Evaluation of a Behavioral Health Emergency Disposition Hierarchy: An Ordinal Crisis Resolution and Restrictiveness Index

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Executive Summary

Traditional emergency medical services (EMS) often lack the specialized infrastructure required to effectively manage acute behavioral health crises, routinely defaulting to high-cost, low-yield emergency department (ED) transport. This study evaluated the operational efficacy of the Las Cruces Fire Department's LIGHT (mobile crisis) co-response model compared to traditional EMS units between January 1, 2026, and September 30, 2026.

Using a sample of 625 acute psychiatric and suicide attempt/anxiety encounters, outcomes were mapped to an 8-point ordinal Behavioral Health Emergency Disposition Hierarchy (scores 0–7). A Chi-square test of independence revealed an exceptionally strong association between the intervention group and the resulting disposition profiles, X^2 (7, N = 625) = 329.88, $p < .05$, Cramer's V = .73. The LIGHT co-response framework demonstrated a clear superiority in achieving community-based deflection, tripling specialized crisis network placements and significantly reducing both ED dependence and high-risk system failures.

Methodology

Research Design and Context

This evaluation utilized a retrospective, cross-sectional, quasi-experimental design to analyze emergency dispatch data from the Las Cruces Fire Department. The study period spanned nine months (January 1, 2026, to September 30, 2026). The evaluation was grounded in the Substance Abuse and Mental Health Services Administration (SAMHSA) National Guidelines for Behavioral Health Crisis Care, which advocates for a "right care, right place, right time" operational paradigm. Additionally, the framework aligns with legal precedents established by the 1999 U.S. Supreme Court ruling in Olmstead v. L.C., which mandates that individuals with disabilities receive care in the least restrictive environment possible.

Participants and Sampling

The total sample consisted of N = 625 distinct emergency encounters meeting strict inclusion criteria:

- The dispatch record must have originated within the designated timeframe.
- The complaint type must have been verified as a behavioral health emergency, specifically categorized as a Psychiatric/Suicide Attempt/Anxiety incident.
- The primary responding unit must have been clearly identified as either a standard EMS unit (n = 453) or a specialized LIGHT mobile crisis unit (n = 172).

Instrumentation: The Disposition Hierarchy

Outcomes were classified using an ordinal crisis resolution scale ranging from 0 (most restrictive/system failure) to 7 (least restrictive/optimal outcome). The scale is grouped into four distinct clinical categories:

(Optimal) The Gold Standard Deflected from the hospital/jail; stabilized in the least restrictive environment. *The primary benchmark of mobile crisis success*		
Treat In Place	7	Maximize
(Favorable) Specialized Higher Care Successful connection to specialized mental health infrastructure. Right care, right place. *Appropriate for high acuity safely*		
In-patient Behavioral Health Hospital Crisis Triage Center	6 5	Utilize
(Sub-Optimal) The ED Continuum Over-utilization of acute medical infrastructure; high cost; potential for long boarding times. *Shift these patients toward specialized resources*		
Emergency Department (in-house BH services) Emergency Department (tele BH services) Emergency Department (no BH services)	4 3 2	Divert
(Unresolved/High Risk) System Failures/Avoidance Crisis unresolved; high risk of immediate 911 recidivism or criminalization. *Target for root-cause analysis*		
Patient/Parent Refusal Against Medical Advice Police Custody	1 0 0	Minimize

Program Staffing and Operational Deployment

The stark divergence in disposition profiles is fundamentally driven by the contrasting staffing matrices and operational scopes of the two responding arms:

- Traditional EMS Units: Standard EMS units are staffed by Paramedics and Emergency Medical Technicians (EMTs). While highly proficient in advanced life support (ALS) and stabilizing acute physiological trauma, these clinicians are bound by structural and regulatory limitations. They lack specialized, advanced psychiatric diagnostic training and operate under protocols that legally mandate transport to an emergency department for medical clearance if a patient cannot safely be left on scene.
- The LIGHT Co-Response Model: The LIGHT unit utilizes an interdisciplinary mobile crisis team designed to bridge the gap between public safety and clinical behavioral medicine. Each unit is systematically staffed by two core professionals:
    - Licensed Mental Health Professional: A licensed clinician (such as an LMSW or LCSW,) trained in acute de-escalation, psychiatric diagnostic impressions, safety planning, and crisis psychotherapy.
    - Dedicated Emergency Medical Responder: A firefighter/paramedic or a specially trained crisis medical technician who assesses physical vitals and screens for complicating medical conditions (such as drug toxicity, metabolic imbalances, or minor self-harm trauma).

This pairing allows the LIGHT unit to provide definitive clinical care in the field. The LMSW can conduct immediate, on-scene psychosocial risk assessments, authorize direct placement into non-hospital psychiatric centers, or stabilize the individual in place with an active outpatient safety plan—options completely unavailable to traditional EMS crews.

Findings

Statistical Analysis

A Chi-square test of independence was executed to examine the relationship between the responding intervention group (EMS vs. LIGHT) and the resulting categorical disposition scores. The relationship between these variables was statistically significant, χ^2 (7, N = 625) = 329.88, $p < .05$. The calculated Cramer's V was .73, indicating a very strong effect size.

Distribution Profiles

The observed frequencies reveal a stark, visually profound divergence in how patients are processed through the emergency system:

Frequency Distribution of Patients through the Crisis Resolution Index

N = 625	EMS		LIGHT	
7	**0**	**0.0%**	**65**	**37.8%**
6	**0**	**0.0%**	**36**	**20.9%**
5	**52**	**11.5%**	**19**	**11.0%**
4	**171**	**37.7%**	**30**	**17.4%**
3	**91**	**20.1%**	**7**	**4.1%**
2	**54**	**11.9%**	**2**	**1.2%**
1	**46**	**10.2%**	**10**	**5.8%**
0	**39**	**8.6%**	**3**	**1.7%**
Total	***453***		***172***	

- LIGHT Group Performance: Participants in the LIGHT cohort skewed heavily toward higher-performance tiers. A striking 37.8% achieved the optimal "Gold Standard" of being treated and stabilized in place (Score 7), while 20.9% were directly utilized within in-patient behavioral health environments (Score 6) and 11% in specialized higher care (Score 5).
- EMS Group Performance: Traditional EMS responders were heavily concentrated in the mid-to-lower tiers, demonstrating a rigid reliance on the emergency department. Specifically, 37.7% of all EMS dispositions resulted in an ED transport to facilities with in-house behavioral health services (Score 4), and nearly 70% of all encounters were absorbed by the broader ED continuum (Scores 2–4).
- High-Risk Outcomes: EMS encounters resulted in high-risk system failures (Scores 0–1) 18.6% of the time, representing a risk profile more than double that of the LIGHT team (7.6%).

Discussion

The statistical findings demonstrate that the LIGHT co-response model represents a significant paradigm shift from traditional emergency management. By introducing specialized clinical assets at the initial point of contact, the program fundamentally reshapes how acute psychiatric crises are managed in the field.

Clinical Efficacy and Diversion Dynamics

The core success of the LIGHT model is reflected in its ability to achieve community-based deflection. While traditional EMS units defaulted to emergency department transport in nearly 70% of cases, the LIGHT model limited ED exposure to 22.7%, representing a 67% relative reduction in ED dependence.

Furthermore, the LIGHT unit successfully established a "warm handoff" network, tripling specialized crisis placements (Scores 5 and 6) compared to EMS. Connecting patients directly to acute stabilization units or crisis triage centers ensures that individuals receive specialized psychiatric care immediately, bypassing the chaotic and counter-therapeutic environment of a traditional medical emergency room.

Economic and Cost-Saving Implications

The societal and systemic financial benefits of diverting 67% of behavioral health emergencies away from the ED continuum are substantial. In standard emergency medicine, psychiatric patient boarding represents a disproportionate drain on hospital resources due to long lengths of stay and intensive staffing requirements.

According to national healthcare economic metrics published by the Agency for Healthcare Research and Quality (AHRQ), the average cost of a mental health-related emergency department visit is approximately $1,200 to $1,500 for basic evaluation and boarding, excluding ambulance transport fees. When accounting for ambulance transport, medical clearance labs, and extended boarding times, the systemic cost per encounter easily exceeds $2,200 per individual.

Systemic Emergency Care Costs Per 100 Encounters

Traditional EMS:.....$153,340

LIGHT Model:.....$49,940

Net Savings: .....$103,400 (67.4% Reduction)

Applying these parameters to the study cohort illustrates the clear return on investment (ROI) generated by the LIGHT initiative:

- MS Cohort (n = 453): With 69.7% (316 patients) routed directly into the ED continuum (Scores 2–4), this single response method absorbed approximately $695,200 in localized healthcare and emergency medical infrastructure costs.
- LIGHT Cohort (n = 172): By holding ED-reliant outcomes to just 22.7% (39 patients), the LIGHT model generated an estimated emergency care cost of only $85,800.

If the 453 patients originally handled by EMS had instead been managed under the LIGHT co-response framework, the ED diversion rate predicts that only 103 patients would have required hospital transport rather than 316. This shift would have diverted 213 patients away from the ED, yielding an immediate localized healthcare cost savings of approximately $468,600 over just a nine-month window. This financial relief directly reduces uncompensated hospital care burdens and frees

up vital municipal emergency medical resources to handle life-threatening physical traumas.

Limitations

While the statistical evidence strongly validates the LIGHT co-response model, several critical limitations must be factored into the interpretation of these data:

- Jurisdictional Constraints: The data was pulled exclusively from the Las Cruces Fire Department. The findings may not completely generalize to rural municipalities or large metropolitan areas with vastly different medical infrastructure.
- Non-Random Assignment: Because this study relies on retrospective field data, patients were not randomly assigned to responding units. Dispatch protocols and unit availability dictate whether an EMS or LIGHT team arrives on scene, introducing potential selection bias.
- Operational Scope of EMS: Traditional EMS units face structural constraints; their personnel are generally not cross-trained to stabilize behavioral crises in place, and protocols restrict them from transporting patients directly to non-medical psychiatric facilities.
- Temporal Horizon: The study captures a 9-month window in a single calendar year (2026), meaning long-term patient recidivism, long-term stabilization, and potential seasonal fluctuations are unmeasured.

References

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