Give 3, Take 3: Improving compliance with Sepsis Six at a District General Hospital

Quality Improvement Project

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Introduction

Sepsis is associated with a high morbidity and mortality as well as carrying a large economic burden. In 2010, 5.1% of all deaths in England were associated with sepsis, and it is estimated that sepsis costs the NHS £12.5 billion a year. The ‘Surviving Sepsis Campaign’ was initiated in 2004, and was aimed at reducing mortality from severe sepsis and septic shock worldwide. From this stemmed simpliﬁed guidelines, ‘Sepsis Six’, for junior doctors. Usage of ‘Sepsis Six’ has been shown to improve the management of patients with sepsis and thus improve mortality.

Motivation

We felt the management of sepsis at Weston General was sub-optimal. It was identiﬁed by the Global Trigger Tool as a recurrent contributing factor in deaths at this hospital and the Standardised Hospital-level Mortality Indicator (SHMI) suggested observed deaths, attributed particularly to pneumonia and urinary tract infection, were higher than expected. As junior doctors we felt given the availability of an evidence-based nationally recognised Sepsis Six bundle, there was no excuse for sepsis not to be managed exceptionally.

Aims and Objectives

Aim
• To improve the management of sepsis in medical admissions by improving adherence to the nationally recognised Sepsis Six bundle.

Objectives
• To ascertain base-line knowledge of the Sepsis Six bundle amongst junior doctors, and implement means to improve any deﬁciency in knowledge.
• To assess the compliance to the Sepsis Six bundle and then carry out interventions to improve short-falls in compliance.
• To use quality improvement methodology to assess the impact of any implemented changes.

Methods

Baseline Audit
Inclusion criteria: new adult medical admissions
Exclusion criteria: neutropenic sepsis, surgical patients, hospital acquired sepsis

Baseline Knowledge
Questionnaire given to foundation year one and two doctors assessing knowledge of sepsis six bundle

Addition of lactate assay on blood gas machine

Plan, Do, Study, Act (PDSA) Cycle 1

Education - departmental teaching on sepsis management
Posters - promotion of Sepsis Six bundle and SIRS criteria
Training - usage of new lactate machines
 Provision of login codes for lactate machine

PDSA Cycle 2

Introduction of a nurse triage proforma for identification of suspected sepsis
Implementation of Sepsis Six and SIRS stickers

PDSA Cycle 3

Email reminder to clinical staff to use the proforma and stickers

PDSA Cycle 4

Discussion:

Initially the majority of the Sepsis Six components were underperformed and knowledge of sepsis management amongst junior doctors required improvement. A lack of Trust guidelines or resources could account for this.

Following our interventions the most striking improvements were seen in junior doctor knowledge and percentage of antibiotics being administered within an hour. This is especially pleasing as it required communication between multiple healthcare professionals to complete this within the time constraints. Implementing a new lactate assay machine in A&E appears to be a major contributor in increasing lactate measurements from 15% to 83%.

Nurse initiated actions were performed most consistently and their longer duration in post will be a key driver in maintaining continuity long after the current junior doctor cohort have moved on. A multidisciplinary and inter-departmental approach will continue to ensure Trust-wide co-operation. We aim to provide new junior doctors with a Sepsis Six crib card at induction to ensure sustainability of good practice.

Recommendations:
• Methodology to be applied to medical and surgical in-patients with new onset sepsis.
• To re-audit compliance of sepsis six annually and to assess for aimed improvement in SHMI data.
• Development of trust sepsis management guidelines.

References: