

66.

**Field Research in EMS:
Who is Doing the Work?***David R. Johnson, MD,* Mark B. Napier*

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Purpose: To determine what types of EMS systems (public vs. private) are contributing to the peer reviewed field research in EMS and what type of research is being done by these agencies.

Methods: A Medline literature search was conducted of all peer reviewed journals using the search terms: EMS, emergency medical services, EMT, paramedic, and ambulance. Studies published between 1976 and 1995 meeting these criteria were reviewed and classified as field or non-field studies. Studies were classified as field studies if they evaluated clinical outcomes or overall EMS system structure and performance. The type of EMS system in which the study was conducted was classified as: public (PB), private (PR), or a mixture of public and private agencies (PP). If the type of system was not evident in the paper, the primary author or EMS agency was contacted by phone. The primary affiliation of the first author was classified as being with: an educational institution, hospital, government agency, or EMS agency. Each study was also classified as being primarily clinical or evaluating EMS system structure. Review articles, editorials, and meta-analyses were excluded as were studies in which critical data elements could not be verified. Fischer's exact test was used for statistical analysis.

Results: A total of 365 studies were evaluated with 66 non-field studies being excluded from analysis. 75 studies did not meet inclusionary criteria. This left 224 studies for analysis. PB systems accounted for 167 (74.5%) of field studies, with PP 44 (19.6%) and PR 13 (5.8%). Clinical studies were more commonly done by PB systems (72.5%) when compared to PR systems (38.5%), $p = 0.02$. System structure studies accounted for the majority of studies done by PR systems (61.5%). An affiliation with an educational institution such as a university occurred in 61.2% of the studies. The number of field studies done by PB systems has increased steadily over the last 10 years while field studies published by PR and PP systems has remained at a low level, with none published from 1992–1994.

Conclusions: The vast majority of EMS field research is done in public EMS systems. These tend to be clinical studies with the principal investigator being affiliated with an educational institution.

71.

**Prospective Evaluation of Criteria Allowing
Paramedics to Treat and Release Patients
Presenting with Hypoglycemia***Robert W. Wolford, MD,^{1,2} William Tisol,^{1,2*} Peter Vasilenko, PhD,^{1,2} Robert M. Domeier, MD,³ Susan Bignall Owensby, MD,^{1,2}*

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Purpose: Criteria (T&R) have been proposed to identify hypoglycemic patients who may be treated in the field and released without transport to the hospital. We prospectively evaluated the validity of these criteria.

Methods: Patients presenting with hypoglycemia (blood glucose [BG] <80 mg/dL) to paramedics of 2 EMS systems were prospectively enrolled and the presence of T&R criteria determined. T&R criteria did not influence transport. Hospital records were reviewed to determine interventions and outcomes.

Results: A total of 151 patients were enrolled (58% male, age 56 years (range 12–94), BG 33 ± 16 mg/dL) and 99 (66%) were transported to the hospital and used to test the T&R criteria. Fifty-six patients (57%) were discharged from the ED and 43 (43%) received additional medications, or were admitted. T&R criteria identified 28 (29%) patients as appropriate for treatment and release. Of these, 5/28 (18%) received additional dextrose 50% (D50) or admission; 3 received D50 (despite normal mental status and documented ED BG >100 mg/dL), and 2 were admitted (transient ischemic attack and 1 hospital day, hypoglycemia and gastroenteritis and 2 hospital days). Sensitivity, specificity, negative and positive predictive values for the T&R criteria were: 41%, 88%, 51%, and 82%, respectively, and 44%, 95%, 54%, and 93%, respectively, if the 3 cases receiving D50 despite BG >100 mg/dL are excluded.

Conclusion: Previously described T&R criteria do identify a population of hypoglycemic patients for field release with a high specificity. However, a small number of patients may require in-hospital care. These criteria require further refinement.