

POSTER 051.**Delays in Air EMS Crew Access to Patients After Helicopter Arrival at Trauma Scenes**Pam DeVellis, RN,^{*1} Stephen H. Thomas, MD,^{1,2}Suzanne K. Wedel, MD,^{1,3} William Benevelli, EMT-P¹

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Purpose: Studies warning of delays between ground EMS scene arrival and EMT patient access should be extrapolated to the air EMS setting. The purpose of this study was to characterize prehospital delays in flight crew access to patients at trauma scenes, and determine if flight team patient access delays are caused by problems that potentially can be addressed effectively by air and/or ground EMS systems.

Methods: Trauma-scene responses 10/1992–4/1995 by an urban air EMS service, excluding prolonged patient extractions, were analyzed. The "access" time was defined as the interval between helicopter landing zone (LZ) arrival and flight team access to the injured patient. Flight records were reviewed to determine reasons for delays in flight crew patient access, and descriptive statistics were used to analyze access time intervals.

Results: Access time interval was calculated for 470 of 507 flight records reviewed; 37 records showed no evidence of access delays, but lacked notation of patient access times. Mean interval between LZ arrival and patient access was 3.3 ± 3.5 minutes (mean ± SD, 95% CI 3.0–3.6). The most common explanation for patient access delay was awaiting arrival of ground EMS ambulances that transported patients to LZs or transferred flight crew from LZs to trauma scenes. In this group (n = 39), mean access delay was 11.4 ± 4.1 minutes (95% CI 10.1–12.8).

Conclusions: Even when delays due to patient extrication were excluded, delays in flight-team access to trauma-scene patients often were significant. Further study should focus on means to refine air and ground EMS cooperation at trauma scenes with the goal of minimizing overall prehospital times and streamlining transport to trauma centers, thereby potentially improving outcomes for victims of trauma.

POSTER 057.**Successful Decrease in Air Medical On-Scene Times After Training Emphasis on Rapid Transport**Stephen H. Thomas, MD,^{*1,2} William Benevelli, EMT-P,¹Mary Amatangelo, RN,¹ Suzanne K. Wedel, MD^{1,3}

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Purpose: The importance of minimizing prehospital delays in transporting trauma patients applies to air and ground EMS. This study's purpose was to analyze on-scene times for an air EMS service over a period of four years, during which increasing emphasis was placed on minimizing on-scene times.

Methods: This retrospective study was conducted at an urban air medical transport service using two BK-117 helicopters. Four study periods (July–August scene responses for the years 1991–94) were analyzed. Limitation of analysis to these summertime study periods maximized *n* while avoiding confounding variables inherent to analysis of longer time periods (e.g., winter weather, new flight team hiring). Flights for which patient extrication prolonged air medical on-scene times were excluded from analysis. Mean air medical on-scene times for the four study periods were compared using Kruskal-Wallis nonparametric analysis, as data were not normally distributed; alpha was set at 0.05.

Results: On-scene times decreased significantly over the four years (*p* = 0.044). The decrement in mean on-scene times from July–August 1991 to July–August 1994 was 4.8 minutes. The table below depicts mean (±SD) on-scene times in minutes for the four study periods.

	1991	1992	1993	1994
n	15	27	66	50
mean scene time	14.4 ± 7.7	11.8 ± 10.0	10.0 ± 6.1	9.6 ± 8.5
95% CI for mean	10.1–18.7	7.8–15.8	8.5–11.5	7.1–12.0

Conclusions: This study demonstrates the success of an air ambulance service's streamlining of operational procedures to decrease air medical on-scene times. The decrement of nearly five minutes from 1991 to 1994 represents a potentially clinically important impact on prehospital transport delays.