



# Ambulance Patient Offload Delay: A Process Map to Improvement

Heidi Yttri MSN, RN, CEN, MICN & Jolie Hultner BSN, RN, CEN, MICN



St. Jude Medical Center  
Fullerton, CA

## Background

- Ambulance patient offload delay (APOD) occurs when emergency medical services arrive with a patient to the emergency department (ED) and are unable to transfer care to the ED staff, usually due to overcrowding
- APOD has been shown to cause delayed treatment, increased morbidity, longer ED length of stay (LOS), and decreased patient satisfaction
- APOD is a new phenomenon, with little research done on fixing the problem
- To date, research has only proposed costly and risky options to address this issue, including a dedicated offloading nurse or a space in the ED to hold offloaded patients awaiting beds
- Tracking offloading times in the study setting was difficult until 2017 when all emergency medical services in the county adopted electronic medical records and could report accurate offloading times
- Fiscally responsible strategies to decrease ambulance patient offload times (APOT) are needed

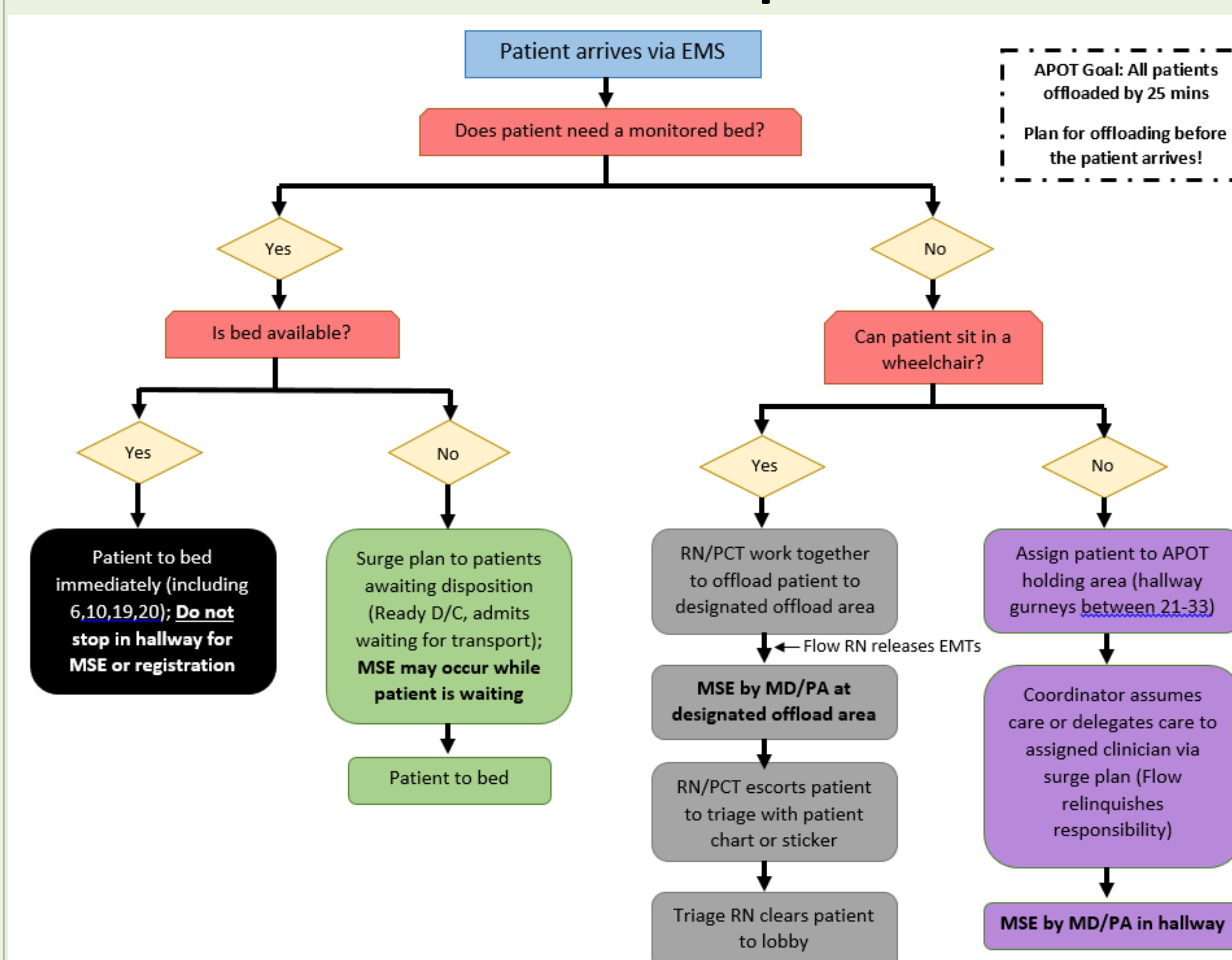
## Purpose

- To develop an individualized plan for an ED to reduce their ambulance patient offloading times without adding staff or physical space

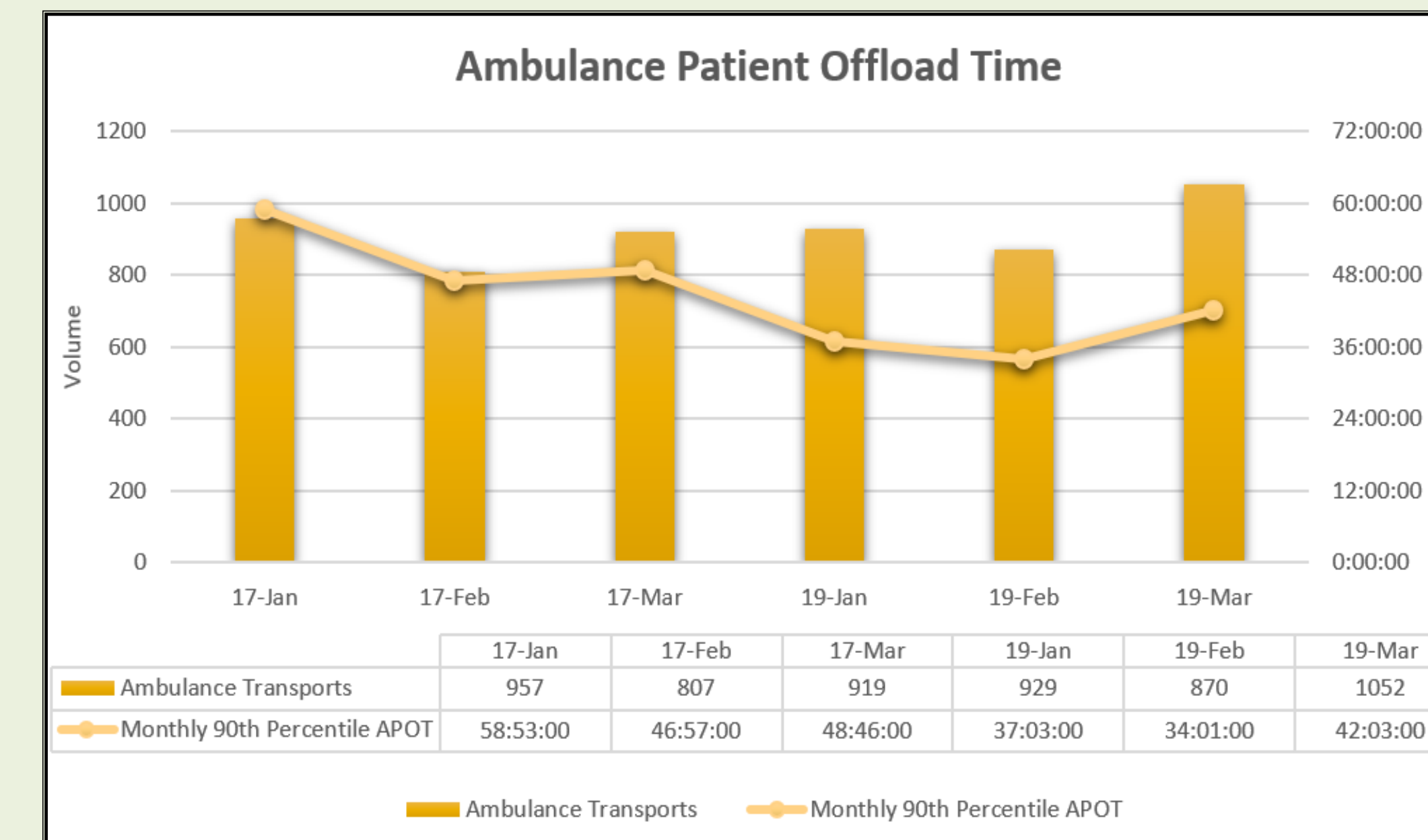
## Methods & Intervention

- Design: Quantitative, quasi-experimental study using retrospective and prospective review; Pre and post study design on convenience sample
- Setting: 36-bed Emergency Department
- Process Map developed by interdisciplinary staff and approved by ED management
- Nurses in charge of offloading ambulances were educated by the researcher on the process map
- To evaluate nursing education, a pre and post test were conducted
- Once all the nurses were educated, APOT data was collected from the public county database for 3 months before and after the educational intervention
- Aggregate LOS data was collected from the electronic medical record for the ambulance patients seen during these months

### Process Map



## Results

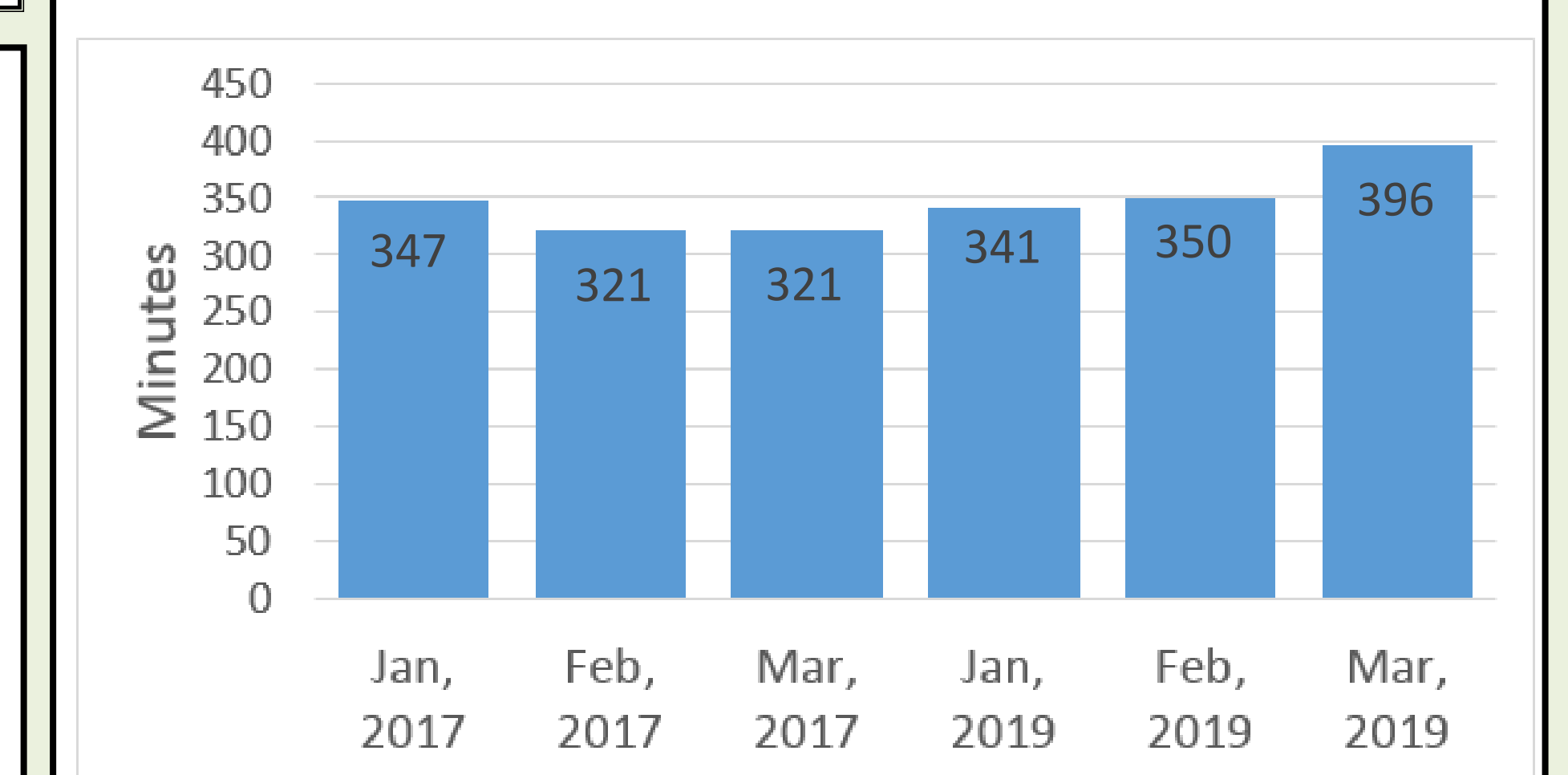


Independent Samples t-test Determining a Significant Decrease in APOT following the Process Map Intervention

	Months n	Time in Minutes M(SD)	t	df	p
Pre- Intervention APOT	3	51.67(6.43)	3.19	3.4	.042
Post- Intervention APOT	3	37.67(4.04)			

Note: Significance is denoted at the  $p \leq .05$  level

Length of Stay Results



Independent Samples t-test Determining a Significant Increase in Test Scores Following the Educational Intervention

	ED Nurses n	Test Score % M(SD)	t	df	p
Pretest	51	59.04(15.1)	-12.29	50	.000
Posttest	51	89.69(10.4)			

Note: Significance is denoted at the  $p \leq .05$  level

## Summary/Discussion

- Pre and post test data show a significant improvement in nursing knowledge after the education was provided
- APOT decreased significantly after the educational intervention
- Nursing buy-in and administrative support was crucial to implementation
- No improvement in LOS even though APOT improved; many factors affect ED LOS, further investigation required to determine correlation
- The intervention is highly specified to the study setting

## Recommendations

- Further research is recommended with longer time study to determine long-term effectiveness
- Obtaining more demographic data on ambulance patients could be helpful for staff to identify those patients at risk for APOD
- Intervention could be successful in decreasing APOD at other hospitals if a process map was developed according to their policies and practices
- More research needed on different strategies to reduce APOD