Sepsis patients at risk of death or long-term complications suffer critical delays in identifying and treating their condition, latest NCEPOD report says

The latest National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report into sepsis, a common but life-threatening condition, shows that 45% of those patients included in the study who were admitted to hospital with no other obvious functional problems, either suffered from a disabling condition at discharge or died with sepsis.

Sepsis is a leading cause of avoidable death in the UK, and kills more people than breast, bowel and prostate cancer combined. The condition occurs when the body is overwhelmed by an infection. In severe sepsis organs fail and in some cases this leads to septic shock (when blood pressure drops to a dangerously low level) and death. It is estimated that 65,000 people a year in the UK survive sepsis, but some suffer a long-term disability such as amputation and irreversible damage to lungs, heart and kidneys.

Dr Alex Goodwin, Just Say Sepsis! report author, NCEPOD Clinical Co-ordinator and Consultant in Anaesthesia and Intensive Care Medicine, said the reported incidence of sepsis in the UK is likely to be an underestimate: “The system clinicians use to code clinical data in the NHS prioritises the source of infection rather than sepsis. So, only the cases where patients receive treatment for sepsis are being counted. Overall, it has been estimated that there could be as many as 200,000 cases of sepsis, and up to 60,000 deaths a year.

“Sepsis has a number of faces. In some cases it can be very obvious in patients who have low blood pressure, a high temperature, racing pulse or altered mental state. But, it can also be present without any of these symptoms, and is commonly mistaken for ‘flu’. This is why it can be so difficult to diagnose, and why recording a patient’s vital signs at all stages and documenting sepsis is so important. Identification of the condition across the healthcare system from primary care through to the emergency department and hospital wards must improve.”

Dr Vivek Srivastava, report author, NCEPOD Clinical Co-ordinator and Consultant in Acute Medicine, described how NCEPOD found poor recording of vital signs both in primary care and hospital care: “We could see from the case notes that a full set of vital signs was only recorded in 41% of patients in the emergency department. Clinicians do not always use early warning scores (EWS) or a screening tool to identify if a patient is deteriorating. Using screening tools would also improve communication between primary and hospital care.

“I am very concerned about the serious lack of awareness of sepsis, and the reliance on the experience of senior hospital clinicians to diagnose it - particularly when our study shows that that timely senior review of a patient’s condition was lacking in 18% of the cases we looked at.”
Dr Srivastava explained that when treated promptly, the first line interventions needed are simple, cheap and readily available: “Taking a blood culture, giving antibiotics, oxygen and intravenous fluids requires a fraction of the resources needed when compared with a hyperacute stroke unit for example, and are well within the competence of junior doctors.

“The long-term complications suffered by so many survivors of sepsis impact greatly on their future quality of life. It is clear that outcomes for these patients could be improved with early recognition of this life-threatening condition and taking prompt action by improving the early implementation of a sepsis care bundle.”

Key findings:
- One third (34%; 184/544) of hospitals in the study had no formal sepsis protocol.
- Of hospitals with a sepsis protocol, there was no formal training on general wards in the use of the protocol for medical staff in 21% (65/305) and nursing staff in 27% (86/314).
- Only 44% (90/244) of acute hospitals carried out any audit on the timely treatment of severe sepsis.
- No early warning scores (EWS) system was used in any of the GP notes reviewed and in only 27% (128/479) of secondary care notes. In secondary care where EWS/ screening tool was used there were fewer delays in diagnosis of severe sepsis (35% v 55%).
- There was poor adherence by GPs in recording vital signs: 26% (34/129) of patients had their temperature taken and 31% (40/129) of patients had their heart rate taken.
- In the emergency department there was also inconsistency in recording vital signs. Only 41% (152/369) of patients had a complete set of vital signs recorded.
- 20% (116/571) patients in the study were not reviewed by a consultant within 14 hours of admission.
- 30% (63/212) of acute hospitals stated that there was no policy in place covering staff handovers. However, 94% (270/287) of hospitals with a policy set aside time for a formal handover of patients between doctors’ shifts.
- 22% (57/258) of hospitals without critical care facilities did not have formal arrangements to transfer patients that needed critical care.
- 89% (199/223) of hospitals with critical care facilities had a critical care outreach team (CCOT), but only 49% (96/196) were available 24/7.
- Only one third of patients (135/434; 31%) were documented as being started on a sepsis care bundle following diagnosis. Management on a care bundle was associated with fewer delays in the treatment of patients with sepsis.

Key recommendations:
- All hospitals should have a formal protocol for the early identification and immediate management of patients with sepsis. The protocol should be easily available to all clinical staff, who should be trained in its use. Compliance with the protocol should be audited regularly. The protocol should be updated regularly with the latest national and international guidelines and local antimicrobial policies.
- Primary and secondary care clinicians should use an early warning score (EWS) for patients to prioritise urgency of care where sepsis is suspected, such as the National Early Warning Score (NEWS) to aid recognition of severity of sepsis.
- Patients should have a full set of vital signs taken on arrival in the emergency department in line with the Royal College of Emergency Medicine standards for sepsis and septic shock.
In line with previous NCEPOD, and other national report recommendations on recognising and caring for acutely deteriorating patients, hospitals should ensure the necessary staffing and resources to:

- review all acutely ill patients by a consultant within the recommended national maximum of 14 hours after admission
- make formal arrangements for patient handover
- access critical care facilities where patient care has to be escalated
- provide a 24/7 critical care outreach service (or equivalent) in hospitals with critical care.

Trusts/health boards should aim to reach 100% compliance with the implementation of a care bundle as part of the care pathway for all patients diagnosed with sepsis. This should be audited and reported on regularly.

NCEPOD Chair Bertie Leigh stated that: “The role of this report is not to draw attention to an unrecognised problem, but to examine an acknowledged problem and to examine whether patients are being let down despite the high profile attention given to this condition in recent years. This is the first report where NCEPOD has looked at events in general practice, and we are developing our understanding of this new environment and the variety of ways in which GPs work.

He said that he was disappointed that the study had found that the diagnosis of sepsis is being delayed because clinicians both in primary and secondary care did not record the four basic vital signs of temperature, pulse, blood pressure and respiratory rate in patients who were later diagnosed with sepsis. And when the condition was suspected, patients were still not receiving the Sepsis Six - simple interventions that are now well-established will save lives in many cases.

“I am saddened to learn that the diagnosis was often not made when it should have been, and when it was made the presumed source of infection not recorded. So, the reality is that sepsis still does not get the same priority in our health centres and hospitals as other conditions. Sepsis protocols and pathways are designed to elicit the subtle changes in a patient that in time reveal the downward trend that makes the difference between life and death. Whilst it is clear that some cases are enormously difficult to manage, in many cases optimising survival is simple. Including the guidelines and protocols in education materials for doctors should be mandatory,” he concluded.

Ends

For further information contact:

Marisa Mason, NCEPOD Chief Executive: 020 7251 9060

Siân Evans, NCEPOD Media Adviser: 020 8674 8921/07752 41 44 33

Report authors are available for interview.

Notes to editors

NCEPOD is an independent charitable organisation that reviews medical and surgical clinical practice and makes recommendations to improve the quality of the delivery of care. We do this by undertaking confidential surveys covering many different aspects of care and making recommendations for clinicians and management to implement. This study was undertaken as part of the Clinical Outcome Review Programme into Medical and Surgical Care.
The Healthcare Quality Improvement Partnership (HQIP) is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. HQIP’s aim is to promote quality improvement, and it hosts the contract to manage and develop the Clinical Outcome Review Programmes, one of which is the Clinical Outcome Review Programme into Medical and Surgical Care, funded by England, Wales, Scotland, Northern Ireland and the Channel Islands. The programmes, which encompass confidential enquiries, are designed to help assess the quality of healthcare, and stimulate improvement in safety and effectiveness by systematically enabling clinicians, managers and policy makers to learn from adverse events and other relevant data. More details can be found at: www.hqip.org.uk/clinical-outcome-review-programmes-2/

Data for Scotland is not included in this study because although the country now contributes to funding the programme, it was not doing so at the time of data collection.

NCEPOD reviewed the care of 551 adult patients, who were admitted to critical care, or seen by the critical care outreach team, with a diagnosis of sepsis. This random sample of cases was taken from 3,363 patients identified over a two week period from 6 to 20 May 2014 across 305 hospitals. Trusts and health boards in England, Wales, Northern Ireland and the Offshore Islands all participated.

For further information about NCEPOD visit our website on www.ncepod.org.uk

Copies of *Just Say Sepsis!* can be downloaded from the NCEPOD website as a PDF from 24 November 2015, or ring NCEPOD on 020 7251 9060.

**Current work and additional resources on improving sepsis care:**

- NHS England has established a Cross System Sepsis Programme Board and issued a patient safety alert in September 2014
- An All Party Parliamentary Group have recently reported on sepsis
- The Royal College of Emergency Medicine – sepsis
  http://www.rcem.ac.uk/Shop-Floor/Clinical%20Standards/Sepsis
- The UK Sepsis Trust
  http://sepsistrust.org
- The Royal College of Physicians of London
  https://www.rcplondon.ac.uk/resources/national-early-warning-score-news