Joint Position Statement on EMS Performance Measures Beyond Response Times

Douglas F. Kupas, Matt Zavadsky, Brooke Burton, Chip Decker, Robert Dunne, Peter Dworsky, Richard Ferron, Joseph Grover, Daniel Gerard, Joseph House, Jeff Jarvis, Sheree Murphy, Jerry Overton, Michael Redlener, George Solomon, Andrew Stephen, Randy Strozyk, Marv Trimble, Thomas Wieczorek, Kathryn Wise

Emergency Medical Services (EMS) exist to provide safe and effective out-of-hospital medical care to communities. Historically, response time has been the primary measure used to assess the performance of an emergency medical services (EMS) system/agency. Public policymakers have adopted response time because it is objective, quantifiable, and easily understood, however, this standard is derived from the need to respond quickly to cardiac arrest and time-sensitive conditions. While it is essential to continue to monitor and promote effective response, the majority of 911 EMS responses do not require a response time under ten minutes[i]. Reliance solely on response time performance increases the cost of EMS and the risk of EMS vehicle crashes. It also prevents communities from evaluating other EMS system quality measures that demonstrate system effectiveness for patient care, experience, and outcomes.

This joint statement encourages EMS systems and community leaders to implement an approach to EMS system performance that prioritizes patient-centered care and uses a broad, balanced set of clinical, safety, experiential, equity, operational, and financial measures to evaluate the effectiveness of EMS systems.

This statement is endorsed by the Academy of International Mobile Healthcare Integration, American Ambulance Association, American College of Emergency Physicians, American Paramedic Association, Center for Patient Safety, International Academies of Emergency Dispatch, International Association of EMS Chiefs, International City/County Management Association, National Association of EMS Physicians, National Association of Emergency Medical Technicians, National Association of State EMS Officials, National EMS Management Association, National EMS Quality Alliance, National Volunteer Fire Council and Paramedic Chiefs of Canada. These associations recommend that local communities and governments modernize the assessment of the performance of their EMS systems/agencies by evaluating a broad array of domains with key performance indicators (KPIs) that can be measured and trended over time, and whenever possible, benchmarked with comparable EMS systems, or other national data, and published to local community stakeholders on a regular basis. The domains that communities should consider when evaluating an EMS system/agency are:

- **Effective**: Is the health care provided clinically appropriate and high quality?
- **Safe**: Are services being provided in a way that is clinically and operationally safe for patients, responders, and the community?
- **Satisfying**: How do patients and EMS clinicians feel about the service being provided?
- **Equitable**: Is the system providing care that is equitable based on patient demographics and service area geography?
- **Efficient**: Is this service being provided in a way that maximizes the use of economic and operational resources?

Whenever feasible, evidence-based performance measures should be used that are associated with improved patient outcomes and system performance. Resources are cited in the attached table that can help to guide selection.

It is also essential for government and community leaders and decision-makers to consider all elements of the EMS system from the moment a 9-1-1 call is made to the conclusion of care by the EMS system/agency.

Innovative programs such as mobile integrated healthcare/community paramedicine, alternative response models and response dispositions to enable a broader array of services to patients and communities should be considered.

By considering these additional performance measures, local communities can gain a more comprehensive understanding of the effectiveness of their EMS system/agency, identify areas for improvement in patient care, system efficiency, and overall emergency response capabilities.

FINAL approved by Named Associations 4/9/24

Examples of EMS System Performance Domains and Potential Measures for Consideration

Domain	Potential Type of Measure for Consideration	Source/Benchmark
Clinical	• Out-of-Hospital Cardiac Arrest • STEMI • Stroke • Trauma • Hypoglycemia • Asthma/COPD • Seizures/Status Epilepticus • Invasive Airway Management • Special Mental Health Crisis Management	Internal agency data trended over time. Benchmarked to comparable EMS systems/agencies. National EMS Quality Alliance (NEMSQA) published measures. NEMSIS Public Dashboards. Cardiac Arrest Registry to Enhance Survival (CARES) AHA Mission Lifeline Other state, regional, provincial, or other community clinical indicators
Safety	• % of responses and transports using lights and siren (L&S). • Crash rate/100,000 miles. • Job-related injuries/100,000 hours worked. • Job-related illness/100,000 hours worked. • Reviews of all dispatch priority assignments. • EMS recall rate after a non-transport response.	Internal agency data trended over time. Benchmarked to comparable EMS systems/agencies. National EMS Quality Alliance (NEMSQA) published measures. NEMSIS Public Dashboards.
Operational	• The number of produced unit hours compared to scheduled unit hours. • Mission failure rate/100,000 miles. • Response time, for high acuity clinical responses, measured from the time the call is placed to a communication center, to the time of patient contact. • QA assessments to insure reliability of prioritization of responses.	Internal agency data trended over time. Benchmarked to comparable EMS systems/agencies.
Experiential	• Patient experience surveys • Hospital experience surveys • First Response Organization (FRO) experience surveys • Personnel engagement surveys • Employee turnover/retention • Emergency dispatcher engagement surveys	Validated, externally conducted patient and provider experience surveys, such as: • EMS Survey Team • Malcolm Baldrige • Press Ganey Alternatively, internal surveys could be conducted by the agency or local jurisdiction.
Financial	EMS system costs and revenues, reported per: • Staffed Unit Hour • Response • Patient Contact • Transport • Dispatch staffing deficits vs. fully staffed periods.	Internal agency data trended over time. Benchmarked to the Academy of International Mobile Healthcare Integration (AIMHI) survey of EMS systems, or other national data sources.

**These examples are not meant to be all-inclusive; communities should establish patient-centric and evidence-based performance measures based on value to their local stakeholders.*

[i] MurrayB, KueR. The Use of Emergency Lights and Sirens by Ambulances and Their Effect on Patient Outcomes and Public Safety: A Comprehensive Review of the Literature. Prehosp Disaster Med. 2017;32(2):209–216.