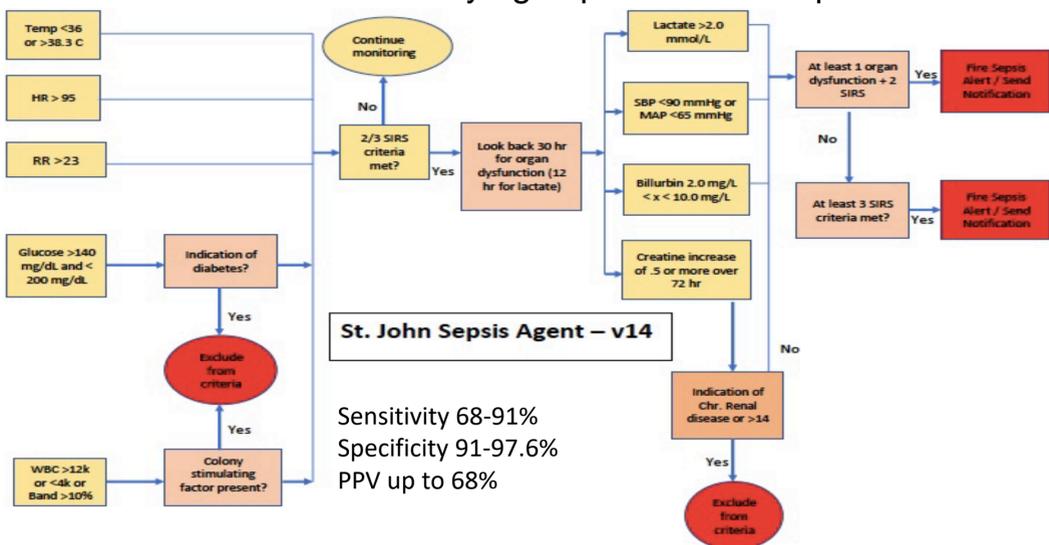


## Introduction

- SJSA is an EMR based alert system designed for early identification of sepsis.
- 2010; Cerner Corporation, Kansas City; continuous revisions - v15.
- Alert fires when the system finds 3 signs of SIRS, or 2 SIRS and 1 sign of organ dysfunction.
- Active in 550+ hospitals in US, UK, Australia, New Zealand.
- Is SJSA accurate in identifying sepsis in trauma patients?



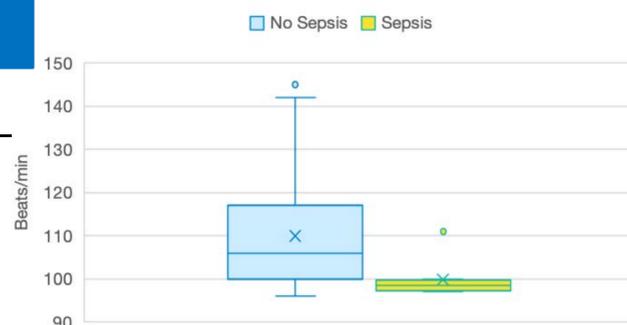
## Methodology

- IRB approved.
- Data from institute's trauma registry was queried Jan '17 – July '17; resulted in 825 encounters.
- Cross-checked with a SIRS/SEPSIS report.
- Retrospective cohort analysis of 272 alerts between 112 trauma patients at our urban, level 1 trauma teaching institute.
- 11 alerts associated with sepsis diagnosis with 9 subclassifying septic shock.
- Pregnant individuals excluded.

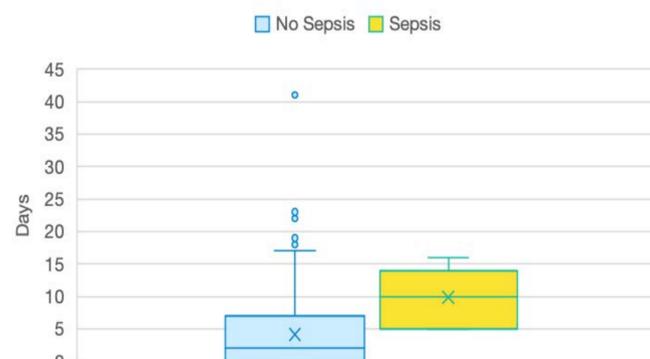
## Results

- Sepsis present in 11 alerts out of 272.
- PPV 1.78%, NPV 86.63%, Specificity 86.63%
- Population 91.5% Male, 43% AA, 43% Caucasian. No significant difference between patient groups.
- Not enough data to compare glucose, signs of organ dysfunction
- Significance in LOS 4.4 vs. 9.9 ( $p < 0.001$ )
- Significance in RR 29.4 vs. 37.3 ( $p < 0.01$ )
- No significance in HR 109.9 vs. 99.1 ( $p = 0.052$ )
- No significance in WBC 15.1 vs. 14.3 ( $p = 0.623$ )

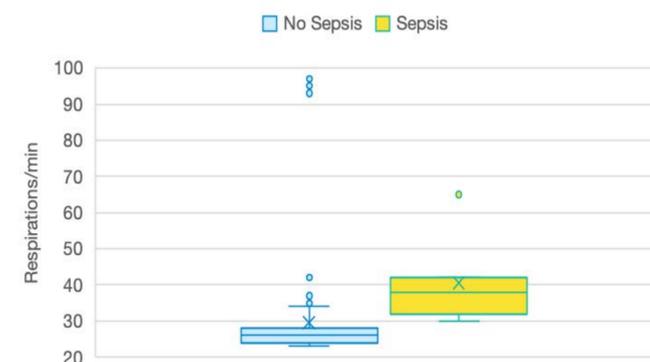
### Heart Rate in Trauma Patients



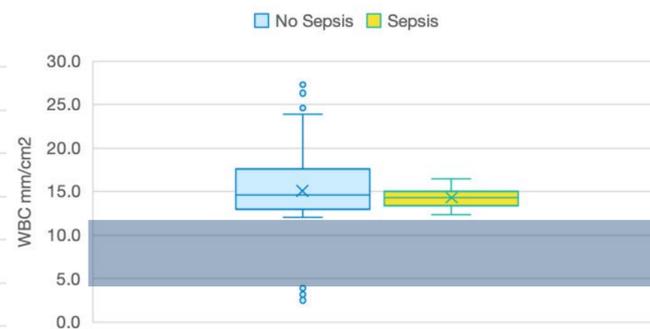
### Length of Stay in Trauma Patients



### Respiratory Rate in Trauma Patients



### WBC in Trauma Patients



## Conclusion/Discussion

- SJSA has a low PPV for trauma patients, appears to be a poor predictor of sepsis and septic shock.
- An association was found between both a prolonged length of stay and increased respiratory rate with having a sepsis diagnosis.
- SIRS response due to severe injury rather than infection.
- Would expect to see an increase in statistical and clinical significance among the components of SJSA when the studies power is increased.
- Surviving Sepsis Campaign sepsis bundles.
- Promoting “pager burn out” among surgical resident.
- Increased hospital costs and resource use.
- Antibiotic stewardship.
- This is a retrospective study and would be beneficial to readdress the application in trauma patients.

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