Shropshire Community Health NHS
NHS Trust

Document Details	
Title	Clinical Observations and recognition of the Deteriorating Patient Policy- including NEWS 2, PEWS, SBAR and Sepsis recognition
Trust Ref No	2119
Local Ref (optional)	
Main points the document covers	This protocol sets out standards for recording and scoring and responding to clinical observations for all patients
Who is the document aimed at?	All Clinical staff
Owner	Andy MacAuley, Resuscitation Officer Emily Peer, Associate Medical Director
Approval process	
Who has been consulted in the development of this policy ?	NEWS2 and Sepsis Steering Group, Resuscitation Group and clinical leads
Approved by	Clinical Policy Group
Approval Date	14/03/2022
Initial Equality Impact Screening	Yes
Full Equality Impact Assessment	N/A
Lead Director	Clair Hobbs, Director of Nursing and Clinical Delivery
Category	Clinical
Sub Category	
Review date	14/03/2025
Distribution	
Who the policy will be distributed to	All SCHT Clinical Staff
Method	DATIX, Heads of Department Meetings, Team Meetings
Keywords	Clinical Observations, Physiological Observations, National Early Warning Score, NEWS, NEWS2, Sepsis, Deteriorating Patient, PEWS, Paediatric Early Warning Scores, SBAR, Situation, Background, Assessment, Recommendation, communication tool, assessment tool
Document Links	
Required by CQC	No
Other	No

Amendments History		
No	Date	Amendment
1	V1 2011	New Policy
2	V2 02/03/2016	Review and change of author and director
3	V3 14/02/2019	Extensive review and updating to NEWS 2 and incorporating PEWS and Sepsis recognition and screening with widening of scope to all services
4	Sep2021	Updated with RCUK 2021 guidance, trust confusion assessment tool, and local PEWS tools
5	V4 March22	Review, updated consultation., PEWS tools updated and minor amendments
6	V5 May 2024	Changes in line with updated NICE Guidance on Sepsis

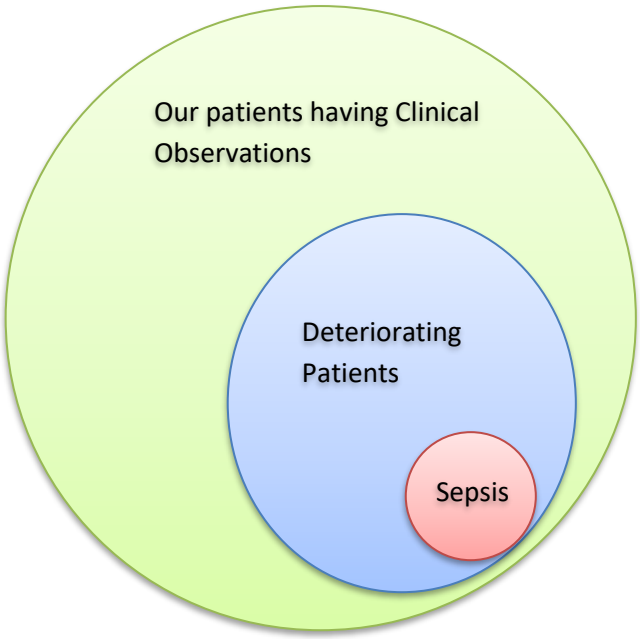
CONTENTS

1.0 Introduction

Clinical observations allow healthcare professionals to be aware of the health status of patients and allow tracking of patients health status. Patients within all healthcare and community settings may be at risk of physiological deterioration and not all patient deterioration can be predicted- so all patients (with the exception of some patients at the end of their life) require observation which includes the taking and recording of vital signs.
Patients who are becoming unwell may have abnormalities that are detectable by clinical observations well in advance and although deterioration can be recognised through vital signs, these are not always regularly recorded or acted upon by the healthcare community.

Early detection, timeliness and competency of response to changes in clinical observations are important determinants of clinical outcome in people with acute illness. 'Track and trigger' tools such as Early Warning Scores assist clinicians in spotting deteriorating patients.

One important cause of deterioration in a patients condition is Sepsis - a time-critical medical emergency which can occur as part of the body's response to infection. Unless treated quickly sepsis can progress to severe sepsis, multi-organ failure, septic shock and ultimately death. The successful management of sepsis requires early recognition and use of Early Warning Scores (EWS) together with clinical judgment to trigger use of sepsis screening tools to determine which patients need urgent treatment and transfer to an acute trust setting.



Inadequate verbal or written communication is recognised as being a serious cause of clinical errors and patient harm and can cause delays in the assessment of a deteriorating patient. The SBAR tool is an easy to remember structured way of communicating information that requires a response from the receiver, or to facilitate efficient handover of patients between clinicians and clinical teams.

The following clinical tools have been chosen for use in our trust:

- **NEWS2** – National Early Warning Score- NHS England and NHS Improvement approved tool as the recommended early warning scoring in adults

- **PEWS -** Paediatric Early Warning Score- locally agreed paediatric early warning

scores (in the absence of nationally agreed scores) to ensure safe and consistent assessment of unwell children living in Shropshire

- **Sepsis Trust Screening Tools -** NHS Improvement approved tools for screening deteriorating patients in different settings for possible sepsis

- **SBAR -** Situation, Background, Assessment, Recommendation - can be used effectively to escalate a clinical problem that requires immediate attention in conjunction with the Early Warning Score

2.0 Purpose

The purpose of this policy is to ensure a standardised Trust wide approach to:

- the recording of clinical observations and
- the actions which should be triggered in the case of abnormality and
- using agreed tools to recognise a deteriorating patient and
- manage deteriorating patients appropriately in community healthcare settings and
- using agreed tools to detect possible sepsis and
- using agreed tools for the effective sharing of clinical information

3.0 Duties

3.1 The Chief Executive

The Chief Executive Officer has overall responsible for maintaining staff and patient safety and is responsible for the governance and patient safety programmes within the organisation.

3.2 Directors

Directors of Services are responsible for ensuring the safe and effective delivery of services they manage; this includes securing and directing resources to support the implementation of this policy. They are also responsible for ensuring a process is in place to effectively manage patient safety and that the organisation is compliant with the Care Quality Commission (CQC).

3.3 Ward Managers/ Team Leaders

Ward Managers/ Team Leaders will ensure that all staff carry out patient observations using the EWS and SBAR tools, and that adequate staff training is undertaken within their area including annual mandatory resuscitation training.

3.4 Staff

All staff members must ensure that they understand the relevant EWS and SBAR and the implications of their use and are up to date with their mandatory resuscitation training.

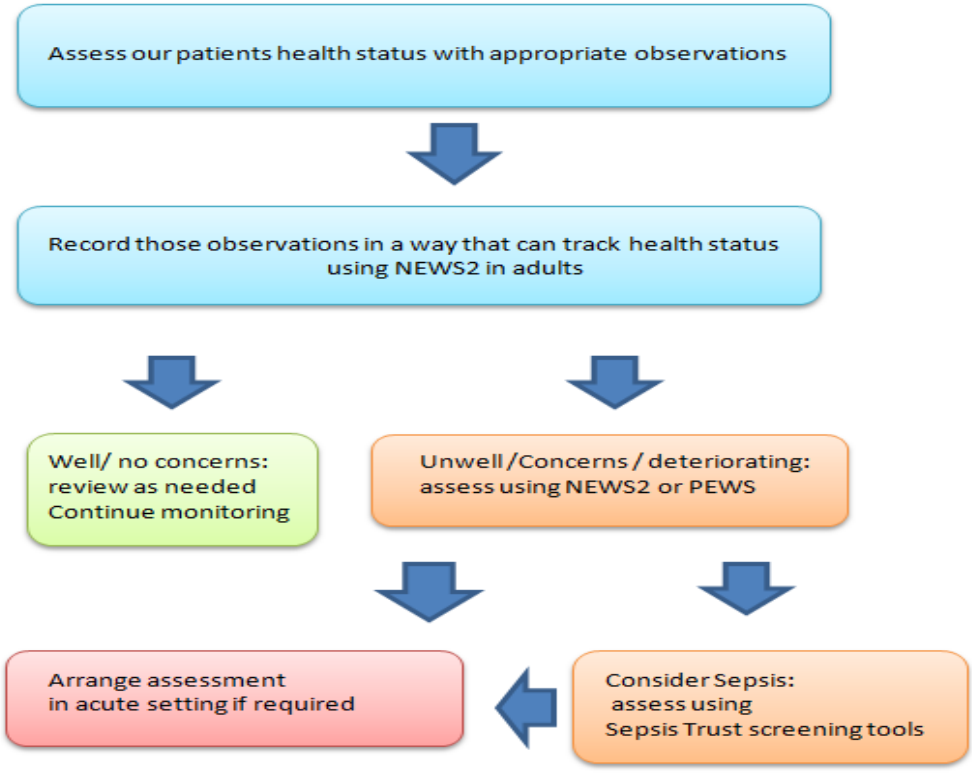
4.0 Glossary

Acronym	Term / Definition
ACVPU	Alert, Confusion, Pain, Verbal, Unresponsive
CAM tool	Confusion Assessment Method Tool (CH055)
ECG	Electro cardiogram
EWS	Early Warning Score- includes NEWS2 and PEWS
GCS	Glasgow Coma Score
GLUC	Glucose
IV	Intra-venous
SCHT	Shropshire Community Health Trust

NEWS/ NEWS2	National Early Warning Score
NICE	National Institute for Clinical Excellence
NPSA	National Patient Safety Agency
RCP	Royal College of Physicians
SP0²	Oxygen Saturation
WBC	White Blood Count
PEWS	Paediatric Early Warning Score
SBAR	Situation, Background, Assessment, Recommendation
MDT	Multi-Disciplinary Team
Sepsis	Sepsis is characterised by a life-threatening organ dysfunction due to a dysregulated host response to infection.
Septic shock	Septic shock is a subset of sepsis where particularly profound circulatory, cellular and metabolic abnormalities substantially increase mortality
Uncomplicated Infection	Viral and bacterial infections where there is no evidence of organ dysfunction or tissue hypo-perfusion that accompanies sepsis or septic shock

5.0 Measurement of Clinical Observations

Observations must be taken on all adult patients at initial assessment and then at regular intervals dependent on need.
Clinical observations are taken on children seen in community setting when appropriate and children presenting with acute illness or deterioration will require assessment and observations dependent on clinical need - see Section 7.
Adult patients observations will be recorded using a NEWS2 observation record and acute paediatric observations will be recorded using a PEWS observation record.



Adult observations should be recorded in on the NEWS2 observation record with the time and date clearly documented. Patient observations must be measured by an appropriately

trained and competent member of staff. A full set of observations should always include:

- **Respiration rate**
- **Oxygen saturation**
- **Systolic blood pressure**
- **Pulse rate**
- **Level of consciousness**
- **Temperature**

All adult patients with acute presentations should have a NEW score attributed to every set of observations.
Some patients may have pre-existing conditions and the scoring may need to be interpreted accordingly, e.g. hypercapnoeic failure due to COPD- scoring is outlined within the guidance.

Frequency of Monitoring
The NEW Score should be used to inform the frequency of clinical monitoring within in-patient areas.

- Patients scoring 0, the minimum frequency of monitoring should be 12-hourly.
- Patients scoring 1-4 increase this to 4-6-hourly, unless more or less frequent monitoring is considered appropriate by the clinical decision-maker.
- Patients scoring 5-6 or any Red (3) score increase this to hourly unless more or less frequent monitoring is considered appropriate by the clinical decision-maker.
- Patients scoring 7 or more should be on continuous monitoring unless less frequent monitoring is considered appropriate by the clinical decision-maker.

All in-patients should have their weight recorded on initial assessment.
If an observation is unrecordable or undetectable this must be escalated to senior clinical staff to assess the patient. An unrecordable observation should always be given a score of 3, unless assessed otherwise by senior clinical staff.

In non-inpatient settings clinical observations will be recorded at initial assessment to establish a baseline and again at any further contact where the patients clinical condition is of concern or if they are at risk of deterioration.

Deviation from Routine Monitoring
For all patients within in-patient areas clinical observations should be recorded at least every 12 hours and any alteration from this requires a senior clinical staff or MDT decision and the rationale must be detailed in the clinical notes by a senior clinician. Until such time as this has taken place observations must continue 12 hourly.

Exclusion from Routine Monitoring
For patients who have been commenced on an 'End of Life' care plan and/ or are subject to a DNACPR order it may not be appropriate to continue routine clinical observations where deterioration will not result in active treatment.
However, it is important to understand that some palliative treatments will still require some vital signs to be monitored and recorded. In these circumstances a documented note detailing what parameters should be monitored to facilitate safe treatment and the range of acceptable results is required along with any escalation actions required if results are outside of these ranges.

Patient consent
Informed verbal consent should always be obtained from the patient to undertake observations.
In circumstances where observations are indicated and patient refuses consent it is important to give a clear explanation of the need to perform observations and to explore the reason for refusal, and document in the clinical record and inform senior clinical staff.
If there are concerns about the risks and implications of not undertaking observations for a patient that may lack capacity then Mental Capacity must be formally assessed where there is any doubt.

5.1 Adults: NEWS Scoring Clinical Observations

5.1.2 Respiratory rate

An elevated respiration rate is a powerful sign of acute illness and distress in all patients. The respiration rate may be elevated because of generalised pain and distress, sepsis remote from the lungs, central nervous system (CNS) disturbance and metabolic disturbances such as metabolic acidosis.
A reduced respiration rate is an important indicator of CNS depression and narcosis.
Respiratory rate should be recorded for 60 seconds to account for variations in respiratory rate and pattern.
A respiratory rate of <9 or >20 is significant and will generate an alert, this will be form part of the aggregated score and trigger a clinical response.
Depth, symmetry and pattern of respiration should also be note and recorded if abnormal together with any associate sounds e.g. wheeze, cough and should form part of any assessment.

5.1.3 Oxygen saturation (SpO2)

Oxygen saturation is a powerful tool for the integrated assessment of pulmonary and cardiac function.
Oxygen saturation and any supplemental oxygen and delivery device should be recorded.
For most patients a target oxygen saturation should be 94% or above on air and recorded on the SpO2 Scale 1.

Oxygen is a drug and for all but emergency lifesaving administration requires a written prescription and rationale for use recorded in the patient record.
A saturation ≤ 91%, with or without supplemental oxygen needs to be reviewed urgently.
If used the device, flow rate, cylinder or wall outlet should all be checked to ensure optimum oxygenation.

The **SpO2 Scale 2** should be used for patients with confirmed hypercapnic respiratory failure (usually patients with moderate or severe chronic obstructive pulmonary disease, severe chest wall or spinal disease, neuromuscular disease or severe obesity) with the NEW score adjusted to reflect the lower recommended oxygen saturation range (88–92%).
This should be a confirmed diagnosis - such as documentation on the patients Summary Care Record, or GP summary, or Acute Trust Discharge letter, or the admitting doctors medical assessment.

If you do not know whether the patient is a CO2 Retainer, use Scale 1 until their diagnosis is confirmed.

Oxygen saturations may be affected by many variables:

- Hypoperfusion conditions e.g., anaemia, atrial fibrillation or hypothermia, carbon monoxide exposure, oedema, jaundice and vasoconstriction – warm the patient's hand to help with peripheral perfusion
- Nail Varnish and artificial nails
- Bright or fluorescent room lighting
- Poorly positioned probe – DO NOT use a finger probe on an ear or vice versa
- Movement e.g., shivers, rigors
- Dark skin – sats probes may read artificially high by up to 4%

5.1.4 Blood Pressure

Blood Pressure (BP) is routinely measure using electronic devices, however if the pulse is irregular or the BP very low (<80mmHg) the accuracy of electronic BP measuring devices may not be accurate and manual recording of blood pressure must be undertaken.

The Systolic BP only is scored on the NEWS2 chart. Diastolic blood pressure does not form part of the scoring system for acute-illness severity because it
does not add value in this context however it should be routinely recorded.

Hypotension may indicate circulatory compromise due to sepsis or volume depletion, cardiac failure or cardiac rhythm disturbance, CNS depression, hypoadrenalism and/or the effect of blood pressure-lowering medications.
It is important to note that some people have a naturally low systolic blood pressure (<100 mmHg) and this might be suspected if the patient is well and all other physiological parameters are normal, or confirmed by reference to previous records of blood pressure.

5.1.5 Pulse Rate

The measurement of heart rate is an important indicator of a patient's clinical condition. Tachycardia (high heart rate) may be indicative of circulatory compromise due to sepsis or volume depletion, cardiac failure or arrythmia, pyrexia, metabolic disturbance, drug intoxication or pain and general distress. Bradycardia (low heart rate) may be normal with physical conditioning or as a consequence of medication, e.g., with beta blockers, or it may also be an important indicator of hypothermia, CNS depression, hypothyroidism or heart block.

A manual pulse **MUST** be taken with every set of observations to assess the pulse properties.
The normal resting pulse rate is between 51 and 90 bpm and rate and regularity should be recorded.
If the pulse is irregular, or the patient is known to be in atrial fibrillation, then the apex beat should be used to assess the patient's heart rate.
Patients receiving a rate limiting medication i.e. beta blocker will not be able to increase their heart rate to compensate for hypoperfusion conditions and therefore other abnormal signs (high respiratory rate and low urine output) will have extra significance.
A 12 lead ECG should be performed on any patient who has a new irregular pulse noted, or any other concerns with their pulse.

5.1.6 Level of Consciousness (ACVPU)

Deterioration in conscious level can be caused by many factors, and a more comprehensive physical assessment should be undertaken by a competent practitioner.
New confusion is a significant indicator of deteriorating physiology and is recorded on the NEWS2 chart scoring a 3.
The trust short Confusion Assessment Method Tool should be used for inpatients (CH055 in the clinical document library).

A	**Alert**	A fully awake patient. Such patients will have spontaneous opening of the eyes, will respond to voice and will have motor function.
C	**New confusion**	A patient may be alert but confused or disorientated. It is not always possible to determine whether the confusion is 'new' when a patient presents acutely ill and **should always be considered to be 'new'** until confirmed to be otherwise.
V	**Voice**	The patient makes some kind of response when you talk to them, which could be in any of the three component measures of eyes, voice or motor
P	**Pain**	The patient makes a response to a pain stimulus
U	**Unresponsive**	This is also commonly referred to as 'unconscious'. This outcome is recorded if the patient does not give any eye, voice or motor response to voice or pain.

Interpret a person's mental state in the context of their normal function and treat changes as being significant. Be aware that changes in cognitive function may be subtle and assessment should include history from the patient and their family or carers.

Consider that changes in cognitive function may present as changes in behaviour or irritability in both children and adults with a learning disability or dementia.

Consider that changes in cognitive function in older people may present as acute changes in functional abilities.

5.1.7 Temperature

Extremes of temperature- both pyrexia and hypothermia- are sensitive markers of acute-illness severity, sepsis and physiological disturbance.
Tympanic thermometers are known to become less reliable below 34°C and alternative systems should be used.

Take into account that some groups of people with sepsis may not develop a raised temperature.

These include:

- people who are older or very frail
- people having treatment for cancer
- people severely ill with sepsis
- young infants or children
- people with a spinal cord injury.

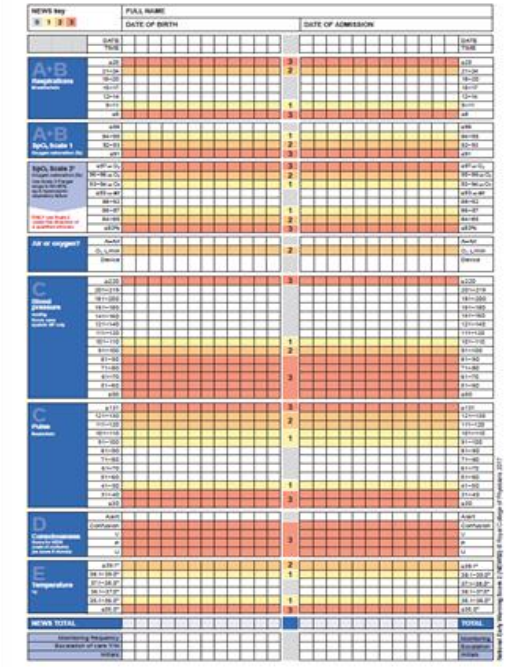
Consider that a rise in temperature can be a physiological response, for example after surgery or trauma. [

5.2 Calculation of the Adult National Early Warning Score - NEWS2

5.2.1 RECORD:

Each of the six physiological NEWS parameters are allocated a score according to the magnitude of disturbance to each parameter and are recorded on the NEWS2 chart (or Electronic Patient Record when available).

Example NEWS2 Chart:



5.2.2 SCORE:

The individual parameter scores should then be added up, along with a score of 2 for use of supplemental oxygen, to derive the aggregate NEW score for the patient.

Example NEWS2 Scoring system:

Chart 1: The NEWS scoring system

Physiological parameter	Score 3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO_2 Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO_2 Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

5.2.3 ASSESS:

Assess whether the score needs any response: There are four trigger levels for a clinical alert requiring clinician assessment based on the NEWS:

- **LOW score:** an aggregate NEW score of 1–4
- **A single RED score:** an extreme variation in an individual physiological parameter (a score of 3 in any one parameter, which is colour-coded **RED** on the NEWS2 chart)
- **MEDIUM score:** an aggregate NEW score of 5 or 6. **A NEW score of 5 or more is a key threshold** and is indicative of potential serious acute clinical deterioration and the need for an urgent clinical response
- **HIGH score:** an aggregate NEW score of 7 or more

Example NEWS2 Thresholds and Triggers: clinical documentation for use is available on SharePoint

Chart 2: NEWS thresholds and triggers

NEW score	Clinical risk	Response
Aggregate score 0–4	Low	Ward-based response
Red score Score of 3 in any individual parameter	Low–medium	Urgent ward-based response*
Aggregate score 5–6	Medium	Key threshold for urgent response*
Aggregate score 7 or more	High	Urgent or emergency response**

* Response by a clinician or team with competence in the assessment and treatment of acutely ill patients and in recognising when the escalation of care to a critical care team is appropriate.

**The response team must also include staff with critical care skills, including airway management.

5.2.4 RESPONSE

These triggers should determine the urgency of the clinical response and the clinical competency of the responder, bearing in mind that physiological abnormalities due to long term conditions should be considered at admission.

- **A LOW score (NEW score 1–4)** should prompt assessment by a competent registered clinician who should decide if a change to frequency of clinical monitoring or an escalation of clinical care is required.

- **A MEDIUM score (i.e. NEW score of 5–6 or a RED score)** should prompt an **urgent (within 1 hour) review by a clinician** skilled with competencies in the assessment of acute illness which will be either the Senior Clinician with appropriate skills, GP responsible for the ward, Urgent Care Doctor, Nurse Practitioner or Specialist Paramedic Practitioner with relevant experience, who should consider whether escalation of care to an acute hospital is required. To ensure clinical cover 24/7, this role will be undertaken by an Out of Hours doctor, nurse or emergency care practitioner

- **A HIGH score (NEW score of 7 or more)** should prompt **emergency assessment (immediate) and/ or usually transfer of the patient to an acute care setting**. An urgent transfer (999) will be arranged by the senior clinician within the clinical area (where appropriate) using their clinical judgement and this should not be delayed to await a more senior assessment.

Example NEWS2 Clinical Response to NEWS Trigger Thresholds:

Chart 4: Clinical response to the NEWS trigger thresholds

NEW score	Frequency of monitoring	Clinical response
0	Minimum 12 hourly	• Continue routine NEWS monitoring
Total 1–4	Minimum 4–6 hourly	• Inform registered nurse, who must assess the patient • Registered nurse decides whether increased frequency of monitoring and/or escalation of care is required
3 in single parameter	Minimum 1 hourly	• Registered nurse to inform medical team caring for the patient, who will review and decide whether escalation of care is necessary
Total 5 or more Urgent response threshold	Minimum 1 hourly	• Registered nurse to immediately inform the medical team caring for the patient • Registered nurse to request urgent assessment by a clinician or team with core competencies in the care of acutely ill patients • Provide clinical care in an environment with monitoring facilities
Total 7 or more Emergency response threshold	Continuous monitoring of vital signs	• Registered nurse to immediately inform the medical team caring for the patient – this should be at least at specialist registrar level • Emergency assessment by a team with critical care competencies, including practitioner(s) with advanced airway management skills • Consider transfer of care to a level 2 or 3 clinical care facility, ie higher-dependency unit or ICU • Clinical care in an environment with monitoring facilities

5.3 Other Physiological Parameters

Knowledge of other clinical observations are also important in assessing and monitoring patients' health state.

5.3.1 Capillary Refill time (CRT)

A capillary refill time of 3 seconds or more is an important warning sign for serious illness and risk of death in children. CRT is widely recommended as part of the routine assessment of unwell children.
It is a simple test to measure the time taken for colour to return to an external capillary bed after pressure is applied, typically by pressing the end of a finger with the thumb and forefinger. Normal capillary refill time is usually 2 seconds or less.

Press on the finger for five seconds using moderate pressure at an ambient temperature of 20–25 degrees Celsius. A capillary refill time of three seconds or more should be considered abnormal.

5.3.2 Supplemental Oxygen

Remember for oxygen therapy the prescription should be to achieve a specified minimum SpO2 rather than the concentration or flow of gas. The method of delivery, device and flow rate therefore need to be recorded within the patient's clinical record and the resulting SpO2 reading obtained marked on the NEWS chart.

5.3.3 Pain

Pain is not recorded as part of NEWS however, pain and/or its cause will usually, but not always, generate physiological disturbances that will be captured by the scoring system. Pain should always be assessed, responded to and recorded.

5.3.4 Urine Output

In the majority of patients urine output does not need to be routinely measured, but should be considered in the following instances:

- Patients with other abnormal signs such as high fever.
- Patients with other abnormal fluid losses such as vomiting, drains, stomas or diarrhoea.
- Patients with primary urological or renal problems

Monitoring urine output will be necessary for some patients as dictated by their clinical condition. Urine output is generally assessed over a two hour period.
The optimum urine output is 1ml / kg / hr. In a 70kg adult this is equal to 70 mls/hr.
The minimum desired urine output is 0.5mls / kg / hr, which is equal to 35 mls/hr.

5.3.5 Fluid Balance Charts

The balance of fluids within the body is vitally important, many conditions and situations impact the bodies ability to manage fluids and in such circumstances measurement of input and output may be required. (NICE CG17410)
When a fluid balance chart is in use all measures of both input and output fluid quantities and times should be recorded.

- All patients receiving IV or SC fluid require a fluid chart
- All patients required to be "nil by mouth" for any period exceeding four hours require a fluid chart

Daily and cumulative balances should be entered onto the fluid chart.
Insensible losses are not normally recorded but should be considered and accounted for in patients with fluid balance problems. Normal insensible loss is approximately 1L in 24 hours but can greatly increase when a patient has a high temperatures or rapid respiratory rate.

5.3.6 Head Injury

In patient falls where a head injury cannot be excluded e.g., un-witnessed falls, the patient should be considered at risk of deterioration and observed closely until clinically significant head injury has been excluded. (See also Prevention and Management of Falls Policy).

5.3.7 Skin signs

Examine people with serious deterioration for:

- mottled or ashen appearance
- cyanosis of the skin, lips or tongue
- non-blanching petechial or purpuric rash
- any breach of skin integrity (for example, cuts, burns or skin infections)
- other rash indicating potential infection.

6.0 Assessing the adult patient with significant deterioration

Vital signs and the NEWs score will give an indication of the patients' condition. If the patient is deteriorating, a more comprehensive assessment is warranted to fully understand any life-threatening presentations.

The **ABCDE** model of assessment is recommended as it gives a rapid, initial assessment of the patients' condition.

Concern about a patient's clinical condition should always override the NEWS if the attending healthcare professional considers it necessary to escalate care.
Sepsis should be considered in any patient with a known infection, signs or symptoms of infection, or in patients at high risk of infection, and a NEW score of 5 or more – 'think sepsis'.

Patients with suspected infection and a NEW score of 5 or more require urgent assessment and intervention by a clinical team competent in the management of sepsis and urgent transfer to hospital or transfer to a higher-dependency clinical area within hospitals for ongoing clinical care.

6.1 Suspect Sepsis

In deterioration of all patients with known or suspected infection full assessments MUST be undertaken with the view to EXCLUDE THE POSSIBILITY of sepsis.

- In a patient with a confirmed or suspected infection, or at risk of infection, a **NEW score of 5 or more** should raise the suspicion of sepsis and prompt an urgent clinical response by a clinical team competent in the management of sepsis.
- **Sepsis screening using the Sepsis Trust tools should be performed.**
- Even where no current signs or symptoms are presently evident clear advice should be given regarding any signs of deterioration. This 'safety netting' process should be fully recorded detailing the information given to the patient if deterioration occurs, or concern increases.

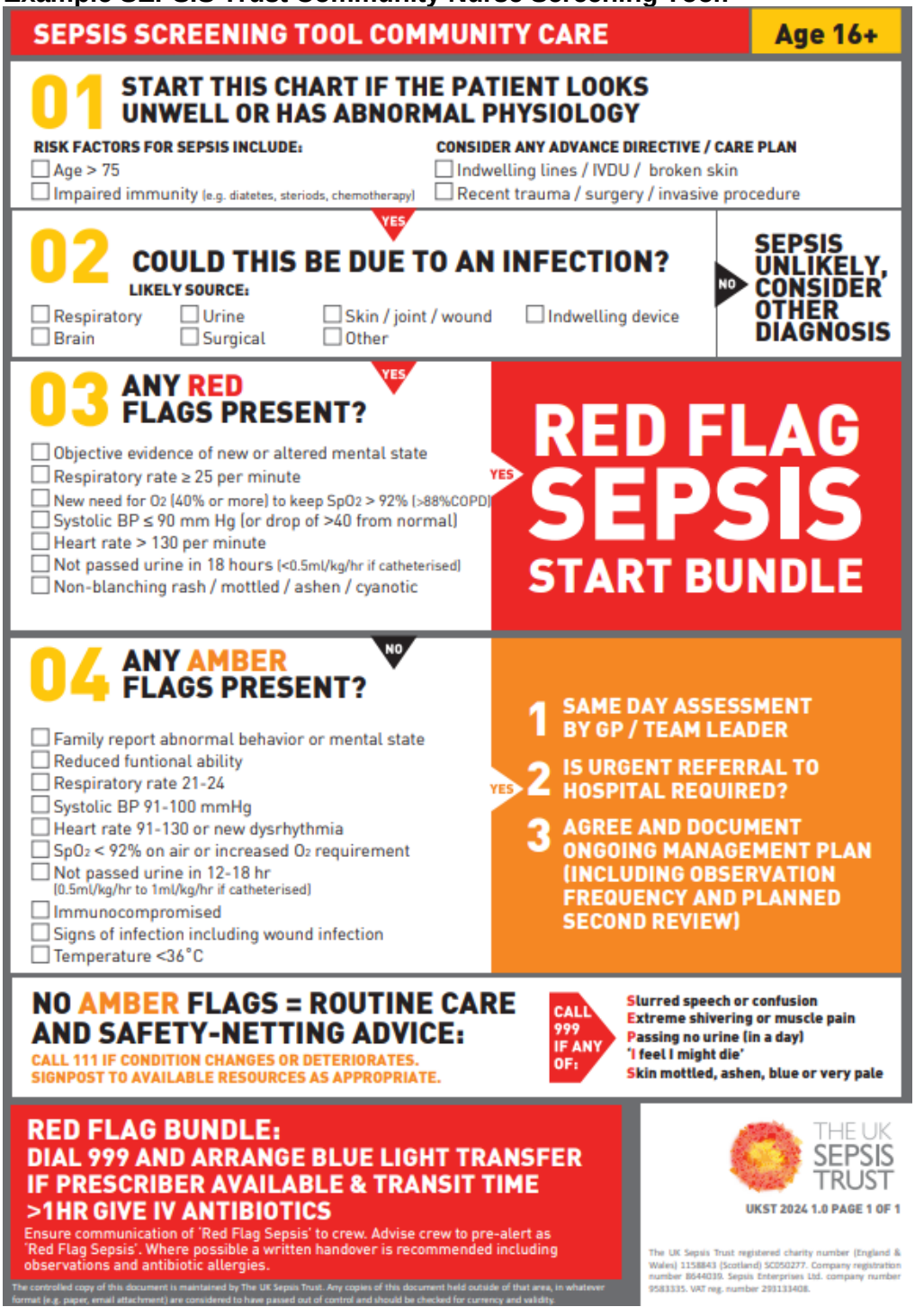
BE SUSPICIOUS, a significant number of patients with early stages of sepsis may 'look well', not all will show 'classic sepsis' symptoms and can present with high or low temperatures.

6.2 Assessment of Sepsis

Current Sepsis Trust Community screening tools for adults and children can be accessed online at the Sepsis Trust website. They are active PDF tools used to assess deteriorating patients for their risk of acute sepsis.
Once completed they can be printed off and uploaded to the patient's clinical record:

https://sepsistrust.org/professional-resources/clinical/

Example SEPSIS Trust Community Nurse Screening Tool:



SEPSIS SCREENING TOOL COMMUNITY CARE — Age 16+

01 START THIS CHART IF THE PATIENT LOOKS UNWELL OR HAS ABNORMAL PHYSIOLOGY

RISK FACTORS FOR SEPSIS INCLUDE:
- ☐ Age > 75
- ☐ Impaired immunity (e.g. diatetes, steriods, chemotherapy)

CONSIDER ANY ADVANCE DIRECTIVE / CARE PLAN
- ☐ Indwelling lines / IVDU / broken skin
- ☐ Recent trauma / surgery / invasive procedure

YES

02 COULD THIS BE DUE TO AN INFECTION?

LIKELY SOURCE:
- ☐ Respiratory
- ☐ Urine
- ☐ Skin / joint / wound
- ☐ Indwelling device
- ☐ Brain
- ☐ Surgical
- ☐ Other

NO → SEPSIS UNLIKELY, CONSIDER OTHER DIAGNOSIS

03 ANY RED FLAGS PRESENT? — YES

- ☐ Objective evidence of new or altered mental state
- ☐ Respiratory rate ≥ 25 per minute
- ☐ New need for O_2 (40% or more) to keep SpO_2 > 92% (>88%COPD)
- ☐ Systolic BP ≤ 90 mm Hg (or drop of >40 from normal)
- ☐ Heart rate > 130 per minute
- ☐ Not passed urine in 18 hours (<0.5ml/kg/hr if catheterised)
- ☐ Non-blanching rash / mottled / ashen / cyanotic

YES → RED FLAG SEPSIS START BUNDLE

04 ANY AMBER FLAGS PRESENT? — NO

- ☐ Family report abnormal behavior or mental state
- ☐ Reduced funtional ability
- ☐ Respiratory rate 21-24
- ☐ Systolic BP 91-100 mmHg
- ☐ Heart rate 91-130 or new dysrhythmia
- ☐ SpO_2 < 92% on air or increased O_2 requirement
- ☐ Not passed urine in 12-18 hr (0.5ml/kg/hr to 1ml/kg/hr if catheterised)
- ☐ Immunocompromised
- ☐ Signs of infection including wound infection
- ☐ Temperature <36°C

YES
1 SAME DAY ASSESSMENT BY GP / TEAM LEADER
2 IS URGENT REFERRAL TO HOSPITAL REQUIRED?
3 AGREE AND DOCUMENT ONGOING MANAGEMENT PLAN (INCLUDING OBSERVATION FREQUENCY AND PLANNED SECOND REVIEW)

NO AMBER FLAGS = ROUTINE CARE AND SAFETY-NETTING ADVICE:
CALL 111 IF CONDITION CHANGES OR DETERIORATES.
SIGNPOST TO AVAILABLE RESOURCES AS APPROPRIATE.

CALL 999 IF ANY OF:
Slurred speech or confusion
Extreme shivering or muscle pain
Passing no urine (in a day)
'I feel I might die'
Skin mottled, ashen, blue or very pale

RED FLAG BUNDLE:
DIAL 999 AND ARRANGE BLUE LIGHT TRANSFER IF PRESCRIBER AVAILABLE & TRANSIT TIME >1HR GIVE IV ANTIBIOTICS
Ensure communication of 'Red Flag Sepsis' to crew. Advise crew to pre-alert as 'Red Flag Sepsis'. Where possible a written handover is recommended including observations and antibiotic allergies.

THE UK SEPSIS TRUST

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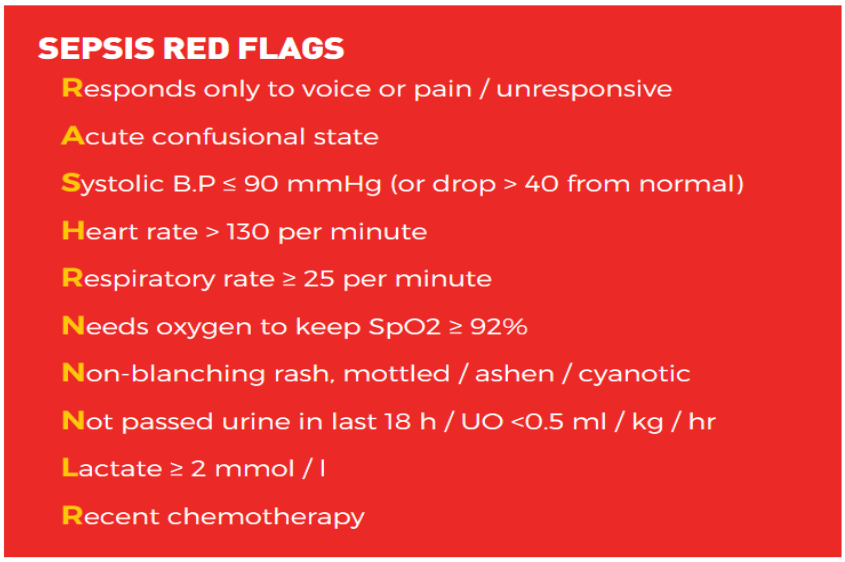
6.3 Arrange urgent admission for patients with RED FLAG SEPSIS



- A patient who looks unwell with presumed infection who displays at least ONE Red Flag Sepsis criterion has **Red Flag Sepsis** and transfer to an acute hospital should immediately be arranged and **The Sepsis Six** regimen commenced.
- Transfer should be by 'blue light' ambulance, with a Paramedic crew if immediately available.
- The call should include direct reference to the acuity of the condition, using the term '**Red Flag Sepsis'**.
- Where possible, a telephone referral to the receiving Emergency Department should be made, using the term '**Red Flag Sepsis'.**

Elements of treatment within The Sepsis Six may usefully be undertaken whilst transfer is awaited in a number of SCHT locations.
There is strong evidence that expedient delivery of 'basic' aspects of care limits the maximum acuity of intervention required - early resuscitation can prevent the requirement for invasive monitoring and vasoactive support later in hospital.
Within SCHT the range of treatments possible may be severely restricted by the scope of practice within differing services.

6.4 Immediate treatment for RED FLAG SEPSIS: The Sepsis Six

The key immediate interventions that increase survival from sepsis are described in a bundle termed the **Sepsis Six.** This bundle has been shown to be associated with significant mortality reductions when applied within the first hour.
The first 4 interventions may be practicable in the community setting and should be considered in our services **where it does not delay transfer to an acute settling.**

The Sepsis Six
1. Administer oxygen to maintain saturations >94%
2. Take blood cultures and consider infective source
3. Administer intravenous antibiotics
4. Consider intravenous fluid resuscitation
5. Check serial lactates
6. Commence hourly urine output measurement

Oxygen
Patients with sepsis are exempt from British Thoracic Society guidelines for the administration of oxygen to acutely ill adults, the pathophysiology of sepsis is such that

organs become critically hypoxic. Hypoxia will kill before hypercapnia.
Oxygen should be given to maintain target saturations of 94% or higher.
Where patients are known to have moderate to severe pulmonary disease (and where available), the recommend that oxygen be administered remains, but to maintain a lower target oxygen saturations, above 88%. Oxygen will not cause sudden apnoea in such patients.
It must be remembered that to titrate oxygen delivery to maintain a specified saturation is provision of oxygen therapy that requires a prescription. High flow continuous oxygen delivery via non-rebreathing mask for the express purpose of life saving does not require prescription.

Antimicrobials
If transfer times to hospital are routinely in excess of one hour consideration of whether it is appropriate and feasible to administer intravenous (or intramuscular) antimicrobials needs to take place. . **It should not delay transfer to an acute settling.**
A delay of one hour in administering antimicrobials in septic shock is associated with an increase in mortality rates of 86%.
Some community facilities may have available the local formulary recommended antimicrobial agents for community-acquired pneumonia, urinary tract infection, skin and soft tissue infection and intra-abdominal infection which together account for 90% of cases of sepsis.

Blood Cultures
If clinicians elect to administer antimicrobials, the feasibility of sampling blood for culture should be considered **where staff have been appropriately trained** and have access to appropriate equipment. **It should not delay transfer to an acute settling.**

While modern blood culture media are able to bind antimicrobials and thus increase the capture rate of organisms after antibiotic administration, this is not fully effective and capture rates remain higher if cultures are sampled first.

Intravenous Fluids
Bolus administration of IV Sodium Chloride (Normal Saline) can be administered to counter hypotension and should considered **where staff have been appropriately trained** and have access to appropriate equipment. Iv fluids require suitable venous access and it is recognised this may be difficult to achieve in patients with hypotension. A PGD is available to support services if a prescriber is not available.
I
It should not delay transfer to an acute settling.

6.5 Management of AMBER FLAG SEPSIS

The presence of **Amber Flag Sepsis** criterion in the absence of Red Flags indicate the patient has sepsis, this may not have yet progressed to cause serious organ dysfunction but careful consideration of the potential need for acute hospital assessment is needed.

Treatment is still indicated for the sepsis, clinicians need to consider the appropriateness of the patient location together with the range of treatment options and skillsets of the staff available. Patients with as yet ‘minor’ sepsis can deteriorate rapidly.

Uncomplicated sepsis, where the patient does not have the suspected organ dysfunction or tissue hypo-perfusion that accompanies severe sepsis or septic shock may be safely managed without acute hospital admission.

However, it is often difficult to determine patients that can be safely treated in the community and in circumstances where there is doubt transfer to an acute hospital is recommended. Additional ‘higher risk’ condition factors, patients who live alone with poor access to

communication and transport difficulties all need to be taken into account.

Where clinical assessment is unable to identify a suspected source of infection, acute hospital assessment must also be very carefully considered and the rationale for decision making explained within the patient record.

For those in whom community-based care is deemed safe and appropriate, consideration should be given to providing a scheduled review appointment/visit, clear records should be made of the decision, rationale and the safety netting provided.

If transfer to acute hospital is considered necessary the call to the Ambulance Service should include direct reference to the acuity of the condition, using the terms 'Amber Flag Sepsis'. A brief, clear handover should accompany the patient to include observations, any relevant medical history and antibiotic history including allergies.

Where possible, a telephone referral to the receiving Emergency Department should be made, using the terms 'Amber Flag Sepsis' or 'sepsis' and SBAR communication method. The presence of any risk factors and the rationale for the clinical decision to refer for hospital assessment should be discussed.

6.6 Low risk patients

Patients who present with infections but without Red or Amber flags require appropriate safety netting advice and signposting to GP/111/999 route if deterioration occurs.
Patients records need to reflect information was given to the patient.

6.7 Neutropenia

Suspect neutropenic sepsis in people who become unwell and:

- Are having or have had systemic anticancer treatment within the last 30 days
- Are receiving or have received immunosuppressant treatment for reasons unrelated to cancer. Use clinical judgement (based on the person's specific condition, medical history, or both, and on the treatment they received) to determine whether any past treatment may still be likely to cause neutropenia.

7.0 Paediatric Early Warning Scores/ Systems (PEWS)

7.1 Clinical observations are not currently routinely taken on children seen in community settings however children presenting with acute illness or deterioration will require assessment and observations.
The Royal College of Nursing is currently working towards a nationally agreed paediatric early warning system, but until that time the trust is using the tool used by the local acute trust to assess unwell children seen in acute community settings, to ensure effective communication of assessment and risk.
Age specific tools for 0-12 months s, 1-5,years, 5-12 years, and 12+ years are used in acute assessment areas and available as printed copies with example links below.


PEWS 0 to 1yrs.pdf


PEWS 1 to 5yrs.pdf


PEWS 5-12 yrs.pdf


PEWS more than 12 years.pdf

Early recognition and intervention in deterioration can improve outcomes for infants and children with conditions that can lead to sepsis.

7.2 Assessment of Paediatric Sepsis

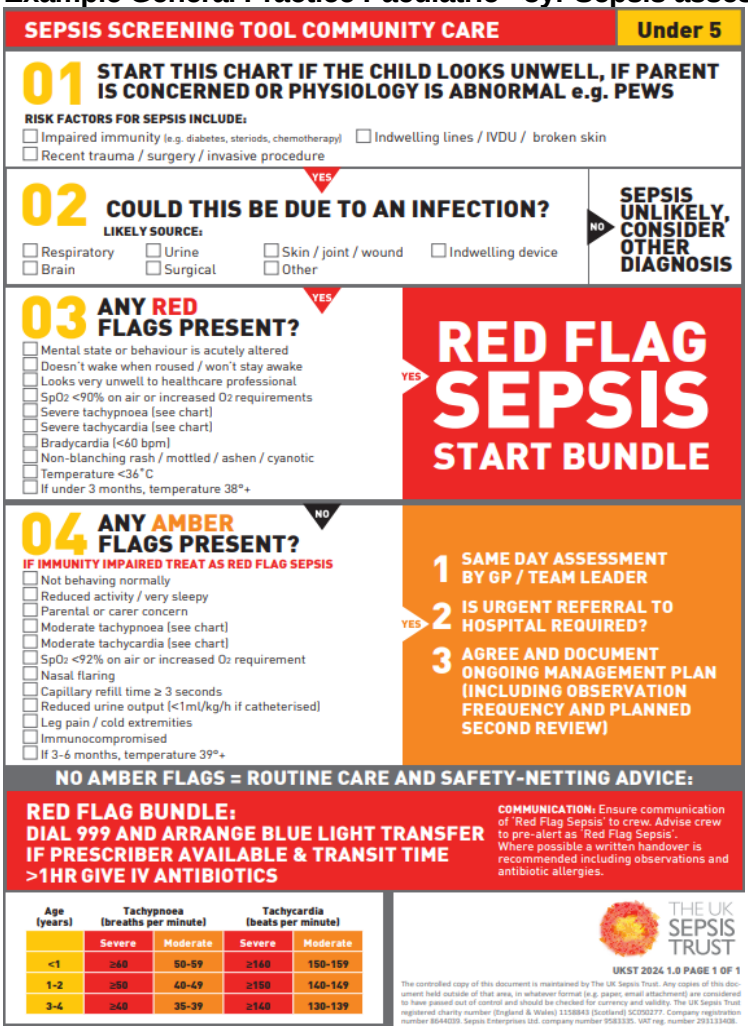
Due to the nature of childhood illnesses, a fever can be quite common. Screening for sepsis

using agreed Sepsis trust screening tools should take place for infants and children who look unwell or are feverish, particularly with a temperature greater than 39˚C, but remembering that in those infants younger than three months a temperature of just 38˚C or more is a Red Flag. A low temperature can be more concerning and is a Red Flag in all children and infants under 12 years.

Current Sepsis Trust General Practice/ Community screening tools for children of all ages can be accessed online at the Sepsis Trust website. They are active PDF tools used to assess deteriorating patients for their risk of acute sepsis. Once completed they can be printed off and uploaded to the patients clinical record:

https://sepsistrust.org/professional-resources/clinical-tools/

Example General Practice Paediatric <5yr Sepsis assessment tool:

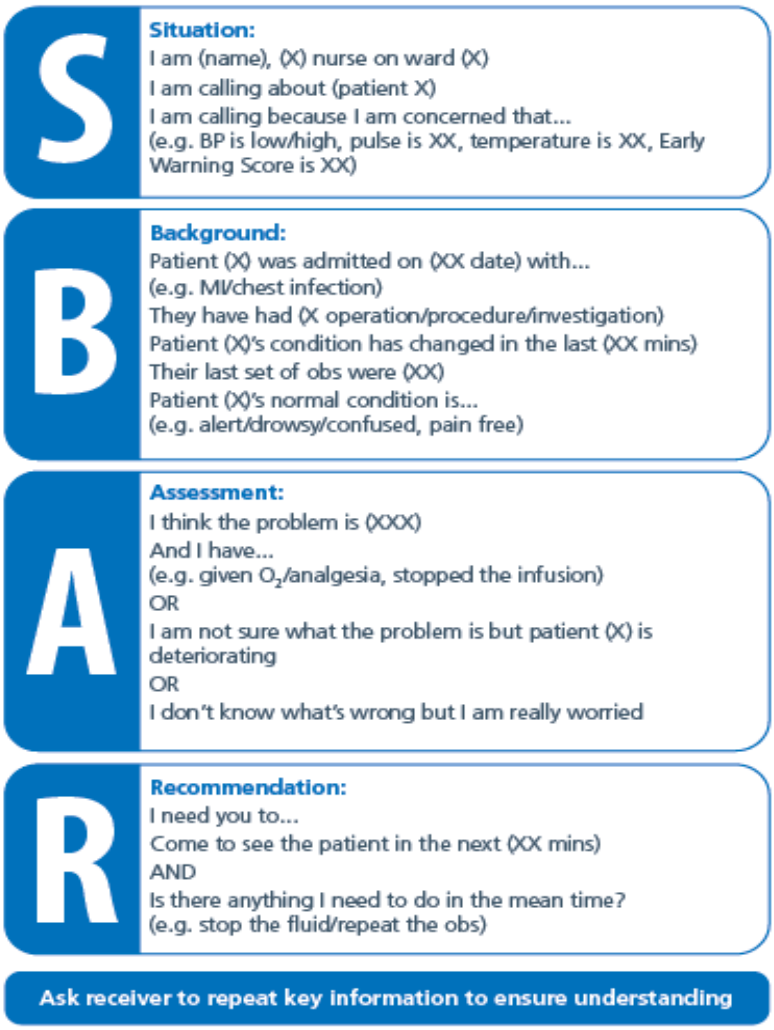


Parents or carers of children at risk of sepsis can be helped to recognise the signs and symptoms using information leaflets produced by the Sepsis trust: a detailed advice leaflet here, and a brief reminder card here.

8.0 Communication: SBAR Tool (Situation, Background, Assessment, Recommendation)

Structured handover systems such as SBAR show significant improvements both in the level of information transferred and the ability of clinicians to make appropriate treatment decisions in a timely manner and is the SCHT system of choice.

The system offers a sensible effective, timely communications tool that improves information transfer between individuals from differing clinical backgrounds and hierarchies.
SBAR is easy to remember and is used to ensure that communication is carried out in a structured way and that clinical problems that require immediate attention are escalated effectively.



The SBAR tool originated from the US Navy and was adapted for use in healthcare by Dr M Leonard and colleagues from Kaiser Permanente, Colorado, USA

9.0 Dissemination and Implementation

9.1 Dissemination

This policy will be circulated by DATIX and available to staff through the Trust website and discussed at local staff forums.

9.2 Implementation:
Staff will receive training as part of induction and then as determined by the Trust Clinical Competencies Training Policy.

All community trust staff will receive Sepsis awareness training at induction.

All clinical staff will be trained in the measurement of physiological observations, use of appropriate EWS and the SBAR tool, and Sepsis screening at agreed intervals as determined by the Trust Clinical Competencies Training Policy.

All clinical staff in high-risk areas will in addition be trained in the recognition of the acutely unwell patient, including management of Sepsis, by attending Immediate Life Support, defibrillator and anaphylaxis training at agreed intervals as determined by the Trust Clinical Competencies Training Policy.

Details regarding the requirements for individual staff groups will be specified, reviewed and monitored as defined by the as determined by the Trust Clinical Competencies Training Policy.

10.0 Monitoring Compliance

Compliance with this policy will be monitored through:

- ESR mandatory training compliance annually
- Significant events analyses
- Resuscitation Group input
- Learning form Deaths Group case reviews

11.0 Consultation

Clair Hobbs, Director of Nursing and Clinical Delivery
Mahadeva Ganesh, Medical Director
Susan Watkins, Chief Pharmacist and CD Accountable Officer
Sharon Simkin, Clinical Quality Lead Children & Families (new job title needed)
Claire Horsfield Director of Operations and Chief AHP
Wendy Sweeney, Clinical Nurse Manager HMP Stoke Heath
Pat Staite, Lead GP HMP Stoke Heath and Associate Medical Director
Tom Seager Clinical Director (Dental)
Caron Morton Medical Advisor and Community Hospital GP Ludlow
Andy MacAuley, Resuscitation Officer
Emily Peer, Associate Medical Director

12.0 References

- NEWS 2 Final Report, Standardising the assessment of acute-illness severity in the NHS, Royal College of Physicians 2017
- NICE CG 50: Acutely ill adults in hospital: recognising and responding to deterioration, July 2007
- NICE CG 51 Suspected sepsis: recognition, diagnosis and early management (nice.org.uk) Updated Jan24
- Resuscitation Guidelines (UK) 2021, Resuscitation Council

- Sepsis-Manual-7th-Edition-2024-V1.0.pdf (sepsistrust.org)
- Sepsis guidance implementation advice for adults, NHS England, September 2017
- SBAR communication tool- situation, background, assessment, recommendation, ACT Academy, Online library of Quality Service Improvement and Redesign tools, NHS Improvement, January 2018
- NICE CG103 Delirium: prevention, diagnosis and management March 2019
- Standards for Assessing, Measuring and Monitoring Vital Signs in Infants, Children and Young People
- NHS England » National paediatric early warning system (PEWS) observation and escalation charts

13.0 Associated Documents

- Consent to Examination and Treatment Policy
- Information Governance Policy
- Clinical Record Keeping Policy
- Resuscitation Policy: CPR- DNACPR Policy
- Prevention and Management of Falls Policy
- CH055 Short Confusion Assessment Method (CAM) Tool

14.0 Appendices

Early Warning Scoring Flowchart- Prisons

Appendix 1

Early Warning Scoring Flow Chart – *Prisons*