Family Nursing & Home Care

Policy for Assessment, Measurement and Monitoring of Vital Signs and Recognition of Sepsis in Children and Young People

December 2022

Document Profile

Document Registration	Added following ratification
Type	Policy
Title	Policy for Assessment, Measurement and Monitoring of Vital Signs and Recognition of Sepsis Children and Young People
Author	Quality and Performance Development Nurse, in consultation with Community Children's Nursing Team
Category	Clinical Paediatric
Description	A policy for the Assessment, Measurement and Monitoring of Vital Signs and Recognition of Sepsis in Children and Young People
Approval Route	Organisational Governance Approval Group
Approved by	Rosemarie Finley
Date approved	9 December 2022
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Document Status	This is a controlled document. Whilst this document may be printed, the electronic version posted on the intranet is the controlled copy. Any printed copies of this document are not controlled. As a controlled document, this document should not be saved onto local or network drives but should always be accessed from the intranet.

Version control / changes made

Date	Version	Summary of changes made	Author
Dec 2022	1	New Policy, which replaces the previous SOPs for the 'Assessment, Measurement and Monitoring of vital signs as indicators of health or deterioration' Addition of NICE Sepsis Risk Stratification Tools for Children and Young People. Policy includes procedures to follow for assessing vital signs.	Mo de Gruchy

CONTENTS

1. INTRODUCTION

1.1 Rationale

Vital signs assessment takes place as part of the art of observation and monitoring of children and young people. The monitoring and measurement of vital signs and clinical assessment are core essential skills for all health care practitioners. The term 'assessment' describes the broader process involving visual observation, palpation (touch), listening and communication to evaluate the child or young person's condition. Assessment can include the characteristics, interactions, non-verbal communication, and reaction to physical surroundings that children or young people may display.

Sepsis is defined as "a life threatening organ dysfunction due to a deregulated host response to infection" (NICE 2017). It is the major cause of death in the under-fives population worldwide, and many sepsis-related deaths are preventable. This group of patients is vulnerable, and they often present with atypical or vague signs and symptoms, potentially resulting in delayed or inappropriate treatment (Sepsis Trust 2022).

This policy aims to establish the minimum standard of type and frequency of clinical observations to be undertaken on children and young people in community settings, including their own homes or clinics. This is in order to:

- provide a baseline of vital signs for children admitted to the CCNT caseload
- identify potential children at risk of deterioration e.g. recognition of sepsis
- ensure staff are aware of when, how and who to inform of deterioration

This policy should be used in conjunction with the Royal College of Nursing 'Standards for Assessing, Measuring and Monitoring Vital Signs in Infants, Children and Young People' (RCN 2017) and the National Institute of Health and Care Excellence 'Sepsis Risk Stratification Tools' (NICE 2017).

1.2 Scope

This policy applies mainly to staff working as part of the Children's Community Nursing Team (CCNT). It is also relevant to any other staff working within Child and Family Services who may be required to monitor vital signs and to be aware of the recognition of sepsis.

1.3 Role and Responsibilities

Chief Executive Officer (CEO)

The CEO has overall responsibility for ensuring there are effective arrangements in place so that staff are appropriately trained and competent to effectively fulfil their role within the organisation and to maintain the safety of patients.

Director of Governance and Care

The Director of Governance and Care will ensure systems are in place to implement and review this policy in line with evidence based practice.

Operational Lead Child and Family Services

The Operational Lead is responsible for ensuring that high standards are maintained within their area of responsibility and the standards set out in this policy are adhered to.

Team Leads

Each team lead is responsible for ensuring that staff attend all relevant statutory and mandatory training; and to monitor attendance on a routine basis. They must ensure all appropriate equipment is available and in good working order and ensure staff are appropriately trained, up dated and competent in the process within this policy.

Employees

Each staff member must ensure they attend all relevant mandatory training and other training if relevant for their role and keep themselves up to date. Staff must be competent in the assessment, measurement and monitoring of vital signs and recognition of sepsis in children and young people.

2. POLICY

2.1 Assessment of Vital Signs

All children and young people admitted to the Children's Community Nursing Team should have a baseline set of clinical observations (heart rate/pulse, temperature and respirations) recorded as part of their primary assessment. Ideally this should be done prior to their nursing/therapy intervention. These children should also have an agreed frequency of observations documented (with rationale provided) in the child's care plan.

Assessment of vital signs should be performed within the broader observation and assessment of the infant, child or young person, and at the appropriate level to meet the needs of the infant, child or young person. Practitioners need to be aware of normal physiological parameters and specific conditions that may alter parameters.

For those children who are receiving end of life/palliative care or have palliative care needs, it may not be appropriate to continue routine recording of clinical observations. Such decisions should always be jointly discussed and agreed with the child (as age-appropriate)/family/clinical team/MDT etc. and clearly recorded as agreed within the child's care plan.

Parents and guardians can provide useful context regarding how a child is in comparison to their normal state. Staff undertaking observation and monitoring of infants, children and young people must be cognisant of this and acknowledge and record any concerns raised.

Assessment tools should only be used by Registered Nurses and Health Care Assistants and Paediatric Care Workers who are trained and competent to make accurate assessment and recording of vital signs as a delegated task (see 2.1.1).

Primary assessments must only be undertaken by Registered Nurses.

2.1 1 Delegation to non-registrants

The monitoring of a child's condition may be delegated to a Health Care Assistant or Paediatric Care Worker who has been deemed competent to undertake the task.

Where the monitoring of a child's condition has been delegated to a non-registrant, clear parameters for vital signs/observations must be recorded in the care plan to enable timely and appropriate escalation where this is required.

The frequency of review by a Registered Nurse must also be recorded on the care plan when care is delegated to support staff.

2.1.2 Paediatric Early Warning Score (PEWS)

Currently there is no standardised PEWS system in place in England or Wales, although this is currently under review. Scotland does use a standardised system, although this is not validated for use in primary care (see Appendix 1). It can be useful to refer to these tables to ascertain how far outside the normal range a set of observations are. This may aid individual and team awareness of children at risk of deterioration and can assist with the structured referral of acutely unwell patients.

However, it is acknowledged that a PEWS will not identify all children at risk of deterioration, either due to the speed or the mechanism of deterioration. Therefore, it is essential that all staff are trained to recognise common patterns of deterioration with or without the use of a PEWS and not just use the score for reassurance.

2.2 Education and Training

2.2.1 Assessment of Vital Signs

Registered Nurses, Health Care Assistants and Paediatric Care Workers who assess and monitor infants, children and young people's vital signs must be competent in these clinical skills. As a minimum this should cover measurements of temperature, heart/pulse rate and respirations, including effort of breathing. They must also be competent to record such measurements accurately.

As part of their competence, Registered Nurses, Health Care Assistants and Paediatric Care Workers should have be able to evidence their understanding of the following:

- legal and professional issues in relation to monitoring and assessing infants, children and young people
- anatomy and physiology related to physiological 'norms' in vital signs and why these alter with age

- normal parameters for vital signs in infants, children and young people
- practical skills in assessing and measuring vital signs in infants, children and young people
- critical thinking when vital signs fall outside the accepted 'norm' for the child

2.2.2 Recognition of Sepsis

All staff working within Child and Family Services must attend regular and appropriate training in the recognition of Sepsis, including an annual refresher.

3. PROCEDURE

3.1 Vital Signs Assessment Recording Tools

The following tools are currently used by CCNT for the assessment, measurement and monitoring of vital signs and are implemented when clinical need indicates their use: The frequency of monitoring is also determined according to clinical need and detailed in the child's care plan.

- General Health Assessment - records responsiveness, rash, respirations, pulse, hydration, pain, temperature, feeding
- Short Term Assessment – less detailed then the General Health Assessment and used for children requiring up to five contacts (face to face/telephone)
- Pain Assessment for Children 0-18 years - records assessment of pain
- Pre-flight Nursing Assessment – records assessment of general health for a named child before flights to attend UK appointments

The tools listed above can be found on EMIS and some are also available in the following electronic folder: FNHC/Central Filing/Child&FamilyServices/Paediatric Records.

3.2 Assessment of Vital Signs

Gain consent from the child/young person and/or parent/carer prior to any assessment/intervention.

Any actions required to restrain or hold the child/young person still, should comply with best practice guidance, in line with the FNHC Policy and Procedures for "Restrictive physical interventions and the clinical holding of children and young people"

3.2.1 Respiration

Normal respiratory pattern is an easy, relaxed, subconscious activity which takes place at a rate dependent on the age and activity of the child

Observe and record the pattern, effort and rate of breathing. Count respirations for one minute

Observe and document skin colour, pallor, mottling, cyanosis and any traumatic petechiae around the eyelids, face and neck

Infants and children less than six to seven years of age are predominantly abdominal breathers therefore, therefore count abdominal movements

Look, listen and document any signs of respiratory distress eg, nasal flaring, grunting, wheezing, stridor, dyspnoea, recession, use of accessory and intercostal muscles, chest shape and movement

3.2.2 Heart/pulse rate

Parents/carers/health play specialists can assist in distracting the child to reduce anxiety whilst the child/young person's heart rate/pulse is measured

Use an appropriately sized stethoscope to auscultate the apex heart rate of children less than two years of age

The pulse of an older child is taken at the radial site at the wrist. Palpate the artery using the first and second fingertips, pressing firmly on the site until a pulse is felt

Count the heart/pulse rates for one minute noting the rate, depth and rhythm

The pulse rate should be consistent with the apex beat

Electronic data should be cross-checked by auscultation or palpation of the pulse

3.2.3 Temperature

If a child says they feel cold, feels cold to the touch or if the skin appears mottled, measure and record their temperature

Measure and record a temperature on all children who present with an acute presentation of illness with the device applicable for age

The thermometer should be left in position for the appropriate time, suggested by the manufacturer's instructions, to gain an accurate reading

In infants under the age of four weeks, measure temperature with an electronic thermometer in the axilla

For infants and children aged from four weeks to five years, use an electronic/chemical dot thermometer in the axilla or an infrared tympanic thermometer

For children five years and upwards, use an electronic/chemical dot thermometer in the axilla or mouth or an infrared tympanic thermometer

3.2.4 Pain

Observe and document findings using a standardised assessment tool appropriate for the child's age and developmental level.

For children up to 7 years old who are non-verbal and/or have cognitive impairments use the FLACC (Face, Legs, Activity; Cry; Consolable) Scoring Tool (Appendix 2)

For children 3 years and upwards who are able to, use the Wong-Baker Faces Pain Rating Scale (Appendix 3) and ask them to point to the face that best represents the pain they are feeling

3.3 Recognition of Sepsis

Screening for sepsis should take place for all infants and children who look unwell or are feverish, particularly with a temperature greater than 39˚C

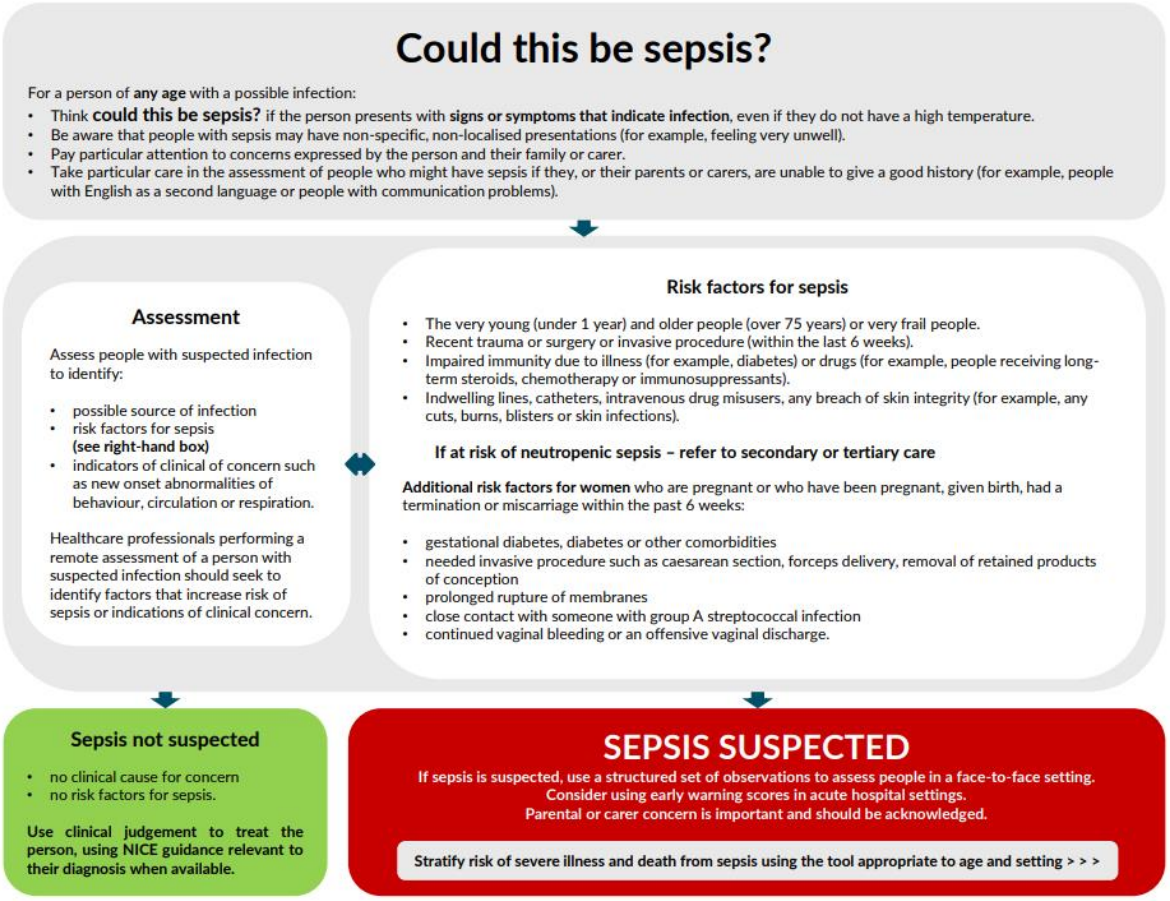
Infants younger than three months with a temperature of just 38˚C or more is a sepsis 'Red Flag'.

A low temperature of <36˚C can be more concerning and is a sepsis 'Red Flag' in all children and infants under 12 years.

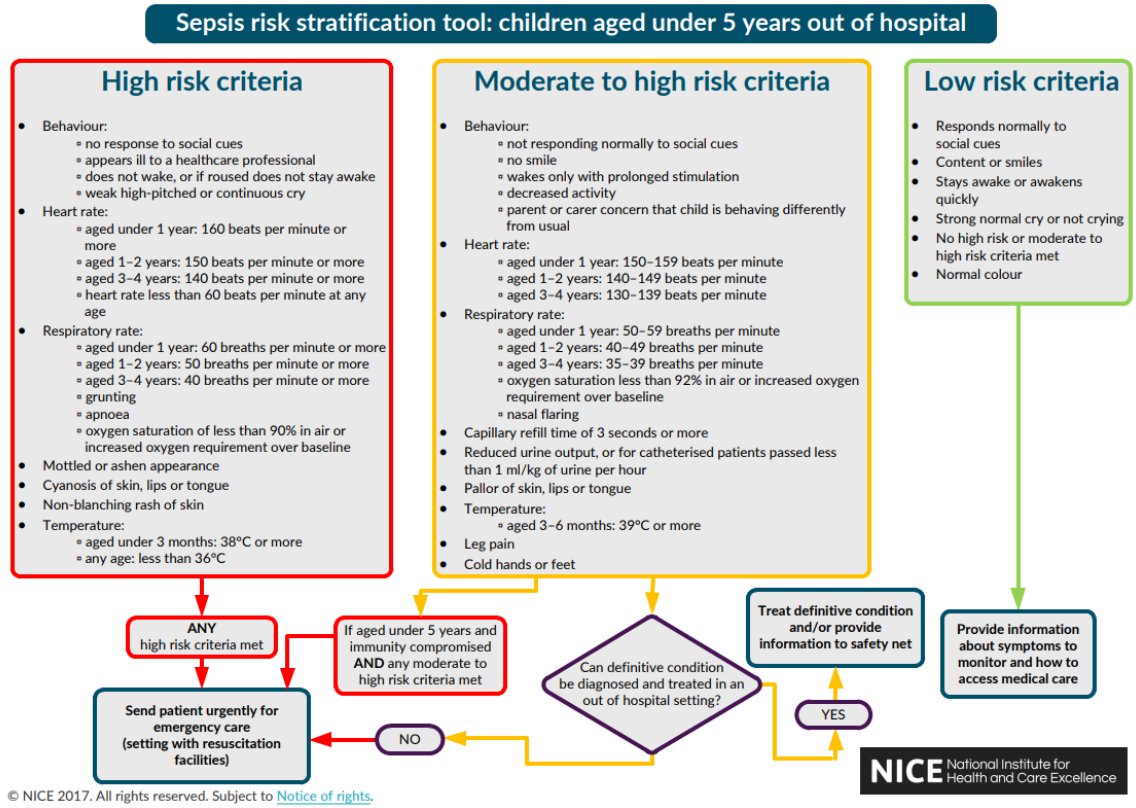
A child may have sepsis if he or she:

- ✓ Is breathing very fast
- ✓ Has a 'fit' or convulsion
- ✓ Looks mottled, bluish, or pale
- ✓ Has a rash that does not fade when you press it
- ✓ Is very lethargic or difficult to wake
- ✓ Feels abnormally cold to touch

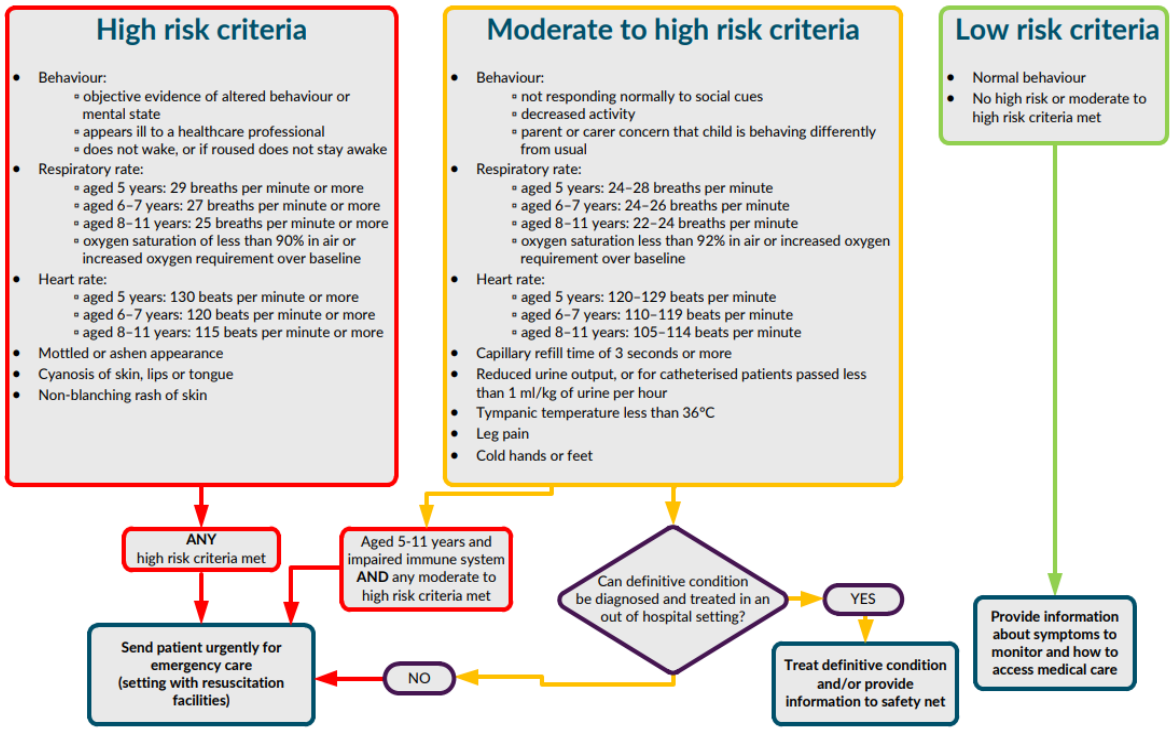
3.3.1 Recognition of Sepsis Algorithm



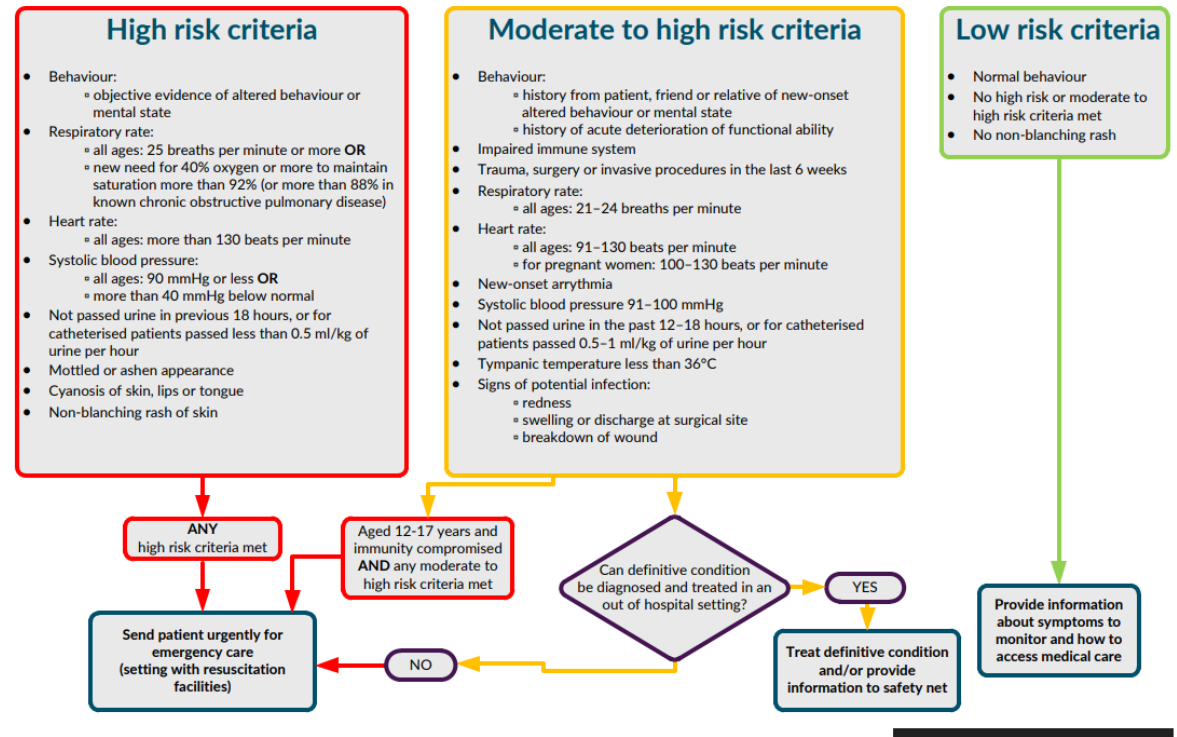
3.4 Sepsis Risk Stratification Tools for Children Outside Hospital Setting



Sepsis risk stratification tool: children aged 5-11 years out of hospital



Sepsis risk stratification tool: children and young people aged 12-17 years out of hospital



4. CONSULTATION PROCESS

Name	Title	Date
Michelle Cumming	Operational Lead Child and Family Services	21/09/2022
Gill John	Team Lead CCNT	21/09/2022
Lara Deer	CCNT	21/09/2022
Elspeth Snowie	Clinical Effectiveness Facilitator	21/09/2022
Justine Le Bon Bell	Education Lead and PDN	21/09/2022

5. IMPLEMENTATION PLAN

Action	Responsible Person	Planned timeline
Email to all staff	Secretary/Administration Assistant (Quality and Governance Team)	
Policy to be placed on organisation's Procedural Document Library	Secretary/Administration Assistant (Quality and Governance Team)	

6. MONITORING COMPLIANCE

Evidence of non-adherence to this Policy should be recorded on Assure and referred to the Operational/Team Lead in order for development plans to be devised and additional training requirements assessed.

7. EQUALITY IMPACT STATEMENT

Family Nursing & Home Care is committed to ensuring that, as far as is reasonably practicable, the way services are provided to the public and the way staff are treated reflects their individual needs and does not discriminate against individuals or groups on any grounds.

This policy document forms part of a commitment to create a positive culture of respect for all individuals including staff, patients, their families and carers as well as community partners. The intention is to identify, remove or minimise discriminatory practice in the areas of race, disability, gender, sexual orientation, age and 'religion, belief, faith and spirituality' as well as to promote positive practice and value the diversity of all individuals and communities.

The Family Nursing & Home Care values underpin everything done in the name of the organisation. They are manifest in the behaviours employees display. The organisation is committed to promoting a culture founded on these values.

Always:

- ✓ Putting patients first
- ✓ Keeping people safe
- ✓ Have courage and commitment to do the right thing
- ✓ Be accountable, take responsibility and own your actions
- ✓ Listen actively
- ✓ Check for understanding when you communicate
- ✓ Be respectful and treat people with dignity
- ✓ Work as a team

This policy should be read and implemented with the Organisational Values in mind at all times.

8. GLOSSARY OF TERMS

None

9. REFERENCES

Great Ormond Street Hospital for Children (2020) *Revised FLACC Scale.* Available at: Scoring (gosh.nhs.uk). Last accessed 23rd November 2022

Healthcare Improvement Scotland (2021) *NHS Scotland Paediatric Early Warning Scores.* Available at: 202003-gp-poster pews-tables-final.pdf (ihub.scot). Last accessed 17th November 2022

National Institute for Health and Care Excellence (2017) *Sepsis: Risk Stratification Tools.* Available at: PowerPoint Presentation (nice.org.uk) Last accessed 2nd September 2022.

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The Sepsis Trust (2022) *The Sepsis Manual 6th edition.* Available at Sepsis-Manual-Sixth-Edition.pdf (sepsistrust.org). Last accessed 7th September 2022.

Wong-Baker FACES® Foundation (1983) *Wong-Baker FACES® Pain Rating Scale; Instructions for Use.* Available at: Instructions for Use - Wong-Baker FACES Foundation (wongbakerfaces.org). Last accessed 23rd November 2022

10. APPENDIX

Appendix 1 NHS Scotland Paediatric Early Warning Scores

NHS Scotland Paediatric Early Warning Scores

PEWS are not validated for use in Primary Care. It can be useful to refer to these tables to ascertain how far outwith the normal range a set of observations are. This can assist with the structured referral of acutely unwell patients **If you are concerned about a child you should not feel reassured by a normal PEWS.**

0-11 months	3	1	0	1	3
Heart Rate	≤99	100-109	110-159	160-169	≥170
BP	≤59	60-69	70-99	100-109	≥110
CRT			<2 secs	2-4 secs	>4secs
Resp rate	≤19	20-29	30-49	50-69	≥70
SaO2	≤91	92-93	≥94		
o2 delivery			air	O2	
temperature	≤34.9	35-35.9	36-37.9	≥38	
Conscious	V/P/U		alert		

12-23 months	3	1	0	1	3
Heart Rate	≤79	80-99	100-149	150-159	≥160
BP	≤59	60-69	70-99	100-109	≥110
CRT			<2 secs	2-4 secs	>4 secs
Resp rate	≤19	20-24	25-39	40-59	≥60
SaO2	≤91	92-93	≥94		
o2 delivery			air	O2	
temperature	≤34.9	35-35.9	36-37.9	≥38	
Conscious	V/P/U		alert		

2 - 4 years	3	1	0	1	3
Heart Rate	≤69	70-89	90-139	140-149	≥150
BP	≤69	70-79	80-99	100-119	≥120
CRT			<2 secs	2-4 secs	>4 secs
Resp rate	≤14	15-19	20-34	35-49	≥50
SaO2	≤91	92-93	≥94		
o2 delivery			air	O2	
temperature	≤34.9	35-35.9	36-37.9	≥38	
Conscious	V/P/U		alert		

5-11 years	3	1	0	1	3
Heart Rate	≤59	60-79	80-129	130-139	≥140
BP	≤79	80-89	90-109	110-129	≥130
CRT			<2 secs	2-4 secs	>4 secs
Resp rate	≤14	15-19	20-29	30-39	≥40
SaO2	≤91	92-93	≥94		
o2 delivery			air	O2	
temperature	≤34.9	35-35.9	36-37.9	≥38	
Conscious	V/P/U		alert		

>12 years	3	1	0	1	3
Heart Rate	≤49	50-69	70-109	110-129	≥130
BP	≤89	90-99	100-119	120-139	≥140
CRT			<2 secs	2-4 secs	>4 secs
Resp rate	≤9	10-14	15-24	25-34	≥35
SaO2	≤91	92-93	≥94		
o2 delivery			air	O2	
temperature	≤34.9	35-35.9	36-37.9	≥38	
Conscious	V/P/U		alert		

Appendix 2 FLACC Pain Rating Scale

Name:	Hosp No:
DOB:	NHS no:

Revised FLACC Scale

Great Ormond Street NHS Hospital for Children
NHS Foundation Trust

Categories	Scoring 0	1	2
Face	No particular expression or smile	Occasional grimace/frown; withdrawn or disinterested; ***appears sad or worried***	Consistent grimace or frown; frequent/constant quivering chin, clenched jaw; ***distressed-looking face; expression of fright or panic***
Individual Behaviours			
Legs	Normal position or relaxed; ***usual tone and motion to limbs***	Uneasy, restless, tense; ***occasional tremors***	Kicking, or legs drawn up; ***marked increase in spasticity, constant tremors or jerking***
Individual Behaviours			
Activity	Lying quietly, normal position, moves easily; ***Regular, rhythmic respirations***	Squirming, shifting back and forth; ***tense or guarded movements; mildly agitated (eg. head back and forth, aggression); shallow, splinting respirations, intermittent sighs***	Arched, rigid, or jerking; ***severe agitation, head banging, shivering (not rigors); breath-holding, gasping or sharp intake of breaths; severe splinting***
Individual Behaviours			
Cry	No cry/verbalisation	Moans or whimpers; occasional complaint; ***occasional verbal outburst or grunt***	Crying steadily, screams or sobs, frequent complaints; ***repeated outbursts, constant grunting***
Individual Behaviours			
Consolability	Content and relaxed	Reassured by occasional touching, hugging, or being talked to; distractible	Difficult to console or comfort; ***pushing away caregiver, resisting care or comfort measures***
Individual Behaviours			

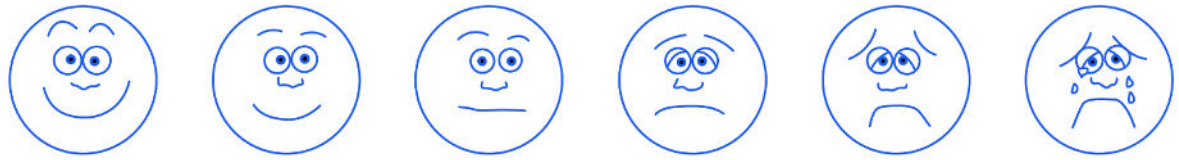
(Adapted from Malviya et al, 2006)

Revised FLACC – Instructions for Use

- **Individualise the tool**: The nurse should review the descriptors within each category with the child's parents or carers. Ask them if there are additional behaviours that are better indicators of pain in their child. Add these behaviors to the tool in the appropriate category.
- Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.
- **Patients who are awake**: Observe for at least 1-3 minutes. Observe legs and body uncovered. Reposition patient or observe activity, assess body for tenseness and tone. Initiate consoling interventions if needed.
- **Patients who are asleep**: Observe for at least 5 minutes. Observe body and legs uncovered. If possible reposition the patient. Touch the body and assess for tenseness and tone.

Appendix 3 Wong-Baker FACES® Pain Rating Scale

Wong-Baker FACES® Pain Rating Scale



0	2	4	6	8	10
No Hurt	Hurts Little Bit	Hurts Little More	Hurts Even More	Hurts Whole Lot	Hurts Worst

Instructions for Usage

Explain to the person that each face represents a person who has no pain (hurt), or some, or a lot of pain.

Face 0 doesn't hurt at all. Face 2 hurts just a little bit. Face 4 hurts a little bit more. Face 6 hurts even more. Face 8 hurt a whole lot. Face 10 hurts as much as you can imagine, although you don't have to be crying to have this worst pain.

Ask the person to choose the face that best depicts the pain they are experiencing.

Appendix 4 Equality Impact Screening Tool

Stage 1 - Screening			
Title of Procedural Document: Policy for Assessment, Measurement and Monitoring of Vital Signs and Recognition of Sepsis in Children and Young People			
Date of Assessment	October 2022	Responsible Department	CCNT
Name of person completing assessment	Mo de Gruchy	Job Title	Quality and Performance Development Nurse

Does the policy/function affect one group less or more favourably than another on the basis of :		
	Yes/No	**Comments**
• Age	No	
• Disability Learning disability; physical disability; sensory impairment and/or mental health problems e.g. dementia	No	
• Ethnic Origin (including hard to reach groups)	No	
• Gender reassignment	No	
• Pregnancy or Maternity	No	
• Race	No	
• Sex	No	
• Religion and Belief	No	
• Sexual Orientation	No	
If the answer to all of the above questions is NO, the EIA is complete. If YES, a full impact assessment is required: go on to stage 2, page 2		

Stage 2 – Full Impact Assessment			
What is the impact	**Level of Impact**	**Mitigating Actions** (what needs to be done to minimise / remove the impact)	**Responsible Officer**

Monitoring of Actions
The monitoring of actions to mitigate any impact will be undertaken at the appropriate level