

Improved Decision Making in Transport of Hypoxemic Patients

Using CQI Processes

Todd Costa, MSN, RN, CEN, CPEN, Linda Verraster, RN, BSBA,
 Brandon Grinstead, BA, NREMT-P, Claus Hecht, MD, FACEP
 Orange County Fire Authority EMS Division



Background

- COVID-19 exacerbated many underlying problem in EMS.
- A novel virus and increased call volume increased stress on prehospital providers and EMS agencies.
- Vague or opaque language leads prehospital providers to interpret protocols and transport requirements differently.

Problem

- The risk of under-triaging and selecting an inappropriate level of transport can be detrimental to patient care.

Purpose

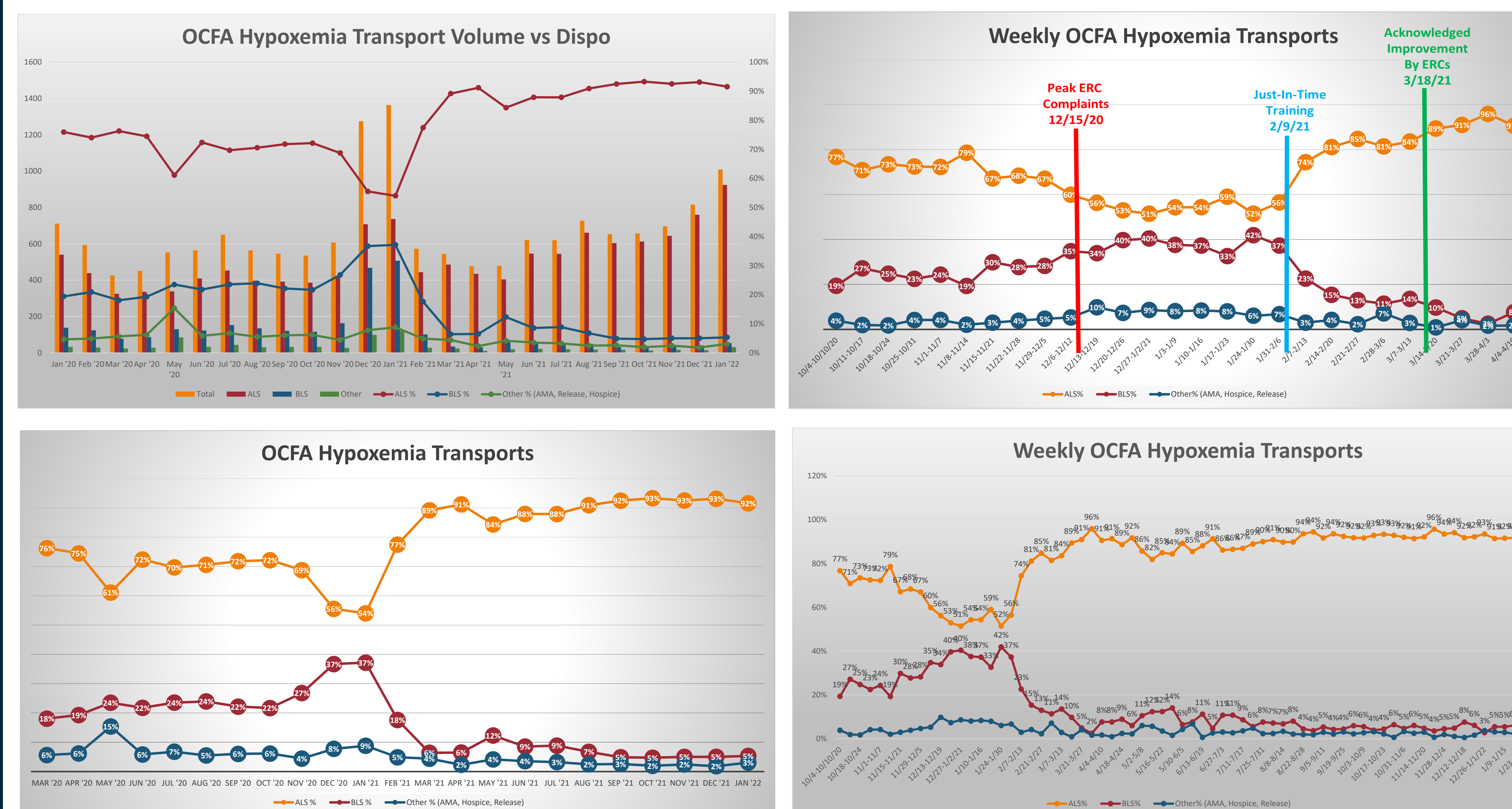
- To utilize continuous quality improvement (CQI) processes to improve identification and transport of acute respiratory patients in the prehospital system.



Methods & Interventions

- A quality improvement project was developed and monitored over a 2-year period (2020-2022), tracking compliance of ALS transport on patients who were found to have an SpO2 <95% on initial paramedic exam
- New Department standard was established and deployed using Just-in-Time training. Feedback was provided to crews using established CQI channels to reinforce compliance with protocol.
- Patient care records that met inclusion criteria (n-16718) were reviewed for compliance with the interventional protocol. Exclusion criteria included history of known baseline SpO2<95% without respiratory symptoms.

Graphics



Results

- Pre-intervention data identified 8840 patients who met hypoxemia inclusion criteria. 5879 (67%) patients were transported ALS (appropriately triaged), 2342 (26%) were transported BLS, and 619 (7%) had a non-transport disposition.
- Post-intervention data revealed 7878 patients qualified for the hypoxemia protocol. 7660 (90%) patients were transported ALS (appropriately triaged), 576 (7%) were transported BLS, and 236 (3%) had a non-transport disposition.
- A chi-squared goodness of fit test found the proportions of utilization differ between pre- and post-intervention groups, $\chi^2 (2, N=16718) = 239.66, p < .0001$.

Significance to EMS

- Prehospital providers work in dynamic settings that require sound clinical decision-making (CDM) to provide safe and timely care.
- Prehospital care is influenced by paramedic experience, operations considerations, and clarity of protocol.
- Evidence shows defining vital sign parameters is a metric for CDM and improves transport decisions.

Recommendations

- Utilizing standardized CQI methods to establish and reinforce clearly defined protocols for ALS transport of hypoxemic patients improved the identification and transport of acute respiratory patients in the prehospital setting.
- This conclusion can be generalized to other fire-based EMS providers with similar resources for implementation of CQI methods.

Theoretical Model

