Association of Prehospital Whole Blood Transfusion with EMS Run Times in Omaha

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Background:

In June 2025, the Omaha Fire Department, in collaboration with Nebraska Medicine and the Nebraska Community Blood Bank, implemented the Omaha metro area's first ground-based prehospital whole-blood transfusion program. Four medic units strategically positioned throughout Omaha carry whole blood. Although this program enables earlier resuscitation of patients with hemorrhagic shock, the limited number and geographic distribution of blood-carrying units could potentially prolong emergency medical services (EMS) response or transport intervals. This study evaluated whether prehospital whole-blood administration was associated with differences in EMS response, scene, transport, or dispatch-to-treatment intervals.

Methods:

We conducted a retrospective matched cohort study of patients who received prehospital whole blood in Omaha between June 1st 2025 through June 1st 2026. Each whole-blood recipient was matched 1:1 with a patient who received crystalloid resuscitation based on sex, age, injury mechanism, trauma activation level, Glasgow Coma Scale score, and prehospital shock index. EMS records were reviewed to determine dispatch-to-scene arrival time, scene time, scene departure-to-hospital arrival time, and dispatch-to-treatment time. Time intervals were compared using the Mann–Whitney U test, with statistical significance defined as $p < 0.05$.

Results:

The study included 10 whole-blood recipients and 12 matched controls. Median response times were 6.7 and 5.6 minutes, respectively ($p = 0.42$). Median scene times were 8.1 and 11.3 minutes, ($p = 0.13$), median transport times were 8.2 and 8.1 minutes ($p = 0.97$), and median dispatch-to-treatment times were 14.8 and 13.4 minutes ($p = 0.89$). No statistically significant differences were identified between groups for any evaluated time interval.

Conclusions:

Prehospital whole-blood administration was not associated with longer EMS response, scene, transport, or dispatch-to-treatment intervals. These preliminary findings suggest that Omaha's four-unit deployment model can provide prehospital whole blood without measurably disrupting EMS operational times. Additional studies should evaluate clinical outcomes and program performance as utilization expands.