

Improving Early Detection & Treatment of Sepsis



Advancing Quality (AQ) is a North West programme designed to identify and reduce unwarranted variation in the delivery of care across healthcare organisations. Driven by the needs of the participating organisations, the programme offers members a structured approach to embedding evidence based care, enabling the highest quality care to be provided to every patient, every time.

The AQ Sepsis programme relies on organisational commitment, executive support, clinical leadership and engagement from front line staff to deliver a collective approach to improving patient outcomes.

Background

Sepsis is a significant cause of morbidity and mortality. In the UK, the estimated in hospital mortality is 30%¹. There are more than 250,000 episodes of sepsis annually in the UK². According to the national Standardised Hospital Mortality Ratio (SHMI) for the year ending June 2018 there were almost 38,000 patients with a diagnosis of sepsis who died in hospital or within 30 days of discharge. About 6200 (~17%) of those were in the North West³.

The early detection and treatment of sepsis has been highlighted as a major focus for improvement, NHS England produced a National Action Plan⁴ and a financial incentive system⁵. The optimal diagnosis and treatment of people with sepsis has received significant international attention and we have seen considerable advances in pathobiology, management and epidemiology⁶.

The lack of available and comparable data for sepsis has hampered evaluation⁷; the AQ Sepsis programme offers a clinical, defined measure set to support organisations to improve. The AQ sepsis measures were devised by a regional Clinical Expert Group (CEG) supported with research based evidence by the British Medical Journal (BMJ). The measure set was revised in 2018 to refine a standardised approach to the identification and treatment of sepsis. The measures are designed to provide a consistent approach to early identification and treatment and reflect national policy and the best available evidence^{8 9 10} (see table 1.).

Aims:

The case study is designed to give you an understanding of how:

- A collaborative approach can improve how quickly you recognise and treat people with sepsis when they arrive at your hospital.
- Measurement data can identify improvement opportunities in the treatment of people with sepsis and monitor the impact of your interventions.

Actions:

The AQ sepsis programme is designed to standardise measurement and to use data to support healthcare organisations to drive improvement.

To provide and promote a standardised measure set, the AQ programme uses diagnosis¹¹ data from hospitals¹² to identify admissions relating to sepsis. Hospital trusts then enter the additional measure set data required for these admissions from patient notes.

The AQ team manage the data processing and produce monthly reports for participating trusts. Performance reports are designed to provide an overview of regional activity and improvement and outcome reports focus on hospital based mortality, length of stay and readmission rates.

The improvement advisors and analysts in the AQ team support organisations in the North West to use data to drive improvement. The team work closely with trusts to translate variations in data into improvement projects using Quality Improvement (QI) tools and methodologies to deliver, and demonstrate, improved outcomes.

To spread good practice, share results and promote success the AQ team host sepsis collaborative events twice a year; these have evolved into communities of improvement.

Table 1. AQ sepsis measure set 2019

Sepsis measures 2019

National Early Warning Score (NEWS/NEWS2) recorded within 1 hour of hospital arrival
Blood cultures taken within 1 hour of sepsis diagnosis
Antibiotics administered within 1 hour of sepsis diagnosis
Serum lactate taken within 1 hour of sepsis diagnosis
IV fluids commenced within 1 hour of sepsis diagnosis
Senior Review or assessment by Critical Care within 2 hours of sepsis diagnosis
Data collection measure
Care pathway commenced following sepsis diagnosis

Results:

- The AQ Sepsis programme has been successful in supporting participating organisations to demonstrably improve the overall standard of care delivered to patients with sepsis in the North West over the last five years.
- 13 Trusts across the region now use the AQ devised measure set to monitor the consistent delivery of care to patients with sepsis.
- This collaborative approach has seen a 29% reduction in variation across the region since the inception of the programme, from a 39-89% range across participating trusts to a 71-92% range.

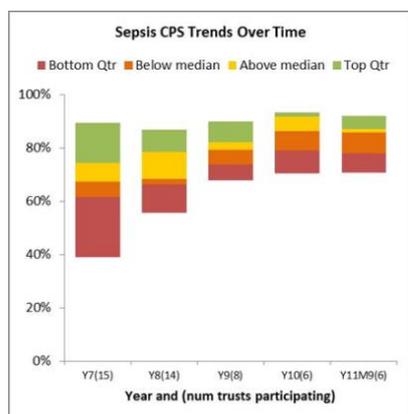


Figure 1. Sepsis composite process score trends over time from September 2014 – September 2018.

Learning:

- Coding of sepsis by hospital trusts has improved due to collaborative working with clinical coding teams.
- The AQ measure set has been used to identify opportunities for improvement, gaps in provision and out-dated clinical standards and has reduced the variation in care experienced by people with sepsis in the North West.
- The AQ measure set has supported providers and commissioners to successfully deliver the sepsis CQUIN.

Further Information:

This case study has been produced by the Advancing Quality Alliance on behalf of Health Education England.

For more information please contact:

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Or visit:

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¹ Mouncey PR, Osborn TM, Power GS, Harrison D a, Sadique MZ, Grieve RD, et al. Trial of Early, Goal-Directed Resuscitation for Septic Shock for the ProMISe Trial Investigators*. N Engl J Med [Internet]. 2015;372(14):1301–11. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25776532>

² https://sepsistrust.org/wp-content/uploads/2018/06/Sepsis_Manual_2017_web_download.pdf

³ <https://digital.nhs.uk/data-and-information/publications/clinical-indicators/shmi/current/shmi-data>

⁴ <https://www.england.nhs.uk/wp-content/uploads/2015/08/Sepsis-Action-Plan-23.12.15-v1.pdf>

⁵ <https://www.england.nhs.uk/nhs-standard-contract/cquin/cquin-17-19/>

⁶ 2001 SCCM/ESICM/ACCP/ATS/SIS international sepsis definitions conference. Int Care Med 2003;29:530-538(<http://www.ncbi.nlm.nih.gov/pubmed/12682500>)

⁷ Rhee C, Gohil S, Klompas M. Regulatory mandates for sepsis care-- reasons for caution. N Engl J Med 2014;370:1673–6.

⁸ Royal College of Physicians. National Early Warning Score (NEWS) 2: Standardising the assessment of acute-illness severity in the NHS. Updated report of a working party. London: RCP, 2017.

⁹ <https://www.england.nhs.uk/wp-content/uploads/2018/04/cquin-guidance-2018-19.pdf>

¹⁰ <https://www.ahsnnetwork.com/about-academic-health-science-networks/patient-safety-collaboratives/>

¹¹ International Classification of Diseases version 10 (ICD10) <https://www.who.int/classifications/icd/icdonlineversions/en/>
The codes for sepsis are agreed by the CEG and entered into an algorithm to identify patients with a sepsis code within the first three Finished Consultant Episodes (FCE's) of a hospital spell.

¹² Secondary Users Service (SUS) data <https://digital.nhs.uk/services/secondary-uses-service-sus>