

# Coming in First When Responding to LAST

Local Anesthetic Systemic Toxicity (LAST) is a life-threatening adverse event that may occur rapidly after the administration of local anesthetic drugs through a variety of routes..

## Background

A LAST case occurred in the Salem Health Surgical Prep Unit, revealing inefficiencies in the established treatment guidelines, orders, and the absence of a specific policy for reference. This highlighted critical opportunities for improvement in responding to these low-frequency, high-risk events.

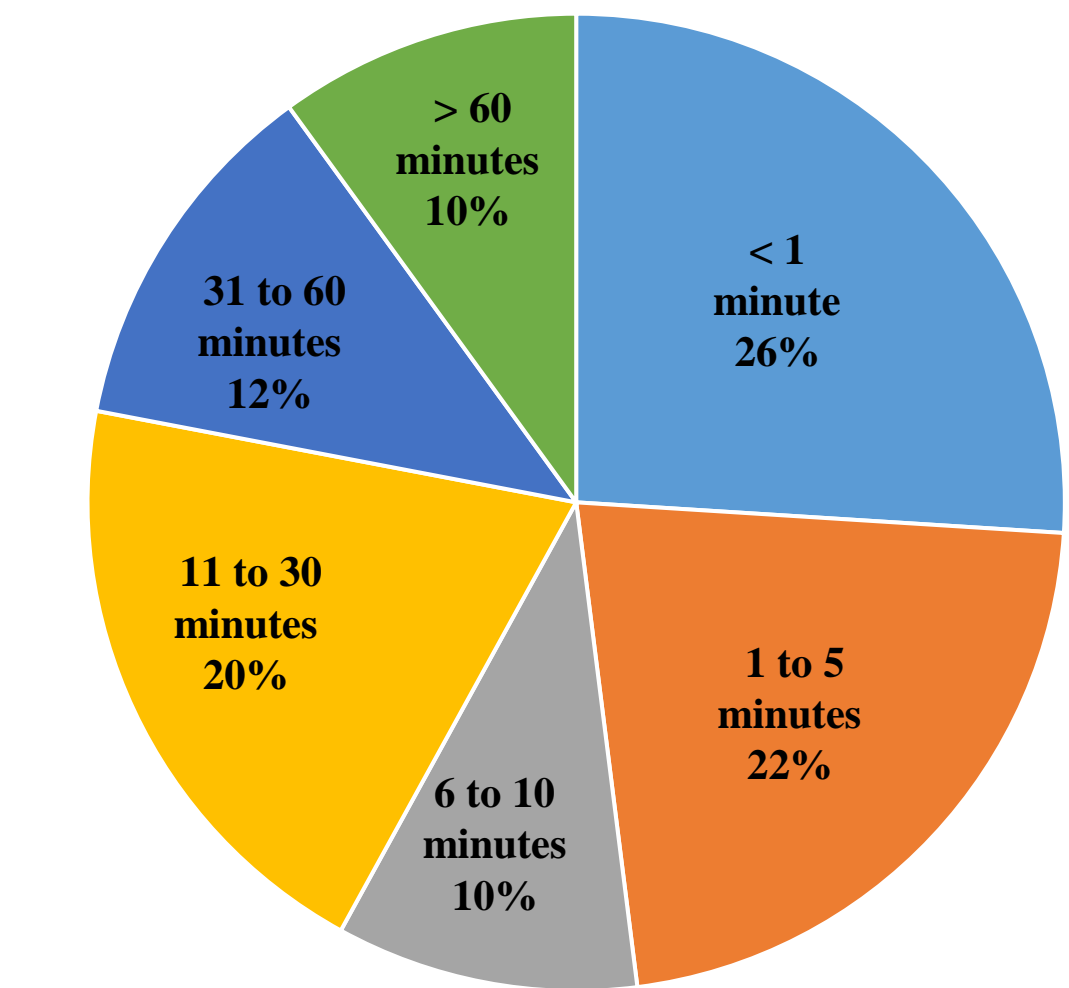


Diagram showing the onset after single-shot regional anesthesia in LAST cases reported between 2010 and 2014. (Vasques, 2015)

## Purpose/Aim/Objectives

- Create Policy for treatment
- Provide guidelines for prompt response
- Revise EPIC MAR orders
- Streamline IV pump settings
- Trouble-shoot barriers
- Create new staff education

## Methods

- Conducted research on the protocols utilized by other healthcare systems in response to LAST events.
- Assembled a multidisciplinary team of content experts, including representatives from Anesthesia, Pharmacy, Informatics, Clinical Education, and Nursing Unit Leadership.



**This poster was made possible by a grant from the Salem Health Foundation.**

**“The team had a LAST situation yesterday. With early recognition, the kits, and quick reactions from the team the patient did great! Thank you for pulling this valuable information together!”**

**Kim Bemrose MSN, RN, CNOR**  
**Director of Outpatient Surgical Services Operations**  
**Salem Hospital Building S and West Valley Hospital**



Scan here to see a short YouTube video of a LAST toolkit in use.

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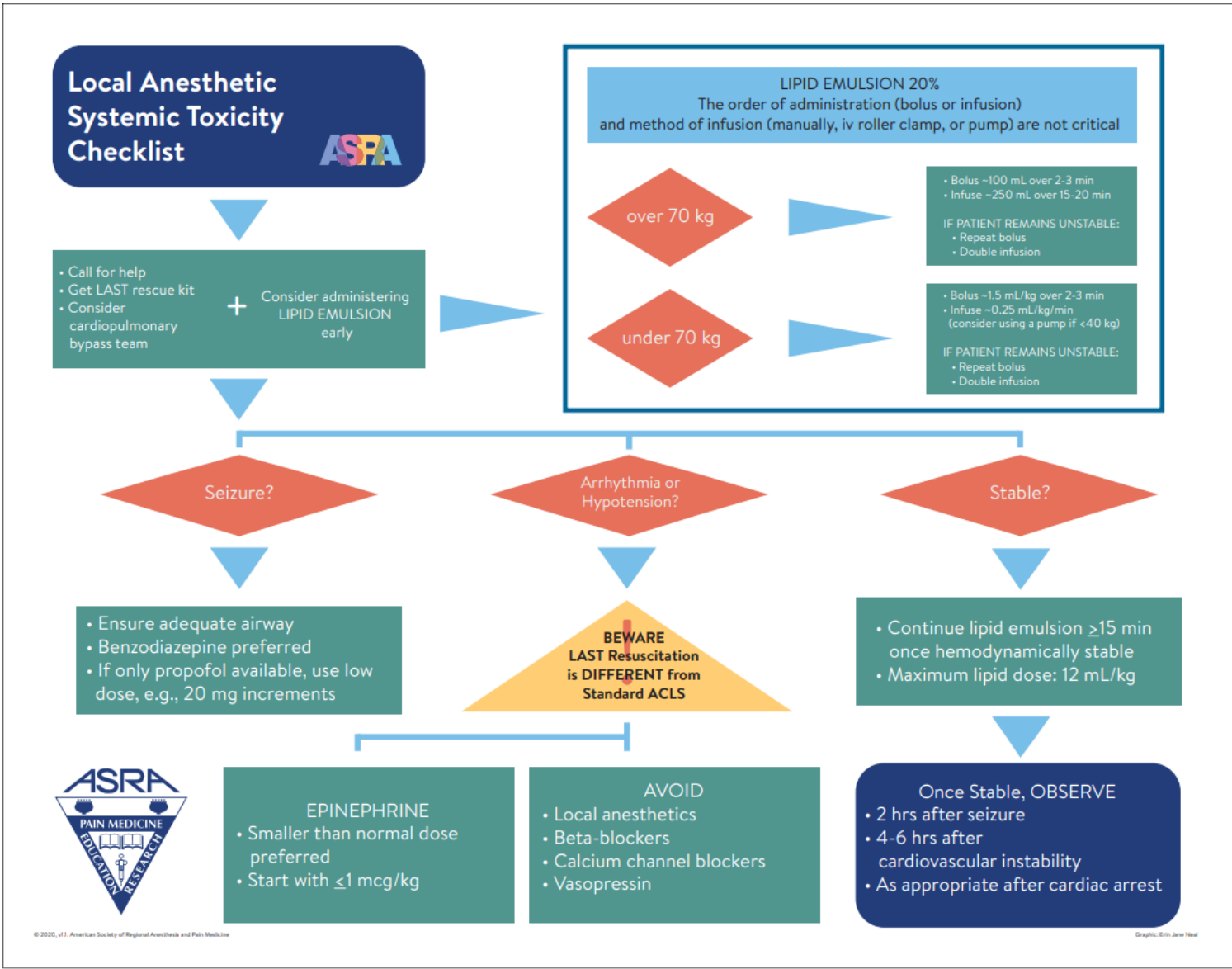
## Acknowledgements

Matthew Tanner, PharmD, BCPS  
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## Results

- Expanded on ASRA Guideline



(Neal, 2017)

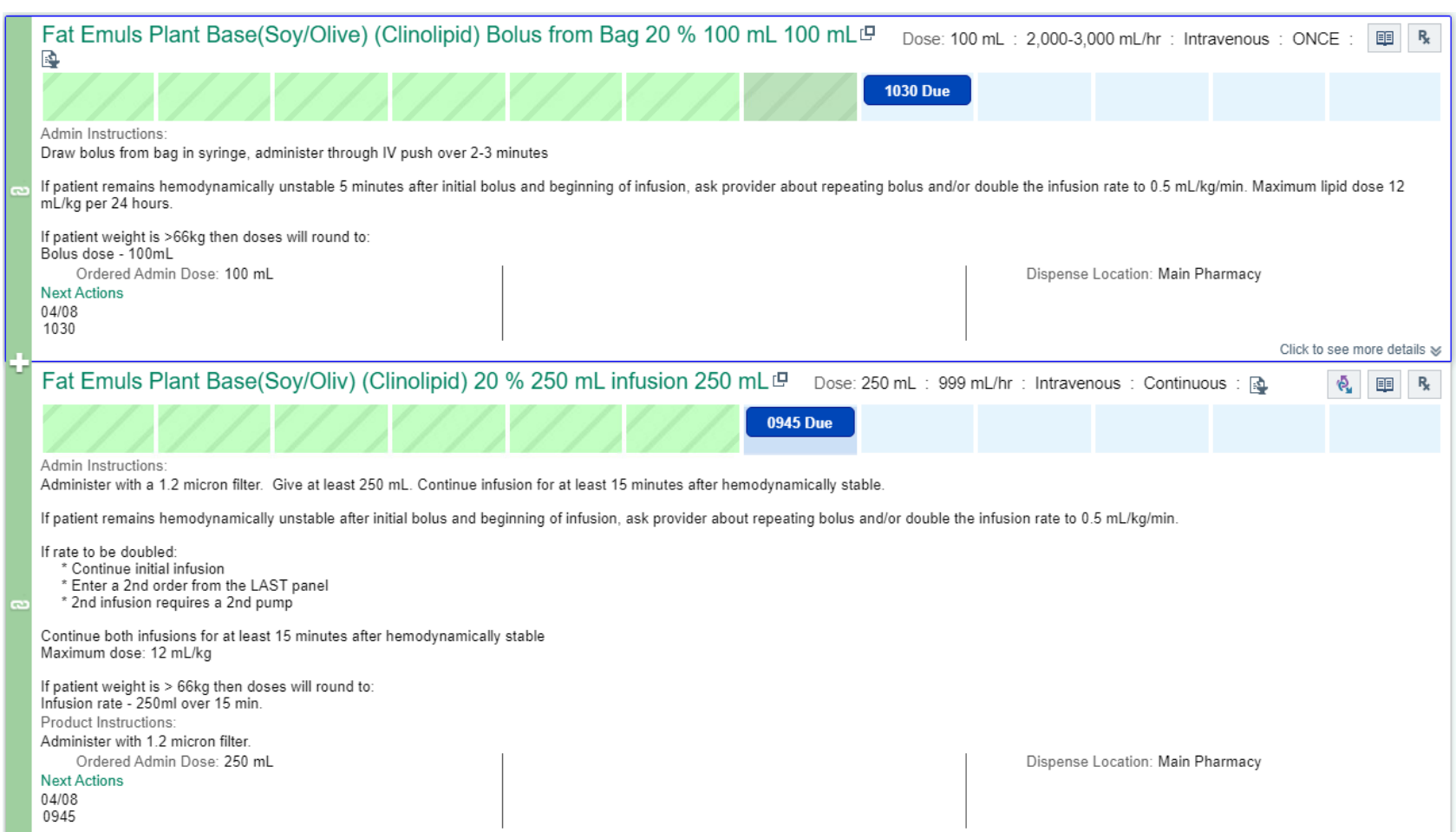
- New policy for treatment and follow-up care

Salem Health Hospitals & Clinics		
Local Anesthetic Systemic Toxicity (LAST) Clinical House Wide Policy and Procedure		
Applicable Campus	Department Name	Approval Authority
Salem Health and West Valley Hospital	Surgical Services	Director, Surgical Services
Effective Date: July 2024		Next Review Date: June 2026

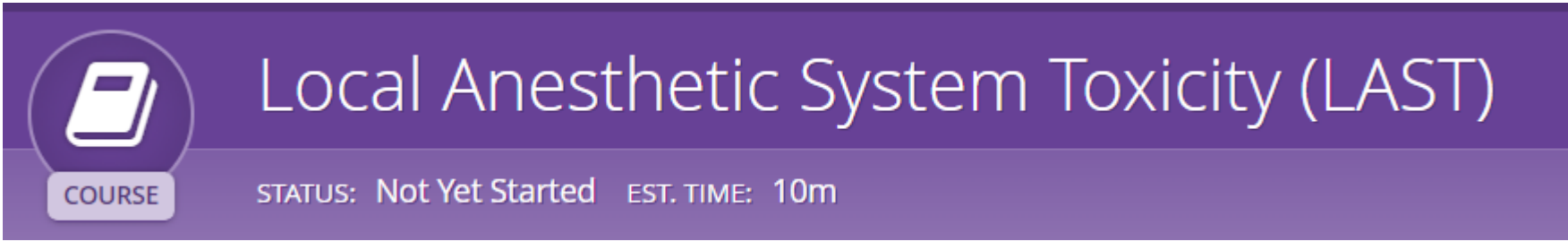
- Established LAST toolkit contents and locations

- Last toolkit contents are contained in a large zip sealed bag
- 500mL of lipid emulsion
  - 2 large bore needles
  - 2 60mL syringes
  - Primary IV tubing
  - 1.2-micron filter
  - ASRA Guideline/dosing chart

- Revised MAR orders



- Created new staff education



## Implications for Clinical Practice

Patients who receive local anesthetics within our healthcare system experience enhanced safety, thanks to the implementation of this evidence-based system. This approach ensures that staff are better equipped to respond to LAST crises through the development of clear policy, regimented multi-platform education, centralized access to toolkit, and streamlined procedures for orders and response.

### References

- Vasques F, Behr AU, Weinberg G, et al. A review of local anesthetic systemic toxicity cases since publication of the American Society of Regional Anesthesia recommendations: Reg Anesth Pain Med 2015; 40(6):698-705
- Neal JM, Barrington MJ, Fettiplace MR, et al. The Third American Society of Regional Anesthesia and Pain Medicine Practice Advisory on Local Anesthetic Systemic Toxicity: Executive Summary 2017. Reg Anesth Pain Med 2018; 43:113.
- Regional Anesthesiology and Acute Pain Medicine (2023, October 3). Dosing lipid emulsion in a LAST crisis! | #toxicity #localanesthetic #lipidrescue [video]. YouTube. <https://www.youtube.com/shorts/U1drbQWhMc>