

Putting NICE guidance into practice

**Resource impact report:
Sepsis: the recognition, diagnosis and early
management (NG51)**

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Summary

This report looks at the resource impact of implementing NICE's guideline on [Sepsis: recognition, diagnosis and early management](#) in England.

This report discusses the potential costs and savings that need to be considered and we encourage organisations to evaluate their own practices against the recommendations to assess resource impact locally.

Organisations can input estimates into the local resource impact template to reflect local practice and estimate the impact of implementing the guideline.

The [UK Sepsis Trust](#) estimates that improved management of sepsis could lead to a saving of £170 million each year for the NHS and £1.25 million each year in a typical medium-sized general hospital.

It is estimated that 10,000 deaths per year from sepsis could be avoided ([NHS England, Reduce premature mortality](#), 2014) and there is room for improvement in the care of 2 in every 3 people with sepsis ([NCEPOD](#), 2015).

Implementing the guideline focuses on using current NHS resources effectively; ensuring sepsis is identified at the first opportunity using a “think sepsis” approach. It may require some additional upfront resource to rule out sepsis and may result in additional costs in the following areas:

- additional primary and secondary urgent care referrals
- medical staffing levels
- monitoring and testing services
- critical care outreach services.

This approach should help deliver some of the savings identified above.

Services that are involved in the recognition, diagnosis and early management of sepsis are commissioned by clinical commissioning groups (CCGs) and NHS England. Providers are all healthcare professionals in health and social care settings.

1 Introduction

- 1.1 The guideline offers best practice advice on the recognition, diagnosis and early management of sepsis.
- 1.2 This report discusses the resource impact of implementing our guideline on [Sepsis: recognition, diagnosis and early management](#). It aims to help organisations plan for the financial implications of implementing this NICE guideline.
- 1.3 This report discusses the potential costs and savings that need to be considered locally.
- 1.4 We encourage organisations to evaluate their own practices against the recommendations in the NICE guideline and assess costs and savings locally. Organisations can input estimates into the local resource impact template to reflect local practice and estimate the impact of implementing the guideline.
- 1.5 Services that are involved in the recognition, diagnosis and early management of sepsis are commissioned by clinical commissioning groups (CCGs) and NHS England. Providers are all healthcare professionals in health and social care settings.

2 Background

- 2.1 Sepsis is a common condition that can be triggered by an infection (bacteria, viruses or fungi). It is estimated that there are around 123,000 cases of sepsis in England every year, resulting in around 36,900 deaths ([UK Sepsis Trust](#), 2015). Over 70% of cases arise in the community ([NCEPOD](#), 2015).
- 2.2 The incidence of sepsis is increasing as people live longer and more medical and surgical interventions are being performed.
- 2.3 According to the [Parliamentary and Health Service Ombudsmen Annual Report](#) (2013), the most common causes of severe sepsis

in adults are pneumonia, bowel perforation, urinary infection and severe skin infection.

2.4 Identifying cases that need urgent treatment to prevent progression to severe sepsis can be difficult. Current standard practice varies because of the facilities available and the clinical experience of the healthcare professional making the initial assessment. In secondary care, sepsis can present to any specialty involved in direct clinical care. Treatment involves immediate recognition, early treatment with antibiotics and continual monitoring and reassessment.

2.5 Groups that are particularly at risk of sepsis are infants and young children, people who are immunocompromised (including those being treated for cancer), people who have recently had surgery, people with indwelling medical lines or devices and women following childbirth. Better treatment of these groups could avoid deaths and reduce the morbidity currently associated with sepsis.

3 Significant resource impact recommendations

Potential areas for additional local costs

Management of sepsis in people outside of hospital

3.1 The guideline encourages a “think sepsis” approach when any person presents with signs or symptoms that indicate infection. This could result in increased referrals from outside of hospital settings if people with a potential infection are recommended to seek urgent care.

3.2 This change could lead to additional A&E attendances and urgent ambulance calls (recommendations 1.5.1 and 1.5.2). There may also be additional pressure on GP services as more telephone triage and face-to-face appointments may be needed. While referrals based on symptoms and risk are appropriate, much of this

additional activity is likely to result in health professionals deciding that sepsis is not suspected, or that there is a low risk of progression to severe illness or death.

- 3.3 In order to estimate the resource impact of this additional activity, modelling was done to show the potential increased cost at 10%, 20% and 30% more activity. The results are shown in table 1.

Table 1 Estimated range of resource impact from increasing demand for healthcare from sepsis referral changes

		Additional demand %	10%	20%	30%
	Unit cost £	Additional activity	12,300	24,600	36,900
	Unit cost £	Reference	£'m	£'m	£'m
Ambulance calls, ASS02	233	National reference costs 2014/15	2.87	5.73	8.60
A&E attendance, VB08Z	119	National tariff, 2016/17	1.46	2.93	4.39

- 3.4 Any increase in activity would lead to additional costs across the healthcare system. The rapid identification of sepsis is likely to mean reduced mortality and morbidity, leading to offsetting savings.

Medical staffing levels

- 3.5 Some recommendations give the type and grade of medical staff that should see people with suspected sepsis, how quickly this should happen, and when a consultant should be brought in to discuss the case or see the patient in person. The grade of senior clinical decision maker needed is different for different populations.
- 3.6 There may be a resource impact if current staffing levels and skill mix are not enough to meet these needs. This should be assessed locally. This is expected to be a particular pressure for out of hours services at some smaller hospitals.

Monitoring and testing

- 3.7 The guideline recommends that people with suspected sepsis who meet high-risk criteria should be monitored continuously or a minimum of once every 30 minutes (recommendations 1.6.5, 1.6.21, 1.6.36) in acute settings. Organisations should seek assurance this can be delivered from within existing resources or add to resources accordingly.
- 3.8 There may be some additional pressures from carrying out blood testing, particularly at night and at weekends, to turn around results for an increased number of tests. The results are needed quickly to make sure people with suspected sepsis get the right treatment as soon as possible and are monitored effectively. Organisations should assess the out-of-hours availability of testing, pathology and supporting services.

Critical care outreach services

- 3.9 The guideline states that critical care should be contacted to review the management of sepsis in people at very high risk (recommendation 1.6.2). Depending on current local critical care outreach services there may be resource implications. Organisations should seek assurance this can be delivered from within existing resources or add to resources accordingly.

Potential areas for local savings

Reduction of mortality and morbidity costs

- 3.10 The improved recognition, diagnosis and early management of sepsis is likely to result in significant savings, which may offset the costs outlined above.
- 3.11 It is estimated that 10,000 deaths per year from sepsis could be avoided ([NHS England, Reduce premature mortality](#), 2014) and there is room for improvement in the care of 2 in every 3 people with sepsis ([NCEPOD](#), 2015). It is reported that better delivery of

basic care can generate efficiency savings of between £2,000 and £5,000 per sepsis case ([NHS England, Improving outcomes for patients with sepsis](#), 2015).

3.12 The [UK Sepsis Trust](#) estimates that a typical medium-sized general hospital could save £1.25 million every year through improved management of sepsis, and that achieving 80% delivery of the basic standards of care is likely to save around £170 million per year across the NHS. This saving equates to over 480,000 additional ambulance calls with A&E attendances, or over 80,000 critical care bed days.

3.13 If critical care bed days can be avoided through improved early management of sepsis, there will be a benefit for providers from more efficient use of beds. A critical care bed costs between £987 and £2,082 per day, depending on the number of organs being supported ([National reference costs](#), 2014/15). People with severe sepsis are likely to be more seriously unwell and will incur these higher costs.

3.14 Many people who survive sepsis have long term physical and mental health issues (organ dysfunction, amputation, chronic pain and fatigue, post-traumatic stress disorder). Better care for people with sepsis is likely to mean fewer people have these issues, and so the costs associated with them would be reduced. Savings would be seen across health and social care.

4 Other considerations

4.1 The increased use of antibiotics was considered as a potential area of additional local costs, but was excluded because of the low unit cost of the drugs.

4.2 The recommendations are designed to assess people and only use broad spectrum antibiotics for high risk cases of suspected sepsis. Trusts should seek assurance that there is adequate antimicrobial

stewardship to prevent antimicrobial resistance issues and reduce unnecessary costs. We estimate that the average cost of a course of broad spectrum antibiotics costs around £5 for a 7 day course ([Costing statement](#) for NICE clinical guideline 191 on pneumonia).

About this resource impact report

This resource impact report accompanies the NICE guideline on [Sepsis: recognition, diagnosis and early management](#) and should be read in conjunction with it. See [terms and conditions](#) on the NICE website.

This report is written in the following context

This report represents the view of NICE, which was arrived at after careful consideration of the available data and through consulting healthcare professionals. The report is an implementation tool and focuses on the recommendations that were considered to have a significant impact on national resource use.

Assumptions used in the report are based on assessment of the national average. Local practice may be different from this, and the impact should be estimated locally.

Implementation of the guidance is the responsibility of local commissioners and providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this resource impact product should be interpreted in a way that would be inconsistent with compliance with those duties.

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