National Association of State EMS Officials

Assessing Continuing Competence in Emergency Medical Services:

A Reference for State EMS Offices

Background

The growing complexities of science and technology has impacted the world of emergency medical services in ways that were not imagined when the National Academy of Sciences (NAS) first published "Accidental Death and Disability: The Neglected Disease of Modern Society" in 1966. Although nearly 50 years ago the NAS asserted, "there are no generally accepted standards for the competence or training of ambulance attendants," MUCH has been accomplished through local, state, national, and federal partnerships since then. Emergency Medical Services (EMS) education has evolved and been increasingly refined through the development and publication of the EMS Core Content, National EMS Scope of Practice Model, and the National EMS Education Standards (NEMSES) by the National Highway Traffic Safety Administration (NHTSA) through its Office of EMS. National EMS Certification is utilized in the majority of states to enhance the state licensure process and today, nearly 700 EMS education programs are or in the process of becoming nationally accredited at the paramedic level. Because the primary role of the state regulatory agency is public protection, the concept of *continuing competence* has been the focus of ongoing discussions within the National Association of State EMS Officials (NASEMSO) for the last several years. In fact, regulators in the United States have been considering this issue as part of the relicensure process for professionals since at least the early 1970's and neither the regulatory nor professional communities have agreed on the best way to ensure continuing competence. On the national level, groups such as the Pew Health Commission, the Citizen Advocacy Center (CAC), and the National Committee on Quality Assurance are highlighting the importance of continuing competence. Concerns about continuing professional competence are at the core of several recommendations of the landmark reports of the Institute of Medicine's, "To Err is Human: Building a Safer Health Care System" and its Future of Emergency Care series.

In a report of the Pew Health Professions Commission titled *Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century*, a powerful statement was made about the need for professions to embrace continuing competence: "The skills, competencies and values for a successful lifetime of professional practice cannot be learned in a single educational encounter. Rather, the health professions must recapture the tradition of a continuing commitment to learning. The rate of change in the health care system makes this commitment imperative for the practitioner and society alike. This commitment must transcend passive, continuing professional education and move towards clear standards of continuing competence."

A 2007 study conducted by AARP and the CAC provided insight into the public's mindset about the continuing competence requirements for health care professionals. More than 95% of respondents believed that health care professionals should be required to show they have up-to-date knowledge and skills needed to provide quality care as a condition of retaining their licenses. Ninety percent of the respondents indicated that it is very important for health care professionals to periodically be re-evaluated to show they are currently competent to practice safely.

Several strategies towards achieving continuing competence have been identified in the literature:

- Professional Discipline/Self-assessment
- Periodic re-examination
- Mandatory continuing education
- Educational outreach (i.e. Practice updates)
- Peer review (or medical director evaluation) of on-site performance, including simulation labs and/or portfolios
- National standards of professional competence

While continuing education (CE) and/or periodic re-examination have been utilized by states in the relicensure process and widely accepted in EMS as a method of maintaining and enhancing professional competence, NASEMSO recognizes that there are multiple methods by which an individual may demonstrate continuing competence. Professional competency models support the need for individual responsibility through self-assessment, development and implementation of a personal learning plan and periodic reassessment and to achieve the goals of continuing competence. NASEMSO supports the state oversight role and coordination with medical directors and EMS agencies to ensure that these goals are adequately accomplished and documented. On April 20, 2015, NASEMSO conducted a competency verification summit in conjunction with the NASEMSO Education and Professional Standards Council in San Antonio, TX to discuss this topic in the context of the state relicensure process. This resource reflects the knowledge gained from many months of discussion that culminated with the Summit.

State Relicensure Requirements

NASEMSO has collected data on state implementation of the National EMS Education Agenda of the Future: A Systems Approach since 2007. In a recent effort to quantify state requirements and identify similarities in the relicensure process, we identified the following trends:

Required by States in the Relicensure Process	EMT	Paramedic
Written Testing	20%	8%
Psychomotor Testing	22%	4%
Continuing Education Requirements	80%	73%
Prescribed Certification Courses (i.e. CPR, ACLS, others)	56%	58%
State Refresher-Type Courses (i.e. protocol review, other clinical updates)	52%	23%

Medical Director Review	20%	29%
Affiliation with an agency licensed to provide EMS	22%	29%
Other (including maintenance of NREMT certification)	38%	37%

Professional Discipline/Self-Assessment

It has been estimated that more than 20% of core information guiding clinical practice changes each year based on new evidence or guidelines. This fact alone would suggest that medical director and practitioner input would be vital to regulators in determining state requirements for competency assessment as a component of relicensure--since the goal of a competency assessment program is to ensure safe practice. "Self-assessments" have been used by health care organizations since the 1970s to identify areas where their staff needs updating. Self-assessment is identified as the process of conducting a systematic review of one's own performance, knowledge base or skill set through some form of questionnaire or testing for the purpose of improving future performance, expanding knowledge, or improving skills. Several medical associations, including the American Psychiatric Association, the American Academy of Pediatrics, and the American College of Obstetricians and Gynecologists, have instituted similar programs. These programs let individual practitioners know where they stand in comparison to their colleagues and identify topics where they may need refreshing. EMS providers and their employers tend to focus on meeting regulatory requirements rather than identifying personal knowledge gaps and finding programs to address them. Self-assessment is presumed to make CE more meaningful to practice by requiring the learner's active engagement in the re-evaluation process. Theoretically, it helps practitioners delineate areas where they need to improve their understanding or require further training. This information can guide an individual to pursue more information or training, or it can be used by EMS organizations to plan educational programs.

Unfortunately, several published studies suggest that people cannot effectively engage in personal self-assessment in any regular or meaningful way. One report suggests that there is a conflict between: (a) the desire for self-assessment accuracy and (b) defensive motives related to self-esteem. Bose et al suggest that self-assessors will distort evaluative information processing to support the practitioner's desire to see themselves favorably and predicts that individuals are more inclined to remember and recall behaviors that are consistent with their self-esteem. Due to the low validity of this methodology, the project group suggests that while self-assessment tools used in a non-punitive and non-threatening manner *could be useful* to individuals, self-assessments are likely the LEAST useful strategy to support state goals for competency assessment in the relicensure process.

Cognitive Testing

Cognitive testing is used primarily to evaluate minimum or "entry-level" knowledge. Because cognitive tests tend to be comprised of multiple-choice questions, cognitive testing alone does not sufficiently measure competency because a practitioner can master content knowledge without possessing the procedural knowledge or skill in a manner that enables the state licensing authority to assess the individual's ability to apply knowledge to effectively care for patients. According to the Council on Licensure Enforcement and Regulation (CLEAR), a reliable and valid licensing examination requires significant amounts of time and money to develop—usually a year or more. As a general rule, each item appearing on an examination takes between two to four hours to plan, write, and review before the item is suitable for publication in an examination. Additional time is required to manage and maintain an examination. Validity is the most important issue in selecting a test. Validity refers to what characteristic the test measures and how well the test measures that characteristic. Reliability refers to how dependably or consistently a test measures a characteristic. The majority of states contract with the National Registry of Emergency Medical Technicians (NREMT) to administer reliable and valid testing for EMS practitioners that is used in the state licensing process. The NREMT exams are developed from a practice analysis at each of the EMS practitioner levels to assess a licensee's competency fairly and in a manner that is defensible in case of legal challenge.

Use of Mandatory CE to Ensure Competency

> *According to the Institute of Medicine (IOM), "Continuing education (CE) is the process by which health professionals keep up to date with the latest knowledge and advances in health care. However, the CE "system," as it is structured today, is so deeply flawed that it cannot properly support the development of health professionals. CE has become structured around health professional participation instead of performance improvement. This has left health professionals unprepared to perform at the highest levels consistently, putting into question whether the public is receiving care of the highest possibly quality and safety."*

In *Redesigning Continuing Education in the Health Professions*, the IOM's Committee on Planning a Continuing Health Professional Education Institute indicates that the current body of literature does not conclusively identify the most effective CE methods, the correct mixture of CE methods, or the amount of CE needed to maintain competence or to improve clinical outcomes. The literature does offer some guidance for improved learning, suggesting that CE should be guided by needs assessments, should be interactive, and should provide multiple learning opportunities and multiple methods of education. It also suggests the scientific literature offers guidance about general principles for CE but provides little specific information about how to best support learning because CE providers cannot determine the effectiveness of their

instructional methods and health professionals lack a dependable basis for choosing among CE programs. CE lasts the duration of a health professional's career and is therefore the model of learning that spans the longest period. It serves two functions: maintenance of current practice and translation of knowledge into practice. Additional considerations states should consider when establishing mandatory CE programs include:

- Availability – accessibility to quality programs, especially in remote areas
- Relevance – accuracy and currency to EMS practice
- Economics – cost to access the learning and who "pays" for registration and/or attendance
- Documentation – record keeping to demonstrate compliance

An emerging concept known as continuing professional development (CPD), includes components of CE but has a broader focus, such as teaching how to identify problems and apply solutions, and allowing health professionals to tailor the learning process, setting, and curriculum to their personal needs.

In 2012, the National Registry of Emergency Medical Technicians (NREMT) introduced a model of CPD for EMS practitioners called the "National Continued Competency Program." The approach segregates criteria into "National", "Local", and "Individual" Continued Competency Requirements at the four nationally recognized levels of EMS licensure: Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic. The NREMT's continued competency task force selected five key principles identified by the American Board of Medical Specialties (ABMS) that were adopted and included in the recertification process for National EMS Certification.

Because of two key elements included in the NCCP proposal, i.e. *practice performance is validated* by the EMS provider's supervisor or training officer at the EMR and EMT levels and by the provider's physician medical director at the AEMT and Paramedic levels; and because the *continuing education is focused on the areas of need of the EMS professional* to improve knowledge, better skills, and positively affect patient outcomes, NASEMSO supports "deemed status" recognition of the NCCP for standardizing an approach towards competency assessment and state EMS relicensure requirements.

On-site Performance Review

Attendance at a class or reading a journal article does not ensure or validate competency nor does it provide a measure of confidence that practitioners can translate what is learned into effective practice. Performing psychomotor skills via direct observation (without prompting) is the best method to ensure that a practitioner can perform such skills safely and independently. EMS standards of care have been effectively achieved through evidence-based research, textbooks and manuals, medication administration references,

policy manuals, clinical guidelines, and a range of proprietary courses that provide a certificate of completion by an external organization or agency.

The effectiveness of simulation and use of patient scenarios is documented in the forefront of EMS education and credentialing at the EMS agency level. Simulation, typically a training and feedback method, is becoming increasingly available and can be used for evaluative purposes for licensees to demonstrate competency. Lifelike circumstances using training models or virtual reality provides feedback from observers, peers, actor-patients, and video cameras to assist improvement in skills. Several types of simulation can be used to measure competency in EMS including:

Interactive applications (apps) for medical professionals that can be downloaded onto a variety of devices. Using a smart phone, tablet, or other electronic device, evaluators can construct a realistic patient experience and measure practitioner responses to specific scenarios identified by a state Medical Advisory Committee.

Standardized patient simulation involves the use of individuals trained to portray the roles of patients, family members or others to allow students to practice physical exam skills, history taking skills, communication skills and other exercises. Patient scenarios are identified to reflect input from medical directors, data and quality improvement activities, or random selectivity.

Simple (or task training) simulation allows licensees to demonstrate basic skills to ensure patient safety and competency on simple equipment such as skin and wound care trainers, phlebotomy and IV trainers, airway management trainers, birthing models, and other skills-oriented trainers.

Manikin-based simulation includes low, mid and high fidelity simulation manikins used in the evaluation of EMS providers. The level of fidelity refers to the technological abilities of the equipment, from a static manikin used for skills training all the way to a manikin that communicates, has dynamic vital signs, blinks, cries and whose chest rises and falls. There are multiple options depending on the objectives and goals of a given scenario using manikin-based simulation.

A range of **Virtual Ride-Along Simulations** are available from EMS publishers and vendors.

It has been argued that cost remains a barrier in using simulation as a tool for competency assessment and relicensure. Advocates for simulation maintain there are various platforms available to meet every budget. In addition, states may find that effective partnerships may be accomplished by forming coalitions involving academic centers, hospitals, public safety, and others in various geographic entities to serve education AND licensure needs and may provide greater access to grant funding and other resources. If practitioner competency is only addressed on a state relicensure cycle, gaps in knowledge and performance can adversely affect patient care. It has also been suggested that EMS agencies can play an important role in supporting staff learning and competency needs while providing an advantage to EMS managers, field training officers, and medical directors committed to ensuring quality care in a non-threatening, non-punitive environment.

Procedural recommendations

A sample format for practitioner evaluation is included as Appendix A.

FORMAT	ADVANTAGES	DISADVANTAGES
Skills days	Efficient way to evaluate multiple staff in short time frame	Requires multiple evaluators, thus consistency in evaluation is more difficult to achieve
	Involves more evaluators, thus creating more potential variations in practice	
Skills of the month	Can spread the work out across the year	Ensuring that staff members complete selected skills on a monthly basis can be difficult
	Staff focuses on a smaller subset of skills at any given time; this can encourage more in-depth understanding	The large skill set necessary for EMS results in several skills being covered each month
One on one	Consistency is more likely if there is a single evaluator or a small group of evaluators	The most-time intensive method
	Can easily tailor to individual learning needs	Single evaluator model may not be possible for large staff
	Easier to schedule	Consistency in evaluation is more difficult to achieve with multiple evaluators
	Scheduling throughout the year means that a subset of staff are always preparing for or have recently completed skills evaluation, leading to increased general knowledge through constant exposure	

The Summit attempted to address the question of how to encourage instructor certification in pediatric specific courses to increase availability of pediatric focused cognitive and psychomotor education at the local level. It was noted that the majority of states require 1-10% of all competency-based activities to be specific to pediatrics. Attendees acknowledged the value of consistent education offered through a variety of nationally recognized pediatric courses available to EMS providers that integrate didactic and psychomotor elements although none of these proprietary courses are specifically required by states in the relicensure process. Several states reported successes in pediatric education and pediatric instructor certification through:

- partnerships with academic and EMS programs to provide education
- partnerships with State Offices of Rural Health to help identify funding
- grants and/or private partnerships to offset expenses to provide training

At the local level, paid time off for experienced participants to attend was identified as a key component in the availability of instructors.

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Appendix A- Sample Evaluation Format

Psychomotor Competency Assessment Checklist for the Emergency Medical Responder (EMR)

(Based on the National EMS Scope of Practice Model 2007, the National EMS Education Standards 2009, and the Model EMS Clinical Guidelines 2014)

Name: _____

Date: _____

License/Registration #: _____

* = Essential skill, must score 2 or 3 (determined by each state)

3 - Performs independently, requires no prompting/teaching

2 - Competent, requires minimal prompting/teaching

1 - Unfamiliar with task, requires significant prompting/teaching

I. Patient Assessment	*	1	2	3	Comments
Demonstrate proficiency in identifying Apparent Life Threatening Events (ALTE) when provided various patient scenarios					
Demonstrate use of weight-based assessment tool to estimate patient wt and proper selection of adjuncts					
Obtain a full set of vital signs					
Demonstrate assessment of neurologic and mental status, including Glasgow Coma Score					
Demonstrate collection of a patient history					
Demonstrate use of Universal Pain Assessment Tool					
Demonstrate accurate completion of patient care					

record					
Demonstrate proper identification of patients at risk (i.e. abuse and/or neglect)					
Ii. Airway/Ventilation/ Oxygenation	*	1	2	3	**Comments**
Demonstrate the proper size selection and technique for inserting an oropharyngeal airway					
Demonstrate the proper technique for using a bag-valve-mask (BVM)					
Describe the procedure for applying cricoid pressure (Sellick's Maneuver)					
Demonstrate the following airway maneuvers:					
a) Head tilt – chin lift					
b) Jaw-thrust					
c) Jaw-thrust - Modified (trauma)					
d) Mouth-to-barrier					
e) Mouth-to-mask					
f) Mouth-to-mouth					
g) Mouth-to-nose					
h) Mouth-to-stoma					
Identify and initiate treatment for foreign body airway obstruction					
Demonstrate setup and administration of oxygen therapy – Nasal cannula					
Demonstrate setup and administration of oxygen therapy – Non-rebreather mask					
Demonstrate proper technique for suctioning the upper airway					
III. Cardiovascular/Circulation	*	1	2	3	
Demonstrate the assessment and care of a patient in cardiac arrest					

Demonstrate setup and delivery of automated / semi-automated defibrillation					
Demonstrate effective hemorrhage control using direct pressure					
Demonstrate effective hemorrhage control using a tourniquet					
IV. Immobilization	*	1	2	3	
Demonstrate effective spinal immobilization					
Demonstrate effective extremity stabilization					
Demonstrate emergency moves for endangered patients					
V. Medication Administration	*	1	2	3	**Comments**
Demonstrate proper technique in the use of an auto-injector (self or peer care)					
VI. Miscellaneous	*	1	2	3	
Demonstrate the steps in assisting a normal cephalic delivery					
Demonstrate necessary care of the infant as the head appears	X				
Demonstrate proper use of CDC Guidelines for Field Triage	X				
Demonstrate proper technique for flushing the eye					
Demonstrate proper removal of pediatric patient from a car seat					
Demonstrate the proper selection and application of patient restraints					
Demonstrate the proper					

selection and use of personal protective equipment								

Score _____ of 114 possible points = _____%
Passing score = 75% of possible points (86) + 2 or higher on all starred criteria
Signature of EMR Evaluated_____
Medical Director/Training Officer _____
Date Completed _____

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