Ashford and St. Peter's Hospitals
NHS Foundation Trust

Guideline for the management of meningococcal septicaemia in Paediatric Emergency

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Guideline History		
Date	**Comments**	**Approved By**
15/06/2021	Updating previous guideline to include new APLS/ILCOR recommendations	Paediatric Guideline Committee

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1.

Guideline for the management of meningococcal septicaemia in the Paediatric Emergency Department

Introduction

Meningococcal septicaemia is a medical emergency, which needs to be recognised and treated promptly by the on call Paediatric team. New guidance has been provided by APLS/ILCOR and has been included in this document. STRS are updating their guidelines and drug calculator which will be compatible with this guideline.

Assessment

There is usually a short history of illness, the child may or may not be pyrexial, beware low body temperature in small and preterm babies. They are usually very pale, shocked and may have a non-specific rash before purpura is evident. Rapidly spreading purpura or ecchymosis is indicative of fulminant disease and has a poor prognosis.

If the child is arriving by priority call, or by urgent GP call, they should be assessed in the Paediatric High Dependency Cubicle (C3). They will usually be retrieved by STRS to an available PICU bed.

GP's should be advised to give Benzylpenicillin or Cefotaxime, and arrange 999 transfer to hospital.

Benzylpenicillin IV/IM	< 1 yr = 300mg 1-9 yrs = 600mg > 9 yrs = 1200mg
Cefotaxime IV/IM	< 12 yrs = 50mg/kg > 12 yrs = 1 gram

If the child is suspected of having meningococcal septicaemia on triage, the paediatric team must be alerted immediately and the child put in C3 with full monitoring. The PED/attending or on call consultant should be informed and attend as needed.

The child should be assessed systematically, and any problems encountered should be treated without delay.

AIRWAY - is airway protection required?

BREATHING - Oxygen via facial rebreathing mask if there are signs of shock or hypoxaemia. Aim for saturations between 94-98%

IV or IO access should be gained immediately:

Bloods:

- Venous gas including blood sugar and lactate
- FBC, Blood Cultures, Meningococcal PCR, Coagulation screen, Group & Save
- U&E, CRP, Ca, Mg, Phosphate

Other investigations:

- Throat swab, Urine culture, CXR for tube position if intubated

DO NOT DO A LUMBAR PUNCTURE

IV Ceftriaxone 80mg/kg should be given IV or IO as soon as access is gained, ideally within an hour of arrival in PED. Cefotaxime and amoxicillin should be used for babies less than 1/12 old.

Penicillin allergy is not a contra-indication for cephalosporin use in this situation.

For further information on drug doses and duration of treatment follow:
https://viewer.microguide.global/asph

CIRCULATION – Most of these children require fluid resuscitation with 10ml/kg balanced -isotonic crystalloid or 0.9% saline which is usually more readily available. The response to fluid therapy must be assessed frequently. Intubation and ventilation with inotropic support should be considered if more than 40ml/kg of IV fluid has been given by bolus.

IV Noradrenaline/adrenaline is now the first line vasoactive drug recommended, though Dopamine can be used if the other drugs are not available.

The child's response to treatment should be monitored clinically and with available blood results. Blood gases should be repeated frequently.

Anaesthetic support and advice from STRS should be sought early and the child kept nil by mouth.

MONITORING

- Heart rate, respiratory rate, capillary refill time and blood pressure as a minimum.
- End tidal CO2 monitoring will be required if ventilated. An NG tube and urinary catheter should be sited and urine output maintained at 1 ml/kg/hr.

Consider ventilation if:

- Exhausted
- G.C.S. less than 8
- Fluid requirement > 40 ml/kg
- Unprotected airway

TALK TO PARENTS

- Very important but not at expense of the resuscitation
- Do they want to sit with their child?
- Explain diagnosis
- Take a history, contacts etc.

CONTINUED MANAGEMENT

Reassess ABC frequently and document response to interventions. Having a member of staff to scribe times and doses of drugs given ensures accurate documentation.

Treat electrolyte disturbances following:

http://trustweb.asph.nhs.uk/docsdata/paed/Guidelines_Paediatrics/Electrolyte%20Emergencies%20Jan%202021.pdf

Coagulation disturbances should be corrected using FFP/platelets/blood following advice from STRS and the on call haematologist.

Drug doses should follow the STRS drug calculator:

https://www.evelinalondon.nhs.uk/resources/our-services/hospital/south-thames-retrieval-service/Drug-calculators/emergency-drug-calculator.pdf

The use of steroids in meningococcal septicaemia should be discussed with a Paediatric Intensivist.

If meningitis suspected consider lumbar puncture when child stable and coagulation normal.

PITFALLS IN DIAGNOSIS

Assessment of severity is usually underestimated.

- Hypotension is a late sign.
- Parent may not realise the child is seriously ill.
- Fever-in GP and PED 98% are viral, 2% bacterial, 0.2% serious.
- Irritability/febrile convulsion -LOOK for rash, tachycardia and poor perfusion.
- Drowsiness in a teenager-mistaken for drug or alcohol intoxication.
- The rash may not be purpuric initially
- Limb pain may be a presenting symptom

THIS IS A NOTIFIABLE DISEASE

- Contact microbiologist ext 3031 or bleep via Switchboard
- Public Health (Ridgewood Centre) Telephone 01276 671718
- Contact tracing and prophylaxis – discuss with Public Health
- Prophylaxis for 'kissing contacts' can be given in PED, others will be advised by Public Health.

2. **Supporting References**

   https://www.nice.org.uk/guidance/cg102

   https://www.rcemlearning.co.uk/cpd-event/apls-iclor-update/apls-and-pls_2021-ilcor-summary_final-pdf/

3. **Supporting relevant trust guidelines**

http://trustweb.asph.nhs.uk/docsdata/paed/Guidelines_Paediatrics/Electrolyte%20Emergencies%20Jan%202021.pdf

http://trustweb.asph.nhs.uk/docsdata/paed/Guidelines_Paediatrics/Meningitis%20Guidelines%20Nov%202017.pdf:

https://viewer.microguide.global/asph

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18years should be aware of practice according to this guideline.

d. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Author and the supervising consultants.
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document:

Policy (document) Author:

Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**YES**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**YES**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**YES**	
	Is the purpose of the document clear?	**YES**	
	Are the intended outcomes described?	**YES**	
	Are the statements clear and unambiguous?	**YES**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**YES**	
	Who was engaged in a review of the document (list committees/ individuals)?	**YES**	
	Has the policy template been followed (i.e. is the format correct)?	**YES**	
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	**YES**	

		Yes/No/ Unsure/NA	Comments
	Are local/organisational supporting documents referenced?	**YES**	
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**YES**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**YES**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**YES**	
	Does the plan include the necessary training/support to ensure compliance?	**YES**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?	**YES**	
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**2024**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?	**YES**	
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	**YES**	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Dr Claire Mitchell**	**Date**	**31/08/2021**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			