Royal Cornwall Hospitals NHS Trust

Policy Under Review

Please note that this policy is under review. It does, however, remain current Trust policy subject to any recent legislative changes, national policy instruction (NHS or Department of Health), or Trust Board decision. For guidance, please contact the Author/Owner.

Information Category	Detailed Information
Document Title:	Febrile Convulsions Clinical Guideline V5.0
This document replaces (exact title of previous version):	Febrile Convulsions Clinical Guideline V4.0
Date Issued / Approved:	December 2023.
Date Valid From:	December 2023.
Date Valid To:	March 2027.
Author / Owner:	Dr. Chris Butler; Paediatric Consultant (Epilepsy).
Contact details:	01872 252716.
Brief summary of contents:	Guideline for medical and nursing staff providing clear evidence based best practice for evaluation of a child presenting with fever and seizure.
Suggested Keywords:	Paediatric, child health, fever, seizure, febrile convulsion.
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Child Health Audit and Guidelines Group
Manager confirming approval processes:	Caroline Chappell
Name of Governance Lead confirming consultation and ratification:	Michael Cross

UNDER REVIEW

Information Category	Detailed Information
Links to key external standards:	NICE Epilepsies in Children, Young People and Adults (NGC 217).
Related Documents:	Leung, A.K.C., Hon, K.L. and Leung, T.N.H. (2018) Febrile seizures: an overview. Drugs in Context 7, 1-12. NICE Clinical Knowledge Summaries, Febrile Seizure. [https://cks.nice.org.uk/febrile-seizure] Last updated, October 2013. https://www.nhs.uk/conditions/febrile-seizures/.
Training Need Identified:	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical/Paediatrics/Neurological

UNDER REVIEW

Febrile Convulsions Clinical Guideline

V5.0

December 2023

UNDER REVIEW

Summary

THINK

Has the patient been fitting for >5minutes?

If yes treat using the **Status epilepticus** APLS algorithm.

Seizure + evidence of associated **fever.**

Yes

No

Consider other causes of a seizure (see Table 1 and refer to Fits, Faints and Funny Turns and First Afebrile Seizure RCHT guidelines).

Are there features of **Central Nervous System infection**?

- Neck stiffness
- Irritability.
- Non-blanching rash.
- Altered consciousness.
- Tense fontanelle.
- Focal neurological signs.
- Reduced feeding (infant).

No

Is the child **>6 m** and **<6 years** of age?

No

Will require individualised management plan from senior doctor.

Yes

Yes

Investigate and treat for **meningitis +/- encephalitis +/- raised ICP.** Need urgent senior doctor review.

What type of seizure was it?

Simple Febrile Convulsion

- Generalised tonic clonic seizure.
- Last less than 15 minutes (typically last 2-3 minutes).
- Do not recur within the same 24 hour period of same illness.
- Complete recovery in 1 hour
- 6m- 6years.

- **Identify source of fever**- if no source found please refer to Feverish Illness in Under 5 years RCHT Guideline.
- Consider **admission** and **observation** if:
  - <12 months.
  - Recent or current antibiotic treatment.
  - Parental anxiety and concern.
  - Unknown source of fever
- Discharge if:
  - Complete recovery + no complex features.
  - Parental education on febrile convulsions and written information leaflet given.

Complex Febrile Convulsion

- Last longer than 15 minutes.
- Focal seizure movement.
- Recurrence within 24 hours of same febrile illness.
- Incomplete recovery in 1 hour.

- **Admit + prolonged observation.**
- Identify **source** of fever and **treat** accordingly.
- Perform blood tests including; blood culture, FBC, CRP, U and E's, calcium, and magnesium. Consider viral titres.
- Consider LP especially if between 6 and 12months of age and the source of fever is unclear. (Defer LP if any contraindications).
- Consider neuroimaging (Discuss with radiology).
- **On discharge**
  - Parental education including written information.
  - Organise General Paediatric clinic follow up in 6-8 weeks.

1. Aim/Purpose of this Guideline

1.1. Guideline for medical and nursing staff providing evidence based best practice for evaluation of a child presenting with fever and seizure.

1.2. This version supersedes any previous versions of this document.

1.3. Use this clinical guideline alongside the other Paediatric Neurology Guidelines:

- Fits, Faints and Funny Turns in Children Clinical Guideline.
- First Afebrile Seizures in Children Clinical Guideline.
- Paediatric Epilepsy Service Referral Pathways (For use by Emergency Department, Paediatric Wards, and RMS Vetting Team).

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team.

Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. **Definition**

A febrile convulsion is a seizure associated with fever (≥38 ℃) without central nervous system infection, which occurs in infants and children aged 6 months to 6 years[1]. It is important to note that the fever may not be present before the seizure and may not develop until after the seizure has stopped.

They are a common paediatric presentation with 2-5% of children having at least one febrile convulsion.

2.2. **Classification[2]**

Febrile convulsions are classified into two groups: simple or complex (atypical).

UNDER REVIEW

2.2.1. **Simple febrile seizures**: (Accounts for 75% of cases)**.**

- Isolated generalised tonic clonic.
- Last less than 15 minutes (typically last 2-3 minutes).
- Do not recur within the same 24 hour period in same illness.
- Complete recovery in 1 hour.
- Present in ages 6m- 6years.

2.2.2. **Complex febrile seizures (one or more of the following):**

- Last longer than 15 minutes.
- Focal onset or focal features during seizure.
- Recurrence within 24 hours of same febrile illness.
- Incomplete recovery in 1 hour.

2.2.3. **Febrile status epilepticus**

Febrile status epilepticus is a branch of complex febrile seizure where the episode lasts ≥30minutes or there is clustering of seizures without full recovery between episodes.

2.3. **Cause**

The exact cause of febrile convulsions is unknown, but it is thought that genetic factors such as a family history and environmental factors have a role. Common infections implicated in causing febrile convulsions include viral infections, otitis media, tonsillitis, urinary tract infections and gastroenteritis.

Post immunization fever is a rare cause and not a contraindication to vaccination. Children who have had a febrile convulsion should complete their childhood vaccinations as normal.

2.4. **Assessment**

- Assess for red flag signs or symptoms that may suggest a serious cause e.g., meningitis / encephalitis or sepsis.
- Consider differential diagnoses (Table 1).
- History to include:
  - Characteristics of fever,
  - Characteristics of seizure to identify if simple or complex,

UNDER REVIEW

- Any previous seizure episodes,
- Recent or current antibiotic use,
- Immunisation history,
- Neurodevelopmental history,
- Family history of febrile convulsions or epilepsy.

- Examine the child including conscious level, neurological examination, assess for other signs to identify cause of fever.
- If concerns about underlying development or neurology this will require further assessment.
- Please see flowchart.

2.5. **Differential diagnoses: (If no fever present see Fits, Faints and Funny turn guideline.)**

Table 1:

With Fever	Without Fever
Central nervous system infection.	Breath holding spells of reflex anoxic seizures.
Shivering.	Syncope.
Rigors.	Head injury (inc. Non accidental injury)
Febrile myoclonus.	Hypoglycaemia.
Sepsis.	Drug use or withdrawal.
	Epilepsy.

2.6. **Associations with febrile convulsions[3]:**

- About 1 in 3 children who have had a febrile convulsion have another one in a subsequent infection (often within a year of the 1st one).
- Risk factors for recurrent seizures[1]:
  - Onset under 18months of age.
  - Family history of febrile seizures or epilepsy in 1st degree relative.
  - Fever <39°C at seizure onset.
  - History of complex febrile seizure.
- Future risk of epilepsy- this information can be shared with the parents[2]:

UNDER REVIEW

- Children who have not had a febrile convulsion 1-2 in 100 chance.
- Children with history of simple febrile convulsion have~ 1 in 50 chance.
- Children with a history of complex febrile convulsion have around a 1 in 20 chance.

2.7. **Discharge advice:**

- Give parents the RCHT 'Febrile Convulsion parent information leaflet' and discuss this with the family.
- Discuss the following acute management steps with the family:
  - Note the time.
  - Prevent injury by removing objects.
  - Warn parents that antipyretics are not proven to prevent febrile convulsions.
  - Do not strip naked or sponge with water as this will not help.
  - Place in recovery position once seizure has finished (do not restrain the child).
  - Observe the child until they have recovered.
- Red flags for reassessment by returning to Emergency department or calling other services such as 111 or 999 include:
  - If it lasts > 5minutes.
  - If your child is having breathing difficulties.
  - Not waking up after the seizure.
  - Repeated seizures.
  - You suspect the seizure is being caused by a serious illness such as sepsis.

2.8. **Follow up**

- Solitary simple febrile convulsions do not require follow up.
- Complex febrile convulsions require General Paediatric follow up in 6-8 weeks. (Refer to General Paediatric clinic of admitting consultant).
- Additional written information can be given from this link (as recommended by NICE): https://www.nhs.uk/conditions/febrile-seizures/.

UNDER REVIEW

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Compliance with policy/ key changes to practice.
Lead	Paediatric audit lead.
Tool	Adherence to guidelines will be monitored as part of the ongoing audit process on a Word or Excel template.
Frequency	As dictated by audit findings.
Reporting arrangements	Child Health Audit and Guidelines group.
Acting on recommendations and Lead(s)	Audit Lead. To be reported to Child Health Audit and Guidelines Meeting. Recommendations and learning will be passed to relevant medical and nursing management and staff.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within three months. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the Equality Diversity And Inclusion Policy or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

UNDER REVIEW

Appendix 1. Governance Information

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Name of Governance Lead confirming consultation and ratification:	Melanie Gilbert.
Links to key external standards:	NICE Epilepsies in Children, Young People and Adults (NGC 217).

UNDER REVIEW

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Training Need Identified?	No
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical/ Paediatric/ Neurological

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
Oct 10	V1.0	Initial Issue.	Dr. Sian Harris. Paediatric Consultant.
June 2013	V2.0	Reformat and update.	Dr. Sian Harris. Paediatric Consultant. Tabitha Fergus Deputy ward
Nov 2017	V3.0	No changes.	Sian Harris, Paediatric Consultant
January 2021	V4.0	Full review and update.	Dr Chris Butler Consultant. Dr. Matilda Iverson; Paediatric Registrar.

UNDER REVIEW

Date	Version Number	Summary of Changes	Changes Made by
August 2023	V5.0	Review wording due to new Paediatric Epilepsy clinic pathways guidelines. New section on follow up.	Dr Chris Butler Consultant paediatrician (Epilepsy)

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

This document has been created following the Royal Cornwall Hospitals NHS Trust The Policy on Policies (Development and Management of Knowledge Procedural and Web Documents Policy). It should not be altered in any way without the express permission of the author or their Line Manager.

UNDER REVIEW

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Febrile Convulsions Clinical Guideline V5.0
Directorate and service area:	Child Health
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Child Health Audit and Guidelines Group
Contact details:	01872 252800

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	Guideline for medical and nursing staff providing clear evidence based best practice for evaluation of a child presenting with fever and seizure. Includes, parental information, suggested audit checklist and flow chart.
2. Policy Objectives	Clear evidence based best practice for evaluation of a child presenting with fever and seizure.
3. Policy Intended Outcomes	Evidenced based, standardised practice.
4. How will you measure each outcome?	Audit.
5. Who is intended to benefit from the policy?	Children and families presenting with fever and seizure.

UNDER REVIEW

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/ visitors: No • Local groups/ system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:** Child Health Audit and Guidelines Meeting.
6c. What was the outcome of the consultation?	Approved- 16 November 2023
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	Any information provided should be in an accessible format for the parent/ carer/ patient's needs- i.e., available in different languages if required/access to an interpreter if required.

UNDER REVIEW

Protected Characteristic	(Yes or No)	Rationale
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Those parent/ carer/ patients with any identified additional needs will be referred for additional support as appropriate- i.e., to the Liaison team or for specialised equipment. Written information will be provided in a format to meet the family's needs e.g., easy read, audio etc.
Religion or belief	No	All staff should be aware of any beliefs that may impact on the decision to treat and should respond accordingly.
Marriage and civil partnership	No	All staff should be aware of any marital arrangements that may have an impact on care (for example: separated parents, domestic abuse).
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Child Health Audit and Guidelines Group

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis

UNDER REVIEW