Evaluating the Sensitivity and Specificity of the Severe Sepsis Tool Utilized

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Purpose / Objective:
The purpose of this pilot study is to evaluate the sensitivity and specificity of the severe sepsis screening tool utilized at a Metropolitan Hospital for early identification of septic patients in a Med-Surgical non- ICU unit

Background / Significance:
Worldwide there are approximately 18 million new cases of sepsis each year, with a mortality rate range estimated about 30% to 60%. Sepsis is the 10th leading cause of death in the United States

Organ failure occurred in 19.1 % of sepsis patients from 1979 to 1989 and 30.2% from 1990 to 2000. Severe sepsis as the primary diagnosis increased from 325,000 in 2000 to 727,000 in 2008.

Severe sepsis as the secondary diagnosis from 621,000 in 2000 to 1,141,000 in 2008.

About 24 % of patients who develop severe sepsis or septic shock will do so in a Medical-Surgical unit.

Methodology / Data Analysis:

Descriptive Retrospective Study

IT generated a report for the time frame of August 2013 to January 2014 that contained: total number of patients admitted to 4 Tower (N=1555): of those patients total number with discharge diagnosis of sepsis (n=193), total number who screened positive > 1 time during hospital stay (n=78), and total number who screened negative during hospital stay (n=110); there were five missing cases. Receiver operating curve (ROC) and the respective area under the curve were calculated. Utilizing a 2x2 design, the sensitivity and specificity of the tool was calculated.

Findings / Implications:
The study yielded a sensitivity of 41.49%. One thousand three hundred and sixty two patients were not diagnosed with sepsis syndrome at the time of discharge. One thousand two hundred and thirty three screened negative for sepsis. Five patients data were dismissed, because of inability to assess chart. The study yielded a specificity of 90.53%. The positive predictive value (PPV) of the tool was estimated at 37.68%, negative predictive value (NPV) was estimated at 91.81 % and disease prevalence was 12.13%. Area under the receiver operating curve was 0.660.

Discussion:
Further studies need to be conducted to validate the sensitivity and specificity of the severe sepsis tool utilized in different clinical areas.

Conflict of Interest:
I have no conflicts financial or otherwise, related to this abstract/presentation.
I confirm that the above disclosure is accurate and complete: Jorge Hirigoyen