**Introduction**

Each year in the UK, it is estimated that more than 100,000 people are admitted to hospital with sepsis. It is estimated that sepsis claims 36,800 UK lives annually, and it carries a 35% mortality. Rapid diagnosis and treatment are critical to survival.  

Early intervention ensuring basic aspects of care has been shown to reduce absolute risk of sepsis mortality with reports ranging from reductions of 16% to 50%.  

In 2006, a landmark paper demonstrated that each hour’s delay of administration of antibiotics to patients with septic shock was associated with a 7.6% greater risk of death.  

The Sepsis Trust has developed the concept of the ‘Sepsis Six’ which is a set of six tasks to be instituted within the first hour at the front line. Compliance with the Sepsis Six has been shown to reduce the relative risk of death by 46.6%.  

This audit aimed to assess our adherence to Sepsis Six and to assess the impact of education in our adherence to Sepsis Six. We also measured the impact this has on 30 day mortality and length of hospital stay.

**Methods**

A retrospective audit was undertaken assessing compliance with the Sepsis Six over three months (April-June 2013) which examined adherence to protocol in 21 cases of suspected sepsis and noted detection of positive blood cultures. \(n=21, 57% > 75\) years, 43% <75 years, Age Range 45-102).  

Results of this retrospective audit initiated the following steps:

- Display of posters – Guidelines in ED & AMU
- Distribution of guidelines to ED and junior doctors
- Highlighting Sepsis Six at Medical Grand Round
- Teaching for AMU Nurses
- Teaching for ED juniors and Nurses
- Simulation training in sepsis for doctors

Prospective audit examined 54 cases of suspected sepsis from May-July 2014 to assess adherence to Sepsis Six and associated 30 day mortality.  

\(n=54, 61% > 75\) years, 39% <75 years, Age Range 21-105)  

**Results**

Overall compliance with the Sepsis Six improved between 2013 and 2014 as demonstrated by an increase in all domains. (Fig. 1)

Average mortality at 30 days decreased between the two data sets from 38% to 18.9% following steps taken to increase awareness of Sepsis Six (Fig. 2)

Average length of hospital stay for those patients surviving to 30 days decreased from 10 days to 8.2 days (Fig. 3)

**Discussion**

Results of the audit demonstrate a 50.3% relative risk reduction of dying from sepsis at East Surrey Hospital from 2013 to 2014 following steps to increase awareness, and compliance with, the Sepsis Six guidance.  

In addition the relative reduction in hospital stay for those surviving sepsis was 18%. These improvements were achieved with no additional healthcare costs.

Limitations of this study were the relatively small sample sizes used, particularly between studies (n=21 vs n=54) and the reliance on correct documentation such as the recording of prescriptions. Different patient groups was used between retrospective (positive blood cultures) and prospective (suspected patients with sepsis) audits which could have an impact on the results.

This study does indicate, however, a positive impact of increased awareness of Sepsis Six protocol in sepsis outcomes.

**Next Steps**

Continued early recognition and interventions for suspected sepsis in a busy district general hospital have improved survival. Through further staff education and training it is hoped that the downward trend in mortality and duration of hospital stay can be maintained.

Further measures that may be considered prior to re-audit in 2015 are:

- Creation of a specialized sepsis proforma with increased prominence in the ED clerking template.
- Sustained emphasis on sepsis education
- Detailed review of sepsis deaths as case-study-based reminders at departmental meetings

This audit data supports the assertion that staff education in Surviving Sepsis is essential for improving sepsis outcomes at Surrey and Sussex NHS Trust.

**References**