

## Poster Presentations

### POSTER 001.

#### Efficacy of an EMS Quality Improvement Program in Improving Documentation and Performance

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**Objective:** To demonstrate the efficacy of a quality improvement (QI) program in an EMS system.

**Methods:** A QI program was instituted in 1994 for the Salt Lake City, Utah, Fire Department. Monthly random audits of 4% of EMS patient-care reports (PCR) were performed by the medical director and EMS officers following written guidelines. PCRs were evaluated for documentation of response, assessment, treatment, and disposition. Adherence to protocols and acceptability of deviations also were evaluated. Overall documentation and performance were rated according to the above criteria and the evaluator's judgment. Monthly feedback reports were circulated to all providers. Patient-care reports were reviewed with the involved providers if there was unacceptable performance or documentation. Letters of commendation were sent to crews that demonstrated outstanding performance and/or documentation. The medical director and a paramedic officer periodically performed scene observation. Continuing medical education sessions were tailored to address problems identified by the QI audits and scene observation. A total of 822 PCRs was reviewed.

**Results:**

Parameter Evaluated	1993 Baseline (n = 147)	1994 QI Program (n = 822)	Probability (chi square)
Response time acceptable	93%	91%	NS
Scene time acceptable	100%	98%	NS
Transport time acceptable	90%	92%	NS
Protocol followed	87%	93%	p <0.05
Protocol deviation acceptable	35%	78%	p <0.05
Disposition appropriate	90%	96%	p <0.05
Outcome condition reported	60%	93%	p <0.05
Release at scene appropriate	89%	98%	p <0.05
Appropriate signatures obtained	62%	70%	NS
Overall documentation acceptable	50%	85%	p <0.05
Overall performance acceptable	76%	96%	p <0.05
Further review needed	28%	10%	p <0.05

At the end of the study, the rate of acceptable responses remained greater than the mean in 12 of 18 categories, including overall performance and documentation.

**Conclusion:** A QI program can effect significant and sustained improvement in documentation and performance in an EMS system.

### POSTER 054.

#### Comparison of Outcomes of Out-of-Hospital Cardiac Arrest Treated by Two Response Modes in One Urban EMS System

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**Purpose:** To compare the efficacy of paramedic (PM) and EMT-defibrillator/paramedic (EMT-D/PM) response modes in treating out-of-hospital cardiac arrest in one urban EMS system.

**Methods:** Paramedics are first-responders in most arrest calls. EMT-Ds may arrive first if the call is in their area of coverage. One hundred twenty-nine PM first responses to arrests of presumed cardiac etiology and 100 EMT-D/PM responses were retrospectively reviewed and compared for response times, initial rhythms, survival rates, and neurologic outcomes.

**Results:**

Parameter	EMT-D/PM	PM	Probability
Cases	n = 100	n = 129	—
Study period	1988-1993	1992	—
% Male	68	61	NS
Mean Age (yrs.)	69.7	67.5	NS
Response Time (min.)	3.8 ± 1.6	4.6 ± 2.0	p = 0.01
Initial Rhythm:			
V-fib/V-tach	44%	49%	NS
Asystole	40%	25%	p = 0.03
Survival Rates, all rhythms:	(n = 100)	(n = 129)	
ROSC in field	46%	46%	NS
Admitted alive	25%	24%	NS
Discharged alive	11%	06%	NS
Neurologic normal	06%	04%	NS
Survival Rates, V-fib/V-tach:	(n = 37)	(n = 60)	
Admitted alive	32%	28%	NS
Discharged alive	16%	08%	NS
Neurologic normal	11%	07%	NS
Survival Rates, Witnessed V-fib/V-tach:	(n = 24)	(n = 19)	
Admitted alive	38%	32%	NS
Discharged alive	21%	16%	NS
Neurologic normal	17%	10%	NS

Power to detect a two-fold difference in survival rates was <0.3 in any category.

**Conclusion:** Despite a longer mean response time for PMs, no significant differences were found in survival rates or functional outcomes between PM and EMT-D/PM response modes. Beta error was high due to small case numbers. Continuing study is indicated.