Advancing Quality in sepsis management: A largescale programme for improving sepsis recognition and management in the North West region of England

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Introduction

Advancing Quality (AQ) is an established approach to reducing variation and improving outcomes for patients in the North West of England. It is responsible for about 13,500 admissions and 3,800 deaths per annum. AEPS-09 Senior Review or assessment by Critical Care within 4 hours of hospital arrival if serum lactate > 4 mmol/l.

The AQ sepsis programme aims to improve sepsis care and clinical coding within the region. In the first 12 months the care of over 9,000 patients with infection was examined. The measure set is consistent with recommendations from the International Surviving Sepsis Campaign (2012) and was devised by a clinical expert group with support from a literature review produced by the British Medical Journal.

AQ Sepsis measures set

(SEPS-01) Early Warning Score recorded within 60 minutes of hospital arrival
(SEPS-02) Evidence of sepsis screen performed
(SEPS-03) Blood cultures taken within 3 hours of hospital arrival
(SEPS-04) Antibiotics administered within 3 hours of hospital arrival
(SEPS-05) Serum lactate taken within 3 hours of hospital arrival
(SEPS-06) Senior Review or assessment by Critical Care within 4 hours of hospital arrival if serum lactate > 4 mmol/l
(SEPS-07) Fluid Balance Chart commenced within 4 hours of hospital arrival if IV commenced
(SEPS-08) Oxygen therapy administered within 4 hours of hospital arrival if SpO2 < 94%
(SEPS-09) Evidence of sepsis screen performed
(SEPS-10) Early Warning Score recorded within 60 minutes of hospital arrival
(SEPS-11) Evidence of sepsis screen performed
(SEPS-12) Blood cultures taken within 3 hours of hospital arrival
(SEPS-13) Antibiotics administered within 3 hours of hospital arrival
(SEPS-14) Serum lactate taken within 3 hours of hospital arrival
(SEPS-15) Senior Review or assessment by Critical Care within 4 hours of hospital arrival if serum lactate > 4 mmol/l

Method

The AQ sepsis measures and monitoring were devised using an established AQ framework.

• A local Clinical Expert Group reviews evidence base to determine a small number of condition specific interventions,

• Teams share ideas and best practice.

• Incentive framework designed to appeal to different audiences

• Public reporting.

• Evidence of sepsis screen performed

• Early Warning Score recorded within 60 minutes of hospital arrival

• Evidence of sepsis screen performed

• Blood cultures taken within 3 hours of hospital arrival

• Antibiotics administered within 3 hours of hospital arrival

• Serum lactate taken within 3 hours of hospital arrival

• Senior Review or assessment by Critical Care within 4 hours of hospital arrival if serum lactate > 4 mmol/l

• Fluid Balance Chart commenced within 4 hours of hospital arrival if IV commenced

• Oxygen therapy administered within 4 hours of hospital arrival if SpO2 < 94%

Measurement

Sepsis care is assessed by using performance on an Appropriate Care Score (ACS) – the percentage of patients who received all eligible measures.

Performance results were published on a monthly basis and shared with collaborating hospitals.

Performance for individual measures can also be monitored, giving clarity on problem areas.

Conclusion

The use of an evidence based sepsis bundle of care across a regional collaborative network of hospitals, appears to have improved management of sepsis and outcomes. Many Trusts have established their own sepsis pathways to include the AQ measures, making data collection easier. The process of data collection has now become routine in many organisations and the programme has also seen an increase in coding of this clinical condition due to heightened awareness and recognition.

Fig 1. ACS results

Performance of all Trusts participating with full census populations for the initial three months from the launch of AQ Sepsis & the latest three months of results. Each colour block represents two acute Trusts.

Each block represents the lower performing Trust and the top the higher performing. Since AQ Sepsis started a higher proportion of patients who received all eligible measures. This is 2.5% higher than patients who did achieve ACS (rate = 22.8%).

Fig 2. Percentage of patients receiving antibiotics within 1hr

In Trusts participating in AQ Sepsis the performance against antibiotics within 1 hour has increased over the duration of the focus area. The proportion of patients with Sepsis receiving their antibiotic within 2 hours has increased by 14.8% over the period.

Fig 3. Mortality rate

There has been an increase of 16.9% of patients with Septic shock receiving their antibiotics within 1 hour.

The proportion of patients with severe sepsis or septic shock, receiving their antibiotic within 1 hour, has increased by 8.8% over the period.

Fig 3. Mortality rate

Performance of all Trusts participating with full census populations for the initial three months from the launch of AQ Sepsis & the latest three months of results. Each colour block represents two acute Trusts.

Each block represents the lower performing Trust and the top the higher performing. Since AQ Sepsis started a higher proportion of patients who received all eligible measures. This is 2.5% higher than patients who did achieve ACS (rate = 22.8%).

References and Acknowledgements

Supported by AHF Evidence

AQ Website: www.advancingqualitynw.nhs.uk

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