

# Stepping on Sepsis- at the Northern Emergency Department

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**Background:** In sepsis, prompt recognition and timely management are the greatest determinants of positive patient outcomes. Strong research evidence suggests patients with sepsis have a significantly reduced mortality risk if they receive anti-microbial treatment within one hour of presentation to the ED. The purpose of the Northern Health (NH) Step on Sepsis (SoS) project is to improve management of sepsis in line with best evidence practices. This project is a continuing supporter of the Global Sepsis Alliance.

**Objective:** The project aims to monitor performance of sepsis management within the department before and during the implementation of the SoS program. The priority outcome is to reduce antibiotic administration times in the ED to less than one hour following triage, and ultimately improve indicators such as mortality, hospital length of stay and need for ICU intervention. This project takes on a multidisciplinary team approach involving medical and nursing staff to improve management of septic patients, specifically in the prompt administration of antibiotics.

**Method:** A translational research methodology was used to support implementation of the SoS guideline in July 2013. Ten patients, fulfilling set criteria, were randomly selected and retrospectively audited each month between April 2012 and March 2015. Analysis was conducted on both the management of sepsis in the department prior to and following the introduction of guidelines, to monitor and measure improvements on targets and key measures to adherence of guidelines. Key performances being measured are; times of triage to antibiotic and doctor review to antibiotic, determined against patients triage category and the number of SoS criteria fulfilled.

**Results:** Following the introduction of the SoS project, average triage category dropped from III to II. Median triage to antibiotic times improved from 156 minutes to 137 minutes, however this data measured against patients allocated triage categories I and II suggest no discernible change in trend. Measured against patients allocated triage categories III and IV, some positive changes are seen with new evidence of antibiotic delivery within sixty minutes seen post introduction of guidelines. There was a decrease in doctor to antibiotic administration time for patients prioritised as categories I-II, but no change in those categorised to triage III-IV. When triage to antibiotic and doctor to antibiotic times were analysed against the number of SoS criteria patient fulfilled, no clear trend was observable in those meeting 4-6 criteria (more sick) both pre and post the introduction of SoS. But small positive changes are evident in those who fulfil 1-3 criteria (less sick).

**Conclusions:** Following commencement of the SoS project, ED sepsis patients were prioritised and the trend towards improvements in time to antibiotics is evident. Despite this, the current post-SoS average of 180 minutes for time from triage to antibiotic administration demonstrates that more work needs to be done to achieve the target time of less than one hour. Feedback from ED staff identified communication issues as one of the major barrier to meeting this objective. Introduction of process changes is currently underway to address this.