

Introduction

- The Canadian Triage and Acuity Scale (CTAS) is an objective tool that enables emergency departments (EDs) to prioritize patient care by triaging patients according to the severity of their presenting signs and symptoms
- The CTAS system is also used by emergency medical services (EMS) and EDs to communicate patient acuity and allot the most appropriate resources accordingly
- For this system of categorization and advanced notice to succeed, there needs to be reliability of the CTAS scoring between EMS and the ED

Objectives

- To assess the inter-rater reliability between CTAS scores provided by EMS and those provided by the ED triage nursing staff (RN)
- To assess the inter-rater reliability between CTAS scores provided by EMS and those provided by ED physicians

Methods

- A retrospective medical record review was performed for patients ≥ 18 years of age brought to the ED via EMS over a 6 month period
- Data consisting of chief complaint, heart rate, blood pressure, respiratory rate, temperature, oxygen saturation, and CTAS scores were extracted from EMS records and ED RN assessment documentation
- Data consistent with 1st and 2nd order modifiers as defined by CTAS publications 1998-2008 was extracted from the record
- Statistical comparisons were made between CTAS scores of EMS, RNs and those generated by retrospective analysis of the documented vital signs, chief complaint and modifiers (designated ED physician CTAS)
- Inter-rater agreement was measured using Cohen's Kappa statistic

Results

- 101 charts reviewed

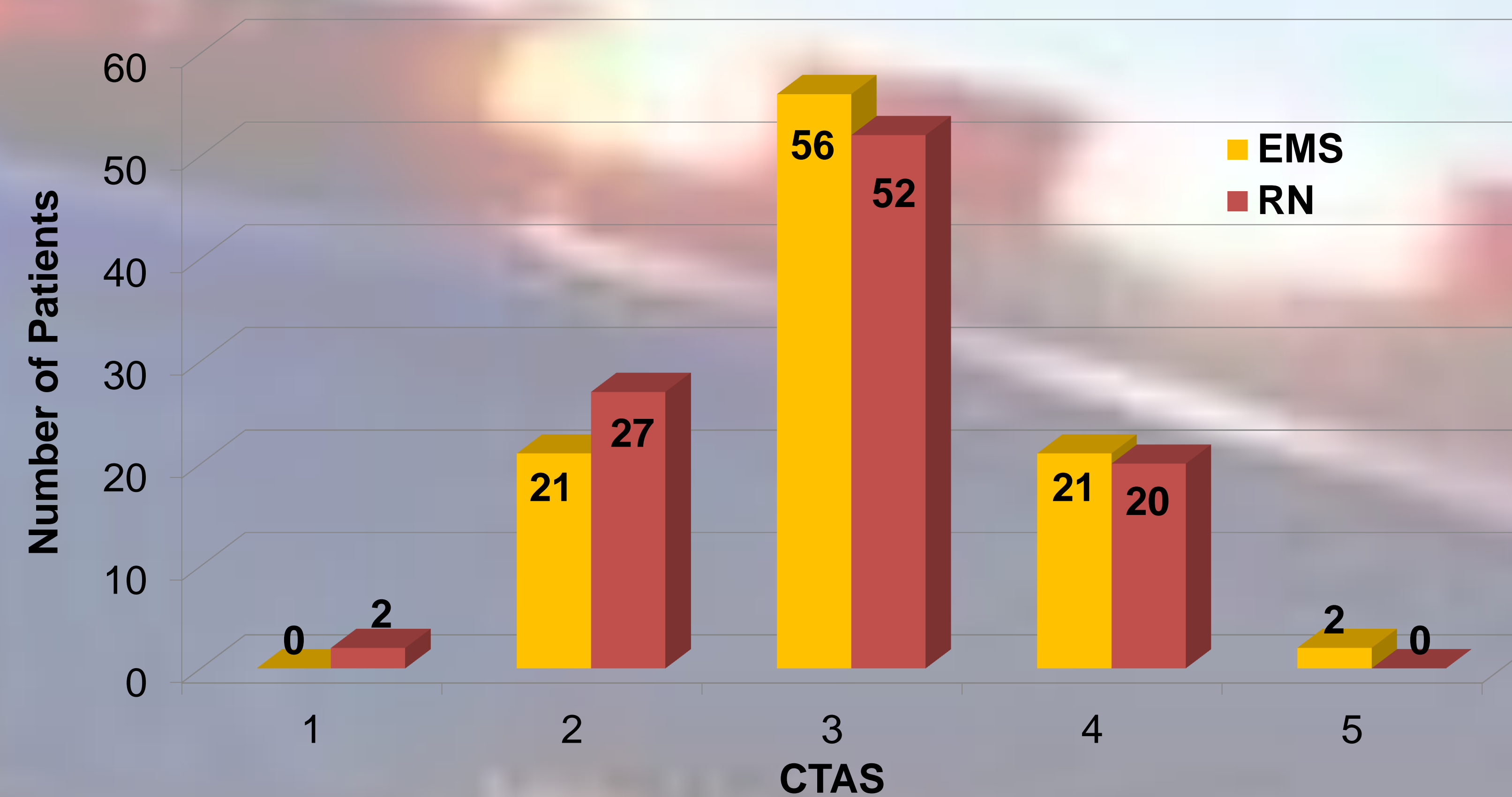


Figure 1. CTAS scoring distribution of EMS versus Nursing

CTAS scores allotted by EMS showed **73.0% agreement** with those of RNs in the ED.

Cohen Kappa score of 0.56 (moderate) with a 95% CI 0.42-0.70

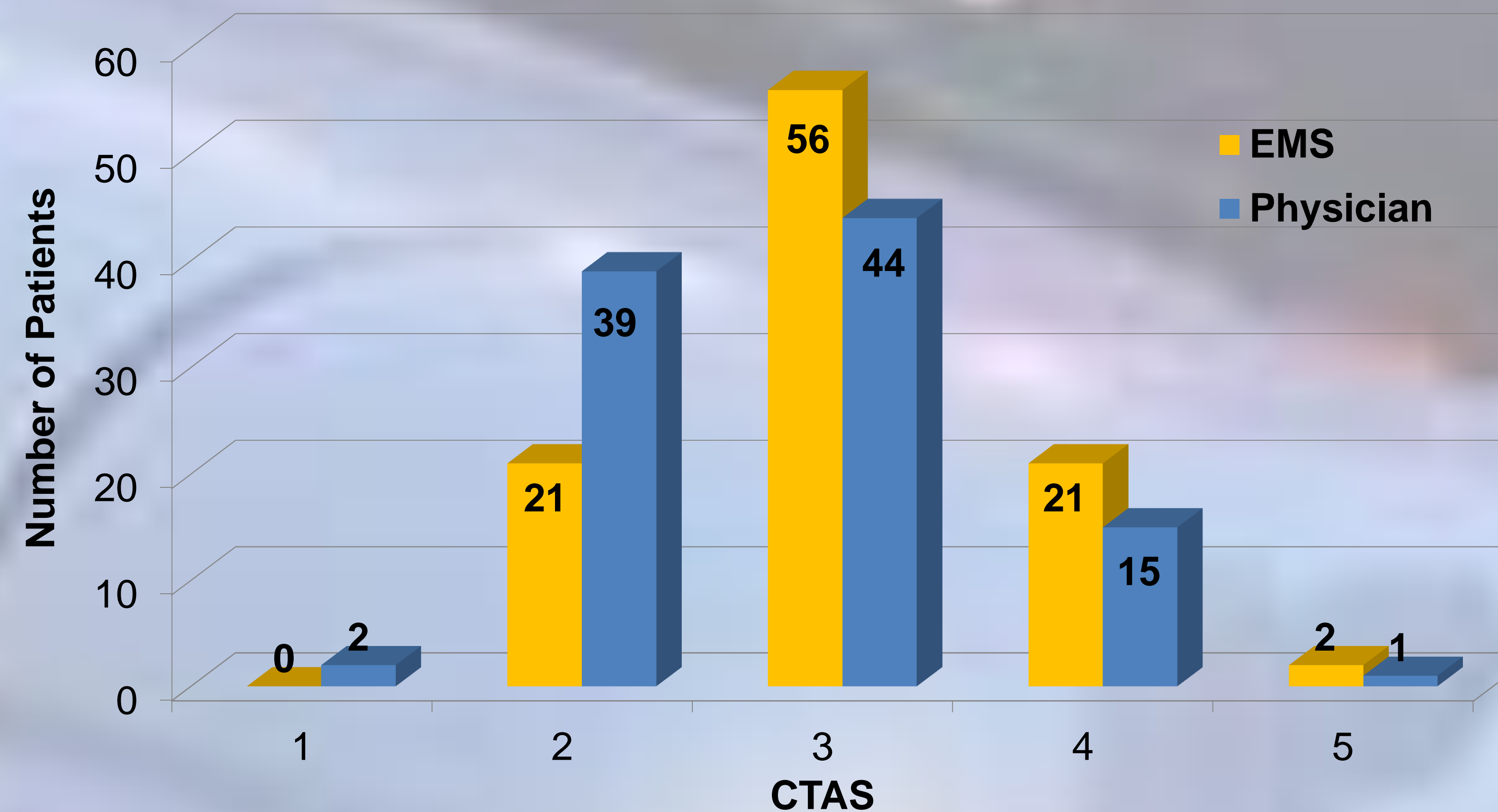


Figure 2. CTAS scoring distribution of EMS versus ED physician score

Scores by EMS compared with ED physician retrospective scores showed **69.0% agreement**.

Kappa score of 0.52 (moderate) with a 95% CI 0.38-0.66

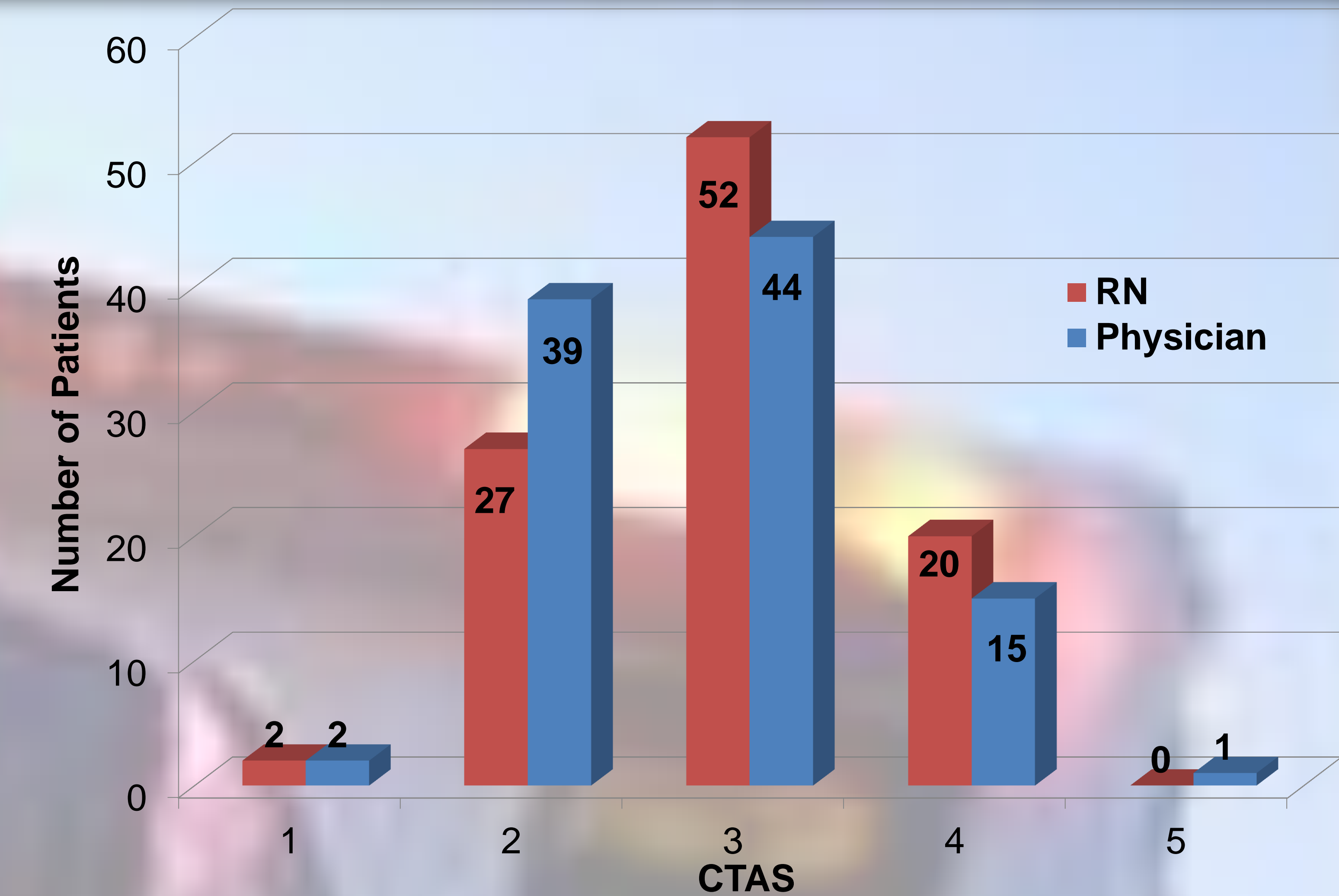


Figure 3. CTAS scoring distribution of RN versus ED physician scores

Scores by RNs compared with ED physician retrospective scores showed **84.2% agreement**.

Kappa score of 0.75 (good) with a 95% CI 0.64-0.86

Limitations

- Potential ED physician bias when assigning CTAS scores as done retrospectively
- CTAS not specifically designed as a prehospital tool

Conclusions

- CTAS scoring by paramedics showed only moderate agreement with RNs scoring or the retrospective ED physician scoring
- RNs had substantial agreement with the ED physician scoring
- Optimal use of the CTAS system requires greater consistency between EMS and staff of the ED when assigning scores