

2012

## Administration of QTc prolonging medications in emergency department patients with prolonged QTc

Lucy Franjic

*Washington University School of Medicine in St. Louis*

Stacey House

*Washington University School of Medicine in St. Louis*

Irena Vitkovitsky

*Washington University School of Medicine in St. Louis*

S. Eliza Halcomb

*Washington University School of Medicine in St. Louis*

Follow this and additional works at: [https://digitalcommons.wustl.edu/em\\_conf](https://digitalcommons.wustl.edu/em_conf)

---

### Recommended Citation

Franjic, Lucy; House, Stacey; Vitkovitsky, Irena; Halcomb, S. Eliza, "Administration of QTc prolonging medications in emergency department patients with prolonged QTc" (2012). Conference Abstracts and Posters. Paper 14. [http://digitalcommons.wustl.edu/em\\_conf/14](http://digitalcommons.wustl.edu/em_conf/14)

This Presentation Paper is brought to you for free and open access by the Division of Emergency Medicine/ Emergency Care Research Section at Digital Commons@Becker. It has been accepted for inclusion in Conference Abstracts and Posters by an authorized administrator of Digital Commons@Becker. For more information, please contact [vanam@wustl.edu](mailto:vanam@wustl.edu).

# **Administration of QTc Prolonging Medications in Emergency Department Patients with Prolonged QTc**

---

**Lucy Franjic, MD**

**Stacey L. House MD PhD, Lucy Franjic MD, Irena Vitkovitsky  
MD, S. Eliza Halcomb MD**

**Washington University in St. Louis  
Division of Emergency Medicine**

Society for Academic Emergency Medicine  
Great Plains Regional Research Forum  
St. Louis, MO. September 2012  
© Stacey House, 2012

# BACKGROUND

---

- ✘ QTc prolongation is associated with fatal arrhythmias including torsades de pointes (TdP) and sudden cardiac death
- ✘ Many medications given in the ED prolong QTc thus recognition of QTc prolongation may alter medication choice

# Methods

Retrospective chart review of all ED patients who received an ECG for any reason during the 5 month period of June 2009 – October 2009 at a large volume, tertiary care center.

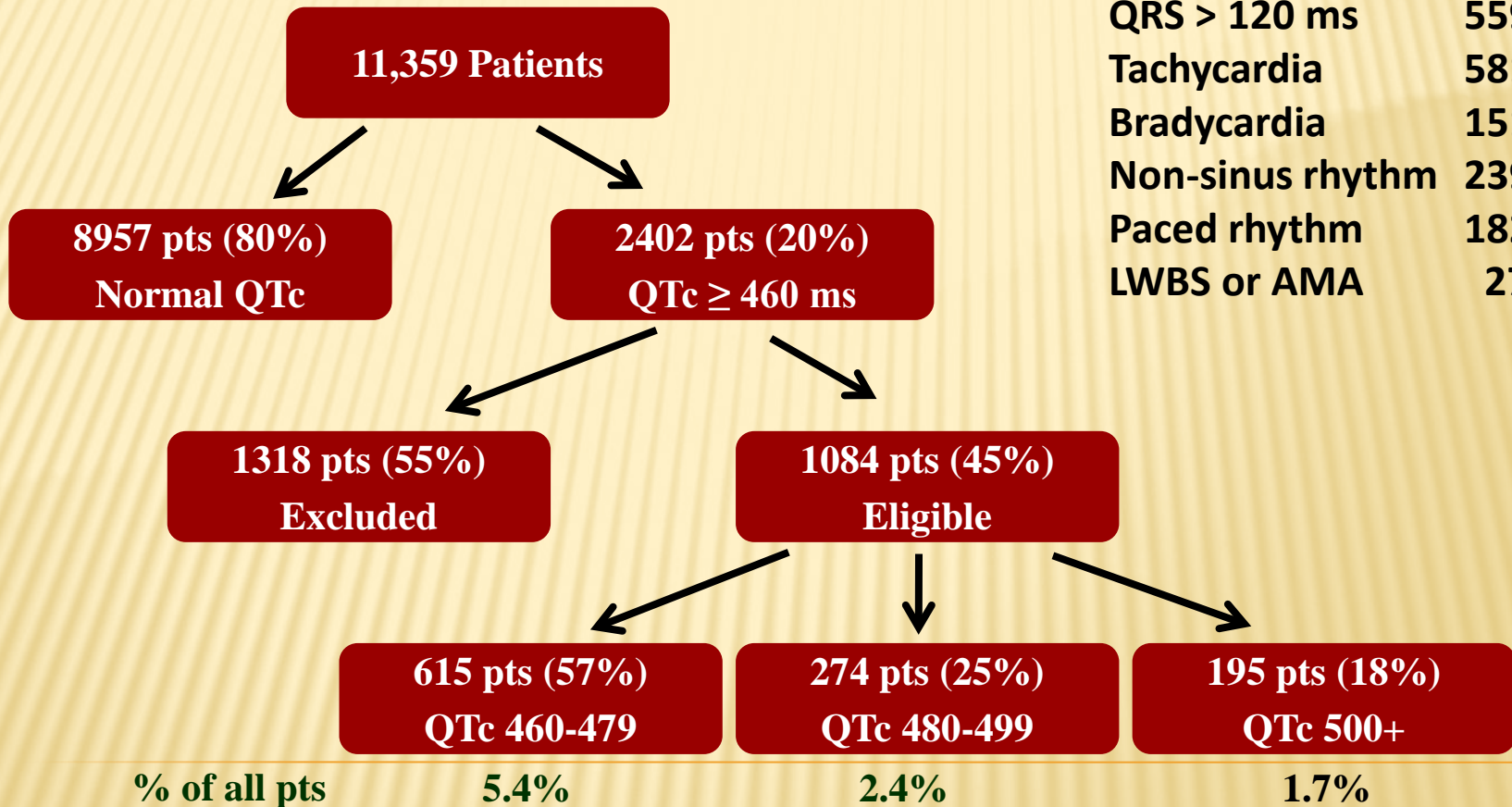
Inclusion Criteria: Patients with a computer generated QTc  $\geq$  460 ms.

Exclusion Criteria: Bradycardia (HR < 60 bpm)  
Tachycardia (HR > 100 bpm)  
QRS > 120 ms  
Non-sinus or paced rhythm  
Patients who left without being seen or against medical advice

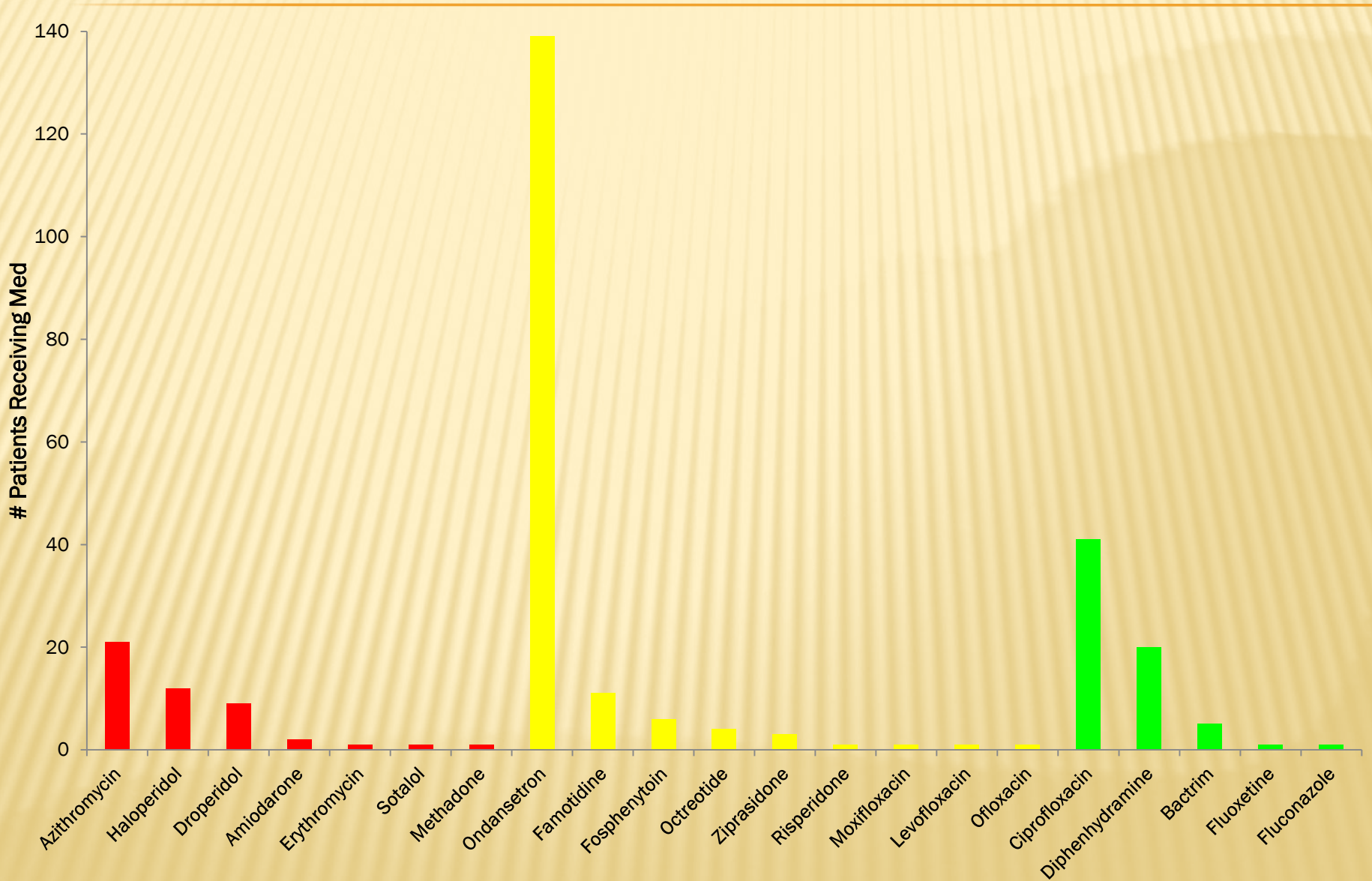
ED electronic medical records were reviewed for medications administered in the ED. QTc prolonging medications were defined as those listed by the Arizona Center for Education and Research on Therapeutics (AzCERT) and were classified as Class 1 (causes TdP), Class 2 (prolong QTc and reported to cause TdP), and Class 3 (prolong QTc and could cause TdP) as defined by AzCERT

Statistical Analysis - Data is expressed as proportion  $\pm$  95% confidence intervals. Data was compared among groups using a Chi-squared test.

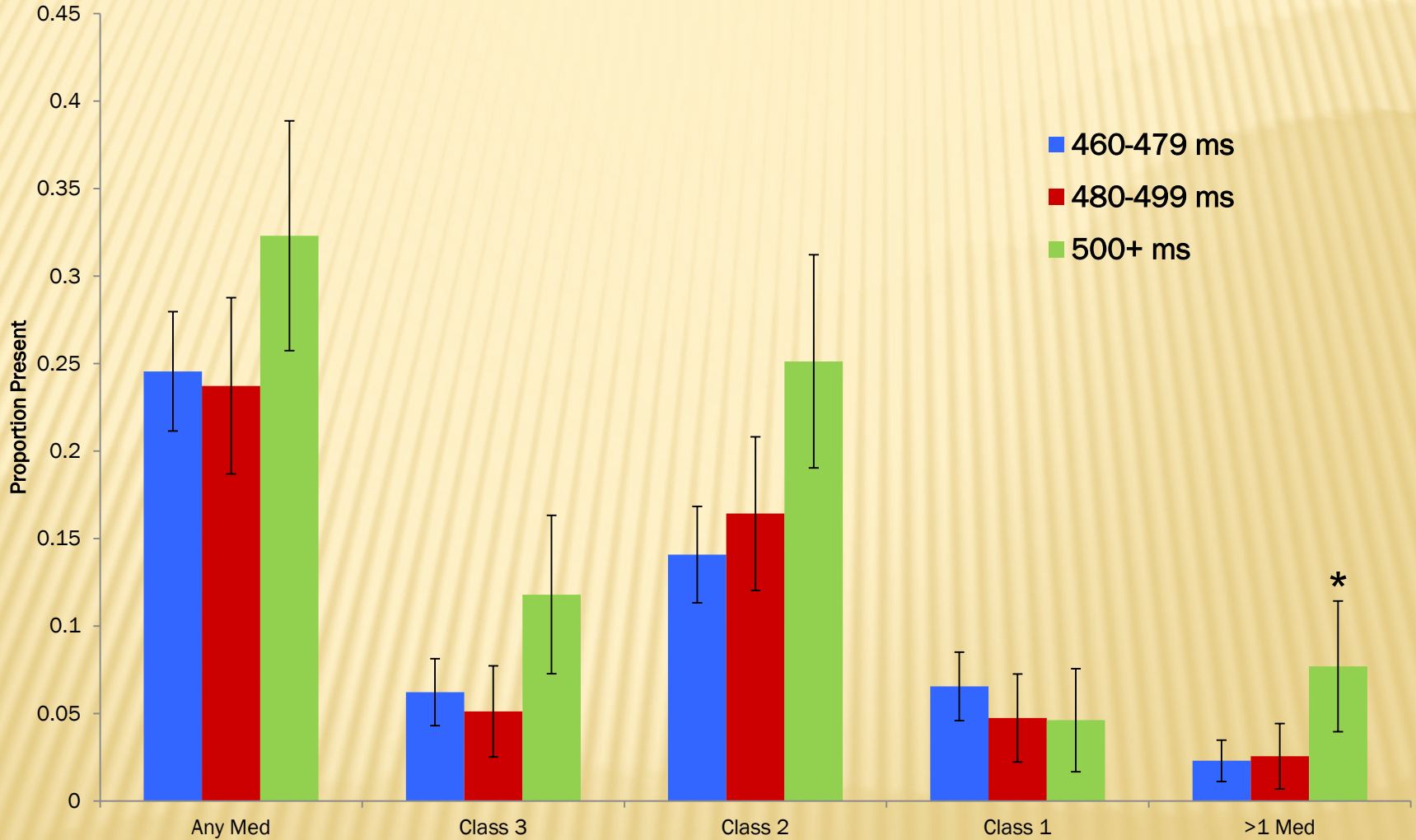
# RESULTS



# Drug Classes Administered

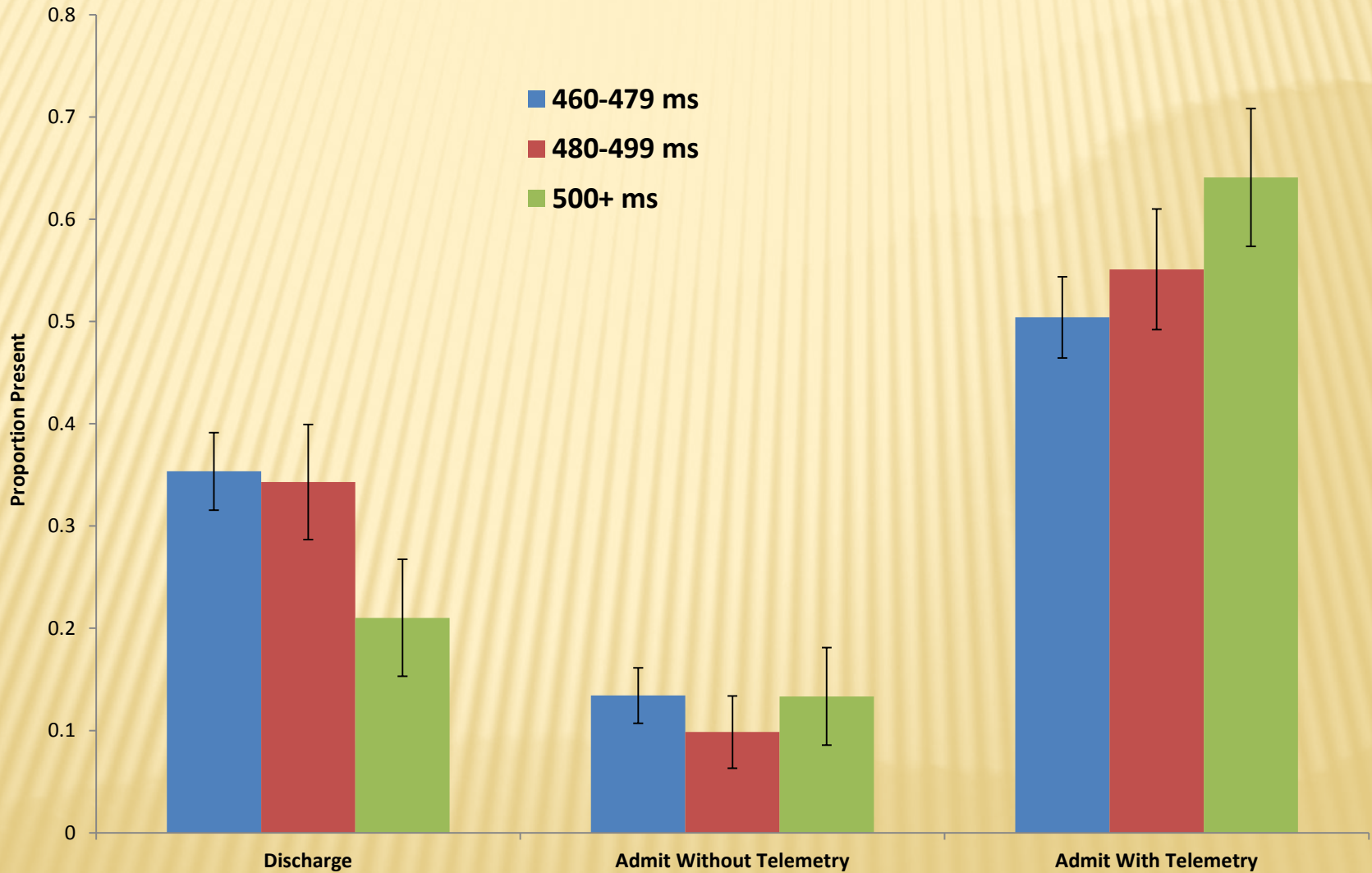


# Medications Received



\*p<0.01

# Patient Disposition





# Conclusion

---

- ✘ Administration of QTc prolonging medications is common in ED patients with prolonged QTc
- ✘ Patients with the most prolonged QTc were at highest risk of receiving multiple QTc prolonging medications
- ✘ Further studies needed to determine if the administration of QTc prolonging medications in patients with prolonged QTc increases the risk of cardiac dysrhythmias

# Bibliography

---

- ✘ Golzari, H. “Prolonged QTc intervals on admission electrocardiograms: prevalence and correspondence with admission electrolyte abnormalities.” *Connecticut Medicine*. 7 (2007): 389-97.
- ✘ Schulman M. “Hypokalemia and cardiovascular disease.” *American Journal of Cardiology*. 65 (1990): 4E-9E.
- ✘ Seftchick, Michael. “The prevalence and factors associated with QTc prolongation among emergency department patients.” *Annals of Emergency Medicine*. 54 (2009). 763-768.
- ✘ Taylor, D. “Cocaine induced prolongation of the QT interval.” *Emergency Medicine Journal*. 21 (2004): 252-253.