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### More Timely Care: Effect of Online Queuing System vs. Change in Hours of Operation on Hourly Arrival Volumes

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#### Recommended Citation

Patel, Aimy; Lee, Brian R.; and Montalbano, Amanda, "More Timely Care: Effect of Online Queuing System vs. Change in Hours of Operation on Hourly Arrival Volumes" (2018). *Posters*. 35.

<https://scholarlyexchange.childrensmercy.org/posters/35>

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# More Timely Care: Effect of online queuing system vs change in hours of operation on hourly arrival volumes

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## Background

**Problem:** Large volumes in the first hour after opening leading to catch up workflow throughout the rest of the day.

**Setting:** Children's Mercy Kansas City Urgent Care, 3 suburban pediatric urgent care centers in a Metro area of 2.15 million people that see over 90,000 patients a year

## Objectives

### Primary Outcome Measure

- Decrease weekend first hour arrival volumes

### Balancing Measure

- Leveling out hourly arrival volumes

### Process Measure

- Percent uptake of online queuing system use

## Methods

**Data Source:** Arrival volume by hour from our electronic medical record

**Population:** All patients seen & discharged on Saturdays & Sundays

\*Excludes "Left Against Medical Advice", "Medical Screen", or "Left Before Seen"

### Interventions

#1 Sept 13, 2017: Implementation of an online queuing system

#2 Jan 6, 2018: Shift weekend hours 12p-10p → 10a-8p

**Timeline:** Sept 12, 2016 (1 year prior to intervention #1) to

May 31, 2018 (6 months after intervention #2)

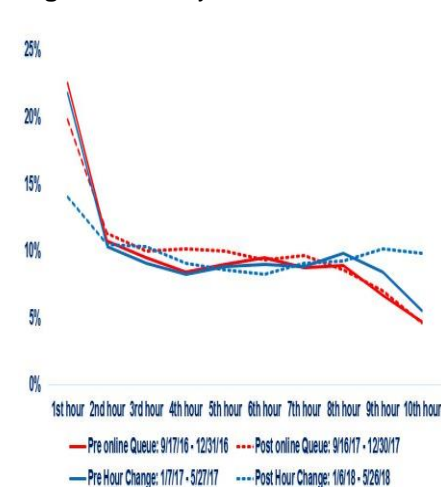
**Analysis:** 1st hour arrival volume by weekend =  $\frac{1^{\text{st}} \text{ hour volume}}{\text{Total daily volume}} \times 100\%$

## Results

**Figure 1.** 1st Hour arrival volume as a percentage of total daily volume for each weekend



**Figure 2.** Hourly arrival volumes



**Figure 3.** Percent online queue usage



## Discussion

### Outcome Measure

- Online queuing system decreased the % first hour arrival volumes & the weekend hours shift decreased it further

Pre #1 1st Hour Arrival Volume **22.7%**

Post #1 1st Hour Arrival Volume **19.9%**

Post #2 1st Hour Arrival Volume **14.3%**

### Balancing Measure

- Online queuing system did not level out hourly arrival volumes. The change in hours of operation did show a tightening of the hourly arrival volumes.

Pre #1 (Sept – Dec 2016) Hourly volumes **5%-23%**

Post #1 (Sept – Dec 2017) Hourly volumes **5%-20%**

Pre #2 (Jan – May 2017) Hourly volumes **6%-22%**

Post #2 (Jan – May 2018) Hourly volumes **8%-14%**

## Conclusion

### Online Queuing System Intervention:

- Minimally decreased our first hour arrival volumes
- Widely popular with the patient families discerned from standard patient satisfaction surveys.

### Hours of Operation Intervention:

- Decreased our first hour arrival volumes
- Leveled off our volumes throughout the day.

### Future Directions

- Maintenance of decreased first hour arrival volumes > 1 year
- Evaluate hourly arrival volumes during the week