



Sepsis Part 2: Recognition

Demonstrated by Claire Walker, Lecturer, University of Liverpool

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Mortality from sepsis decreases with early recognition and treatment. It is vital that recognising, screening for and treating sepsis is done rapidly to increase the chance of survival (Guirgis, 2017; UK Sepsis Trust, 2017). In the UK, the focus is now on the use of the National Early Warning Score (NEWS) 2 and identification of high-risk criteria ("red flags") (RCP, 2017; NICE, 2017a).

Taking observations such as respiratory rate, pulse, blood pressure and temperature, is critical in the detection of sepsis in all healthcare settings (NHS, 2015). Detecting sepsis in primary care can be difficult due to the lack of a laboratory service. The Royal College of General Practitioners (RCGP) has produced a sepsis toolkit, which includes a screening tool to help healthcare professionals in primary care identify and manage the condition (RCGP, 2016). In hospital, healthcare professionals use the NEWS 2 to identify and assess patients who may be deteriorating. National guidance (NCEPOD, 2015) recommends that, in addition, all hospital trusts have a sepsis screening tool in place for the consistent early identification and management of sepsis.

Symptoms present differently in adults and children. There is no single sign for sepsis; symptoms may resemble influenza, gastroenteritis or lower respiratory tract infection (UK Sepsis Trust, 2019). Patients who have received anti-cancer therapy in the past 6 weeks and who present feeling unwell or have a suspected source of infection, even in the absence of other clinical signs, should be treated for suspected sepsis. Any patient presenting with any one of the red flags shown in the table below should be suspected of having sepsis, triggering the Sepsis Six care bundle (UK Sepsis Trust, 2017), as outlined in Part 3 of this series. This procedure outlines the red flags in detail, following the ABCDE structure of assessment as in the NEWS 2 chart (RCP, 2017). It should be read in conjunction with part 1 of this series on possible causes and high-risk groups, and part 3 on sepsis management.

The absence of red flags does not mean that a patient is well. The amber flags (moderate- to high-risk criteria) shown below will identify those patients at moderate risk of deterioration. If present, healthcare professionals should consider further assessment and closer monitoring, or transfer to hospital if patients are being cared for in the community (NICE, 2017a). In the hospital setting, NICE (2017b) recommends that with any two or more amber flags, staff should send blood tests for analysis and ask a senior clinician to review the patient.

Perform a structured set of observations and a physical examination if sepsis is suspected. Base the criteria and risk on the patient's age, and consider the use of an early warning score. It is important to monitor patients suspected of having sepsis continuously or at least every 30 minutes (NICE, 2017a).

Perform observations and physical examination									
NEWS key		FULL NAME: Jill Payne			DATE OF BIRTH: 21/05/1939		DATE OF ADMISSION:		
0 1 2 3		DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
A+B Respirations Observations	25								
	21-24								
	18-20	2							
	15-17								
	12-14								
A+B SpO ₂ Scale 1 Oxygen saturation (%)	96								
	94-95								
	92-93	2							
	91								
	88-92								
SpO ₂ Scale 2 Oxygen saturation (%) Use Scale 1 if patient receives 28-35% by respiratory failure	97 on O ₂								
	95-96 on O ₂								
	93-94 on O ₂	3							
	93 on air	1							
	88-92								
Air or oxygen? O ₂ L/min Device	A=Air								
	A								
C Blood Pressure systolic systemic BP only	220								
	201-219								
	181-200								
	161-180								
	141-160								
	121-140								
	111-120								
	101-110								
	91-100	1							
	81-90	2							
C Pulse Beats/min	131								
	121-140								
	111-120								
	101-110								
	91-100	1							
	81-90								
	71-80								
	61-70								
	51-60								
	41-50	1							
D Consciousness Score for level of consciousness (on a scale of 0-5)	Alert								
	Confusion								
	V								
	P	3							
	U								
E Temperature °C	39.1°								
	38.1-39.0°								
	37.1-38.0°								
	36.1-37.0°								
	35.1-36.0°	1							
NEWS TOTAL	5								
Monitoring frequency		4							
Escalation of care Y/N									
Initials		CW							

The NEWS 2 helps to identify patients at risk of deterioration: a score of 5 or above should always prompt a sepsis screen and an immediate check for any red flags; check local guidelines which may specify a lower score (RCP, 2017; UK Sepsis Trust, 2017). See clinicalskills.net procedure, "A-G assessment".

Sepsis red flags

- Patients who respond only to voice or pain or are unresponsive;
- Patients who present in an acutely confused state;
- Systolic blood pressure ≤ 90 mmHg (or >40 mmHg below normal);
- Heart rate >130 beats per minute;
- Respiratory rate ≥ 25 breaths per minute;
- Oxygen required to keep SpO₂ ≥ 92 per cent (>88 per cent in COPD);
- A non-blanching rash, mottled/ashen/cyanotic;
- No urine passed in the past 18 hours or a urine output <0.5 mL/kg/h;
- Blood lactate level ≥ 2 mmol/L;
- Recent chemotherapy.

Sepsis amber flags

- Relatives concerned about mental status;
- Acute deterioration in functional ability;
- Immunosuppressed;
- Trauma/ surgery/ procedure in last 6 weeks;
- Respiratory rate 21–24 or breathing hard;
- Heart rate 91–130 or new arrhythmia;
- Systolic blood pressure 91–100 mmHg;
- Not passed urine in past 12–18 hours;
- Temperature $<36^{\circ}\text{C}$;
- Clinical signs of wound, device or skin infection.

