Introduction:
In many venues, EMS crews limit on-scene care for pediatric out-hospital cardiac arrest (POHCA), attempting treatment during transport. Hypothesizing that neuro-intact survival can be improved by prioritizing on-site care, strategies were effected to expedite on-scene drug delivery and intubation (with controlled ventilation).

Methods:
From 1/1/2012 to 4/30/2017, data for POHCA cases were collected. In 2014, new training prioritized on-site resuscitation (Phase I) using expedited drug delivery and intubation with controlled ventilation (~6 breaths/min). Training included psychological and skills-enhancing tools to boost confidence in providing on-scene care. In 2016, drugs were prepared while responding (Phase II). 2010 American Heart Association guidelines were used throughout and no other modifications were made. Neuro-intact survival in 2012-13 was compared to Phase I & II outcomes.

Results:
Over the 5.33-years, EMS faced 143 consecutive POHCA cases. The great majority presented in asystole throughout. In those resuscitated, mean time from on-scene arrival to the 1st epinephrine infusion fell from 16.5 min (2012-13) to 7.3 min (Phase I) and 5.0 min (Phase II). By 2017, it was 2 min. for resuscitated patients and 3.33 min. for all patients. Intubation and intraosseous insertion occurred more frequently in Phase I/II, but there were no significant differences in age, sex, etiology, response times, bystander CPR or drug sequencing. Neuro-intact survival improved significantly from 0/38 in 2012-13 to 23.2% (13/56) in Phase I and 34.7% (17/49) in Phase II (p < 0.0001; 2-tailed Fisher’s exact test).

Conclusion:
Although historically-controlled, the sudden appearance of neuro-intact survivors following a renewed focus on rapid on-site care was profound, immediate and sustained. Beyond skills-enhancing strategies, physiologically-driven techniques and supportive encouragement from leadership, pre-arrival psychological and clinical tools were also likely contributors to the observed outcomes.