Entry 3

Form "2017 Letter of Intent - EAST Multicenter Trial Junior Investigator Award"

[redacted]

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Institutional Affiliation	Children's Hospital Los Angeles / University of Southern California Keck School of Medicine
Position	Assistant Professor of Surgery
Date Training Completed	6/30/2015
I am a current member of EAST	Yes
Full Name	Jeffrey S. Upperman
Institutional Affiliation	Children's Hospital Los Angeles / University of Southern California Keck School of Medicine
Position	Associate Professor of Surgery
My mentor is a current member of EAST	Yes
Full Name	
Institutional Affiliation	
Position	
My sponsor is a current member of EAST	
Background	As the leading cause of mortality in children, pediatric trauma remains a critical target for program improvement and research. Simulation-based training for pediatric trauma resuscitation has become increasingly popular with single-center data suggesting improvement in team performance, but translation to clinical outcomes and multi-center implementation data are lacking. The characteristics of training and outcomes of team performance across centers utilizing simulation are not known.
Specific Study Aim 1	To understand variability in management of acute traumatic brain injury in pediatric patients across multiple centers.
Specific Study Aim 2	To understand variability in team performance as a function of simulation implementation factors (in center versus in situ, announced versus unannounced).
Specific Study Aim 3	Understand organizational characteristics related to implementation of simulation-based training including perceived characteristics of intervention and organizational climate scales.
This study is	Prospective
Study Population	Multidisciplinary trauma resuscitation teams at trauma centers in the US and Canada that utilize simulation-based training for pediatric trauma resuscitation.
Intervention	Centers will implement a standard scenario of traumatic brain injury using high fidelity simulation on three separate occasions with three different teams. Implementation will be per the centers' usual practice (in center or in situ) and characteristics of implementation will be recorded.

Data Collection	Data related to process measures (time to intubation, time to CT, time to mannitol or 3% NS) and team performance (trauma NOTECHS) will be collected with each simulated resuscitation. Furthermore, centers will complete self assessment of implementation factors including 1) Perceived characteristics of Intervention and 2) Implementation Climate Scale.
Data Collection software to be used:	REDCap
Data Analysis	Variability in resuscitation process measures will be assessed between teams at each center and this variability will be compared to pooled variability between centers. Between center variability will be analyzed relative to implementation characteristics at each center to identify training methodologies associated with improved team performance.
Sample Size & Power Estimates	Variability within centers or between centers is not known so power analysis is not possible. We have five enters currently in agreement to participate and will expand centers as interest allows.
Potential Limitation 1	Completion of three simulated resuscitations may be difficult for centers to complete. We are limiting this study to centers with in place programs that have demonstrated the ability to use this training.
Potential Limitation 2	
Potential Limitation 3	
Long-Term Research Plans & Goals	My long term research plan is to create a simulation 'registry' that can track details of simulation-based team training at trauma centers to be correlated to outcomes data and process metrics in the TQIP database. This initial study to understand variability in training will provide a framework to set up this registry.
Long-Term Investigator Research Plans	I plan to apply for a K23 in the next two years focusing on Implementation Science aspects of simulation-based training for pediatric trauma resuscitation. My long term goal is to submit a multicenter R-award for the creation of a national simulation registry with standardized scenarios (potentially standardized through the ACS Accredited Education Institutes) and standardized data points that can then prospectively be correlated with TQIP clinical data to better understand the optimal training factors (training location, frequency, scenario, and other factors) that lead to improved clinical outcomes.
I have read & meet all award criteria	Yes