

WHAT IS LAST AND ARE YOU PREPARED?

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Background

- Local Anesthetic Systemic Toxicity (LAST) is a rare yet life-threatening event that can occur in any setting where local anesthetic is used.
 - LAST occurs in 2-2.8 per 10,000 patients who receive a nerve block.
- Sequelae include altered mental status, seizure, hypotension, dysrhythmia, acute respiratory failure, and cardiac arrest.
 - The toxicity is fatal in 0.4% of patients.
- Our team discovered that nurses working in the pre- and post-anesthesia units of an outpatient surgery center had insufficient knowledge of LAST recognition and management.
 - Nurses scored an average of 4.76 points on a 7-point, 5-question **LAST quiz** (see below).
- Low-frequency, high-risk procedures require additional training to hardwire knowledge and ensure competency.

LAST QUIZ

- Do you know what LAST is? (Yes/No)
- Name three symptoms of LAST.
- Which is the standard dose of lipids for a 75kg patient? (50 ml, 75 ml, 100 ml, 125 ml)
- A patient experiencing LAST requires more epinephrine than a standard ACLS patient. (True/False)
- LAST only occurs in the first 15 minutes after a nerve block. (True/False)

Objectives

- Increase perianesthesia nursing knowledge to recognize signs and symptoms of LAST.
- Assist perianesthesia nurses in competently managing a LAST scenario.
- Standardize nursing practice for LAST.

Educational Intervention

- Nurse leaders developed a multi-modal educational intervention based on current best evidence for managing LAST.
 - An in-service led by the perianesthesia nursing education coordinator, 45 minutes long.
 - Hands-on simulation.
 - In the moment supportive tools: Badge buddies, LAST kit.



Data Collection and Analysis

- Nurses' knowledge was reassessed at 1, 3, and 9 months following the intervention. Independent *t*-test was used to determine differences.

Outcomes

- Fifty-five nurses from outpatient perianesthesia units participated in the survey and simulations.
- Results showed an increased score from 4.76 to 6.34 one month following education interventions with sustained improvement through the 9 month time period. (9 month score=6.19, $t=2.99$, $p=0.002$)
- The Medication Use Policy Committee developed a standardized lipid order set for the health system.
- A computer-based learning module with on-demand access was created for the entire health system.
- A Clinical Practice Guideline for the health system was developed and aligned with national standards to standardize care during a LAST event.



Photo from LAST simulation video.



Sustained Improvement in Quiz Scores

| | Baseline | 1-month | 3-month | 9-month |
|----------------------|----------|---------|---------|---------|
| N | 33 | 26 | 25 | 33 |
| Score | 4.76 | 6.34 | 6.40 | 6.19 |
| Change from baseline | | 1.58 | 1.64 | 1.43 |
| p-value | | <.001 | <.001 | .002 |

Conclusion

A multimodal approach to education, including simulation, may improve sustained knowledge of recognition and management of a LAST event.

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