%
promotes continuous quality improvement in paramedic programs	25.1%	74.9%
will produce better clinicians	49.8%	50.2%
will have little to no effect on the quality of education provided by my program	47.9%	52.1%
should be required to be eligible for homeland security	61.6%	38.4%
should be required for reciprocity	54.3%	45.8%
should be required to obtain a license in my state	54.8%	45.2%
is a fair process	35.7%	64.3%
is desirable from the students perspective	45.8%	54.3%
will significantly increase the cost to students	41.7%	58.3%

Table 5: Paramedic Program Directors Attitudes to Accreditation

One factor that may be involved, and not included in the study, is the educational requirements of instructors in accredited programs. As mentioned earlier research has shown that the higher the education of the instructor the more successful the student is when taking the National Registry certification exam (Fernandez, Studnek, and Margolis, 2008). Research has also shown that many instructors in the U.S. do not meet the educational qualifications needed for accreditation. In a study to determine the characteristics of those who teach in initial education programs it was found that 73% of EMS instructors are part time and teach less than 20 hours per week. Of the population sampled 65.8% reported having an Associate’s degree or less, and 35.5% indicated they only had some college, and only 34.2% had a Bachelor’s degree or higher which is required to be a program director of an accredited program. Furthermore 45% of respondents teach in an EMS or fire academy setting, 31% did not have access to

instructors to help students with math and reading, and less than 50% had access to the resources required for accreditation.

There were even more disturbing findings in the study beyond the academic preparation and resources available to instructors. Responses to comfort levels, defined as very comfortable, somewhat comfortable, not comfortable, or not applicable revealed sobering results. Fifty six percent of instructors are only somewhat comfortable writing specific learning objectives for a lesson plan, and 38% were somewhat comfortable or not comfortable in providing feedback on class assignments. In terms of adaptation 59% were only somewhat comfortable or not comfortable using test results to modify instructional methods, and 51% felt somewhat or not comfortable writing objective based exam questions. On the positive side the majority of participants did feel very comfortable engaging, teaching, and evaluating students, as well as their knowledge of content (Ruple, Frazer, Hsieh, Bake, & Freel, 2005).

State Resistance

Individual states are also determining their position on accreditation. Through much conversation with EMS leaders across the country I have learned that some feel as though they are being forced by two private companies, NREMT and CAAHEP, to undergo the process, without any input from the states themselves. There has in fact been discussion that some states will stop requiring National Registry certification so that their programs do not have to become accredited. There are other states that have had long disagreements with the National Registry and choose not to recognize or

require their certification, while others have threatened to become “non-Registry” states (Croom, 2009c).

This would be detrimental to the goals of the *Education Agenda* and recommendations of the IOM. As mentioned reciprocity has been a large issue over the years, but it has become easier as 44 states recognize National certification in some manner. However, if a situation occurs where some states require National certification, and by extension accreditation of programs, and other states do not, a very confusing situation will be created. What if, for example, a person was to become a Paramedic in a state that did not have these requirements, but then wanted to move to a State that did require National certification? In this case, which conceivably can occur in current non-Registry states such as New York, Wyoming, and North Carolina, the individual would find that their entire education would have to be repeated in an accredited school before being eligible for national certification. It could in essence limit a Paramedic to working only in those states that do not have such requirements. The ability to be able to move from state to state, just as other medical professionals, along with quality education, are the driving goals behind accreditation and national certification.

One does have to take the state’s position into consideration however. Most, if not every, state has developed a system of program approval or accreditation. Additional accreditation may be seen as an unnecessary expense or process. Although I am not personally familiar with the position of the state of Tennessee, I will use them as an example. They have one of the best systems in place for ensuring quality EMS education. Many of their polices, including academic requirements for instructors, exceed those of CoAEMSP (Rules of The Tennessee, n.d.). It is feasible to expect they

may see little value in the additional cost and process of national accreditation. It should be noted however, this state is the exception and many state processes are not as stringent as the national process. It does however become an issue of state rights and the ability to determine what works for each particular state. It has been suggested that if these requirements were to come from governmental agencies they may be accepted better than from a private company.

Conclusion

Despite the issues raised in this paper, the reader should know that currently EMS services are provided by competent, professional, and caring individuals across the country. Under the current system the health and safety of the public is in no way compromised. However, there are improvements that can be made in the educational modality that will not only benefit the public, but will also bring EMS closer to the goals stated in the *Agenda for the Future, Educational Agenda*, and other visionary publications about the industry.

EMS is indeed at a crossroads as indicated by the title of the 2006 IOM report. With a history of only 40 years it is experiencing growing pains and an identity crisis that most other allied health professions have experienced. Is EMS a profession, a trade, a skilled occupation? Is it part of healthcare, or does it provide stabilization and transport to the healthcare system? These are questions that have yet to be answered, and have direct effect on how education should be provided, and what the expectations of that education should be. Answers will of course depend on who is asked these questions

and their philosophical background, as has been shown the debate is heated and furious with multiple competing interests and views.

Much of this is the result of a clashing of the “old guard” with new and progressive ideas. More and more people are gaining higher education in EMS than ever before, and while they recognize the need for this trend to continue they are still in the minority. There are many very dedicated and very good EMS professionals who rose through the ranks based on a vocational education and have enjoyed great success. In their eyes the system worked, and there is no need to change it. However the vocational system may not be able to meet the needs of the future healthcare system and demands on the EMS system. Until there is consensus, or one group becomes more predominant, such as occurred when nursing went through a similar process in the 1960's, these differing views will continue to be prevalent.

There are actions that can be taken however, many of which have been suggested by steering committees and EMS experts as various reports and vision statements have been created. The most beneficial action would be the creation of a unified agency representing EMS within the federal government. In the current environment of multiple interests and ideas progress is not being made on any front. Many will argue that no other healthcare profession has such a structure, they are correct. However no other healthcare profession is both a part of healthcare and a part of public safety, provided as an essential government service, or provided by distinctly different entities. While other public safety and healthcare professions enjoy the benefit of a unified voice and common direction, EMS does not. In this case a singular leading

agency, much like the U.S. Fire Administration, or the Department of Justice, would provide the solidarity required for forward and professional growth.

With such a department and common goals and purpose established, only then can the challenges faced by EMS education be addressed. National accreditation of educational programs to ensure the quality of EMS education is vital to the future of the profession and to professional development. While the current system is working, it can be made better. Ensuring programs have highly qualified faculty who are dedicated to the art and science of teaching, have the necessary academic background for teaching, as well as having all the resources necessary to provide quality medical education is paramount to the safety and well being of patients who are cared for by EMS providers.

Educational standards must be increased to meet the demands and expectations of the modern EMS system. The amount of knowledge now expected by all EMS providers, and especially Paramedics, exponentially surpasses requirements of the past. However we are continuing to educate in the same manner we have for the last 40 years. This has resulted in poor success rates on certifying exams, and more importantly, although it is only anecdotal, but there is widespread agreement, new providers are not graduating with adequate skills and knowledge to perform the role now expected of them.

I believe there are two contributing factors to this phenomenon. One is that EMS education should now be an academic pursuit rather than a vocational pursuit due to the amount of education needed, and secondly the high school graduates entering EMS programs do not possess the academic skills of their predecessors. Therefore they are

not only learning a greater amount of information than those of the past, but they are not as prepared to do so. Increasing both educational time and coursework would alleviate these issues. I believe part of the argument against requiring higher education is done so without this realization. It speaks to the belief that vocational education worked in the past so it should continue to work today.

EMS and more importantly EMS education is indeed a fractured system; however with continued work and collaboration between all interested parties this can be remedied. For the last 20 years I have hoped to see resolution to these issues during my career. While I am not sure I will see that, I am convinced that through expectations of the public, the demands of the healthcare system, or professional evolution, they will become a thing of the past.

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