Running head: FEASIBILITY OF FIVE-YEAR RECERTIFICATIONS

Leading Community Risk Reduction

Continuing Medical Education Recertification For Emergency Medical Technicians

Will It Work In The Fire Department of the City of New York?

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed _____

Abstract

The problem was that the Fire Department of the City of New York (FDNY) shifted from a three-year recertification program to a five-year continuing medical education (CME) program for its Emergency Medical Technicians (EMTs). The purpose was to examine the extension of recertification on EMT knowledge and skill retention, and potential impact on patient care. Descriptive research was employed utilizing questionnaires, an extensive literature review, and personal interviews to ascertain: certification alternatives; certification guidelines; model curricula; educational delivery components; CME versus patient care; cost/benefits of extended certifications; and testing significance.

The recommendations included: adopting an evaluative timeline; redefining the program; substituting a challenge-type recertification; providing a format for CME drills; and creating an Emergency Medical Services (EMS) training officer/coordinator position.

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Introduction

The New York State Department of Health's Bureau of Emergency Medical Services (NYS DOH) has enacted three- and five-year recertification pilot programs for Emergency Medical Technicians (EMTs) throughout New York State (NYS). These pilot programs were instituted as an option to the traditional recertification process. The pilot programs allow EMTs at all levels, who are in continuous practice, to demonstrate competency and complete appropriate continuing medical education (CME) to renew their certifications without taking practical skills or written certification exams (Bruno, 1996).

The perceived benefits of allowing EMTs to renew through CME include: the retention of members and/or employees; providing a variety of learning experiences; making the recertification process more interesting for the student; presenting greater choices and schedule flexibility; and meeting specific individual and agency educational needs (NYS DOH, 2004).

The research problem is that the Fire Department of the City of New York (FDNY) is extending the recertification of its EMTs and Paramedics (EMT-Ps) from a traditional three-year program (which includes written and skill examinations), to a five-year CME-based program (with no testing components). This change may affect the didactic knowledge and psychomotor skills of these employees, and directly impact their ability to provide quality patient care in the communities they serve.

The purpose of this research is to examine the extension of EMT and EMT-P recertification periods within the FDNY and the potential outcome of that extension on the quality of emergency pre-hospital patient care. This research will endeavor to delineate the pros and cons of the program and make specific recommendations for its continuance, or adaptation.

To that end, this paper will utilize descriptive research to assist in answering the

following questions:

1. What are the alternative methods available for recertifying EMTs and EMT-Ps in New York State and New York City?
2. What are the NYS DOH guidelines regarding extending EMT recertifications?
3. How successful have the three- and five-year recertification programs been throughout New York State?
4. What is the relationship between extended EMT recertifications and the delivery of patient care?
5. What methods are presently in place to measure and compare patient care with the three- and five-year recertifications, versus traditional recertifications?
6. In New York State, what is the pass/fail rate of EMTs with three- or five-year recertifications and how do they compare to the pass/fail rates of EMTs who have taken traditional recertifications?
7. What are the cost/benefits used in the FDNY's decision to extend the EMT recertification periods?
8. What results have the three- and five-year EMT recertifications had with the quality of patient care, or pass/fail test scores, of EMTs in other fire and ambulance departments and corporations?
9. What procedures are being utilized for CME recertification of FDNY EMTs?

Background and Significance

According to the FDNY's Annual Report (FDNY, 2006), in its 142nd year, the FDNY presently consists of 14,074 Fire Officers, Firefighters, EMTs, Paramedics, EMS Officers, and Fire Marshals. These highly trained individuals are supported by a total support staff of 1,118

Dispatchers, Fire Inspectors, Civilian Administrators, and Trade Personnel. Working together, the FDNY protects the lives and property of over 8 million residents and 4 million daily travelers who visit the city's 321 square miles for work, vacation, and entertainment (NYC & Company, 2006).

The mission of the FDNY is:

> As first responders to fire, medical and other emergencies, disasters and terrorist acts, the FDNY protects the lives and property of New York City residents and visitors. The Department advances public safety through its fire prevention, investigation and education programs. The timely delivery of these services enables the FDNY to make significant contributions to the safety of New York City and homeland security efforts. (Fire Department, 2007-2008, p. i)

To look at the problem as presented in this research paper, it will prove beneficial to first visit the significant historical events that have led the FDNY to where it is today.

The beginning of the impressive history of pre-hospital emergency medical care and training in New York City (NYC) can be traced back to 1865—the same year that the Civil War ended and just four years after the establishment of the FDNY (J.P. Martin, personal communication, February 1, 2007). In that year, the Bellevue hospital of Manhattan started hiring "ambulance surgeons"—medical interns with a required minimum of six months' hospital experience—and rotating "ambulance physicians" who, along with untrained drivers, staffed five horse-drawn ambulances to respond to life-threatening emergencies (Fire Safety Education Fund, 2000). This service was administered by the Department of Public Charities and Corrections. They responded to 1,812 calls the following year (Fire Safety Education Fund, 2000). This service also holds the historical distinction of being the first ambulance service in the United

States (J.P. Martin, personal communication, February 1, 2007). In 1883, the NYS Legislature passed an act giving ambulances within the city the right-of-way; in 1908, the first motorized ambulance was pressed into service, and the American Red Cross objected to the use of its symbol—a red cross in a white circle—on ambulances (this symbol later became the international sign of emergency ambulances). The NYC ambulance history continued in 1909, when less skilled personnel staffed the ambulances and the operation was placed under the Board of Ambulance Service, chaired by the police commissioner (Fire Safety Education Fund, 2000). In 1912, 26 ambulances were staged at a west-side pier in Manhattan to receive survivors of the Titanic ocean liner disaster; in 1922, the last horse-drawn ambulance was removed from service; in 1928, the Department of Hospitals took over administration of the Bellevue hospital ambulance service (J.P. Martin, personal communication, February 1, 2007); by 1929, 12 city and 33 private hospitals provided ambulances in a joint municipal-private venture. Drivers did not assist with patient care, and patient transport to the nearest hospital was not required. In 1969, after passing the 400,000 emergency response mark, all NYC municipal ambulances were merged into the Ambulance and Transportation Service of the Department of Hospitals (Fire Safety Education Fund, 2000); in 1970, the New York City Emergency Medical Services (NYC*EMS) was officially founded as part of the city's newly chartered Health and Hospitals Corporation. NYS started issuing "Medical Emergency Technician" certificates in 1973 (M. Taylor, personal communication, April 24, 2007); 1974 saw the graduation of the first class of paramedics who operated in the Bronx; in 1975, the NYS Legislature passed the "Public Health Law—Article 30, Part 800," which created the titles of EMT and EMT-P, set the standards of care and training requirements, and issued the first EMT cards under the law between 1976 and 1977; also in 1977, NYC Mayor Abraham Beam issued an executive order designating

NYC*EMS as the coordinating agency for all pre-hospital emergency care in the city; in 1978, paramedic ambulances were located in all five boroughs; in 1981, the computer-assisted dispatch system replaced the old scratch pad and card-map system; in 1982 and 1983, NYS began to standardize the EMT-Ps and issue NYS EMT-P certifications (M. Taylor personal communication, April 24, 2007); in 1989, all EMTs were upgraded to EMT-Defibrillation (J.P. Martin, personal communication, February 1, 2007); in 1994, FDNY engine companies in Brooklyn started to respond to the most serious of emergency medical calls as NYS Certified First Responders–Defibrillation (CFR-Ds). This was the start of the FDNY citywide CFR program (the "D" designation was dropped in 2000) that took an additional 2 ½ years to implement (Fire Safety Education Fund, 2000); and on March 17, 1996, the NYC*EMS and its legislative charter was officially transferred from the Health and Hospitals Corporation to the FDNY. This merger launched a new chapter in the NYC*EMS history. It provided for the continuation of excellence and the opportunity to expand upon the already extensive tradition of this exemplary service.

Another historical perspective that adds relevance to the research problem involves the NYS DOH Bureau of EMS. This agency is directly responsible for the training, curricula, certification, and protocols for all pre-hospital emergency care providers in NYS.

As established in the early 1970s by the NYS Legislature, the NYS DOH adopted the certification of EMT, followed shortly by the addition of EMT-Is (Intubation), EMT- CCs (Critical Care), and EMT-Ps. The certification period for each of these titles was three years. Prior to certification expiration, individuals were required to apply, attend, and pass formal didactic and practical skills recertification classes. At the conclusion of these courses, members needed to pass hands-on skills exams and written certification exams in order to be recertified. In

the 1990s, the NYS DOH adopted a “Challenge” model for recertifications. This model allows students to waive their attendance at the lecture and skills portions of the formal refresher course provided they can demonstrate cognitive and hands-on skills proficiency. The first two sessions of the challenge refresher course is dedicated to an eight-unit written test and a six-unit skills exam. Students are then graded on their skills and cognitive knowledge, and required to attend only those classes on topics in which they could not prove proficiency. Additionally, the challenge refresher includes some mandatory “core curriculum” studies—such as CPR and pediatric emergencies—regardless of challenge test scores. Students are also required to sit for the state certification exam at the end of the course (NYS DOH, 2007).

The challenge refresher course has proved to be a welcome alternative for students because of the reduced hours that might have to be spent in the classroom to receive recertification. Some students, however, still do not like the required test-taking components.

In 1996, instead of approaching the Regional and State EMS councils and the NYS DOH, EMTs throughout NYS lobbied their legislators to pass laws changing the coursework and testing model to a CME-based education model. In the process, the idea of NYS converting to a “national registry” surfaced (M. Tayler, personal communication, March 2, 2007).

The National Registry of Emergency Medical Technicians (NREMT) is a non-profit, impartial organization whose mission is to standardize the process to assess the knowledge and skills required of professional EMTs. The NREMT maintains a registry of the same and has produced a nationally recognized process to serve and facilitate EMT competency levels allowing for reciprocity across jurisdictional and state boundaries (National Registry of Emergency Medical Technicians [NREMT], 2007).

However, since NYS cannot endorse any particular product, NYS could not simply adopt

the NREMT. The EMTs successfully pushed for laws creating the states own CME-based recertification program based on a “nationally recognized model” (Bruno, 1996). The national registry was the only model in existence, so that is what the three-year NYS CME pilot refresher program is modeled after (M. Tayler, personal communication, March 2, 2007).

In 2001, EMTs throughout NYS asked their legislators to extend the three-year CME pilot recertification to five-years. Hence, the law to create a five-year CME recertification pilot program was enacted (M. Tayler, personal communication, March 2, 2007). Both recertifications had very little input from the NYS EMS system or NYS DOH on how to create or implement the programs. The NYS DOH was left to research how other states where working the NREMT model into their programs and adapt the current NYS programs into that model (M. Tayler, personal communication, March 2, 2007).

As of this writing, 44 agencies in NYS use the five-year CME pilot program and 992 use the three-year pilot program (NYS DOH, 2006). As written and amended in section 3002 subdivision 2-b of the NYS Public Health Law of 1996 (Bruno, 1996), the three-year CME pilot program was available everywhere in NYS except for employees of municipal ambulance services in cities with populations exceeding one million (Bruno, 1996). The extended Public Health Law of 2001 limited the five-year CME pilot program to nine counties in NYS (Adirondack, Delaware, Fulton, Hamilton, Montgomery, Nassau, Ostego, Schoharie, and Suffolk) and also prohibited the participation of employees of municipal ambulance services in cities with populations of over one million (NYS Legislature, 2001). Both of these laws expressly prohibited FDNY employees from participating because NYC’s population exceeds one million.

In June 2006, NYC and the unions for the FDNY EMTs and EMT-Ps negotiated a

contract settlement where the parties agreed to support legislation allowing the FDNY to participate in the current NYS DOH five-year certification pilot program. The city pushed for the law, citing the past three-year recertification and testing model as a deterrent to recruitment and retention of EMS personnel throughout NYS (Maltese, 2006). Additionally, since the FDNY has more than 3,000 employees that must participate in this recertification training, the necessity of removing them from ambulance duty for 10 days for EMTs, or 16 days for EMT-Ps, caused financial and staffing hardships for the FDNY (Maltese, 2006). The city also maintained that the NYS five-year certification pilot program's requirements were less cumbersome.

Citing the above advantages of the five-year program, the city concluded that benefits for both itself and the unions included—among other things—that reducing the number of times EMTs and EMT-Ps need to recertify during their careers allows for continual training over the entire five year period; provides for alternative forms of training as a means of obtaining recertification; and would allow the FDNY to better staff and schedule its ambulance tours (Maltese, 2006).

The EMT union, on the other hand, had received a contract credit for the savings associated with this settlement and promised to support the legislation. Since the contract was negotiated and ratified before the law was passed, had the bill not been enacted, the parties would have had to reopen and renegotiate the contract. The EMT unions would have then been forced to provide the city with some other form of equivalent savings (Maltese, 2006).

The NYS law that allowed FDNY employees to participate in the five-year recertification pilot program was signed into law on August 16, 2006, and took effect immediately. The FDNY was forced to quickly devise a training mechanism for all EMS employees. As will be discussed in later sections of this research, the CME program

development was not an easy task. And, although NYS DOH assisted the FDNY by providing information on developing the program, by partnering with the FDNY to address issues and provide focus to remain forward thinking, and by showing a willingness to compromise on how best to coordinate the program, it was recognized early on that the creation of a CME-based program within the FDNY would be an enormous undertaking (M. Tayler, personal communication, March 2, 2007).

Relating this research to the United States Fire Administration's mission "to save lives and reduce economic losses due to fire and related emergencies..." (National Fire Academy [NFA], 2005, Forward, p. iii), the possibility exists that loss of human life and/or economic loss could occur from related injuries or illness if the standard of care provided by FDNY EMTs is compromised because of the extension of their training, or the lack of formal education and testing of cognitive knowledge and practical hands-on skills.

The opportunity to reduce the community risk in conjunction with the training of FDNY EMTs is a correlation that cannot be ignored. "The community risk-reduction process from the executive fire officer's perspective must examine the community from a broader perspective than in the past and examine risk as it applies to all areas that may affect the community." (NFA 2005, pp. SM-0-16). Therefore, if a community risk-reduction process must examine the community from a broader perspective and then apply risk management to those areas (NFA, 2005), then certainly the training and recertification of emergency care providers is one of those areas that must be explored. This concept can be further expanded to include the hiring of employees to fill EMT positions as they are representative of the diversity of the communities in which they will serve.

In regard to the significance of this research and the ability to lead community risk

reduction, the educational needs of present and future FDNY EMTs as diverse individuals must be considered to determine if the five-year CME certification is the best form of education available to them. Providing these employees with the necessary tools to save lives and reduce economic loss from illness and injury should be paramount in the reduction of community risk.

Although the economic savings to NYC cannot be overlooked, it is the educational component of CME-based pre-hospital emergency care coupled with the reported recruitment and retention problems previously identified that provides the relevance of this research.

Literature Review

To understand if a five-year CME recertification program will be successful and advantageous to the FDNY, this research will first examine the broader scope of EMT certifications and, more specifically, CME-based recertifications. The requirements necessary to attain and keep these certifications will also be explored.

This literature review was organized around the project's research questions: examining certification alternatives (questions 1 and 3); certification guidelines (2); educational delivery components—such as didactic and skills testing (6 and 8); and the relationships between EMT certifications and patient care (4 and 5). The remaining question (7) relates to the cost/benefits of extended certifications and will be addressed in later sections of this research.

Although the problem—as detailed in the introduction of this paper—is focused on the FDNY and NYS, the literature review has uncovered a substantial amount of information associated with this topic on a much greater, national scale.

As important as initial training is to ensure EMT competency and the ability to provide effective care (Brown, Dawson, and Harwell, 2003), it is the continuous training and recertification that is particularly relevant because of the high turnover rate found in the

profession (Brown et al.). As mentioned earlier, this argument was presented by NYC in its bid to extend the FDNY EMT certifications. The effects of potential lost knowledge and hands-on skills over time make on-going training a significant concern (Brown et al.). Similarly, that same training is critical to ensure the EMT's preparedness for the variety of tasks he or she is called upon to perform on a daily basis (Brown et al.). Within the education agenda, Dubin (1977) points out that EMS providers may become incompetent due to their failure to keep up with constant changes in the art and science of emergency medicine and that these individuals are at risk of becoming outdated in their skills and knowledge as well (NHTSA, 1998, p. 16). Clinical competence is a result of cognitive learning, psychomotor learning and effective (professional socialization) learning, (Janing, 2001) but the evaluative methods most used today are centered on the EMT's cognitive and procedural skills only (Janing, 2001). Effective skills must also be evaluated to truly gauge an EMT's clinical competency and retention (Janing, 2001).

As verified in several of the reviewed literary works, each U.S. state presently has several options to certify/recertify its EMTs and EMT-Ps. The options include traditional refresher courses, generally viewed as a well-rounded approach in that they give the student time to perfect "book" knowledge and skills that they may not have used on the street. They include cognitive and psychomotor skills testing components, and allow additional information, techniques, or protocols that have been updated or adopted since the EMT's last certification course (Lonchens, 2002). Challenge refresher courses, on the other hand, offer the same well-rounded approach but give the EMTs "credit" for the knowledge and skills that he/she have retained and can demonstrate (through didactic and skills testing components), yet streamline the amount of hours necessary for the EMTs to invest in brushing up on the knowledge and skills in which they are lacking (NYS DOH, 1998).

A newer option is CME. CME recertifications can be obtained from many different sources including classes, seminars, or conferences—either locally or nationally, as well as over the Internet (Lonchena, 2002). The enticing element of CME recertification is that there are no formal testing components, and EMTs can find courses that are interesting and exciting for them while complementing their individual learning styles (Becknell, 2001). This interesting variety of available courses may have the added benefit of instilling confidence in the EMT's weakest areas (Becknell, 2001). Nationally, average recertification hours range from 72 hours for EMTs up to 190 hours for EMT-Ps (NYS DOH, 2002, 2004; NREMT, 2007).

According to the final report on NREMT Reregistration and Continuing Competence (Brown, Holterman, Johnson, LaFleur, Lohr, Margolis, Michos, Wagner and White, 2006), "the continued assurance of clinical competence is the goal of CME" (p. 2). The report asserts that there is a common belief that mandatory CME automatically means continued competence. However, Brown (2006) concludes that there is very little evidence to support this assertion. Likewise, the Pew Health Professions Commission (Dower, Finnocchio, Granola, and McMahon, 1995) found that CME requirements generally only ask that individual EMTs attend approved CME classes and, like Brown (2006), found that there is little evidence of a relationship between CME participation and EMT job performance or clinical outcomes. The Pew Commission (Dower et al., 1995) recommended that health boards abandon arbitrary CME, and develop, adopt, and evaluate continuing competency requirements for EMTs instead.

In Appendix I, this research breaks down each U.S. state's and the District of Columbia's certification/recertification requirements as proof of the lack of a consensus among the states regarding EMT training (EMS Responder Magazine, 2005). The significance of this data will be discussed in detail in the results section of this research. However, it is worth pointing out here

that the vast differences in the certification programs include the time frames in which the EMT must be retrained, the amount of hours required for each option, and the inclusion, or exclusion, of evaluative (testing) components.

A concurrent question throughout the literature review, as posed by Welch (2005) is how often do EMTs need to be retrained to maintain competency? The American Heart Association (AHA) recommends a two-year period between initial education and retraining for its cardiopulmonary resuscitation (CPR) classes (AHA, 2005). This recertification time frame may prove to be more economical for some protocol decision makers, but there may be a point where a person "is no longer prepared to respond and perform effectively" (American Red Cross [ARC], 2007). Conversely, in Brown (2006) the results support the AHA position. That study found EMT-Ps were more likely to pass their NREMT recertification exams if they took them within two years or less of their previous exam. This fact suggests that two years could be a reasonable time frame for requiring recertification in cases of professional EMS personnel.

Several researchers and organizations dispute the AHA timeline as being too long for skills retention. In fact, the ARC (2007) requires annual recertification for its CPR and first-aid courses, while the Occupational Safety and Health Administration (OSHA, 2006) encourages employers to provide skills review and practice sessions for CPR and Automated External Defibrillators (AED) every six months, with employees being fully retrained annually.

Another research report showed that CPR skill retention in students from physician to layperson start to decline as early as two weeks after training; then they appear to plateau between one and two years, and were seen as mostly inadequate after only one year (Dorfman, Raizner, Raizner, and Weaver, 1999). Another study concluded that many participants in CPR classes fail to acquire the necessary skills, and that those who did acquire the skills at the outset

had a decline in those same skills over the subsequent six to nine months (Chamberlin, 2002). Although CPR and AED skills are just a small component of EMT training, they are looked at as basic core content, as opposed to more advanced skills that EMTs must possess. The correlation is that if basic skills are not being retained, how can EMTs and EMT-Ps maintain the more advanced skills? Hence the purpose of this research.

Basic CPR is not the only place where retention is at issue. Welch (2005) points out that in studies from as early as 1987 it has been routinely proved that advanced cardiac skills among EMTs have shown "significant degradation" in retention during the first six months, and that "what people forgot they forgot immediately. What they remembered, they remembered for a long time." A number of additional literature reviews disclosed that the decay in knowledge and skills among pre-hospital emergency care providers appears to be across-the-board and at all levels of disciplines from basic CPR, through EMT, and up to the advanced cardiac life support of EMT-Ps (Gausche-Hill, 2000; Kee, 1996; Welch, 2005).

A different perspective was shared by Welch (2005) in that one study (Chen, Chi, Lin, and Wang, 2000) found students who attended a two-day pediatric advanced life support refresher course showed enhanced retention over those students who only attended a one-day course. This reference suggests that retention might be improved if class time were increased and made more comprehensive. Welch (2005) continues that CME programs have been effective in preventing cognitive and skills decay. He also demonstrates that CME has been proved as a way for EMTs and health care providers to maintain technical and professional skills, and offers each a mechanism to learn and practice more advanced skills at their own pace (Sanders, 2000).

Welch (2005) and Susan Wooley of the ARC Advisory Council (ARC, 2007) agree that learning requires repetition, reinforcement, and repeated exposure. They conclude, however, that

none of those can replace retraining on a timely and regularly scheduled basis.

The literary research further revealed that individual states do not work together to standardize pre-hospital emergency care, reciprocity, recertification, or EMT registries (Lonchena, 2002). The lack of a formal national office, or federal EMS agency mandated by law, has led individual states to develop their own EMT curriculum and certification guidelines (Lonchena, 2002). As delineated in the document "The EMS Education Agenda for the Future: A Systems Approach," commonly known as the "Education Agenda" (National Highway Traffic Safety Administration [NHTSA], 1998), the nonexistence of a national, structured EMS education system has contributed to the inconsistency in EMS education and to the significant absence of licensing standards and a clear-cut direction for the future of our national EMS system (NHTSA, 1998). That document and its predecessor—the "EMS Agenda for the Future," commonly known as the "Agenda" (NHTSA, 1996)—are the consensus of a wealth of experts in the pre-hospital care field. Both documents suggest numerous ways to overcome a variety of national situations regarding our pre-hospital EMS delivery system.

As previously identified, the main issue to overcome in the education agenda was the need for a national EMS office (Lonchena, 2002). The secondary issue was to create a uniform system of EMS training and licensing. A blueprint from within the education agenda called the "Scope of Practice Model" (Evans, 2005) outlines the core educational content and includes the skills and abilities to be practiced at each EMT provider level (NHTSA, 1998). Evans (2005) points out that the scope of practice model's goal is to achieve national licensure for the entire country to help the EMS system evolve. He continues that licensure out-weighs the need for certification by explaining that:

Professions that employ licensure generally have more stringent standards for those

> practicing in the field. Licensure systems allow for an improved system of handling allegations of licensee incompetence. Most importantly licensure, when linked to standardization of the scope of practice and common educational standards, allows for reciprocity. Licensure also offers autonomy, which may allow EMS workers to enter clinics, offices or emergency rooms and provide a career path for more senior EMS workers. (p. 24)

The significance of that quote lies in the ideal that licensure equates to a formal criterion of higher education. Certification, on the other hand, is considered to be a series of standards adopted by an agency or government, based on competency rather than educational archetype (Evans, 2005). Furthermore, the education agenda defines the difference between education and training as not being a "matter of semantics," but that:

> Education is a broad-based, theoretical endeavor designed to improve cognitive skills and decision making. Training, on the other hand, tends to be specific and practically orientated. ... Education without training results in inert knowledge which lacks transfer to real life situations. Training with inadequate education results in narrow, task-orientated outcomes characterized by poor understanding, inadequate long-term retention, and little ability to change or adapt to situations. (p. 30)

The scope of practice document, as a subdivision of the education agenda, is now in its second revision because of several factors. One is the proposal for only four levels of EMT certification: emergency medical responder, emergency medical technician, paramedic and advanced-practice paramedic, with the elimination of an intermediate EMT level between EMT-Basic and EMT-P (Evans, 2005). Although this particular factor will not be examined in this research, it is worth noting because it has been a contributing influence in the reluctance to accept the education

agenda as the national standard EMS system.

A second factor that is significant to this research is the proposal to substantially increase the hours of EMT training and certification (Dittmar, 2005). The International Association of Fire Chiefs (IAFC) noted that the increased training hours proposed by the education agenda would devastate local EMS systems, especially the volunteer fire and EMS organizations that make up the majority of basic life support (BLS) delivery in this nation (Dittmar, 2005). With limited financial and personnel resources, these organizations are already finding it difficult to recruit, train, and retain members under the current requirements, because volunteers may not be able to take additional time off from their jobs and families to train (Dittmar, 2005).

On the paid professional front, the International Association of Firefighters (IAFF), the nation's largest firefighters' union, in submitting its comments on the education agenda, concurred with the committee for elimination of the intermediate EMT but urged for additional training for EMTs and EMT-Ps (Dittmar, 2005). The IAFC (Dittmar, 2005), in contrast to Welch (2005) and the IAFF (Dittmar, 2005), argued that there is no correlating proof to indicate that increased training hours for EMTs would significantly provide for better patient care. Additionally, a multitude of EMS governing agencies cried out against additional training hours, saying they oppose any measure that would increase hours of EMT training or raise certification levels of their already overburdened EMS teams (Dittmar, 2005). The motivation behind these positions will be examined in the results section of this research.

In conclusion, the literature review for this research reveals substantial debate as to whether CME recertification, and the extended time frames it offers, is reasonable and prudent for EMTs in general and the FDNY's EMTs in particular. Although other recertification options are available, NYC and the FDNY have chosen to adopt the extended five-year CME-based

recertification over all others. It was also found during the literature review that testing criteria (or lack thereof) is just as controversial. Likewise, the relationship between recertification options and patient care has been revealed as a valid concern although there appears to be no such research addressing this issue. This paper will expand upon the recommendations and discoveries found during the literature review in the result and discussion sections that follow.

The findings of the literature review influenced this project in that it lays down the foundation for debate, magnifies the issues presented in the problem and purpose statement, and validates the worthiness of the research.

Procedures

The procedures employed in the preparation of this Applied Research Project (ARP) consisted of first developing a focused problem, research purpose, and relevant research questions. A literature review was conducted in addition to topic-specific questionnaires and personal interviews. Policies, procedures, and guidelines from outside agencies were used for comparison to those of the FDNY. The descriptive research method has been utilized to detail the past and present relationships between EMS training and certification, and pre-hospital patient care.

The first step of this ARP commenced on January 8, 2007, when the author attended the Executive Fire Officer Program's Leading Community Risk Reduction course. On January 17, 2007, just prior to completing the course, the author contacted the assigned evaluator by telephone, introduced himself, and notified the assigned evaluator of his expectation to submit the research proposal. On January 18, 2007 the ARP proposal was submitted to the evaluator via e-mail. On January 19, 2007, guided by the evaluator's feedback, the problem statement, purpose statement, and research questions were redefined and revised.

The next two steps (January 18, 2007) were to construct a road map to success (Appendix A), and to identify the research organizations to contact for statistical analysis, guidelines, procedures, and protocols. The road map was devised to help develop an organized approach to the research. In addition, a completion check-off sheet was produced listing each required ARP section and proofreading confirmation. An approximate target date for each ARP section was also included (Appendix B). At this time it was decided that the required sections of the ARP would be completed in sequential order (with the exception of the abstract). Following the road map, a master resource list (Appendix C) and master reference list were established on January 20, 2007 (the master reference list later became the attached research reference list). Throughout the remainder of January, February, and March 2007, the author set out to find past ARPs and trade publications related to this subject to be used in the literature review. A handwritten spreadsheet was developed to track and cross-reference important excerpts and to compare and contrast article information and references found throughout the literature review.

An exhaustive effort was undertaken to identify individuals to be contacted and interviewed for the project (January 2007). It was the intention of the author to include resources outside the emergency services, but because of the nature of the project's problem and purpose those outside resources were limited to medical professionals not necessarily involved with pre-hospital emergency care, and those authors who have published and developed educational or training texts and/or principles.

Before contacting the designated potential sources on the rosters, several questionnaires were developed—two for FDNY personnel, one for outside organization personnel, and one for the FDNY EMS unions (Appendices E, F, G, and H, January-February 2007). Each questionnaire was accompanied by a cover letter (Appendix D). When necessary, the

questionnaires were slightly modified for use during personal interviews.

The next phase of the ARP (February-March 2007) was the initial contacting of the individuals and agencies identified on the rosters. In cases where emergency service agencies or training institutions were contacted, every attempt was made to go directly to the individual(s) most responsible for the related information. It is worth noting here that every contact proved to be exceptionally helpful and accommodating with the requests.

As shown on Table 1 (p. 76), 18 individuals from 16 different bureaus/organizations were contacted. Out of the 18 individuals, 14 were interviewed. Of the 16 bureaus and organizations, 8 provided written documentation, copies of policies, procedures, and/or guidelines regarding EMT recertifications. This information was used to help answer research questions 1, 2, 3, 4, 6, 7, and 8.

The first individuals to be contacted were those directly involved with the FDNY CME program as members of the FDNY EMS division or EMS training academy. This proved to be beneficial in that some of those interviewees provided referrals to other important research connections. Out of the 18 total contacts, 11 were affiliated with the FDNY and all 11 were interviewed. Of the remaining 7 contacts, 2 outside contacts failed to respond (the Freeport, NY, Fire Department-EMS Captain, and the Elmont, NY Fire Department-EMS Captain). The FDNY contacts helped to answer research questions 1, 5, and 9. The outside contacts assisted in answering research questions 1, 2, 3, 4, 5, 6, and 8.

Personal interviews were used to investigate the views and opinions of key individuals from both inside and outside the FDNY, and provided statistical information that was not readily retrievable from documented or published sources. Each interview was scheduled for approximately 30 minutes (although most lasted closer to 1 hour or more). The researcher was

cautious not to over-burden the interviewees or to overstay his welcome. The interviews utilized the aforementioned questionnaires and were based on the original nine research questions, which were adapted to cover a wider range of topics. Where necessary, follow-up phone interviews expanded or clarified answers to the original interview questions or queries that arose from the questionnaires.

The personal interviews were conducted with the following individuals: FDNY Chief Medical Officer Dr. David Prezant; FDNY Chief of EMS John J. Peruggia; FDNY Chief of EMS Training John P. Martin; Lillian Rivera, NYC Office of Labor Relations (OLR); Assistant Chief Frank Chester, Nassau County EMS Academy; Michael P. Tayler, NYS DOH; Karen Meganhoffen, NYS DOH; Deputy Chief of EMS training Scott Holliday; FDNY EMS Captain John Nevins; Thomas Eppinger, President, FDNY EMS Officers Association; FDNY EMS Medical Director Dr. Dario Gonzalez; North Merrick, NY, Fire Department Commissioner Kevin P. O'Hara; Rochester, NY, Fire Department Lieutenant Steven Erb; FDNY EMS Captain Kathleen Conzi; and Patrick Bahnken, President, and Donald Faeth, Vice President, FDNY EMTs and Paramedics union.

The ARP research contacts were specifically selected to provide a wider perspective of the research problem and to allow for extensive investigation of both the research problem and purpose statements. The questionnaires and personal interviews yielded new information beyond that found in the literature review.

The extension of the literature review beyond the fire and EMS service proved to be advantageous to the researcher. The outside perspective on training and retention validated the research purpose and will be embellished upon in the results and discussion sections.

Limitations of this ARP included the lack of statistical analysis—in both NYS and the

nation—on the comparison of CME recertification versus traditional recertification. There has also not been any evaluative research or observations performed to document the success or weaknesses within the NYS DOH three- and five-year CME recertification pilot programs. A secondary limitation was the potentially broad topic area and the necessity to concentrate on the less broad perspective of national EMT recertification. Keeping the problem and purpose of the research in focus was instrumental in overcoming this limitation.

The final stages of completing this ARP (April-June 2007) included compiling the materials, organizing the processes, and writing the report. The formatting, typing, and proofreading of the paper, and ultimately the submission of the completed research to the National Emergency Training Center, were accomplished prior to the submission date.

Definition of terms

Certification: The act of being certified-no more than a relative indication of proficiency (Merriam-Webster, 2007).

Cognitive: The function of, relating to, or being conscious intellectually in activity (as in thinking, reasoning, or remembering (Merriam-Webster, 2007).

Didactic: Involving lecture and textbook instruction rather than demonstration and laboratory study (Merriam-Webster, 2007).

EMT: Emergency Medical Technician. A person who is certified to provide basic pre-hospital emergency care. In NYS, to receive this certification, you must be 18 years of age, attend 135 hours of basic pre-hospital emergency care instruction pursuant to the Department of Transportation (DOT) National Standard Curriculum, successfully pass the course, pass the NYS practical skills exam, and pass the NYS EMT certifying exam (NYS DOH, 2007).

EMT-P: Emergency Medical Technician-Paramedic. A person who is certified to provide advanced level pre-hospital emergency care. In NYS, to receive this certification, you must be 18 years of age, attend 1,200 hours of basic pre-hospital emergency care instruction pursuant to the DOT EMT-P National Standard Curriculum, complete clinical and in-field internships, successfully pass the course, pass the NYS practical skills exam, and pass the NYS EMT-P certifying exam (NYS DOH, 2007).

FDNY: The Fire Department of the City of New York.

Licensure: The act of having a license with permission to engage in a profession granted by an official or legal authority to practice medicine and to perform medical acts and procedures (Merriam-Webster, 2006).

NYS DOH: The New York State Department of Health: Bureau of Emergency Medical Services.

NREMT: The National Registry of Emergency Medical Technicians. A nonprofit, impartial organization whose mission is to provide a standardized process to assess the knowledge and skills required for competent practice by professional EMTs. Furthermore, the NREMT maintains a registry of the same and has produced a nationally recognized process to serve and facilitate EMT competency levels to allow for reciprocity across jurisdictional and state boundaries (NREMT, 2007).

Protocols: A set of rules, standards, and procedures that guide EMS personnel in step-by-step instruction in their medical actions and duties (Hafen, 2003).

Psychomotor: Relating to movement or muscular activity associated with mental processes (Merriam-Webster, 2007).

Reciprocity: The exchange, recognition, or enforcement of licenses, privileges, or obligation between states of the U.S. or between nations (Merriam-Webster, 2006).

Skill: A developed art, talent, ability, trade, or technique, particularly one requiring use of the hands or body (Merriam-Webster, 2006).

Results

As indicated in the literature review, EMS knowledge base, skill retention and the length of time between initial training and subsequent retraining have been matters of contention among educators and researchers for decades. The debate has included experts from both inside and outside of the EMS world (NHTSA, 1996, 1998; ARC, 2007; Welch, 2005; Janing, 2001; Brown, 2006; Dittmar, 2005).

The literature review uncovered a vast amount of information on the general topics of EMT recertifications. Unfortunately, there were limited published works on the specific topic of extended EMT recertifications as identified in this research's problem and purpose statements.

The education agenda (NHTSA, 1998) falls short in addressing CME and continued competency assurance as an integral part of a more comprehensive national EMS educational system. However, the education agenda does call for the development of such a program (NHTSA, 1998).

Research questions

1. What are the alternative methods available for recertifying EMTs and EMT-Ps within NYS and NYC?

NYS DOH presently certifies five levels of pre-hospital emergency care providers within its boundaries. They are (in ascending order): CFR, EMT-Basic, EMT-I (intermediate), EMT-CC (critical care), and EMT-P. Because NYC is its own EMS region within NYS, the local regional emergency medical services council (REMSCO) only recognizes the CFR, EMT and EMT-P levels within the jurisdictional boundaries of NYC. The recertification of all NYS DOH pre-

hospital care providers has traditionally been (since 1973), a three-year cycle of attending a refresher course, successfully passing it, passing the NYS practical skills exam, and passing a NYS certification written exam, in addition to clinical rotations (M. Taylor, personal communication, 2007).

In 1996 and 2001, the NYS DOH initiated three- and five-year CME-based pilot programs for EMT recertifications, respectively. These programs do not include written or practical skills testing and have proved to be very enticing to EMTs statewide. The literature review uncovered that, although the NYS DOH was supposed to report to the NYS Legislature annually (Bruno, 1996; NYS DOH, 2004, 2007), it is just now (2007) preparing its first and final report on the "pilot" CME programs. The report will concentrate on how the programs have progressed and the success of each, and provide recommendations and options to make future improvements and how to advance them from the pilot to permanent stage. This research may prove to be of value to that final report and will be submitted to the NYS DOH report committee upon completion.

To expound on the literature review, and to provide a wider perspective to this research, Appendix I provides a national state-by-state comparison of EMT recertification policies including the District of Columbia (EMS Responder, 2005). That comparison reveals that of the 51 localities surveyed, 32 use traditional recertification programs that include testing components; and 19 use CME-based recertification exclusively, only five of which include testing components. Additionally, 17 use traditional refresher training with a CME option and no testing component, and 8 others utilize traditional recertification with a CME option and include testing components. The significance of these findings lies in the disparity of standards among the states in certifying EMTs. Another noteworthy discovery is that over 85% (44) of the

localities include testing components within their certification processes. Additionally, as the literature review established, 43 of the 50 states and the District of Columbia presently use some form of National Registry exam for reciprocity and/or recertification (Lonchena, 2002; NREMT, 2007). Only nine states currently use the National Registry 100% for reciprocity at all their EMS provider levels (Lonchena, 2002; NREMT, 2007).

These literature review and survey results have a direct correlation to this research and are reflected in the following statement by Lonchena (2002):

> If we are to be a true profession, and the Registry a true national organization, the process to assess the knowledge and skills of EMS providers for competent practice must be uniform. In order for that to occur, we must work together to structure a compromise [between the states] so EMS is not a fragmented profession. (p. 56)

As evidenced by the above survey, and because of the multitude of options in which an EMT can recertify (dependent upon what state they practice in), the call for a national office of EMS, or a federally run EMS agency—mandated by law—to streamline and provide a true national standard of care at each EMT level, appears to be substantiated (Lonchena, 2002; NREMT, 2007; NHTSA, 1996, 1998).

Another finding of the literature review that supports this argument is the disparity from state to state in the number of hours required for EMT certification and recertification. As documented in Appendix I, those hours range from 110 to 420 for EMT and from 310 to 1,500 for EMT-P (EMS Responder, 2005).

2. What are the NYS DOH's guidelines regarding extended EMT certifications?

On August 8, 1996, and August 17, 2001, NYS Governor George Pataki signed into law Chapter 459 of the Laws of 1996 and Chapter 190 of the Laws of 2001, respectively. These

memoranda extended the previous laws calling for the commissioner of health to develop three- and five-year pilot programs, in at least six NYS regions, to allow an EMT who is in "continuous practice," who has "demonstrated competence in applicable behavioral and performance objectives," and who has "demonstrated completion of appropriate continuing education," to renew their certification without "requiring the completion of a written examination" (Bruno, 1996; NYS DOH, 2006). The literature review revealed that once signed by the governor, the laws only allowed the programs to be "pilots" and that they were to be repealed in five years (NYS Legislature, 1996; 2001). Additionally, the literature review brought to light that the commissioner of health was supposed to report annually to the state legislature on the status of the pilot programs (NYS Legislature, 1996; 2001). As of this writing, no report has ever been submitted (although the NYS DOH is writing a final report to be submitted in fall 2007).

According to the NYS DOH (2004), the three-year CME recertification pilot program requires a total of 72 training hours. For EMT, the program includes 24 hours of core content material with an additional 48 hours of CME. The EMT core content hours are broken down as follows: (a) preparatory – 1 hour; (b) airway and ventilation – 2 hours; (c) patient assessment – 3 hours; (d) medical/behavioral emergencies – 8 hours, divided into subsections of: general pharmacology/respiratory/cardiac conditions (4 hours), diabetes/altered mental status/allergy emergencies (2 hours), and poisoning/environmental/behavioral emergencies (2 hours); (e) trauma injuries – 4 hours; (f) obstetrics/gynecology – 2 hours; (g) infants and children – 2 hours; and (h) elective – 2 hours. The 48 hours of CME for the EMT three-year pilot program must include: (a) geriatrics – 3 hours; and (b) weapons of mass destruction and terrorism awareness – 3 hours.

The NYS DOH (2004) three-year CME pilot program requirements for EMT-P includes

48 hours of core content material with 24 additional hours of CME (72 total hours). Those hours are slightly modified from those of the EMT and comprise core content of: (a) preparatory – 6 hours; (b) airway management – 6 hours; (c) trauma – 10 hours; (d) medical emergencies – 18 hours divided into subsections of: respiratory and cardiac emergencies (6 hours), allergic reactions and poisonings (3 hours), neurological and abnormal emergencies (3 hours), environmental/behavioral/gynecological emergencies (3 hours); (e) special circumstance emergencies – 6 hours, which include: neonatology and pediatrics (3 hours), abuse and assault (1 hour), and patients with special challenges and acute interventions for chronic care patients (2 hours); and (e) operations – 2 hours. The 24 hours of CME for the EMT-P under the three-year pilot program must include: (a) geriatrics – 3 hours; and (b) weapons of mass destruction and terrorism awareness – 3 hours.

Conversely, the five-year CME recertification pilot program (NYS DOH, 2002) requires a total of 130 training hours. For EMT, those hours are broken down into 28 hours of core content material, 20 hours of mandatory topics, and 82 hours of CME. Those hours include core content: (a) preparatory – 2 hours; (b) airway – 3 hours; (c) patient assessment – 4 hours; (d) medical behavioral emergencies – 6 hours; (e) trauma emergencies – 6 hours; (f) geriatrics – 2 hours; (g) obstetrics/infants/children emergencies – 4 hours; and (h) operations – 1 hour. The 20 hours of mandatory topics include: (a) emergency vehicle operations – 4 hours; (b) hazardous materials – 3 hours; domestic violence preparedness – 4 hours; (c) pediatric emergencies – 3 hours; (d) geriatric emergencies – 3 hours; and (e) NYS Basic Life Support (BLS) and regional protocol review – 3 hours.

The EMT-P five-year CME recertification pilot program requires 48 hours of core content material, 27 hours of mandatory topics and 55 hours of CME (130 total hours). Those

hours include core content: (a) preparatory – 6 hours; (b) airway management and ventilation – 6 hours; (c) trauma – 10 hours; (d) medical emergencies – 18 hours; (e) special consideration patient emergencies – 6 hours; and (f) operations – 2 hours. The mandatory hours include: (a) emergency vehicle operations – 4 hours; (b) hazardous materials – 3 hours; (c) domestic abuse preparedness – 4 hours; (d) pediatric emergencies – 6 hours; (e) geriatric emergencies – 6 hours; and (f) NYS BLS and regional protocol review – 4 hours.

CME hours for the NYS three- and five-year pilot recertification programs may include many different learning activities (NYS DOH, 2002, 2004). Those activities and topics must be relevant to EMS and/or pre-hospital patient care. The EMTs must be able to document their attendance and participation using NYS approved forms specifically for that purpose. They can only receive credit for time actually spent participating in the activity. For example, if an eight-hour course ends two hours early, the participating EMTs can only receive credit for six hours (NYS DOH, 2004, 2002).

The three-year pilot program allows EMTs to be credited with up to 12 hours for "core content," and 24 hours of additional CME for self-study activities from documented publications, periodicals, lectures/seminars, agency drills or in-service training, videos and/or Internet training. An additional eight hours may be credited for certified CPR or EMT course instructors and can only be used once for each recertification period (NYS DOH, 2004).

The five-year CME pilot program allows for 25 hours of self-study activities (but not more than three hours per year for any one topic) via the same resources as noted above under the three-year pilot program. However, the credited hours for certified CPR instructors increases to 16 hours, and EMTs that are state-certified instructor coordinators (CICs) also receive up to an additional 14 credits per year for teaching EMT courses (NYS DOH, 2002). As exemplified in

the above paragraph, the NYS DOH has purposefully allowed a wide breadth of approved CME opportunities, allowing for broad-based knowledge and enhancing the educational process of EMTs throughout the state.

It is important to note, however, that the range of opportunity built into the NYS three- and five-year CME pilot programs which are accepted under the NYS DOH guidelines (2002, 2004) are not part of the FDNY five-year CME program. The FDNY five-year program does not allow members to acquire CME credit outside the FDNY (S. Holliday, personal communication, January 31, 2007). It was stated in Gausche-Hill (2000) that EMS systems who allow their providers to seek CME on the basis of "perceived" need will potentially not obtain necessary CME until long after their knowledge and skills have deteriorated. The FDNY program endeavors to avoid this situation by providing up-to-the-minute, topical training to its EMTs.

In applying this position to the FDNY, it can be argued that not allowing for outside CME may result in some EMTs not receiving the necessary medical education when they need it, but only receiving the education provided by a scheduled based on a perceived notion of what the general EMT population requires. The education agenda (NHTSA, 1998) proposes an EMS system that would accommodate the increasing sophistication and changing nature of EMS. That system would benefit each U.S. state by avoiding duplication of effort in curriculum development, testing, certification, and licensure of EMTs, and would help facilitate national EMT reciprocity (NHTSA, 1998). The education agenda further details a controversial education approval program under the "scope of practice" chapter, which sets standards that all states would be required to follow (NHTSA, 1998). In Dittmar (2005), several EMS responders surveyed on the education agenda's scope of practice model (NHTSA, 1998) raised the possibility that individual states might not follow the proposed federal guidelines, noting that

states have the sole certification and licensing authority for their EMTs and they must approve any scope of practice changes made within their state. Hence, the national standards are not being adopted or considered by most states (Lonchena, 2002).

3. How successful has the five-year recertification been throughout NYS?

The literature review conducted for this research could not uncover any relevant or factual information or statistics to answer this research question, as none are available. The NYS DOH does not maintain such statistics, and neither do any of the six NYS regions that allow the five-year CME recertification pilot program.

On a national level, the Longitudinal Emergency Medical Technician Attributes & Demographics Study (LEADS) project (Brown et al., 2005), which began in 1998, is comprised of a team of researchers, who collect data annually and provide a snapshot of the national EMT population. The survey documents EMTs in their work activities, working conditions, education, and job satisfaction. More important, the data permits detailed analyses of knowledge and skill retention. The LEADS project is significant in that it adds credence to the importance of ongoing training and certification. It is relevant because of the high turnover rate in the EMT profession and the potential loss of knowledge and skills over time. The project concluded that although EMTs and EMT-Ps were satisfied and felt well prepared by their certification courses, significant opportunities to improve certification training and education do exist. Specifically, in the absence of a national “master plan” to guide and develop EMS curricula, there lies a significant inconsistency in the provision of EMS education throughout the nation.

The LEADS project points to the NREMT as a good source of education, certification, and standardization. It presents the NREMT as the model for a nationally based, impartial board that certifies EMS providers who meet the high educational and professional standards for the

individual EMS provider levels (NREMT, 2007). Finally, the LEADS project (2003) hails the significance of testing as a way of evaluating pre-hospital patient care and EMT education.

Regarding the success of the NYS DOH five-year recertification, the personal interviews conducted for this research revealed that the Rochester, NY Fire Department (RFD) and the North Merrick, NY Fire Department (NMFD) view their five-year recertification programs as generally successful, based on the number of members involved in each of the programs, and the successful completion and recertification of those members. RFD Lieutenant Steven Erb (personal communication, April 12, 2007) stated that the success of their program lies in the continuous recertification of all 420 department EMTs and the continuity of training. He cautiously conceded, however, that assessment or comparison of cognitive and skill levels has not been performed, and that a system to validate the CME training on an "empirical" level is needed (S. Erb, personal communication, April 12, 2007).

Likewise, Commissioner Kevin O'Hara of the NMFD (personal communication, March 7, 2007) echoes similar sentiments in that the program's success is based on the continued recertification of over 50% of his department's membership at the EMT or higher level. The fact that over 95% of all NMFD members who have entered the department's five-year recertification program have completed it is also perceived as a measure of success. Commissioner O'Hara said that although there is no measuring instrument in place and that the success of the program is highly subjective, he views it as being effective—especially for the EMT student that averages low scores on written exams (because of the absence of CME exams).

4. What methods are presently in place to measure and compare patient care with the five-year recertification pilot program?

As mentioned in the previous research question, the literature review and personal

interviews reveal that no mechanisms are currently in place to answer this research question. However, the literature review did reveal that the NYS DOH originally intended to evaluate both the three- and five-year pilot programs on the quality of patient care, and their effectiveness retaining EMTs. As delineated in the administrative manuals of both pilot programs (2002, p. 10; 2004, p. 11), the evaluation tools include surveys and questionnaires, random audits, random testing, and comparison between participants and non-participants. The surveys and questionnaires were to be sent to: (a) course participants—to determine how satisfied they are with the program, if they found the program easier than traditional refreshers, did they feel that they learned more or less than in previous refreshers, and did the program affect their decision to recertify; (b) agency chief officers—on program satisfaction, if the program was helping their agency with retention, any differences noted between participant and non-participant patient care, and difficulties in providing in-service drills or CME; (c) agency medical directors—program satisfaction, if the CME is adequate to maintain or improve the quality of patient care, any differences in patient care between participants and non-participants; (d) receiving hospitals—are they aware of the program, is it part of their quality-improvement/quality-assurance activities, do they provide CME for EMTs, have they noticed greater participation by EMTs in call reviews, lectures, seminars, etc., have they seen any improvement or degradation in patient care; and (e) local regional emergency medical advisory committees—program satisfaction, impacts on quality of patient care, any increase or decrease in patient care complaints or protocol violations, and any greater participation by agencies in the program.

The random audits were to be conducted by the DOH or its designee on select CME participants to verify attendance, records, and CME documentation as listed on their individual renewal forms. The NYS DOH also planned to sit in on CME education programs throughout the

state (NYS DOH, 2002, 2004).

The random-testing evaluation was to include written tests or quizzes and/or skills examinations. The results of those exams would remain confidential and would not be used to determine the certification eligibility of the random EMTs being tested. These tests were also to be used to compare the knowledge and performance of CME participants with non-participants.

The final evaluative tool for the CME pilot programs was a confidential comparison of participants versus non-participants. Sample groups of both participants and non-participants were to be used to compare patient care complaints, protocol violations, and disciplinary actions.

The personal interviews conducted for this research concluded that, to this date, none of the above evaluation tools have been scheduled, planned, or used by the NYS DOH. In addition, the annual report from the NYS commissioner of health to the NYS Legislature that is required by the public health law has also not been completed (NYS Senator C. Fushillo; NYS Assemblyman D. McDonough, personal communications, April , 2007).

As discovered during this research, the methods used to measure the success and/or weaknesses of the NYS three- and five-year CME recertification programs are non-existent, unsupportable, and/or subjective.

5. What is the relationship between extending EMT recertifications and the delivery of patient care?

As stated in the previous question, the relationship between patient care and extended EMT recertifications cannot be supported due to lack of documentation and research. Although the NREMT does offer some statistical analysis on extended EMT recertification from a training, testing, and competency standpoint, correlating that extension with patient care outcomes would be an overwhelming task, a logistical nightmare, and might be logistically impossible (Brown et

al., 2003).

This comparison would need to include hospitals, emergency responders, patients and their families, almost all aspects and disciplines of the medical professions. It would need to consider specific patient injuries and illnesses, and the recommended care versus the treatment they received. Furthermore, legal issues such as confidentiality, patient and family rights, and malpractice lawsuits would prove to be significant stumbling blocks for this type of research.

As pointed out by Janing (2001), EMT performance standards are not conducted in a vacuum. Patient care situations have as much influence on successful emergency care performance as does the didactic knowledge of skills and procedures. Unfortunately, skills are usually taught and practiced under "ideal" conditions. So, EMT performance and any evaluative standards must be integrated into the realm of the patient situation encountered, and the ability of the EMT to adapt and overcome obstacles (Janing, 2001). These standards are applied mainly in field performance situations. However, they do provide for a realistic attempt at correlating patient care with educational recertifications. In discussing field performance evaluations, Janing (2001) writes that studies have proved that the greater the patient complexity, the more subjective the evaluation, so field evaluations may not be as valuable a tool as formal testing scenarios.

Another problem with such relationship comparison (education versus patient care) is that the results may prove too subjective to merit scientific integrity.

6. In NYS, what is the pass/fail rate of EMTs with five-year recertifications and how do they compare to the pass/fail rates of EMTs who have taken traditional recertifications?

As disclosed during the literature review, the NYS DOH three- and five-year CME recertification pilot programs do not include testing components (NYS DOH, 2002, 2004).

Therefore, as presently constructed, the NYS CME pilot programs cannot be compared to traditional recertification test results. Furthermore, the NYS DOH is currently preparing a final legislative report on the progress of the CME pilot programs and the best way to advance those programs out of the pilot phase. Much of the statistical information necessary to answer this question is unavailable to this researcher until after the legislative report is published (M. Tayler personal communication, February 15, 2007).

On a national scale, the literature review pointed out that passing an exam does not necessarily correlate into clinical competence (Brown et al., 2006), and that it is difficult to determine if EMTs remain competent after their initial training without some valid form of testing component (Brown et al., 2006). To date, there are no studies that universally support either the CME or traditional recertifications as best practice (Brown et al., 2006). However, Brown (et al., 2006) does conclude that EMT-Ps who reregistered with the NREMT (passing written and skills exams) were more knowledgeable than those who did not. The correlation is that the NREMT requires EMTs to pass exams to recertify. This is substantiated in the Pew Health Professions Commission Report (Dower et al., 1995) that finds random CME requirements should be abandoned in lieu of developing, implementing, and evaluating continued competency (e.g., testing) in health care professionals.

7. What are the cost/benefits used in the FDNY's decision to extend the EMT recertification periods?

According to the researched personal communications (T. Eppinger, April 27, 2007; D. Gonzalez, May 1, 2007; S. Holiday, January 31, 2007; J. Martin, February 1, 2007; J. Peruggia, January25, 2007; L. Rivera, January 25, 2007; and K. Gonzi, January 12, 2007), the cost savings to NYC and the FDNY by switching to a five-year recertification will be significant.

With the FDNY's traditional three-year EMT recertification, 2,217 FDNY EMTs were required to go off line to the training academy for 10 days, and an additional 884 EMT-Ps were required to do the same but for 16 days—every three years. When these EMTs were attending refresher training, the ambulance tours they normally worked needed to be back-filled by other EMTs on an overtime basis.

According to Donald Faeth, Vice President for the FDNY Uniformed EMTs and Paramedics union (personal communication, April 27, 2007), a top paid FDNY EMT makes an overtime salary of $32 an hour. A top paid FDNY EMT-P makes an overtime salary of $40 an hour. If those salaries are multiplied by the respective 10- and 16-day refresher classes, NYC is saving approximately $320 per EMT and $640 per EMT-P every three years. Further multiplying those numbers by the respective 2,217 EMTs and 884 EMT-Ps, the city is saving $709,440 for EMTs and an additional $565,760 for EMT-Ps every three years. That combined total represents an average three-year savings to the city of $12,752,000. This sum is a significant savings and clearly illustrates the economical benefit of the five-year CME recertification program for NYC.

Since NYC adopted the five-year certification program, EMTs spend far less time in refresher training (two days annually as opposed to 10 or 16 days every three years). Over a 25-year career (the present retirement entitlement), the average EMT, under the five-year CME program, will recertify only five times. Conversely, that same EMT would attend eight or nine refreshers under the traditional three-year recertification, again further enhancing a significant monetary savings to the city. (It should be noted that the EMT and EMT-Ps', and EMS officers' union were given a 1% pay raise to support the legislation to include the FDNY in the NYS DOH five-year CME recertification pilot program.)

In light of the above facts, the cost and benefit to the city starts to become clear. But there

were other considerations for the city. The NYS DOH's three-year pilot program was scheduled to expire on July 1, 2006 (NYS DOH, 2004), and there was no guarantee that the program would be renewed (J. Martin, personal communication, February 1, 2007). On the other hand, the five-year program is set to expire on July 1, 2008 (NYS DOH, 2002). The city lobbied the state lawmakers and, on August 16, 2006, the state legislature passed the amended law allowing FDNY EMTs to become part of the five-year recertification pilot program. The pilot program was then implemented by the FDNY on January 1, 2007 (J. Martin, personal communication, February 1, 2007).

8. What results have other fire and ambulance departments and corporations had with extended EMT recertifications?

As presented in research question 3, the RFD and NMFD have had success implementing and utilizing the NYS DOH five-year CME recertification pilot program. However, an additional 42 agencies are enrolled in the program and another 992 are enrolled in the three-year pilot program (M. Tayler, personal communication, April 4, 2007). The lack of statistical research and analytic oversight by the NYS DOH, made it difficult-to-impossible to determine, during the literature review, the results of these programs in other NYS organizations.

According to the NYS DOH's latest statistics (2007), as of July 1, 2005, there were 37,460 certified EMTs and another 5,878 certified EMT-Ps. Today (June 2007), those numbers have naturally increased. As of January 2007, approximately 17,000 EMTs and EMT-Ps were registered in the NYS CME pilot programs, and only 1,600 have completed their CME recertification (F. Chester, personal communication, January 22, 2007). No corresponding details were found during the literature review to explain this outcome.

The literature review did reveal several factors that may contribute to the statistics,

however, such items as the increased training hours necessary to complete the CME recertifications—for example, 82 hours for EMT versus 60 hours in a traditional refresher course (K. O'Hara, personal communication March 7, 2007; NYS DOH, 2007). Other factors include the need for rural EMTs to travel long distances to attend CME-approved courses and the fact that volunteers may not be able to take the additional time away from their jobs and families to attain CME (Dittmar, 2005).

The LEADS project (2003) also found that the majority of EMS responders in the nation reside in rural areas, maintain lower incomes, and generally had lower educational levels than the minority (urban) respondents. Gausche-Hill (2000) also identifies program costs and CME course availability as barriers to obtaining CME in addition to the geographical distance factor already presented. All of these factors may contribute to the low CME completion rate within NYS.

The advent of Internet-based CME and the abundance of regional as well as national conventions, seminars, and workshops have made it easier than ever before to achieve CME credit. Now, more so than at any other time in EMS history, the trend among EMS educators is to encourage EMTs to take more ownership of their continuing education—and that means more choices on how to get CME (Becknell; Ostrow, 2001).

A good judge of CME program quality is in receiving certification by the Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS) (Becknell; Ostrow, 2001). The CECBEMS board, founded in 1992, is the only national accreditation agency for CME programs and is sponsored by the NREMT (Becknell; Ostrow, 2001). The CECBEMS lists CME course by location, cost, and course content. EMTs that are looking to obtain CME credit can contact the CECBEMS with a calendar and budget in mind. The CECBEMS then finds

courses that may interest the EMTs and build confidence in their weakest areas or complement their individual learning styles. At the same time, the choices of courses allow an EMT to choose one that sounds exciting to attend (Becknell; Ostrow, 2001). As this organization becomes better known and assimilates more CME courses, EMTs will have even more options to obtain CME credit.

As much as the CECBEMS appears to be a beneficial resource for EMTs throughout NYS and the nation, FDNY EMTs will not be able to avail themselves of this service because under the FDNY CME program, its EMTs are not allowed to obtain CME credit outside the FDNY. The reason for this restriction is to ensure controlled, precise, and measurable training to FDNY employees (S. Holiday; J. Martin, personal communication January 31, 2007; February 1, 2007).

9. What is the model used for the CME recertification of FDNY EMTs?

With 2,217 EMTs and 884 EMT-Ps in the FDNY (as of February 1, 2007) the FDNY's CME program is one of formidable size and logistical complexity (S. Holliday, personal communication January 31, 2007). The FDNY program, as shown in Appendix L, consists of training 21.5 EMTs and 8.4 EMT-Ps in each of two five-month cycles (February through June and September through January; June through September is reserved for EMT recruit training). This schedule allows the FDNY to meet its five-year goal of recertifying every EMT and EMT-P (S. Holliday, January 31, 2007).

Under the FDNY program, each EMT and EMT-P must attend two eight-hour NYS core curriculum training days per year at the FDNY EMS academy. They must also participate in a one-hour skills and non-core drill in their respective EMS station, in addition to answering a 10-question quiz on-line, once per month. The quizzes are based on all of the drills given during the

previous semester/cycle (S. Holliday, personal communication, January 31, 2007).

This schedule provides the FDNY EMTs and EMT-Ps with 200 hours of CME per year, which far exceeds the NYS DOH minimum core curriculum requirement of 130 hours (J. Peruggia, personal communication, January 25, 2007). The additional hours above the NYS DOH minimum cannot be rolled over into the EMT's following year's CME hours (S. Holliday, personal communication, January 31, 2007).

To accommodate the FDNY CME program, all FDNY EMS officers receive a two-day, 16-hour educational methodology class to help them deliver the station drills (Appendix K). As of February 2, 2007, 19 EMS Captains and 114 EMS Lieutenants had been trained (S. Holliday, personal communication, January 31, 2007).

Tracking quiz results, attendance, and academy CME is accomplished by scanning par-scores (scantrons) into a computer database program that is designed to measure retention and to act as a quality-assurance/quality-improvement tool (S. Holiday; J. Martin; D. Gonzalez; personal communications, January 1, 2007; February 1, 2007; May 1, 2007). The computer program stores the station-drill quiz scores of the EMTs and will calculate the percentage of retention for each member for a six-month cycle. The database will also retain an accumulative score of the EMT's long-range recall. This program will be available to EMS officers in each station (J. Martin, personal communication, February 1, 2007). As part of the five-year CME pilot program, the NYS DOH requires the FDNY to document all training of each EMT—especially in the core curricula. Since this documentation is subject to audit by the NYS DOH, the FDNY computer program offers unalterable files for each EMT in areas of training content, attendance, skills, quizzes, and tests. (J. Martin, personal communication, February 1, 2007).

The database generated by this computer program will also offer the FDNY an internal

evaluation of the CME program in a relatively short amount of time (D. Gonzalez, personal communications, May 1, 2007). It is hoped that the program will provide the department (and subsequently, the NYS DOH) with a benchmark as to the success of the CME program at the end of the program's first year (J. Martin, personal communication, February 1, 2007).

The personal interviews conducted for this research project were instrumental in answering the research questions, as well as defining the research problem and purpose statements. With the exception of the questionnaire for FDNY EMTs and EMS instructors (Appendix F), the remaining questionnaires were utilized to conduct the personal interviews and proved to be invaluable.

For research and information retrieval, the questionnaires were divided into two categories. The first included contacts within the FDNY (Appendices E, F, and G); the second included those from outside the FDNY (Appendix H). Appendix G, although included as part of the FDNY insider questionnaires, was specifically focused on the FDNY EMS unions for their distinctive views on the five year CME program.

The FDNY insider questionnaire's consensus was that, overall, the outlook on the FDNY CME five-year program is positive, if not cautiously optimistic.

The first interview conducted was a phone interview with the FDNY Chief Medical Officer Dr. David Prezant, whose support and enthusiasm for the program was impressive. He feels that the five-year recertification program provides a unique opportunity to rapidly disseminate EMS changes or updates to EMTs in the field. He further explained that by adding monthly training (in the form of EMS station drills) over the five year period provides true continuing education that was previously nonexistent. The replaced program only allowed training to occur once every three years. New protocols or protocol updates took many more

years to be disseminated to each EMT in the field. The past curricula was comprised only of learning rote skills and test-specific knowledge. Now, every EMT can be given new or updated information on a monthly basis. Dr Prezant pointed out that the in-service drills were driven and negotiated by the EMS labor unions and proved to be an innovative idea.

During the interview, Dr. Prezant disclosed his outlook on the NYS DOH's requirement of "continuous practice" for EMT inclusion in the five-year recertification pilot program. He explained that although the NYS DOH allows the participating agency (i.e., the FDNY) to define continuous practice, the definition must include patient contact. The doctor pointed out that the NYS DOH uses the following working definition of continuous practice: "the applicant must have a recent history of actively providing pre-hospital patient care at or above the certification level the applicant is applying for." He continued that FDNY members who do not meet that criteria must attend the traditional three-year refresher program.

Upon examination, the continuous practice definition draft classifies FDNY EMS pre-hospital care providers into seven groups. The draft designates which members are eligible for the five-year CME recertification program:

1. Full duty, assigned to ambulances—EMTs who, for at least 70% of the recertification period, provide continuous patient care and attend all station drills (once per month). They must also meet all CME requirements (quizzes and academy core-training [two days per year]) to be eligible for the five-year program.
2. Off-line positions involved in daily patient contact—these positions include: Prison Health; Communications; FDNY Bureau of Health Services; Bureau of Investigations; Division of Safety; EMS Training Academy and Office of Medical Affairs. Since these positions require regular patient assessments and/or decisions, health care education,

health care quality assurance and protocol actions, they are included in the five-year program as long as they remain up to date with all CME (drill) requirements.

3. Off-line positions not involved in daily patient contact—members under this definition include: administrative functions; audiovisual/photo unit; recruitment; buildings unit, etc. To be eligible for the five-year program these members must perform two eight-hour ambulance tours per month, at their level of certification, for a minimum of 22 hours per year. This direct patient care is in addition to all other CME (drill) requirements.
4. Officers—including FDNY EMS Lieutenants, Captains and Chiefs assigned to field operations. These members are eligible for the five-year program and must meet all CME requirements as previously noted.
5. EMS Officers assigned to administrative functions involved in daily patient care—as noted in section 3 above, are included in the program provided they meet all CME (drill) requirements.
6. EMS Officers assigned to administrative function not involved in patient care—same requirements as in section 3 above.
7. FDNY EMS members on extended leave (except members returning from military leave who will be granted additional time to complete drills and CME requirements) including:

   a. Members returning from line-of-duty injuries, medical leave, maternity/family leave or personal leave of less than six months—must complete all missed CME (drill and quiz requirements) within 30 days of their return to full duty. There are no patient care restrictions during this time period.

b. Members returning from line-of-duty injuries, medical leave, maternity/family leave, or personal leave of greater than six months but not more than 18 months—must successfully complete an evaluation/training program at the EMS academy. The program will include all drills and CME missed during the leave and skills refresher/evaluation. These members are restricted from performing patient care duties during this period. Upon successful completion, the member may continue in the five-year program with no change in timeline for recertification.

c. Members returning from line-of-duty injuries, medical leave, maternity/family leave or personal leave of greater than 18 months but not more than 48 months—must complete a full refresher course. This is designed not to result in three-year recertification, but rather to maintain successful enrollment in the five-year program and produce necessary skill proficiencies. Due to their extended leave time this program cannot be individually assigned or scheduled. Patient care restrictions are in place during attendance in the refresher course. Upon successful completion, the member continues in the five-year program with no change in timeline for recertification.

d. Members returning from line-of-duty injuries, medical leave, maternity/family leave, or personal leave of greater than 48 months are not eligible for the five-year recertification program and will remain on the traditional three-year recertification program cycle.

FDNY EMS officers are required to provide and document all scheduled drills and quiz requirements for the above members. Any FDNY EMS members who are not physically capable of performing field duty, who are assigned to off-line positions and who are not involved in daily

patient contact are ineligible for the five-year CME program. Those members will continue to participate in the traditional three-year refresher program.

It should be noted that the continuous practice requirement and the issue of FDNY EMS members in non-patient care roles were concepts unanticipated by this researcher, yet proved to be validating concepts for the research.

The next interview was conducted with Chief John Peruggia, the FDNY Chief of EMS. Like Dr. Prezant, Chief Peruggia believes that the CME program is a good idea and beneficial to the department, citizens, labor, and management. He stated that the idea of a "no pressure recertification" (without exams and the punitive damages that accompanied failure in the past) is an intriguing aspect of the program for him. The chief also likes the continuous education component, oversight, and review. He welcomes the opportunity to put the "M" (for medical) back into the continuing education process. An added bonus, he said, is what he hopes will bring a new era of mutual respect and interaction between EMTs and EMS officers in the field.

When asked about the catalyst for the adoption of the program, the chief explained that the unions had approached the department about licensing EMS members as opposed to certifying them, in an effort to gain more bargaining power. In those discussions, the desire to keep EMTs current and continually educated was identified as a major concern.

When the possibility of adopting the five-year CME recertification was broached by the city, the unions saw it as an opportunity to show productivity for their officers and members. As previously mentioned, the unions negotiated a 1% raise with the city in exchange for their support for legislation to allow the FDNY to enter into the five-year CME recertification.

During a cost/benefits discussion with Chief Peruggia, he confirmed that the FDNY and the city benefit from the associated savings in the reduction of recertification hours for each

EMT. The benefit to the department and members, as he pointed out, and in agreement with Dr. Prezant, include the chance to receive information, add new skills and techniques, and make modifications to behaviors—all in less time than ever before. According to the Chief, an additional benefit for the members is that less time at the training academy equates to fewer travel costs and increased time off.

Chief Peruggia provided the author with the names of the planning committee and key players who were instrumental in adopting the CME program. The researcher then was able to use these leads as additional resources and to conduct further research.

Chief Peruggia concluded the interview by providing a synopsis of the CME training schedule and the planned core/non-core curricula.

The next interview was conducted with FDNY Deputy Chief of Training Scott Holliday (personal communication, January 31, 2007). Chief Holliday was tasked by the EMS Command to develop the FDNY CME program. As Chief Holliday made perfectly clear—this was a monumental task, with only a five-month time frame for implementation. Yet, Chief Holliday and his academy staff put together not just one, but two feasible programs in a very short time. When asked if he thought the five-year CME recertification was a good idea for the FDNY, Chief Holliday opined that from an academic perspective, a challenge-type recertification program—including testing components—would work better for the members of the FDNY EMS Command. A challenge program allows EMTs to take written and skills tests first, and then only attend the course segments in which they were weakest. The Chief pointed out that some people need a structured classroom environment in order to learn. However, NYC chose the CME-based curricula over the proposed challenge refresher.

Chief Holliday expressed his concern regarding the EMS officers who were being thrust

into the roles of instructors to conduct the station drills, adding that a significant number of those officers probably would be unwilling or unable to fill such positions. Conversely, the EMS Training Academy staff is comprised of dedicated, well-educated, experienced, and state-certified instructors who would be more suited to deliver the recertification program he said. In planning meetings for the new program, the idea was entertained to allow the academy staff to conduct the in station drills, but the expense, timing, and logistical constraints, in addition to other commitments of the academy staff, would make that possibility unfeasible.

The FDNY's answer to that concern was to provide every EMS officer with a two-day education methodology course (on overtime) to assist them with delivering the in-station drills (Appendix K). In contrast, FDNY first-line firefighting supervisors (Lieutenants) receive a five-day course on the same topic. This may be relevant when comparing the training received by EMS officers (versus fire officers), and their ability to deliver effective drills.

It is the opinion of the two upcoming interviewees (J. Martin; D. Gonzalez, personal communications, February 1, 2007; May 1, 2007) that the two-day EMS officer training may not sufficiently prepare the EMS officers. It was suggested that the EMS officers are not expected to be, nor are they significantly trained to become, "instructors." These officers' roles are that of facilitators in providing the drill information in an organized manner to their subordinates.

Chief Holliday concluded the interview by acknowledging that no research is available from the NYS DOH or any other source on developing this type of program or training. The FDNY EMS training academy staff was left to draft a CME program from scratch, with the assistance of the NYS DOH and its senior EMS Representative, Mr. Michael Tayler, RN, BS, EMT-P.

Mr. Tayler (personal communication, March 2, 2007) commented on that relationship by

saying that when first contacted by the FDNY EMS Command regarding the five-year CME-based recertification, the NYS DOH conceded that such a program in the FDNY would be an enormous undertaking. However, the NYS DOH gave its full support and communicated its willingness to partner with the FDNY in developing the program, addressing any issues or concerns, and provide forward thinking and compromises, to help implement the program (M.Tayler, personal communication March 2, 2007).

All the interviewees agree that there is not another program of this magnitude in the state or the nation. The FDNY program is unique in its size, complexity, and relevance. The success (or failure) of this program in the FDNY may provide the NYS DOH with a realistic evaluation of the five-year pilot program.

Another interview performed for this research was with FDNY Chief of EMS Training John P. Martin (personal communication, February 1, 2007). Chief Martin supplied most of the historical information presented in the background and significance section. He reserved his opinion on the success of the program, citing that "we need to see how it plays out." Chief Martin mentioned some immediate concerns with the program, such as having EMS officers who are trained in basic life support (BLS) attempting to conduct drills with paramedics on advanced life support (ALS). He also questions (as did all other FDNY interviewees) the effectiveness of having EMS officers delivering the in-station drills. Chief Martin mentioned that the main catalyst for the adoption of the program was a cost-saving measure by NYC.

Chief Martin provided the insight that the NYS DOH three-year pilot program was due to expire shortly after the EMS union negotiated their contract with the city. With no guarantee of renewal for the three-year recertification pilot program, the five-year program was an extremely attractive (and well-timed) alternative for the city.

Concerning the CME training, Chief Martin pointed out that only in-house FDNY CME training would be accepted in the program. The reason for this rigidity is to allow for controlled, precise, and measurable CME. It will also not allow the EMTs to fall through the cracks and leave them short CME hours when it is time to recertify, unlike the trend among EMS educators today that encourages EMS providers to take more ownership of their CME (Becknell, Ostrow, 2001).

Chief Martin expounded on the drill, quiz, training, and CME computer database tracking system implemented by the department. This instrument will allow an accumulative breakdown of skill and knowledge retention, and organize the tracking of each FDNY EMS employee's progress throughout the five-year cycles. It is his hope that the internal tracking will show the effectiveness of the CME recertification program fairly immediately, and the department should be able to measure the program's success within the first year. This program also meets the NYS DOH requirement to document all training, especially in core-curricula. These records are subject to audit by the NYS DOH and can be retrieved instantaneously.

The interview with Chief Martin disclosed that firefighters on the suppression side of the FDNY who are EMTs (even though some of them were promoted to firefighter from EMT within the department) would be ineligible to participate in the five-year CME program. He stated that the OLR and the city only recognize firefighters as trained to the CFR level and that they act only in that capacity. Firefighters wishing to recertify as EMTs must do so on their own time and at their own expense.

Chief Martin is not convinced that a challenge refresher would be better educationally for FDNY EMS members, compared to the five-year CME recertification. The fact that there were (and in some cases still are) punitive damages for failing written and/or skills tests—including

termination—has always been a huge detriment to that type of refresher.

He added that the FDNY EMS Operational Guide will require updating and that the continuous care definition document (as identified earlier in this research) and CME program overview will need to be added. When asked why this had not been completed prior to the start of the program, Chief Martin replied that they are in the approval stages, and that the program needed to start immediately. He assured the researcher that this was not done intentionally and that he hopes the field guides will be issued to the members in the field shortly. The Chief admitted that the lack of information and clarification has led to some misunderstandings about the program out in the field but that as the program progresses, the members will recognize that it is a well-organized plan.

The final in-depth FDNY interview was with the FDNY EMS Medical Director, Dr. Dario Gonzalez (personal communication, May 1, 2007). When asked if the five-year CME program is beneficial to the FDNY, Dr. Gonzalez noted that the continuing education concept is good. He added that the ability to bring updates immediately to the field is perhaps the most important purpose of the entire program. He also applauds the fact that the FDNY CME program exceeds the standard hours required by the NYS DOH and that the department has implemented a computer database program to establish a "benchmark" of progress.

The doctor admitted, however, that the current CME system does not appear adequate primarily because it exists to meet an arbitrary mark of success. There is also an internal underlying problem of competing needs between the FDNY EMS operations and EMS training, he said.

The time to change the way the FDNY EMS conducts training and recertification is long overdue, he said. The past scenario and test-based training did not go far enough in

disseminating new or improved concepts to the field. Now the department can add new concepts immediately.

On the topic of the CME option, Dr Gonzalez agreed with other interviewees that although little information is available on the success of the NYS DOH five-year CME recertification, the department should attach a time frame to the program as a trial period—say one year. He said that at that time, the program can be looked at and fine-tuned, to meet the demands of the membership and the department.

On the subject of EMS officers providing CME training and the concerns found so far in the research, Dr. Gonzalez remarked that the EMS officers are not instructors, but facilitators providing information, and that there needs to be oversight at the station level to assure that BLS and ALS officers are providing information concurrent with the officer's level of training.

Another concern brought up by Dr. Gonzalez that has not been previously identified in this research is the concern over paramedic credentials in NYC. In addition to NYS DOH certification requirements, paramedics who operate in NYC must past a separate review process before they can practice ALS. The Regional Emergency Medical Advisory Committee (REMAC) is comprised of hospital emergency room physicians, agency medical directors, and hospital specialists who are appointed by the Regional Emergency Medical Services Committee under the NYS DOH to certify NYC paramedics based on knowledge and skills.

That certification presently expires after three years, and the REMAC is reluctant to extend their certification to align it with the five-year CME time frame. The committee has also decided it will not consider CME for the REMAC certification.

Regarding the cost/benefits for the city, Dr. Gonzalez feels that the savings may not be as much as the city first anticipated, because of future training needs and possible frailties of the

CME system.

When asked to describe any unresolved issues with FDNY's five-year program, Dr. Gonzalez discussed the following points: (a) the "continuous practice" guidelines as set forth by the NYS DOH and the adaptation of that policy into the FDNY program; (b) the FDNY CME program does not have a re-evaluation time frame built into it; (c) the issue of the three-year REMAC ALS certification; and (d) the undetermined policy regarding EMS employees who do not complete the CME hours (because of leaves of absence) and cannot fit into a refresher class because of scheduling conflicts.

When asked about feedback from the field, Dr. Gonzalez stated that he has found suspicion on everyone's part. When asked about availability issues concerning ambulances being out of service for drills, the doctor replied that department operations will need to cover those response areas in a timely manner.

Concerning the in-station drills, Dr. Gonzalez was asked if there was a set committee writing them and if he felt they were adequate to meet the needs of the program and members. He replied that the drills have improved, but they need to be kept short. The doctor is presently writing a format to be followed by anyone who attempts drafting a drill. The format will include the number of Power Point slides to be used, the length of each drill, and strict adherence to the guidelines.

Dr. Gonzalez concluded the interview on the perspective of EMS officers conducting the in-station drills and the inherent problems brought up by the membership, as well as other interviewees. His position is that the city and department need to pay the officers a little more money, perhaps a stipend, for the training they provide. It would motivate some to perform better, and it would also allow more accountability for the training that is conducted. He also

stated that the two days of educational methodology is probably not sufficient to prepare the EMS officers to provide the drill information to their subordinates.

Interviews conducted with FDNY Captain John Nevins (January 25, 2007), FDNY Captain Kathleen Conzi (January 25, 2007), and Lillian Rivera, FDNY OLR (January 25, 2007) provided supplemental background information included throughout this research. Those interviews provided factual information on the FDNY's computer database tracking system, the FDNY continuous practice draft, and NYS laws, respectively.

This research would not be complete without exploring the labor management issues that surround the FDNY's adoption of the five-year CME-based recertification policy. To that end, the next interviews were conducted with union representatives of the unions representing the FDNY EMTs and EMT-Ps, and EMS Officers.

The interviews conducted on this front were with Patrick Bahnken, President, and Donald Faeth, Vice President, of the FDNY Uniformed EMTs and Paramedics union (personal communication, May 18, 2007), and Thomas Eppinger, President of the FDNY EMS Officers union (personal communication, May 6, 2007). Although these interviews reiterated much of the already established history surrounding the adoption of the FDNY five-year recertification program, some new information was brought to light. For instance, it is the EMT union's perception that the five-year program (and this research) is too new, and therefore, premature in its ability to tell if the program is, or will be, a success. On the other hand, the officers' union is already going on record as saying that the program is not a success. In fact, President Eppinger feels that the program should be stopped and held in abeyance until it can be more thoroughly planned and executed.

The union representatives reiterated that the unions have had no say nor have they been

asked by the FDNY to be involved in the development of the CME program.

In the recent contract negotiations the EMT unions were left only to negotiate a collective bargaining credit (equivalent to a 1% raise for their members) for the savings the program would bring to the city, they said. The unions agreed to support legislation to enact the five-year program based on such credit. The union representatives unanimously agree that they were hopeful that the unions would be involved in developing the program and that significant time would be spent on that task. Unfortunately, according to both union presidents, once the legislation was passed, the FDNY implemented the program with no union input. President Eppinger noted that, as of this date, the department has not produced any written procedures to add to the EMS Operations Guide, which has led to questions and confusion on the part of many EMS personnel.

As far as feedback from their membership concerning the five-year recertification program, the EMT union representatives again cautiously stated that the program is too new to get a true feeling for or against it. The majority of their members are not familiar with the intricacies of the program, so the feedback has been cautious skepticism and, in some cases, ambivalence. This, President Bahnken feels, is because the department is not disseminating enough information to the membership.

The EMS Officers union has received significant negative feedback from its membership because of the additional burden placed on them by the program, and the lack of support in implementing it, President Eppinger said. The majority of EMS officers, do not approve of the CME program and prefer the traditional refresher given at the academy, he said.

During the interview, the EMT union representatives were very careful not to condemn their fellow EMS Officers concerning the delivery of the program’s in-station drills. However,

they did express their concerns about how well the drills are being presented and that the officers are not being properly trained or compensated for this added responsibility. The EMT union noted that one issue still not addressed by the department is the problem with BLS officers attempting to provide EMT-Ps with ALS drills (which are above their level of training). This topic then led to a side conversation concerning a proposal to require all future EMS Lieutenants to be trained to the EMT-P level. If that were successful, the aforementioned concern would be nonexistent, according to Vice President Faeth (personal communication, May 18, 2007).

In the EMS Officers union's opinion, the in-station drill topic includes the same concerns as those of the EMTs' union. In addition, the officers' union added the following concerns—the drills are geared at too high a level, they are not realistic, they do not address the realities of the job and they are not received in an adequate amount of time for the officers to familiarize themselves with the material. Also, the EMS officers are not compensated for the additional drill duties (including documentation and participation tracking).

On a positive note, the EMT union representatives relayed the opinion of its membership that the nontesting component is an advantage. Traditionally, the union expended a significant amount of time during every refresher class on a minority of their members who had difficulty passing the course and state examinations. The resulting possibility of the members losing their jobs and careers played a significant role in the EMT union's decision to support legislation for the five-year program. The time and effort of the union can now be better spent to help its members with issues unrelated to refresher testing, they said.

Presidents Bahnken and Eppinger agreed that they want the unions more involved with the program in the future. Mr. Bahnken said the program should be constructed from the "bottom up," by the members involved in everyday emergency care, in conjunction with the training staff.

Mr. Eppinger added that this would be preferred to the present practice of mandates being sent down from the upper echelon who are far removed from the day-to-day issues faced in recertification.

Regarding the researcher's proposal to offer a challenge-type refresher or a hybrid course combining the best of the traditional refresher courses and the CME-based program, President Bahnken said the union probably wouldn't like the idea due to the challenge refresher's testing requirements, and the logistical issues involved with tracking attendance. President Eppinger, conversely, liked the idea as a more structured alternative to the flawed CME program.

The EMT union would not give this researcher permission to circulate a questionnaire (Appendix F), asking its members their opinions of the CME program because of concerns of the program being too new, and the possibility of the negative impact on future negotiations with the city based on the outcomes and publication of such a questionnaire. In light of these concerns, the author agreed not to use the questionnaire in the research.

The external interviews conducted for this research started with RFD Lieutenant Steven Erb (personal communication, March 22, 2007). The RFD adopted the three-year CME-based recertification pilot program in 2002 for its EMT basics (the RFD does not provide paramedic services). They saw the CME program as a way to shift much of their EMT recertification training from the academy to the firehouses (for the non-core curriculum) and reduce the academy visits from three weeks every three years, to three days per year (for the core curriculum).

The RFD's EMS office and training division pushed for the CME program and provided the chief of department with a list of pros and cons of three certification options (Appendix J). The CME pilot program was chosen over the other two. The firefighters' union was successful in

negotiating a $650 EMT training stipend and didn't lose benefits (in the form of overtime pay) for switching to the CME-based program. The RFD members liked the CME program because they did not have to take skills or written certification exams.

The RFD uses reimbursement costs received from the NYS DOH to help pay for the instructor overtime costs. The RFD CME program satisfies the NYS DOH-required 24 hours of core curriculum by scheduling each EMT for three eight-hour days at the academy. The three days are divided into three "blocks" of information. Block A includes three lectures: (a) preparatory; (b) anatomy and physiology; and (c) patient assessment. Block B includes: (a) medical and trauma lectures; and (b) CPR recertification. Block C includes: Student teams being evaluated on NYS skill stations and scenario-based problem solving. Remediations are also handled in this block if necessary. The remaining 48 hours of non-core curriculum are performed quarterly in the fire stations and includes written multiple choice exams on each topic.

Similar to the FDNY program, the RFD has all of its EMTs enrolled in the CME program. EMTs who are not in continual patient practice must recertify through the traditional three-year challenge recertification program. EMT challenge courses run parallel to the RFD recruit firefighter original EMT course to allow for make-up lessons. This enables the RFD to run the courses concurrently rather than holding separate refresher courses.

The RFD measures the success of its program based on the continued certification of its EMTs and the continuity of training. However, the assessment or comparison of cognitive levels has not been conducted. Lieutenant Erb would like to see a department-wide EMT exam once a year to track overall learning, to establish educational trends, and to validate the CME training on an "empirical" level.

A second external interview was conducted with Commissioner Kevin O'Hara of the

NMFD (personal communication, April 3, 2007). The NMFD, although completely volunteer, was one of the first departments in the state to adopt the NYS DOH CME recertification pilot program. Prior to implementing the program, the NMFD did not have any formal CME program. The department conducted monthly training sessions but they could not be used for CME credit, as the program did not exist. The NMFD members attended traditional refresher and challenge refresher courses through the local EMS academy. Once NYS DOH released the three- and five-year pilot programs, the majority of the NMFD EMTs stated that they would be interested in the programs. The NMFD program has been successful with over 50% of its membership being certified to the EMT level or above. More than half of its members (45 out of 85) are enrolled in the five-year CME program and have successfully completed the first round of CME certification. An additional 10 members are enrolled in the three-year CME program.

To gain core-curricula hours, the NMFD members attend classes at the local (Nassau County, NY) EMS academy. Non-core credit is obtained through hospital lectures, teaching CPR, Internet programs and attending educational seminars. The department also provides its own in-house non-core training provided by a certified instructor. The department maintains copies of non-core curricula with attendance records for each member. They also provide course-completion certificates for each attendee.

According to O'Hara (personal communication, April 3, 2007), the key issues with the pilot program were who would track the CMEs for the members, and the possibility that members would fall behind in obtaining the required CME hours and not recertify. The department's answer was to put a program coordinator in place to track members' CME credits and to aggressively schedule in-house CME courses to help track required hours.

The key issues identified by NMFD members were: (a) the ability to certify without state

written or skills exams (this was particularly attractive to the weaker or average-testing students); (b) the stronger students looked at the program as an opportunity to learn above the basic nature of the state EMT curriculum, and receive more interesting education; (c) some members were concerned about the extra class hours required; and (d) other members said that since they would be going to various lectures and seminars anyway, they might as well get some credit for it.

Commissioner O'Hara said there is little to no cost associated with this program within the department. Concerning measurement tools, none are in place in the NMFD. The program coordinator reviews the students' paperwork and mentors their progress as they obtain their CMEs.

On the success of the program, O'Hara stated that it has potential for growth. He believes the NYS DOH should narrow its guidelines as far as what needs to be covered and exactly who should provide core curricula. He noted a conflict of information from the NYS DOH in that in one conversation a NYS DOH representative stated that the core curriculum must be taken through an accredited EMS academy; then O'Hara received conflicting information stating that any NYS Certified Instructor Coordinator (CIC) can offer core CME. This lack of continuity, he added, tends to undermine the success of the program.

The final external interview was conducted with Michael Tayler, Senior EMS Representative for the NYS DOH (personal communication, March 2, 2007). Mr. Tayler was very contributory to this project, and information provided from the NYS DOH has been used extensively throughout this research. Statistical analysis of the three- and five-year programs, the NYS DOH's perception on their success or weaknesses, and the quality-assurance/quality-improvement issues, concerns, and observations, could not be provided because the NYS DOH is compiling a final report to present to the state legislature. Those issues will be part of the report

and therefore cannot be disclosed until the report is published.

Discussion

The author began this research project with the impression that a five year CME recertification program within the FDNY would be detrimental to the educational process of its EMTs, as well as to the patients they provide care for. It was also the understanding of the author that the NYS DOH five-year CME pilot program included skill and written certification exams.

While conducting the research it was discovered that the latter was not the case and that, in fact, the NYS DOH five-year pilot program does not include any such testing components, but rather core curricula and CME only (NYS DOH, 2002, 2004). This qualified the author's concerns and magnified the scope of the problem statement.

The former—detrimental—effects of the program also appear to be a legitimate concern. As detailed in the literature review and results sections, most of the research identified two key controversial concepts that affect EMS skills and knowledge retention. The first concept was the time frame between initial training and retraining (ARC, 2007; AHA, 2005; Chamberlin, 2002; Dorfman et al. 1999; Gausche-Hill, 2000; Kee, 1996; OSHA, 2006; S. Wooley, ARC, 2007; and Welch, 2005). The second concept was EMT testing and the use of evaluative components (Brown et al., 2003; Brown et al., 2006; Dubin, 1977; Janing, 2001; and Lonchena, 2002).

The literature review also revealed that, although building a consensus is difficult, most research points to the two year time frame as being adequate for retraining (ARC, 2007; AHA, 2005; Chamberlin, 2002; Dorfman et al., 1999; Gausche-Hill, 2000; Kee, 1996; OSHA, 2006; S. Wooley, ARC, 2007; and Welch, 2005). This may, however, prove impractical for many jurisdictions, agencies, and individual EMTs. It is this researcher's interpretation that the NYS DOH's three year time frame for recertification appears to be productive in retaining skills and

knowledge without overwhelming or “burning out” the student population or EMS system.

In evaluating the research and literature review. This author is convinced that formal testing components are essential to the tracking of knowledge and skill retention, and ultimately to the better provision of pre-hospital emergency patient care. As an example, the NREMT has testing components for all certification levels of EMS providers. The NREMT has proved successful in setting a national standard of care for EMTs that includes a formal testing process (NREMT, 2007; Brown et al., 2003; Lonchena, 2002; and Brown et al., 2006).

It is the author’s position that the five-year CME recertification is too long for FDNY EMTs to retain competency. In addition, from an educational point of view, the lack of skills and cognitive testing components is inappropriate. It is the authors’ concern that the FDNY CME-based EMTs of the future will lack the high level of skills and knowledge that NYC has come to expect from the biggest, busiest, and most experienced EMS system in the world.

The implications of this project’s results section are that the FDNY needs to re-evaluate its five-year CME policy after a set interval of time—perhaps one year. The FDNY must consider adding formal testing components and should explore increasing the number of days each EMT must attend formal education training at the academy. The effectiveness of the present in-station drill process must also be re-evaluated.

Unfortunately, the research was limited by the lack of statistical analysis to measure the success of the NYS DOH five-year recertification pilot program. Additionally, the absence of methods to evaluate traditional recertification programs versus CME-based programs and their effects on patient care also proved detrimental to this research.

Recommendations

After significant research and analysis, the author has compiled five specific recommendations to assist in solving the problem and purpose statements of this project. These recommendations represent positive additions and potential improvements to the already successful delivery of EMS education and pre-hospital emergency care within NYC.

1. Schedule six-month and one-year evaluations of the present CME program with the intent of advancing the program's successes and reshaping its weaknesses.
2. Consider changing the FDNY program title from Continuing Medical Education to Continuing Competency Education. This minor change will instill a higher standard of didactic and psychomotor skills commitment. It will result in competence building rather than concentrating on "book knowledge."
3. Provide a strict format for all CME in-station drills. Designate an encompassing committee (to include the EMS unions) to write and produce the drills. Allow field EMTs to submit drill topic ideas to the committee and give them credit for suggestions that are used.
4. Adopt a hybrid challenge CME recertification program for all FDNY EMTs. This program can combine the best of educational resources while retaining the ability to quickly disseminate new information or updated protocols to the field in a timely manner. The benefits of this type of program would include: formal testing components, CME flexibility, and the continued ability to meet the city's financial savings goal of the five-year recertification program.
5. Develop a promotional step within the FDNY EMS officer's rank of "Station Training Officer/Coordinator." This individual would be trained to the NYS DOH

instructor level, receive a pay stipend, and be responsible to perform and document all CME training and record-keeping functions within their particular station or a group of stations. This would be a full-time position, and this individual would have no other administrative responsibilities within the station. This position would not relieve other EMS officers from assisting or attending the in the in-station drills.

A recommendation for future researchers of this topic would be to form a comparison of EMT knowledge and skills between states that mandate formal testing and those that do not. Additionally, the evaluation of EMS training and education standards, and their effects on patient care, would prove most interesting and beneficial to the national EMS community.

This research may be used to further the call for a National Office of EMS or a federal lead EMS agency—mandated by law (Lonchena, 2002) to oversee the national EMS system.

This research acknowledges the FDNY's EMS command and its members, who routinely demonstrate their commitment and abilities. They unselfishly provide an excellent degree of pre-hospital, life-saving emergency care to all residents and visitors of NYC.

References

American Heart Association (AHA) (2005). *Guidelines CPR Emergency Cardiac Care.* Dallas, TX: American Heart Association.

American Red Cross (ARC) (2007, March, 6). Occupational Hazards.com. In *CPR Skills Retention: Is Two Years Too Many?* Retrieved April, 16, 2007, from http://www.occupationalhazards.com/Zone-OHEmployeeSafet/Whitepapers/45690/CPR_Skill_Is_Two_Years_Too_Many.aspx.

Becknell, J., Ostrow, L.S. (2001, January-February). How to get your CEUs. *Every Second Counts, 3*(1), pp. 22-26.

Brown, W., Holterman, K., Johnson, J., LaFluer, B., Lohr, G., Margolis, G., Michos, M.B., Wagner, R., White, R. (technical report) (2006, April). *National Reregistration and Continuing Competence of EMT-Paramedics* (The George Washington University School of Medicine and Health Sciences No. DOT HS 810 577, pp. 1-3, 9). Washington, DC: U.S. Department of Transportation, NHTSA. (Final report.)

Brown, W.E., Dawson, D.E., Harwell, T., NHTSA (2003, January-March). Assessment of nationally registered emergency medical technician certification training in the United States: The LEADS Project. *Prehospital Emergency Care, 7*(1), pp. 114-119.

Bruno, J. (1996, October 30). Laws of The State of New York [Chapter 459 With Memorandum]. *Public Health Law (New York), Section 3002, Subdivision 2-B,* pp. 1-2.

Chamberlin, D., Colquhoun, M., Newcombe, R.G., Veteer, M., Whitefield, R., Wollard, M. (2004, January). *PubMed Central. Vol. 60: U.S. National Institute of Health (NIH)* (NIH, Ed.) (1, pp. 17-28) [PubMed Indexed for MEDLINE]. *PMID 15002485*. Wales, UK: NIH, Wales, UK.

Chen, C., Chi, C.S., Lin, C.S., Wang, T.M. (2000). The follow-up on the training course of pediatric advanced life support [Abstract]. *Acta Paedeatr, 41,* 205-210.

Dittmar, M. (2005, March). Scope of practice responses: Save the EMT-I, but don't increase basics' training. *FIRE EMS, March*, pp. 30-31+.

Dorfman, S., Raizner, A.E., Ramirez, A.G., Weaver, F.J. (1979). Trainees' retention of CPR: How quickly they forget. *Journal of American Medical Association, 241,* 901-903.

Dower, C., Finnocchio, L.J., Granola, S.M., McMahon, T. (1995, December). Reforming Health Care Workforce Regulation: Policy Considerations for the 21st century [Pew Health Professions Commission] [Abstract]. *Taskforce on Health Center Workforce Regulation*.

Dubin, S. (1977, August). *A learning model for updating older technical and professional persons.* Paper presentation presented at the Annual Meeting of the American Psychological Association, San Francisco, CA.

EMS Responder Magazine (2005). *State & Providence Survey* (1). Retrieved March 19, 2007, from Cygnus Business Media: http://www.emsresponder.com/survey/.

Evans, B. (2005, April). Move to licensing will change medics' scope. *FIRE CHIEF*, *49*(4), pp. 24-25+.

FDNY (2006, July 1). Agency Highlights. In *FDNY Strategic Plan* (4) (Agency Highlights). Retrieved April 5, 2007, from Fire Department, City of New York: home2.nyc.gov/html/fdny/pdf/strat_plan/2007/responsibilities.pdf.

Fire Department, City of New York (FDNY Strategic Plan) (2007-2008). Mission Statement, Core Values and Responsibilities. In F.X. Gribbon (Ed.), *FDNY Strategic Plan 2007-2008, Executive Summary* (p. i). New York, NY: FDNY Office of Public Information.

Fire Safety Education Fund, FDNY (Limited Edition) (2000). Fire Department, City of New York. In *Library of Congress Number: 00-131551* (J. Kimmerly, Ed.) (Commemorative, pp. 198, 225) [FDNY Historical, Millenium Edition]. *ISBN: 1-56311-584-0*. Kentucky: Turner Publishing Company.

Gausche-Hill, M. (2000, n.d.). Pediatric continuing education for out-of-hospital providers: Is it time to mandate review of pediatric knowledge and skills. *Annals of Emergency Medicine, 36*(1), 72-74.

Hafen, B., Karren, K.S., Mistovich, J.J. (2003). *Prehospital Emergency Care.* New York, NY: Brady, Prentice Hall.

Janing, J. (2001, March). Student field performances: How valid are your preceptors' evaluations. *Emergency Medical Services, 30*(March, 2001), 65-71.

Kee, C. C., Minick, M.P., O'Steen, D.S. (1996, December). Abstract. In *The retention of advanced cardiac life support knowledge among registered nurses*. Nurse Staff Development (Tech. Rep. No. 12, pp. 55-72).

Lonchena, T. (2002, December). The Three R's. *Emergency Medical Services, 31*(12), pp. 55-56.

Maltese, S. (2006/Bill No S8210, August 16). Laws of The State of New York [Chapter 643 as amended]. *Public Health Law, Section 3002, Subdivision 2-b,* 1-3.

Merriam-Webster's Medical Dictionary (2007). *Dictionary.com*. Retrieved April 26, 2007, from Lexico Publications, LLC: http://dictionary.reference.com/browse/certification.

Merriam-Webster's Dictionary of Law (2006). *Dictionary.com*. Retrieved April 26, 2007, from Lexico Publications, LLC: http://dictionary.reference.com/browse/licensure.

National Fire Academy (NFA) (2005). *Leading Community Risk Reduction—Student Manual* (5th printing, Trans.) (1st ed.). Emmitsburg, MD: National Emergency Training Center.

National Highway Traffic Safety Administration (NHTSA) (1996). *EMS Agenda for the Future* (Consensus Document) (NHTSA, Ed.). Washington, D.C.: NHTSA.

National Highway Traffic Safety Administration (NHTSA) (1998). *EMS Education Agenda for the Future: A Systems Approach (a.k.a. Education Agenda)* (Consensus Document) (NHTSA, Ed.). Washington, D.C.

National Registry of Emergency Medical Technicians (NREMT) (2007). About the NREMT. In *History of the NREMT*. Retrieved April 9, 2007, from NREMT: http://www.nremt.org/about/nremt_history.asp.

New York State Department of Health (NYS DOH) (2006, September). *Renewal of certification through Continuing Education (Pilot) Program*. Retrieved January 29, 2007, from NYSDOH: http://www.health.state.ny.us/nysdoh/ems/emerecert.htm.

New York State Department of Health (NYS DOH) (2002, September). 5 Year Pilot EMS Recertification Program. In NYS DOH Bureau of EMS (Ed.), *NY State Dept. of Health, Bureau of EMS* (Revised, pp. 5-8) [Administrative Manual]. New York: New York State Department of Health, Bureau of EMS.

New York State Department of Health (NYS DOH) (2004, October). 3 Year Pilot EMS Recertification Program. In NYS DOH Bureau of EMS (Ed.), *NY State Dept. of Health, Bureau of EMS* (Revised, pp. 8-10) [Administrative Manual]. New York: New York State Department of Health, Bureau of EMS.

New York State Department of Health (NYS DOH) (2007, April). *EMT Challenge Refresher, Introduction and Administration Manual*. Retrieved April 9, 2007, from NYS DOH: http://www.health.state.ny.us/nysdoh/ems/pdf/refmod1.pdf.

New York State Department of Health (NYSDOH) (1998, n.d.). *EMT-B Refresher Attendance*

Challenge Examinations. Retrieved 4/9/07, from http://www.health.state.ny.us/nysdoh/ems/pdf/refmodl.pdf.

New York State Department of Health, Bureau of EMS (NYS DOH) (2007). *New York State EMS System Statistics*. Retrieved April 23, 2007, from NYS DOH: http:/www.health.state.ny.us/nysdoh/ems/pdf/statistics.pdf.

New York State Legislature (1996, n.d.). Laws of the State of New York [Chapter 459]. *Public Health Law, Section 3002, Subdivision 2-b* (Legislative Bill: A09337-B).

New York State Legislature (2001, n.d.). Laws of the State of New York [Chapter 563]. *Public Health Law, Section 3005-b, Subdivision 2.*

NYC & Company (2006, n.d.). NYC Statistics. In *Tourism* (1) (Total Visitors to NYC 1998-2006). Retrieved April 5, 2007, from NYC & Company: http://www.nycvisit.com/content/index.cfm?pagePkey=57.

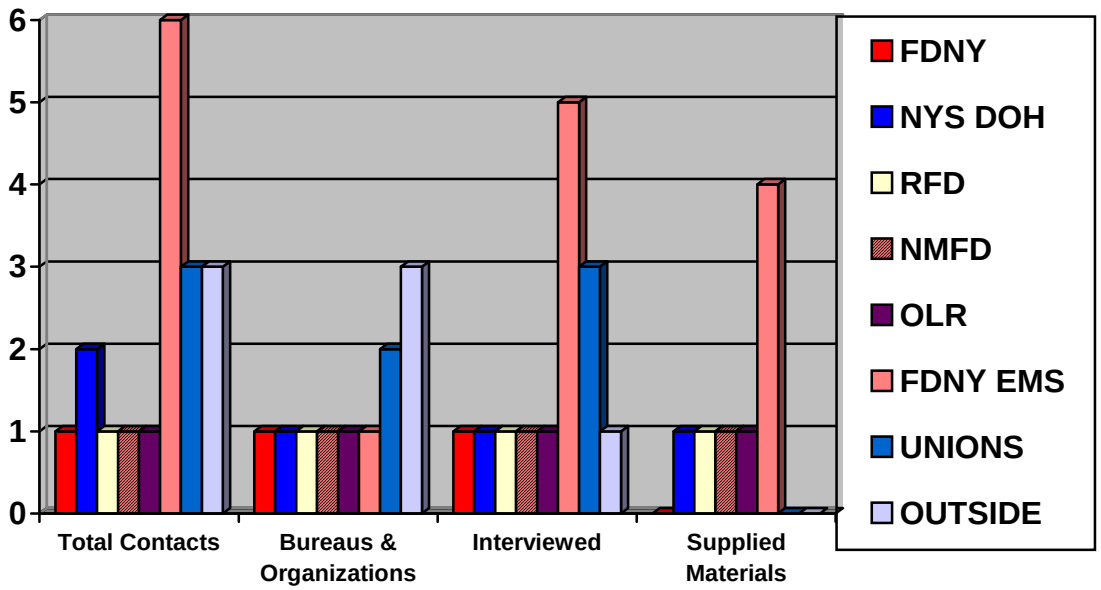
Occupational Safety and Health Administration (OSHA) (2006). *Best Practices Guide: Fundamentals of a Workplace First Aid Program.* Washington, D.C.: OSHA 3317-06N 2006.

Sanders, M. (2000). *Paramedic text revised* (2nd ed., Vol. 13). St Louis, MO: Mosby's.

Welch, T. (2005, April). Maintaining competency in 12-lead ECGs: How quickly do medics forget? *FIRE EMS*, pp. 43-44+.

Table 1

Collated summary of contacted resources

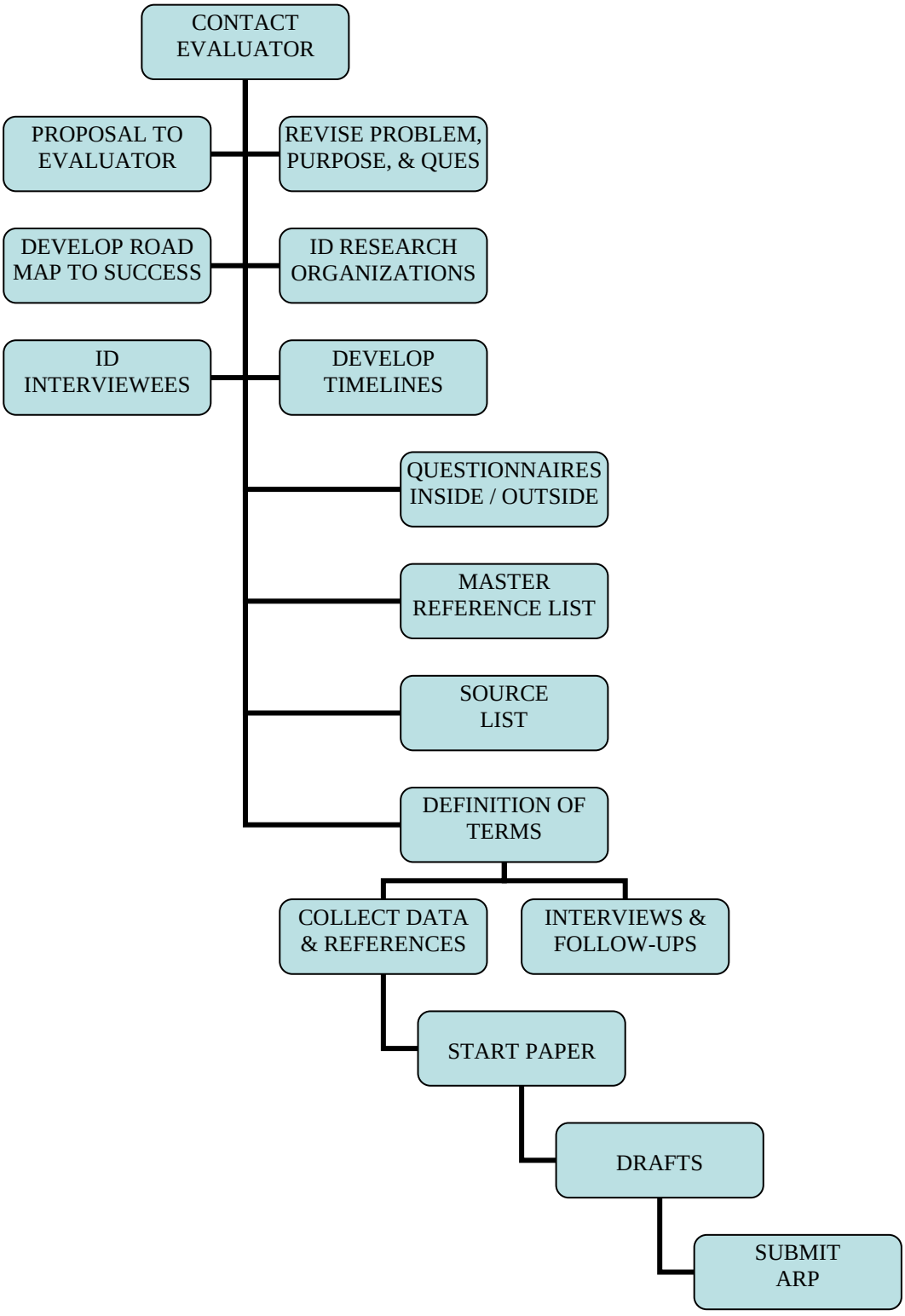


Note. Some contacts generated more than one interview.

FDNY = Fire Department, City of New York; NYS DOH = New York State Department of Health, Bureau of EMS; RFD = Rochester, NY, Fire Department; NMFD = North Merrick, NY, Fire Department; OLR = New York City Office of Labor Relations; FDNY EMS =Fire Department, City of New York, EMS Command; UNIONS = FDNY Uniformed EMTs and Paramedics, and FDNY Uniformed EMS Officers Union; OUTSIDE = Non-FDNY personnel.

Appendix A

Road map to success



Appendix B

ARP required elements

SECTION	TARGET DATE	COMPLETED	Proof 1	Proof 2
1. Title Page	_____	☐		
2. Certification Page	_____	☐		
3. Abstract (Separate page)	_____	☐		
4. Table of Contents (Separate page)	_____	☐		
5. Main Body Sections	_____	☐		
Introduction (Separate page)	_____	☐		
Background & Significance	_____	☐		
Literature Review	_____	☐		
Procedures	_____	☐		
Results	_____	☐		
Discussion	_____	☐		
Recommendations	_____	☐		
6. Reference List (Separate page)	_____	☐		
7. Appendices (Optional)	_____	☐		

Appendix C

Master source list (in contact order)

NAME	AFFILIATION	CONTACT NUMBER
Dr. David Prezant	FDNY	xxx-xxx-xxxx
Chief John Peruggia	FDNY EMS	xxx-xxx-xxxx
Lillian Rivera	FDNY OLR	xxx-xxx-xxxx
Chief of EMS Training J.P. Martin	FDNY EMS	xxx-xxx-xxxx
Assistant Chief Frank Chester	NCEMSA	xxx-xxx-xxxx
Senior Rep. Michael Tayler	NYS DOH	xxx-xxx-xxxx
Deputy Chief Scott Holliday	FDNY EMS	xxx-xxx-xxxx
Captain John Nevins	FDNY EMS	xxx-xxx-xxxx
President Tom Eppinger	FDNY EMSO Union	xxx-xxx-xxxx
Medical Director Dr. Dario Gonzalez	FDNY EMS	xxx-xxx-xxxx
Commissioner Kevin O'Hara	N. Merrick FD	xxx-xxx-xxxx
Lieutenant Steven Erb	RFD	xxx-xxx-xxxx
Captain Kathleen Conzi	FDNY EMS	xxx-xxx-xxxx
Captain Dave Raguza	Elmont FD	xxx-xxx-xxxx
EMS Captain	Freeport FD	xxx-xxx-xxxx
Vice President Don Faeith	FDNY EMT/P Union	xxx-xxx-xxxx
President Patrick Bahnken	FDNY EMT/P Union	xxx-xxx-xxxx
Karen Meganhoffen	NYS DOH	xxx-xxx-xxxx

Appendix D

Five year recertification pilot program cover letter

Dear

My name is Stephen Marsar. I am a Captain in the Fire Department of the City of New York (FDNY). I am presently enrolled in the Executive Fire Officer Program at the National Emergency Training Center/National Fire Academy in Emmitsburg, MD. As part of the course requirements, I am conducting an Applied Research Project on the FDNY's adoption of a five year continuing medical education (CME) recertification program.

If you would please take some time to answer the following questionnaire regarding your experiences with CME recertifications and/or the New York State Department of Health pilot programs, it will greatly assist me in gathering the crucial information to complete this project. Your answers will be added to the responses I have already received from other Fire and EMS agencies throughout the state. Your responses can be mailed or e-mailed to me.

Thank you in advance for your time and help in this endeavor. If you require additional information or wish to contact me, my information is as follows:

Stephen Marsar, Captain FDNY
618 Farmers Ave.
Bellmore, NY 11710
HOME: (516) 409-6850
CELL: (516) 509-6966
E-MAIL: stephenmarsar@yahoo.com

Sincerely,

_____
Stephen Marsar, Captain
FDNY

January 20, 2007

Appendix E

FDNY insider questionnaire

LCRR APPLIED RESEARCH PROJECT

3 & 5 Year E.M.T. Recertification Questionnaire

Interviewee: _____

1. In your opinion is the adoption of a 5 year recertification program a good idea for the FDNY?

   Why

   Why not?

2. What is/was the main catalyst for the FDNY extending their EMT recertifications?

3. What research or statistics were used to explore this option for the FDNY?

4. Who was on the planning committee to launch this program?

5. What is the plan for the FDNY 5 year recertification program?

6. What are the proposed training models and/or schedules to be used for this program?

7. What changes will be made to the FDNY EMS operating guidelines (if any)?

8. What mechanisms will be used to track the performance of the EMTs in this certification program?

9. What are the cost/benefit considerations of this program for the FDNY?

10. What are the Union opinions/expectations of this program?

1/20/07

Appendix F

FDNY EMT and instructor questionnaire

EXECUTIVE FIRE OFFICER PROGRAM
APPLIED RESEARCH PROJECT
FDNY EMT/EMT-P
CME QUESTIONNAIRE
By Capt. Stephen Marsar

This anonymous questionnaire has been approved by EMS Chief of Training, the FDNY Uniformed EMTs and Paramedics union and the FDNY EMS Officers union for distribution and collection as part of a research project.

Participation in this questionnaire is strictly voluntary. This questionnaire will not be given to the department but used solely by the author of the research project – FDNY Capt. Stephen Marsar, EMT, CIC, Regional Faculty.

1. Are you an EMT or EMT-P?

EMT ___ EMT-P ___

1a. Are you an FDNY EMS Instructor?

Yes ___ No ___

2. How many years have you been NYS certified (as an EMT/EMT-P)?

___ years

3. How many years have you been in the FDNY EMS?

___ years

4. How many refreshers have you attended in your career? ____

5. How familiar are you with the FDNY 5-year CME recertification program?

Very ___ Not Very ___ Not At All ___

6. Have you attended station drills as part of this program?

Yes ___ No ___

7. Do you feel the station drill(s) you attended were productive?

Yes ___ No ___ N/A ___

8. Would you prefer to recertify using CME or attending the traditional recertification model at the EMS academy?

CME ___ Traditional ___

9. Do you feel the present CME recertification program will help you stay current in your job knowledge and patient care skills?

Yes ___ No ___

10. If offered, would you prefer a "Challenge" type recertification (where you would be tested in your knowledge and skills and then required to attend the academy only for those classes that you showed a need to be refreshed in), the traditional recertification, or the present CME.?

Challenge ___ Traditional ___ CME ___

11. What do you like about the 5-year CME program?

12. What do you dislike about the CME program?

Thank you for taking the time to answer this questionnaire. Your answers will be used for research purposes only – as part of my project for the Executive Fire Officer Program at the National Emergency Training Center in Emmitsburg, MD.

Thank you again and stay safe,

Stephen Marsar, Captain

FDNY

Appendix G

Outside FDNY questionnaire

LCRR Applied Research Project
5-Year Recertification Questionnaire

1. Can you please provide a brief history of your department's 3-year CME recertification program including what type of recertification program was used previously?

2. Who pushed for the change to your department's present CME recertification?

3. What were the key issues/concerns that led to adopting the CME recertification?

4. Please provide an overview of your department's CME program. Can you also include copies of S.O.G.s/Ps and or schedules, forms, lesson plans, etc., used to manage your CME?

5. How many members of your department are enrolled in the program?

6. Who provides your CME training/education? (in-house, out-sourced, or both?)

7. What mechanisms (if any) are in place to measure the success of your department's CME program?

Appendix H

FDNY EMS union questionnaire

FDNY*EMS
UNION QUESTIONNAIRE
Capt. Stephen Marsar
April 2007

Interviewee:

1. In your (your local's) opinion is the adoption of a 5-year CME recertification program a good idea for the FDNY EMS?
   Why?
   Why not?

2. In your recent contract negotiations how was (has) your union (been) involved in the development of the FDNY CME recertification program?

3. In your (your local's) opinion, what are the concerns over having an untrained, or under-trained, officer conducting station drills for your EMTs/EMT-Ps?

4. What is the feedback your union is receiving from the field regarding the CME program?

5. Do your members like the idea of the CME recertification versus the traditional academy-based EMT/EMT-P recertification.?
   Why?
   Why not?

6. Do your EMTs/EMT-Ps feel they are learning from the station drills?

7. In the officers union has there been a sense of uncaring or uninterested workers attending the station drills?

8. What do you (your union) feel was the main catalyst for the FDNY and NYC going to the CME-based refresher?

9. What are your union's main labor management issues with the 5-year CME-based recertification?
   Officers work more, for no compensation?
   Officers not comfortable giving drills?

10. What are the things that you (your union) would like to change in regard to the CME refresher program?

11. Do you (your union) feel that a challenge-based refresher held at the academy, using certified instructors, would be more beneficial for your members than the current CME program?

Appendix I

2005 U.S. certification survey

STATE	Traditional Recert. With Tests	Traditional With CME Option	Traditional With CME Option And Test	CME Only (T=test)	# of Years to Recert.	Original Training Hours	
						EMT	EMT-P
Alabama	Yes	-	-	-	2	171	534
Alaska	Yes	-	Yes		2	128	1132
Arizona	Yes	-	-	-	2	125	500
Arkansas	Yes	-	-	-	2	160	1200
California	Yes	-	Yes	-	2	120	1032
Colorado	Yes	-	Yes	-	3	110	1000
Connecticut	Yes	-	Yes	-	2-3*	130	1000
Delaware	Yes	-	-	-	1	110	1200
Dist. Of Col.	Yes	-	Yes	-	2	140	600
Florida	Yes	-	-	-	3	250	1100
Georgia	Yes	-	-	-	2	110	1018
Hawaii	Yes	-	-	-	2	420	1215
Idaho	-	-	-	Yes	2	110	1000
Illinois	-	-	-	Yes	4	110	950
Indiana	-	-	-	Yes	2	144	1500
Iowa	-	-	-	Yes	2	130	310
Kansas	-	-	-	Yes	2	110	1200
Kentucky	-	-	-	Yes	2	120	1500
Louisiana	Yes	-	-	-	2	130	400
Maine	Yes		Yes		3	111	700
Maryland	-	-	-	Yes	2	131	1200
Massachusetts	-	-	-	Yes	2	110	1050
Michigan	Yes	Yes	-	-	2	194	550
Minnesota	Yes	-	Yes	-	2	N/A	N/A
Mississippi	Yes	-	-	-	2	110	1500
Missouri	-	-	-	Yes	5	N/A	N/A
Montana	Yes	-	-	-	2	110	1200
Nebraska	Yes	Yes	-	-	3	N/A	N/A
Nevada	Yes	Yes	-	-	2	110	N/A
New Hampshire	Yes	-	-	-	2	110	1200
New Jersey	-	-	-	Yes	2-3**	120	950
New Mexico	-	-	-	Yes	2	135	1250
New York	Yes	Yes	-	-	3	135	1200
N. Carolina	-	-	-	Yes	3	110	1500
North Dakota	-	-	-	Yes/T	2	110	1500

STATE	Traditional Recert. With Tests	Traditional With CME Option	Traditional With CME Option And Test	CME Only (T=test)	# of Years to Recert.	Original Training Hours	
						EMT	EMT-P
Ohio	Yes	Yes	-	-	3	130	1066
Oklahoma	-	-	-	Yes/T	2	140	1200
Oregon	-	-	-	Yes	2	140	1200
Pennsylvania	Yes	Yes	-	-	3	126	1200
Rhode Island	Yes	-	-	-	3	122	1200
S. Carolina	Yes	Yes	-	-	2	139	1000
S. Dakota	Yes	-	-	-	2	110	1100
Tennessee	Yes	-	-	-	2	110	1218
Texas	Yes	Yes	-	-	4	140	624
Utah	-	-	-	Yes/T	4	120	1200
Vermont	-	-	-	Yes/T	2	110	1200
Virginia	Yes	-	-	-	3-4***	121	444
Washington	-	-	-	Yes	1	110	1200
W. Virginia	Yes	Yes	Yes	-	3	120	1000
Wisconsin	-	Yes	-	Yes	2	120	1000
Wyoming	Yes	-	-	-	2	120	1200

N/A According to the NREMT 2005 survey, recertification hours were unavailable.

* Connecticut recertifies its EMTs once every 2 years, up to 6 years. After 6 years recertification is once every 3 years.

** New Jersey requires recertification for EMTs once every 3 years, EMT-Ps once every 2 years.

*** Virginia requires recertification for EMTs once every 4 years, for EMT-Ps once every 3 years.

RESULTS AND FINDINGS

Out of the 50 states and the District of Columbia:

- 32 Use traditional recertification with testing but no CME option.
- 19 Use CME recertification only (four with testing components).

Of those 51 localities:

- 17 Use traditional recertification with a CME option, without testing components.
- 8 Use traditional recertification with a CME option, with testing components.

Appendix J

Rochester Fire Department Plan

City of Rochester

Rochester, NY All-America City 1998

Inter-Departmental Correspondence

To:	Floyd A. Madison, Fire Chief
From:	Capt. Jim McKinney
Date:	October 16, 2002
Subject:	A Plan

Trying to head off a potential dilemma, I've done some research as to how we might handle re-certifying some 160 EMTs whose certification is going to expire between 7/1/04 and 6/30/05. If we conduct the refresher process the way it's currently done, it will require about four months to get everyone recertified, as it will take 4 EMT refresher courses per group. Obviously that's not acceptable.

We have two other choices: internet based training by partnering with MCC (if approved by the DOH), or a new pilot program that allows people to recertify using a non-traditional method of demonstrating their EMS competency through appropriate continuing education methods. The latter can be done by providing each student with 24 hours of EMS training per year, over 3 years, and *the student does not have to take a state written exam at the end.*

I've attached a chart which breaks down the pros and cons of each of the three different programs. After much thought, my recommendation would be to go with the new pilot refresher program even though it's scheduled to end in 2006 (I believe the DOH will either extend the pilot program at that time, or take it out of pilot and make it a permanent program).

If we do go with the pilot program, it will require a fair amount of EMS training in order to complete the hours that are required for those 160 people mentioned above in order to get them recertified in time. But, once the program is fully instituted it will result in each EMT needing, on average, only about 14 hours of specific EMS training per year to attain their recertification (hazmat, CPR and bloodborne pathogen training will add another 10 hours of credit per year) .

I would like to get your permission to apply for the pilot continuing education recertification program.

EEO Employer/Handicapped

TRADITIONAL EMT CHALLENGE RE-CERTIFICATION PROGRAM

(what we currently do)

PROs

1. Maximum reimbursement rate - $ 425.00 / student over 3 years would generate $157,250.00
2. Would generate maximum FTEs
3. Documentation of student's performance is easily done

CONs

1. Each challenge requires reserving 9 8-hr class days, takes about 2 months to complete a course
2. Instructors/students get tired of repeating this course
3. Requires student to take state written exam, an overtime expense

WEB BASED TRAINING BY PARTNERING WITH MCC

1. Maximum reimbursement rate - $ 425.00 / student less MCC payment would net $92,250 over 3 yrs
2. Maximum flexibility, student can remediate where ever they've got internet access (e.g. home, wireless laptops)
3. Minimum number of formal class days needed
4. Would generate same FTEs as the traditional program
5. Documentation of student's performance is easily done

1. About $65,000.00 would need to be paid to MCC over the 3 years
2. Requires internet access at all firestations (cost)
3. Minimum use of RFD's instructors, would probably lose some due to lack of interest, may lose ability to do EMS training in-house
4. Requires student to take state written exam, an overtime expense

CONTINUING EDUCATION RECERTIFICATION PROGRAM

1. On average an individual must get 24 hrs of EMS training per year over 3 yrs - hazmat, CPR and bloodborne pathogen training would count towards that 24 hrs
2. Program flexibility, some training can be done nights, 3+ hrs of training/yr can be self study (e.g. tapes, magazines)
3. No state written exam (no overtime expense)
4. RFD instructors stay involved so training can continue to be done in-house
5. Office of Pre-hospital Care will supply data regarding the practicals skills that each individual has documented as having done on their PCRs. This will help to satisfy the practical skills requirement and cut down on the number of formal training hours an individual will need
6. Many subject matters will qualify as credit hours, will make the recertification process more interesting for the students

1. Reimbursement is $300.00 per student or a total of $110,700 over a 3 year period
2. Fewer number of FTEs generated
3. Extensive paperwork is generated to accurately account for each individual's training
4. Extensive records must be kept to verify each individual's training
5. Does still require at least 11 hours of formal classroom training per year
6. Would require somewhere between 7 and 9 8-hr class days per year per group
7. Must be phased in, would result in traditional and this program running simultaneously for about 2 yrs which will tie up significant class days

Appendix K

FDNY officers training for drills

FIRE DEPARTMENT
Building 325, Fort Totten, Bayside , N.Y. 11359
TEL. (718) 281-8325 FAX (718) 352-3954

BUREAU OF TRAINING
EMERGENCY MEDICAL SERVICE DIVISION

TO: Lt. Dave Russell
Insts: Carlson, D'Agusto, Finneran, Mejias, Silvestry

FROM: Arthur Lester Lieutenant

DATE: 11/22/07

SUBJECT: Officers Training for Drills

From mid-December through the end of January, the DOT has been tasked with training officers to present information to MOS in the field. This hopefully, will enable them to present the drills they will be required to run as part of the 5 year Recertification program.

I have developed a two day class that includes both lectures and skills as well as handouts they will be able to use as reference material. A tentative schedule is attached.

The topics include:

Day 1
- The Adult Learner
- Verbal & Non-Verbal Communications
- Public Speaking
- Lesson Planning

Day 2
- Teaching Skills & Measuring Performance
- Mentoring
- Teaching Tips
  - a.10 Requirements
  - b. Enhancing Effectiveness
  - c. Enhancing Teaching & Learning
  - d. Evaluating your own teaching

The skills component of the class will include:
- Preparing and Following a Lesson Plan
- Use of Evaluation Tools (Skills Sheets)
- Demonstrating A Skill
- Conducting a critique

While we can not make instructors, I believe this will give them a foundation to build on – however, any suggestions you may have will be greatly appreciated.

I would like to have a meeting with all of you early next week – and I will speak to each of you on Monday 11/27 to try to pick a time convenient for everyone. I will give you copies of the materials at that time.

0FFICERS
Training Program


Presenting Information

&

Enhancing Teaching Effectiveness

Overview – Day 1

Day 1

Session 1. 4 hrs

The Adult Learner & Communication Techniques

A. Presentations

1. Overview
2. Adult Learner
3. Verbal and Non-Verbal Communications

Break

4. Public Speaking
5. Lesson Planning

LUNCH .5 Hrs

Session 2. 3.5 Hrs

Work Groups

- *Building & Following a Lesson Outline*
- *Lesson Presentations*

Assignment for Day 2, Session 2:

Prepare to demonstrate a BLS skill

Overview – Day 2

Day 2

Session 1. 4 Hrs

Measuring Performance, Mentoring & Teaching Tips

A. Presentations

1. Teaching Skills & Measuring Skill Performance
2. Mentoring

B. 5 minute mini presentation & critique

LUNCH .5 Hrs

Session 2 3.5 Hrs

A. Student presentation

BLS skill presentation & critique

Using evaluation tools

B. Teaching Tips

10 Requirements

Enhancing your Effectiveness

Principles to Enhance Teaching & Learning

Evaluating your own Teaching

Appendix L

FDNY EMT CME schedule

Proposed Schedule for CME – 5 Year Recertification - EMTs

	Feb 2007 – Jun 2007	Sep 2007 – Jan 2008	Feb 2008 – Jun 2008	Sep 2008 – Jan 2009	Feb 2009 – Jun 2009
0700 to 1100	AHA BCLS Refresher Course (4)	Soft Tissue Injuries (1) Musculoskeletal Injuries (1) Skills Eval: Bleeding &,Shock (1) Skills Eval: Traction Splint (1)	Pediatrics (2.5) Protocol Review (0.5) *Pediatrics* Skills Practice: Pediatrics (1)	AHA BCLS Refresher Course (4)	Obstetrics, Gynecology, & Neonatology (3) Protocol Review (1) *Obstetrics and Newlyborn Resuscitation*
1130 to 1500	Medical Emergencies (3) *Diabetes & AMS* *Seizures* *Poisonings & ODs* *Behavioral* Protocol Review (0.5) *Medical Emergencies*	Geriatrics (3) Protocol Review (0.5) *Geriatrics*	Medical Emergencies (3) *Cardiovascular* Protocol Review (0.5) *Cardiovascular Emergencies*	Preparatory Module Lecture (2) Protocol Review (0.5) *RMA, 10-95, etc* Skills Eval: Cardiac Arrest/AED	Bleeding and Shock (2.5) Operations (1) Ambulance Operations Crime Scene Rescue Awareness
	Sep 2009 – Jan 2010	Feb 2010 – Jun 2010	Sep 2010 – Jan 2011	Feb 2011 – Jun 2011	Sep 2011 – Jan 2012
0700 to 1100	Patient Assessment (1.5) Medical Skills Practice: Medical Assessment (1.25) Skills Eval: Medical Assessment (1.25)	AHA BCLS Refresher Course (4)	Skills Eval: Oxygen Skills (2.5) Domestic Preparedness (1.5)	Environmental Emergencies (2) Emergency Vehicle Operations (2) Lecture and simulator	Patient Assessment (1.5) Trauma Skills Practice: Trauma Assessment (1.25) Skills Eval: Trauma Assessment (1.25)
1130 to 1500	Domestic Preparedness (1.5) Emergency Vehicle Operations (2)	Pediatrics (2) Protocol Review (0.5) *Pediatrics* Skills Practice: Pediatrics (1)	Airway Management & Respiratory Emergencies (3) Protocol Review (0.5) *Airway Management*	Geriatrics (3) Protocol Review (0.5) *Geriatrics*	Injuries to the Head, Neck, & Spine (2) Skills Eval: Seated Spinal Immobilization (1.5)

Version 8.0

Proposed Schedule for CME – 5 Year Recertification - Paramedics

	Feb 2007 – Jun 2007	Sep 2007 – Jan 2008	Feb 2008 – Jun 2008	Sep 2008 – Jan 2009	Feb 2009 – Jun 2009
0700 to 1100	AHA BCLS Refresher Course (4)	ACLS Practices (3) Well-being of the Paramedic (1)	Skills Practice: Needle Decompression (1) Skills Eval: IV Therapy (1) Hemorrhage & Shock (2)	AHA BCLS Refresher Course (4)	ACLS Practices (3) Medicolegal Considerations & Ethics (1)
1130 to 1500	Soft Tissue Injuries & Burns (1) Obstetrics & Gynecology (1.5) Neonatology (1)	Musculoskeletal Trauma (0.5) Skills Eval: Long Bone (1) Skills Eval: Traction Splint (1) Airway Lecture (1)	Toxicology (3.5)	Pulmonology (2.5) Ambulance Operations, Crime Scene Awareness, & Rescue Awareness (1)	The Patient with Special Challenges & the Chronic Care Patient (1) Venous Access & Medication Administration (0.5) Skills Practice: Needle Crichothyrotomoy (1) Skills Eval: IV Bolus & IV Piggyback (1)
	Sep 2009 – Jan 2010	Feb 2010 – Jun 2010	Sep 2010 – Jan 2011	Feb 2011 – Jun 2011	Sep 2011 – Jan 2012
0700 to 1100	Skills Eval: Dynamic Cardiology (2) Endocrinology & Hematology (1) Thoracic & Abdominal Trauma (1)	AHA BCLS Refresher Course (4)	ACLS Practices (3) Skills Eval: ET Intubation (1)	Pediatrics (2.5) Life Span Development (0.5) Behavioral and Psychiatric Emergencies (1)	Skills Eval: Static Cardiology Skills Eval: Seated Spinal Immob (1) Skills Eval: Patient Assessment (1) Hazardous Materials (1)
1130 to 1500	Emergency Response to Terrorism/WMD (2) Geriatrics (1) Trauma Systems & Kinematics (0.5)	Neurology (2.5) Injuries to the Head, Face, and Spine (1)	Pharmacology (3) Therapeutic Communications (0.5)	Skills Practice: In-Line/Face-to-Face Intubation & Sterile Suctioning (2) Allergies/Anaphylaxis & Environmental Emergencies (1.5)	Gastroenterology, Nephrology, & Urology (1) Infectious & Communicable Diseases (1) General Principles of Pathophysiology (1) Abuse and Assault (0.5)