Arkansas Department of Health
Office of Preparedness and Emergency Response, Section of EMS
Arkansas EMS Advisory Committee
Advisory and Recommendations

Reduction of Red Lights and Siren Responses to 911 Calls for Improved Safety in EMS

As prepared by the Professional Safety Subcommittee

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IMPORTANT NOTICE: This advisory is NOT a mandate. Adoption of reduced lights and siren response protocols is not required of Arkansas EMS agencies. This advisory is intended to equip agencies with evidence-based information to bring to their community stakeholders—including governing bodies, contracted entities, first response partners, civilian focus groups, and others—to facilitate informed, local decision-making. The EMSAC is providing this evidence as a resource for agencies that wish to initiate that conversation.

SCOPE: This advisory addresses only EMS response to the scene of a 911 call. It does not address patient transport to a receiving facility. Decisions about transport mode are governed by separate clinical and operational considerations and are not within the scope of this document.

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A. Executive Summary

The Arkansas EMS Advisory Committee (EMSAC) recommends that Arkansas EMS agencies evaluate their use of red lights and sirens (RLS) during response to 911 calls and, where local stakeholder consensus supports it, implement evidence-based protocols to reduce unnecessary RLS responses. A substantial and growing body of peer-reviewed literature demonstrates that routine use of RLS for the majority of 911 calls confers minimal clinical benefit while imposing meaningful and measurable risk to EMS providers, patients, and the public.

National organizations, including the National Association of EMS Physicians (NAEMSP), the National EMS Quality Alliance (NEMSQA), the National Highway Traffic Safety Administration (NHTSA), the American College of Emergency Physicians (ACEP), and more than a dozen other leading EMS associations, have published guidance and position statements supporting targeted, evidence-based reduction in RLS use. The National EMS Quality Alliance has established RLS utilization as an official EMS safety performance measure (NEMSQA Safety-01: Use of Lights and Sirens During Response to Scene), reinforcing that tracking and reducing unnecessary RLS responses is a core quality and safety expectation.

This advisory encourages Arkansas EMS agencies to treat RLS as they would any other clinical intervention: with a deliberate, documented assessment of risk versus benefit. RLS should be reserved for call types and circumstances where the evidence suggests that the time savings may plausibly influence patient outcome. For the large majority of 911 calls, the evidence does not support that standard.

The EMSAC recognizes that decisions about RLS response mode are inherently local. They involve agency medical directors, operational leaders, governing bodies, contracted entities such as city and county governments, first response partner agencies, and the communities EMS serves. This advisory is intended to provide the evidence base that agencies need to have those conversations. It is not a state mandate.

B. Problem Statement

Historically, EMS systems have defaulted to RLS response for the vast majority of 911 calls, operating under the assumption that faster arrival leads to better patient outcomes. This assumption is deeply embedded in EMS culture, community expectations, and many existing response contracts and performance agreements.

The evidence does not support this assumption for most call types. Research consistently demonstrates:

- RLS response reduces travel time by an average of only 1.5 to 3.6 minutes in most settings—a time savings that is clinically insignificant for the majority of medical conditions.
- RLS use is associated with substantially increased risk of ambulance crashes, injuries, and fatalities involving EMS personnel, patients, and innocent bystanders.
- The majority of 911 calls, when analyzed using agency-specific data, do not result in the performance of a Life-Saving Intervention (LSI) at any point during the call—meaning the potential clinical benefit of faster arrival is absent for most responses.
- Reliance on response time as the primary or sole performance measure for EMS systems is increasingly recognized by national leadership as inadequate, and potentially counterproductive to safety and quality.

Arkansas EMS agencies lack consistent statewide guidance on how to evaluate and address this mismatch between current operational practice and the available evidence. This advisory aims to fill that gap with actionable, evidence-based recommendations.

C. Background and Evidence Base

1. The Limited Time Savings of RLS Response

Multiple studies have evaluated the time savings achieved through RLS use during response to 911 calls. The findings are remarkably consistent. Brown et al. (2000) found that RLS use in an urban environment reduced response times by an average of approximately 1 minute and 46 seconds. Studies in rural environments have shown somewhat greater savings, but still averaging fewer than 4 minutes across published research. Murray and Kue (2017), in a comprehensive review of the existing literature, concluded that RLS use during response and transport saves between approximately 43.5 and 181 seconds in urban settings and up to approximately 6 minutes in rural settings.

These time savings may be clinically meaningful in a narrow subset of true emergencies—primarily witnessed cardiac arrest, active airway obstruction or respiratory distress, anaphylaxis, and certain other immediately life-threatening conditions where seconds may genuinely matter. For the large majority of 911 calls, such time savings have not been demonstrated to influence patient outcomes.

2. The Crash Risk of RLS Operations

The use of RLS during emergency response is associated with a significantly increased risk of ambulance crashes. Watanabe et al. (2019), analyzing NEMSIS data, found that ambulance use of warning lights and sirens was associated with a meaningfully increased risk of ambulance crashes, with the association greatest during the transport phase but present during response as well. The NHTSA Office of EMS commissioned a comprehensive review specifically examining this risk, concluding that RLS use poses real and documentable hazards to EMS providers, patients, and the public, and calling on EMS leaders to approach RLS use the way they would any other high-risk intervention—with a deliberate risk-benefit analysis (Kupas, 2017).

Ambulance crashes result in injuries and deaths to EMS crew members, patients, and uninvolved members of the public. Additionally, they result in vehicles being removed from service for extended periods of time or indefinitely, operational disruption, financial losses, additional units having to backfill the original call as well as respond to the ambulance crash, and significant harm to provider well-being. Furthermore, ambulance crashes are the single largest source of legal liability for EMS agencies across the nation. These are not theoretical risks; they are well-documented consequences of routine emergency vehicle operations that occur in every region of the country, including Arkansas.

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3. How Often Are Life-Saving Interventions Actually Performed?

The most directly relevant question for evaluating RLS response policy is: for which call types is a Life-Saving Intervention (LSI) actually performed, making faster arrival potentially meaningful? Jarvis et al. (2021) addressed this question directly in a landmark analysis of nearly 3.9 million 911 RLS responses from 1,187 EMS agencies using national EHR data from ESO, with many Arkansas EMS agencies contributing to this data collection. Their findings were striking:

- Across all 911 calls, 85.8% used RLS for response.
- Only 6.9% of all RLS responses resulted in the performance of a potentially life-saving intervention (PLSI) at any point during the call.
- Even using a deliberately liberal definition of "potentially life-saving," 93.1% of RLS responses involved no intervention that met that threshold.
- The PLSI rate exceeded 10% for only 13 of the 52 call types analyzed (25% of call natures).
- There was no significant difference in PLSI rates across response time quartiles—meaning calls with shorter response times were no more likely to require PLSI than those with longer response times.

Importantly, Jarvis et al. used a very liberal definition of PLSI—one that likely overstates the true rate of life-saving interventions. The actual proportion of calls where faster arrival through RLS could plausibly change outcome is almost certainly lower than 6.9%.

This methodology—analyzing call-type-specific LSI rates using agency-level data—is the foundation of the EMSAC's recommendation for how individual Arkansas agencies should evaluate their own response practices.

> ***RLS should be treated as a clinical intervention. Like any intervention, its use should be based on a deliberate assessment of the likely benefit weighed against the known and documented risk. "Look at lights and siren use like we would any other treatment we give the patient." — Douglas Kupas, MD (NHTSA, 2017)***

4. Patient Outcomes Are Not Compromised by Reduced RLS Use

A critical concern for any agency considering changes to RLS response practices is whether reducing RLS use will harm patients. The evidence consistently indicates that it does not, for the large majority of call types.

- Murray and Kue (2017) concluded in their comprehensive literature review that current evidence suggests no significant improvement in patient outcomes with RLS use, and identified potential for worsening of certain aspects of patient care during transport associated with emergency driving.
- Marques-Baptista et al. (2010) found that only 4.5% of patients transported with RLS to a Level I trauma center had a time-critical intervention performed at any point during their emergency department stay—and no patients had a time-critical intervention performed within the time savings attributable to RLS transport.
- Jarvis et al. (2021) demonstrated no significant difference in PLSI rates across response time quartiles, specifically addressing the concern that faster RLS response might mitigate patient deterioration and thereby reduce the apparent need for PLSI.
- Kupas et al. (1994) studied a protocol that limited RLS transport and found no adverse effect on patient outcomes.

The weight of the evidence supports the conclusion that, for the vast majority of EMS call types, reducing or eliminating RLS response does not compromise patient safety. This information would likely be considered useful for conversations with stakeholders who hold on to traditional thinking that arriving faster is in the best interest of patients, and therefore inappropriately assume that arriving later must lead to worse outcomes or missed opportunities for critical interventions.

5. National Organizational and Regulatory Context

The movement toward evidence-based, targeted RLS use is not a fringe position. It represents the current consensus of national EMS leadership and well over two decades of literature in support of the concept. Key markers of this consensus include:

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- The NHTSA Office of EMS commissioned and published Kupas, D.F. (2017). Lights and Siren Use by Emergency Medical Services (EMS): Above All Do No Harm, the most comprehensive federal review of this topic to date, resulting in specific recommendations for states, regions, and agencies to reduce RLS use based on evidence.
- The National EMS Quality Alliance (NEMSQA) established NEMSQA Safety-01 (Use of Lights and Sirens During Response to Scene) as a formal EMS quality performance measure, with higher scores (lower RLS use rates) indicating better quality. NEMSQA has noted that the Safety-01 and Safety-02 measures "may have the strongest evidence of any measure in the EMS Compass 2.0 Measure Set."
- NEMSQA launched a national Lights and Siren EMS Quality Improvement Partnership (EQIP) Collaborative enlisting 50 diverse EMS agencies to operationalize the evidence and develop best practices for reducing RLS use across varied system models.
- The Kupas et al. (2024) *Joint Position Statement on EMS Performance Measures Beyond Response Times*, endorsed by 15 national EMS organizations, including NAEMSP, NAEMT, ACEP, NASEMSO, NEMSQA, the American Ambulance Association, and the International Association of EMS Chiefs, explicitly identifies percentage of responses using lights and sirens as a key safety performance indicator, and calls on communities to move beyond response time as the primary EMS performance measure.
- NAEMSP and the National Association of State EMS Directors (NASEMSD) published a joint position statement as early as 1994 recognizing the need for targeted RLS use, a position that has been reinforced repeatedly in the decades since.

6. Moving Beyond Response Time as the Primary Performance Measure

A critical context for this advisory is the broader national movement to modernize how EMS system performance is measured. The 2024 Joint Position Statement on EMS Performance Measures Beyond Response Times (Kupas et al., endorsed by 15 national organizations) articulates this clearly: while response time remains an important measure for high-acuity calls, it has become an inadequate and potentially harmful primary metric for overall EMS system quality.

The joint statement notes that the majority of 911 EMS responses do not require a response time under ten minutes, and that sole reliance on response time performance increases EMS costs, increases the risk of vehicle crashes, and prevents communities from evaluating the clinical, safety, equity, experiential, and financial measures that more accurately reflect EMS system quality.

The five performance domains recommended in that statement are Effective, Safe, Satisfying, Equitable, and Efficient. RLS utilization rate is explicitly listed as a key safety performance indicator within the Safe domain. EMS systems that track and reduce unnecessary RLS use are demonstrably performing better on an evidence-based safety measure endorsed by virtually every major national EMS organization.

Arkansas EMS agencies and the communities they serve should understand that moving away from reflex RLS response and toward evidence-based response mode decisions is not a step backward—it is alignment with the current national standard for high-performing EMS systems.

D. Recommended Framework for Agency Evaluation

The EMSAC recommends that Arkansas EMS agencies interested in evaluating their RLS practices use a structured, stepwise, data-driven methodology. The following framework, grounded in the Jarvis et al. (2021) approach, provides a practical starting point.

1. Define Life-Saving Interventions for Your System

Each agency, in collaboration with its physician medical director, should define what constitutes a Life-Saving Intervention (LSI) for their system. This should reflect the agency's scope of practice, available interventions, and local clinical protocols. A reasonable starting point is to include interventions that are specifically intended to reverse an immediately life-threatening condition—such as CPR, defibrillation, naloxone administration for respiratory arrest, dextrose for hypoglycemia with altered mental status, intubation, needle decompression, and epinephrine for anaphylaxis—but agencies should develop their own consensus-based list with their medical director.

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2. Analyze Agency-Specific Call Data

Using the agency's electronic health record (EHR) or patient care report (PCR) data, stratify calls by dispatch call nature and calculate the rate at which an LSI was performed for each call nature. This analysis should:

- Be performed using the agency's own data, not national averages, because dispatch protocols, population demographics, call mix, and available interventions vary significantly between systems.
- Use dispatcher-assigned call nature (not provider impression or chief complaint), since call nature is the information available at the time the response mode decision is made.
- Be performed over a sufficiently large sample period (typically at a minimum of 12 months of data) to account for seasonal and call volume variation.
- Be reviewed and validated by the agency's medical director and quality improvement leadership.

3. Evaluate Your Dispatch Determinants and Response Matrix

Agencies using an established Emergency Medical Dispatch (EMD) protocol system should review how their dispatch determinants correlate with LSI rates. Many modern EMD systems assign response priorities that can be directly linked to RLS or non-RLS responses. Agencies should:

- Review whether their current response matrix (which dispatch determinants trigger RLS response) is supported by their own LSI data.
- Identify call natures or dispatch determinants with very low LSI rates that may be candidates for non-RLS response.
- Ensure that call natures with high LSI rates (cardiac arrest, respiratory arrest, anaphylaxis, and similar) retain RLS response.
- Engage their EMD system vendor, if applicable, for guidance on response matrix configuration based on LSI data.

4. Engage Stakeholders Before Making Changes

No Arkansas EMS agency should implement changes to RLS response protocols without first engaging the relevant stakeholders. Depending on agency structure and governance, this will likely include, but not limited to:

- The agency's physician medical director (whose approval of clinical protocols is required).
- Local governing bodies—city councils, county commissioners, quorum courts, or other oversight entities—particularly where response time requirements are embedded in contracts or ordinances.
- First response partner agencies. For agencies that function as the transporting provider and rely on fire or other first responders to arrive before them, changes to RLS response mode have implications for those partners. Their operational and contractual situations must be considered, and their input sought.
- Hospital partners and medical oversight committees.
- Community stakeholders, including local government, public safety leadership, and community members, who deserve transparency about the evidence and about any operational changes being considered.
- Medicare, Medicaid, commercial insurance, and other payors, who may inaccurately claim that responding without RLS may serve as a proxy for emergency vs non-emergency coding.

This advisory is explicitly intended to provide agencies with the evidence they need to initiate these stakeholder conversations. The data, references, and national position statements contained in this document are appropriate to share directly with governing bodies, contracted entities, and community partners.

5. Implement, Monitor, and Reassess

Agencies that implement changes to RLS response practices should:

- Establish baseline RLS utilization rates before implementation, using NEMSQA Safety-01 methodology or equivalent.
- Track RLS utilization rates over time as a safety performance measure.
- Monitor for any changes in clinical outcome indicators for affected call types.
- Track ambulance crash rates and personnel injury data before and after implementation.

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- Conduct regular QA review of calls where non-RLS response was used to confirm appropriate dispatch prioritization and clinical performance.
- Report results to agency leadership, medical director, and relevant governing bodies on a regular basis.

E. End Goal and Recommendations

The end goal of this advisory is to improve safety for EMS personnel, patients, and the public in Arkansas by supporting evidence-based, targeted RLS response practices—while preserving rapid RLS response for the call types where it is most likely to matter. Specific recommendations:

1. The Arkansas Department of Health, Section of EMS, should disseminate this advisory and its supporting evidence to Arkansas EMS agencies as an educational and quality improvement resource.
2. Arkansas EMS agencies are encouraged to analyze their own call-type-specific Life-Saving Intervention rates to determine which dispatch call natures may be appropriate candidates for non-RLS response.
3. RLS use should be treated as a clinical intervention requiring deliberate risk-benefit analysis, rather than a default operational practice. The question “Is there evidence that faster arrival for this call type is likely to change patient outcome?” should guide response mode decisions.
4. Agencies should evaluate their dispatch determinants and response matrices in the context of their LSI data, and update their response protocols accordingly, with medical director approval.
5. RLS utilization rate (NEMSQA Safety-01: Use of Lights and Sirens During Response to Scene) should be tracked as a standard safety performance measure by Arkansas EMS agencies.
6. Agencies considering implementation of reduced-RLS protocols should engage all relevant stakeholders—medical director, governing body, contracted entities, first response partners, and community stakeholders—before making operational changes.
7. The Section of EMS should consider incorporating RLS utilization as a safety quality indicator in statewide EMS quality improvement activities and reporting frameworks.

F. Scope, Limitations, and Important Clarifications

The EMSAC wishes to be explicit about the scope and limitations of this advisory:

- This advisory addresses EMS response to the scene of a 911 call only. It does not address patient transport mode. Decisions about whether to transport a patient with or without RLS involve a different set of clinical, safety, and operational considerations and are not within the scope of this document.
- This advisory is not a state mandate. The Arkansas Department of Health Section of EMS does not require any agency to adopt reduced-RLS response protocols. Adoption is a local decision that must be made through appropriate stakeholder processes.
- This advisory is particularly relevant to agencies engaged in tiered response models, where the question of response mode can be evaluated independently for different tiers or unit types. However, the evidence and framework are applicable to any agency regardless of system design.
- Agencies that serve rural areas with longer response times, lower call volumes, or limited dispatch information systems may face different operational considerations. The EMSAC acknowledges this variability and encourages agencies to apply the framework to their specific context rather than relying solely on national averages.
- Nothing in this advisory should be interpreted to suggest that RLS response should be eliminated. Cardiac arrest, respiratory arrest, anaphylaxis, active major hemorrhage, and other immediately life-threatening conditions continue to warrant RLS response. The goal is targeted, evidence-based use—not blanket elimination.

G. Payor Considerations: Response Mode is Not a Determinant of Claim Validity

1. The Legal and Regulatory Standard: Patient Condition, Not Response Mode

One of the most significant practical concerns raised by EMS agencies considering evidence-based reductions in RLS response is the potential for payors to deny or downgrade ambulance claims on the basis that no RLS

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response was used. The EMSAC addresses this concern directly: under established federal and state law, the validity and reimbursement level of an ambulance claim are determined by the patient's clinical condition at the time of dispatch and transport — not by the operational response mode of the responding unit.

Under the Medicare Ambulance Fee Schedule and its implementing regulations (42 CFR §410.40 and §414.605), the distinction between emergency and non-emergency transport — and the applicable HCPCS billing code — is determined by whether the patient's medical condition at the time of dispatch was such that transport by any other means would endanger the patient's health. The use of lights and sirens is explicitly not part of this definition. As the CMS Medicare Ambulance Fee Schedule guidance and published billing resources confirm, emergency transport billing (e.g., A0427 for ALS-emergency, A0429 for BLS-emergency) applies when the patient's condition requires it — regardless of whether the crew drove with or without RLS. An agency that responds without RLS to a patient who is found to be having a STEMI, a stroke, or a serious respiratory emergency has provided emergency-level care and is entitled to bill accordingly, based on what was found and what was done — not on how the unit drove to the scene.

For commercial and Medicaid payors, the applicable standard is similarly patient-centered. Under the Affordable Care Act's "prudent layperson" standard, health plans are required to cover emergency services when a prudent layperson with average knowledge of health and medicine would have reasonably believed that the absence of immediate medical attention could result in serious jeopardy — a determination that also rests on the presenting complaint and clinical picture, not on what response mode the ambulance used. A payor that denies or downgrades a claim solely because the responding unit did not use RLS is applying a standard that has no basis in federal law, CMS policy, or established medical necessity criteria.

2. The Perverse Incentive: RLS as a Billing Proxy

A significant and underappreciated problem in EMS billing practice has been the informal use of RLS response mode as a proxy for emergency billing classification. Some EMS billing services and agencies have historically used whether a unit responded with lights and sirens as a shorthand for selecting emergency versus non-emergency billing codes — an approach noted in national reporting on the topic. This practice is clinically and legally incorrect, and it creates a dangerous incentive structure: if agencies believe that billing for emergency-level care requires RLS response, they face a financial disincentive to reduce RLS use even when the evidence supports doing so.

The correct standard — under Medicare, Medicaid, and commercial plans — is that the billing level is determined by (a) the patient's presenting condition and clinical need, and (b) the level of care and interventions actually provided by the EMS crew. An ALS crew that responds without lights and sirens and upon arrival finds and appropriately treats a patient with an acute alteration in mental status, chest pain with hemodynamic compromise, or severe respiratory distress has provided ALS-level emergency care and should bill accordingly. The absence of RLS response is irrelevant to that determination. Arkansas EMS agencies should review their billing practices and ensure that response mode is not being used, explicitly or implicitly, as a proxy for billing classification.

3. Payors Do Not Reimburse Life-Saving Interventions — They Reimburse EMS Assessment and Care

A foundational point that must be clearly articulated in any payor conversation is this: the threshold for RLS response — which this advisory frames as the performance of a Life-Saving Intervention — is a much higher clinical bar than the threshold for covered ambulance services. Payors, including Medicare, reimburse EMS for the medical assessment and care of patients whose condition warrants ambulance transport. They do not reimburse only for calls where a life-saving intervention was performed.

To illustrate: a patient who calls 911 for chest pain, is assessed by an ALS crew, has a 12-lead ECG performed that rules out STEMI, and is transported for further evaluation may not receive a "life-saving intervention" as defined for RLS response analysis — but that call is appropriately billed as ALS emergency transport, and Medicare and most commercial payors will cover it when properly documented. The clinical need for EMS assessment and transport exists independently of whether an LSI was ultimately required. Reducing RLS response for a call type with a low LSI rate does not change the medical necessity of the patient's condition; it changes only the operational decision about how fast the unit drove to arrive. These are separate determinations entirely.

Stated plainly for use in payor conversations: the fact that only 6.9% of RLS responses in national data resulted in a life-saving intervention (Jarvis et al., 2021) does not mean that 93.1% of those calls were not medically

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necessary EMS responses. It means that the vast majority of patients who called 911 needed EMS assessment, monitoring, and often transport — but did not require the specific high-acuity interventions that would have made faster arrival through RLS clinically relevant. These are covered services. Payors have been and should continue to reimburse them regardless of the response mode used by the ambulance.

4. Responding to Payor Denials or Inquiries Based on Response Mode

If an Arkansas EMS agency implementing evidence-based RLS reduction encounters a payor that denies or threatens to deny claims on the basis of non-RLS response, the agency should be prepared to respond with the following arguments, supported by the documentation cited in this advisory:

- Response mode is not a coverage criterion. Neither CMS, nor any Medicare Local Coverage Determination (LCD), nor the standard medical necessity framework used by commercial payors includes RLS response as a criterion for coverage or billing level. Denying or downgrading a claim on this basis has no regulatory or clinical foundation.
- Medical necessity is determined by patient condition and clinical documentation. The PCR/ePCR documents the patient's presenting condition, clinical findings, interventions, and the clinical justification for ALS or emergency-level transport. A well-documented PCR that supports medical necessity stands on its own, independent of whether the unit drove with lights and sirens.
- Reduced RLS use is a patient safety improvement supported by 15 national organizations. The agency's response practice reflects adherence to evidence-based safety standards endorsed by NAEMSP, NEMSQA, ACEP, NASEMSO, the American Ambulance Association, and others. A payor policy that effectively penalizes compliance with national patient safety standards would be deeply inconsistent with payor mission and public health goals.
- Requiring RLS response as a condition of coverage would create a public safety hazard. If payors establish a de facto policy that only RLS responses are reimbursable, they create a direct financial incentive for agencies to use emergency driving for calls that do not clinically warrant it — increasing the risk of ambulance crashes, injuries, and deaths. No responsible health plan should create such an incentive.
- EMS is reimbursed for assessment and care, not for LSIs. Payors have historically covered, and should continue to cover, EMS services for patients whose condition warranted EMS response and transport — regardless of whether a specific high-acuity intervention was performed. A patient with syncope, altered mental status, or respiratory distress who is assessed, monitored, and transported by an ALS crew has received covered ALS services. The response mode is irrelevant to this determination.

Agencies encountering systematic payor pushback on this issue should document the denial rationale carefully, appeal through standard channels with supporting clinical documentation, and consider engaging their medical director, the resources at the Arkansas Department of Health Section of EMS, and legal counsel familiar with EMS reimbursement law if the issue is not resolved at the payor level. Pattern denials based on response mode, if they occur, represent a payor policy concern that may warrant escalation to state insurance regulators.

H. Regulatory Authority

The Arkansas Department of Health and the Section of EMS have regulatory authority to provide guidance, encourage quality improvement initiatives, and establish best practice recommendations for EMS agencies operating within the state. Individual EMS agencies maintain operational control of their response protocols under physician medical direction. This advisory does not alter those authorities. It operates within the existing advisory and quality improvement function of the EMSAC.

I. Existing Guidance and Gap Analysis

National guidance on this topic is substantial and well-established. The NHTSA commissioned report (Kupas, 2017), the NAEMSP/NASEMSD joint position statement, the NEMSQA Safety-01 and Safety-02 performance measures, the NEMSQA Lights and Siren EQIP Collaborative, and the 2024 multi-organizational Joint Position Statement on EMS Performance Measures all provide clear evidence-based direction supporting targeted reduction in RLS use.

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The gap in Arkansas is the absence of a statewide advisory translating these national recommendations into a practical, Arkansas-specific resource for EMS agencies. Many agencies are aware of the national literature but lack the internal resources to develop a stakeholder engagement framework or a systematic approach to analyzing their own LSI data. This advisory provides that framework and serves as a reference document that agencies can share directly with governing bodies and community partners to support evidence-informed local decision-making.

J. Implementation Considerations

Successful implementation of evidence-based RLS response practices, where agencies choose to pursue it, will require:

1. Access to quality call data: Agencies must have access to dispatch call nature data linked to PCR/EHR intervention data to perform the LSI rate analysis. Agencies without robust data systems should prioritize data quality improvement as a prerequisite.
2. Medical director leadership: The physician medical director plays a central role in defining LSIs, reviewing data, approving protocol changes, and providing clinical credibility in stakeholder discussions.
3. EMD system review: Agencies using an EMD protocol system should work with their protocol vendor and medical director to align dispatch priority assignments with LSI data.
4. Stakeholder education: Governing bodies and community partners often have misconceptions about the relationship between response time and patient outcome. Providing clear, accessible summaries of the evidence—including the data in this advisory and its references—is essential to productive stakeholder engagement.
5. Incremental implementation: Agencies may choose to implement changes incrementally, beginning with the call natures with the lowest LSI rates, rather than modifying all response modes simultaneously.
6. Continuous quality improvement: RLS utilization rates and clinical outcome data should be monitored continuously, with regular reporting to medical direction and governance.

K. Conclusion

The evidence is clear and consistent: routine, reflex use of red lights and sirens for the majority of 911 responses imposes significant and documented risk on EMS providers, patients, and the public, while providing minimal clinical benefit for most call types. The national EMS leadership community has reached broad consensus on this point, and that consensus is reflected in formal position statements, quality performance measures, federal guidance, and active national quality improvement initiatives.

The Arkansas EMS Advisory Committee is not asking agencies to abandon RLS response. Rapid response with lights and sirens remains essential for cardiac arrest, respiratory arrest, and a relatively small number of other time-critical emergencies where the evidence supports a plausible connection between faster arrival and improved outcome. The EMSAC is asking agencies to look critically at their data, ask honest questions about where RLS response is and is not supported by evidence, and engage their stakeholders in an evidence-based conversation about modernizing response practices, in an effort to improve safety for EMS providers and other civilians on the roadway.

The decision to change response practices belongs to each agency and its community. The EMSAC is providing the evidence that makes that conversation possible.

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