

Methods: The study was approved by the local Ethics Committee. The patients should show clear signs of heroin overdose (coma, miosis, hypoventilation). Blood samples were taken from the patients during the preparation period for the antidote. The patients were informed, after waking, that the samples were taken and hereby given the opportunity to deny further investigation.

Results: A total of 53 patients participated in the study. The male/female ratio was 43/10. The mean age was 24 years (19–46). Of the 44 patients who did respond to the antidote treatment, 40 declined admission to the hospital, and two responders were admitted. In 49 patients, the IV heroin overdose was combined with either alcohol or minor tranquilizers (benzodiazepine).

Characteristics of Patients with IV Heroin Overdose

	Not Hospitalized	Admitted To Hospital
Pure heroin	3	0
Mixed	39	10
Others	0	1
Alcohol >0.2%	9	1
Naloxone ≤1.0 mg	4	2
Naloxone ≥1.8 mg	8	5
Flumazepine	4	3
Morphine >0.2 mg/l	6	1

Conclusion: IV heroin overdose almost always is combined with either alcohol or benzodiazepine abuse. Despite a blood alcohol level above 0.2%, most of the patients respond to the naloxone treatment and reach a state of self-reliance.

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On-Line Medical Direction

Wuerz RC, Holliman CJ, Vazquez-de Miguel G
The Pennsylvania State University
Hershey, Pennsylvania, USA

Objective: To determine how often on-line (direct) medical direction (OLMD) alters therapy in an emergency medical system (EMS) with numerous treatment protocols, and to analyze how time is spent in on-line medical direction.

Design: Prospective study of on-line medical direction over a four-month period.

Setting: A university hospital base-station in a rural setting.

Participants: Ten emergency physicians (EP) gave on-line medical direction to 46 paramedics (EMT-P) in 259 consecutive cases. Fourteen cases were excluded that had incomplete data, leaving 245 cases for analysis.

Interventions: EPs and EMT-Ps were blinded to the study. Radios and closed-circuit televisions were monitored by third-party observers.

Results: The EPs asked EMT-Ps to repeat information in 9% of cases, and to give further information in 23%. Orders for therapy not requested by EMT-Ps were given in 20% of cases. Time intervals for the 245 cases were:

Time Interval	Mean (minutes)	95% C.I.
EP response delay	0.7	0.6–0.7
EMT-P report	2.2	2.1–2.4
EP query and orders	1.2	0.8–1.7
Total radio time	4.1	3.6–4.5
OLMD-Treatment time*	11.9	11.0–12.9

*hospital arrival time minus initial OLMD contact

Time intervals did not vary significantly by EP, EMT-P unit, or call type (trauma, chest pain, other medical). Mean transport interval in this system is 11.9 minutes, the same as the OLMD-treatment interval.

Conclusion: Physician on-line medical direction changes therapy in 20% of cases, requires an average four-minute time commitment per call, and does not delay hospital transport when combined with protocol treatments.

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A Survey to Assess Ambulance Safety Based on Driver Accident Records

Gans L, Welsh S

University of Massachusetts Medical Center
Worcester, Massachusetts, USA

Objective: To evaluate ambulance safety based on driving accident records of prehospital personnel.

Design: Survey.

Setting: One university hospital and one community hospital serving a population of about 600,000 persons in adjacent rural and urban communities.

Participants: Convenience sampling of 100 emergency medical technicians (EMTs) and paramedics upon presentation to hospital.

Interventions: Not applicable. Responses were analyzed and compared on the basis of age, gender, numbers of accidents, driver's education, driving experience, duration of prehospital employment, and type of ambulance service.

Results: Incidence of accidents was correlated positively with years of experience (up to 10 years). Level of driver training was correlated negatively with incidence of accidents. Paid, full-time personnel were far more likely to be involved in an accident when compared to part-time and volunteer personnel. No significant correlations were noted for the other variables assessed.

Conclusion: Based on this small sample, several factors appear related to ambulance accident frequency. A larger study to determine the statistical significance of these may be relevant to EMS programs.