Worcestershire Acute Hospitals NHS Trust

Management of Brief Resolved Unexplained Episode (BRUE)

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

A Brief Resolved Unexplained Episode (BRUE) refers to an episode in an infant aged <12 months which is characterized by:

- <1 min duration (typically 20-30 sec)
- Followed by return to baseline state
- Not explained by identifiable medical conditions
- Includes one or more of the following:
  1. Central cyanosis or pallor
  2. Absent, decreased or irregular breathing
  3. Marked change in tone (hyper- or hypotonia)
  4. Altered level of consciousness

This guideline is for use by the following staff groups: Paediatrics, Emergency Department

Lead Clinician(s)

Dr Corinne Hield	Paediatric Consultant, Paediatric Department
Approved by Paediatric Governance Meeting on:	15th November, 2023
Review Date: This is the most current document and should be used until a revised version is in place	15th November, 2026

Key amendments to this guideline

Date	Amendment	Approved by:
15/11/2023	Replaced ALTE document	Paediatric Directorate Committee

History and Examination

History

The following points should be focused on during history taking:

Event-related:

- **Before** the event:
  1. Who witnessed the event and where did it occur?
  2. What was baby doing immediately before the event started?
  3. Position: supine / prone / upright/ moving? Were they awake or asleep?
  4. Feeding: How long since last feed? Did they vomit or have anything near the mouth?

- **During** the event:
  1. Consciousness level
  2. Skin colour: normal/pale/blue/red? Colour of lips?
  3. Breathing pattern: Any signs of respiratory distress or increased work of breathing? Choking or gagging?
  4. What was their tone and were there any abnormal movements?
  5. Termination of the event: Sudden or gradual cessation? Spontaneous or with stimulation?
  6. Duration of the whole event?
  7. Medical help sought e.g. 111 or 999?
  8. Was any CPR administered and if so, what level of intervention and by whom?

- **After** the event:
  1. Is the baby back to their normal self and how long did it take?
  2. What was the baby's condition after the event ended?
  3. If not returned to normal, what is different about the baby?

Non-Event-related:

<table>
<tr><th>Recent and Past illness</th><th>Perinatal history</th><th>Family history</th><th>Social history</th></tr>
<tr><td>Recent URTI, diarrhoea, vomiting or gastro-oesophageal reflux symptoms</td><td rowspan="2">Gestation and condition at birth and/or any interventions were required after birth</td><td>SUD in 1st degree relative especially during the infancy period?</td><td>Family structure</td></tr>
<tr><td>Previous unexplained episodes? Any resus was required with any?</td><td>Any previous BRUE in a sibling of the baby</td><td>Smoking, drugs or toxic substances' use at home</td></tr>
<tr><td>Injuries, falls or surgeries</td><td>NNU/SCBU/TCU admissions</td><td>Parental consanguinity</td><td>Any physical or mental illness in the household?</td></tr>
<tr><td>Recent immunizations</td><td rowspan="2">Newborn blood spot screening results</td><td rowspan="2">Inherited or genetic conditions in the family: metabolic, arrythmias, long QT.</td><td rowspan="2">Any social services involvement with the family? **</td></tr>
<tr><td>Medications: OTC or prescribed</td></tr>
</table>

**Ensure no safeguarding concerns e.g., story changes/multiple stories, inconsistencies with the child's developmental age, unexplained bruising or bleeding, and if the child is subject to child protection plan (CPP).

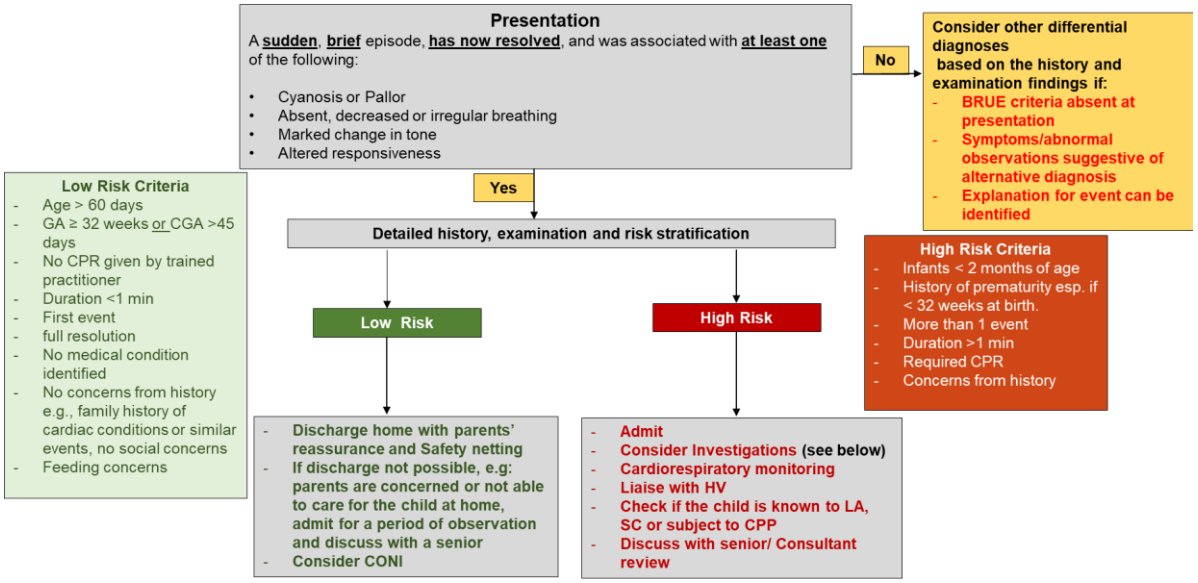
Examination:

- Full clinical examination including ABCDE.
- Observations including temp, RR, HR, BP, AVPU and oxygen saturations.
- Plot weight and head circumference on growth charts.

Differential Diagnoses

Physiological	Gagging, laryngospasm, neonatal periodic breathing
Cardiac	Congenital heart disease, arrhythmias, prolonged QT, vascular ring
Respiratory	Inhaled foreign body, airway obstruction from e.g. laryngomalacia, congenital malformation.
Infection	Pertussis, pneumonia, URTI/LRTI (e.g., RSV), meningitis/encephalitis, UTI, septicaemia, gastroenteritis
CNS	Head injury, seizures, cerebral malformations, central hypoventilation syndrome
Non-accidental injury	Inflicted injury including drug ingestion, factitious illness, suffocation.
Gastrointestinal	Gastro-oesophageal reflux
Surgical causes	Intussusception, testicular torsion
Metabolic/Toxins	Hypoglycaemia, hypocalcaemia, hypokalaemia, inborn error(s) of metabolism, intentional and non-intentional drug overdose

Management



Investigation of high-risk BRUE

We should consider some or all of the following investigations based on the history and examination:

- Nasopharyngeal aspirate for virology, consider pernasal swab for pertussis
- Bloods: FBC, U&E, blood glucose, Plasma lactate, Blood gases and Blood culture
- Urine: microscopy and culture, Urine biochemistry (store for possible further tests (see below))
- Chest x-ray
- ECG (looking for long QT)

Further Management

- SpO2 and ECG monitoring
- Liaise with the Health Visitor (direct or via liaison health visitor on wards)
- Check if child known to local authority children's social care or is the subject of a child protection plan.
- If events recur during admission, discuss further investigations with senior e.g. MRI brain, 24 hour ECG, cardiorespiratory recordings, skeletal survey, toxicology screen

Referral to Care of Next Infant (CONI)

All patients must have consultant review and consider referral for CONI Plus programme if:

- Parents remain concerned despite reassurance.
- Recurrent or severe events (e.g. needing CPR/PICU)
- For babies born following a post perinatal death from causes other than sudden infant death syndrome (SIDS)
- History of a sudden infant death in the close family e.g. parent's siblings

Note: CONI programme should have already been offered to families to provide support and guidance where there has been a previous sudden infant death (SIDS).

Local referrals agreed by a paediatric consultant for CONI Plus programme need to be sent to the CONI co-ordinator prior to discharge via PHN Central Admin team via generic email address: WHCNHS.StartingWell@nhs.net, putting CONI in the subject line.

Monitoring

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
Page 5	Management flow diagram	Audit	Every 2 years	Paediatric audit lead	Paediatric departmental audit meeting	Every 2 years

References

1. Bedside Clinical Guidelines Partnership in association with “Partners in Paediatrics”, 2022-2024
2. https://www.clinicalguidelines.scot.nhs.uk/nhsggc-guidelines/nhsggc-guidelines/emergency-medicine/brief-resolved-unexplained-event-or-brue-alte-guideline-update/
3. https://www.uptodate.com/contents/acute-events-in-infancy-including-brief-resolved-unexplained-event-brue?search=BRUE&source=search_result&selectedTitle=1~30&usage_type=default&display_rank=1#H315925996, Acute events in infancy including brief resolved unexplained event (BRUE), UpToDate, August 2023 (see website for any future updates)

Contribution List

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
All acute Paediatric Consultants at Worcestershire Acute Hospitals NHS Trust
Becky Magan, Riverbank Ward Manager

This key document has been circulated to the chair(s) of the following committee’s / groups for comments;

Committee
Paediatric governance meeting

Supporting Document 1 - Equality Impact Assessment Tool

. To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

Worcestershire Acute Hospitals NHS Trust

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Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	X	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	**Dr Corinne Hield**

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Dr Corinne Hield	**Paediatric Consultant**	**corinne.hield@nhs.net**
Date assessment completed	**16/10/2023**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title: Guideline on the Management of Brief Resolved Unexplained Episode (BRUE)**			
What is the aim, purpose and/or intended outcomes of this Activity?	To provide guidance for clinicians when managing an infant with a suspected Brief Resolved Unexplained Episode (BRUE)			
Who will be affected by the development & implementation of this activity?	❑ ❑ ❑ ❑	Service User Patient Carers Visitors	X ❑ ❑ ❑	Staff Communities Other _____
Is this:	X Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?			

What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	A regional BRUE audit completed in 2022
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	8 hospitals contributed across the Midlands. Data collection proformas created by Paediatric Research Group and used across all units. Data collected on 8 patients in Worcester.
Summary of relevant findings	Recommendation to update our local guidelines e.g. remove ALTE guideline and replace with updated BRUE guideline

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age	X			Updated management of BRUE for infants <12 months of age
Disability				
Gender Reassignment				
Marriage & Civil Partnerships				
Pregnancy & Maternity				
Race including Traveling Communities				
Religion & Belief				
Sex				
Sexual Orientation				
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)				

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)				

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	E.E.Field

Date signed	16/10/2023
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.