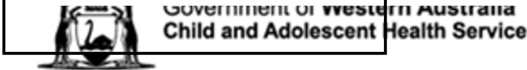
Supplementary file 2: Emergency department guidelines for initial management of children presenting with fever without source

[Health department logo]



[Hospital logo]

Fever - Without source

Disclaimer

These guidelines have been produced to guide clinical decision making for the medical, nursing and allied health staff of Perth Children's Hospital. They are not strict protocols, and **they do not replace the judgement of a senior clinician**. Clinical common-sense should be applied at all times. These clinical guidelines should never be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of each patient. Clinicians should also consider the local skill level available and their local area policies before following any guideline.

Read the full PCH Emergency Department disclaimer.

Aim

To guide staff with the assessment and management of fever without a source.

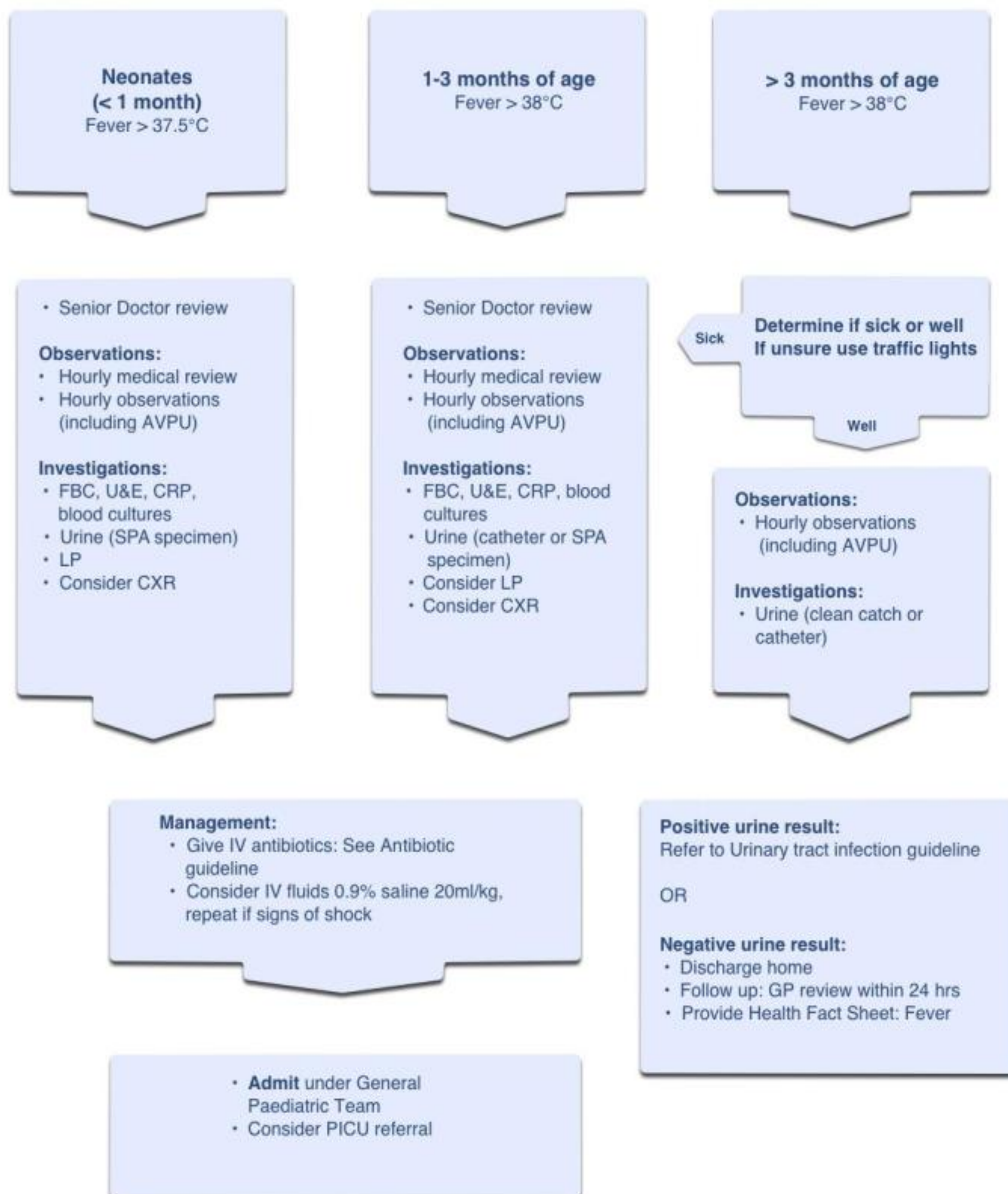
Background

- Fever in a neonate is > 37.5^{o}C
- Fever in a child greater than 1 month old is > 38°C
- Fever is nature's way of killing viruses / bacteria.

Key Points

- Fever > 39°C in the 3-6 month age group is concerning as they are not fully immunised.
- After 6 months of age the height of the fever is unhelpful.
- Most fevers are caused by a viral illness.
- Lack of response to antipyretics does **not** predict a serious illness.

Mace AO, *et al. BMJ Open* 2020; 10:e035992. doi: 10.1136/bmjopen-2019-035992



Assessment

- General features of the child's behaviour, interaction and appearance over a period of time provide the best indicator of whether serious infection is likely
- Beware of the unimmunised child
- Beware of the partially treated child.

Examination

- A well child is one who is interested in their surroundings, interacts with caregivers and examines normally
- A toxic child is:
  - Pale
  - Poorly perfused
  - Lethargic
  - Hypoventilation or tachycardia
- For those children who are sick but not toxic use the traffic light system to stratify risk.

System for identifying the likelihood of serious illness[1]

	Low Risk (Green)	**Medium Risk (Amber)**	**High Risk (Red)**
Colour activity	Normal colour Responds normally to social cues Content/smiles, stays awake or awakens quickly Strong normal cry/not crying	Pallor reported by parents/cares Not responding normally to social cues No smile Wakes only with prolonged stimulation	Pale/mottled/ashen/blue No response to social cues Appears ill to a healthcare professional Does not wake or if roused does not stay awake Weak high pitched cry or continuous cry
Respiratory	Normal parameters No respiratory distress	Nasal flaring Sp02 ≤95%, Crackles in chest Tachypnoea	Grunting Moderate to severe chest in drawing Tachypnoea
Circulation and hydration	Normal skin and eyes Moist mucous membranes	Tachycardia Capillary reduce time ≥3 seconds Dry mucous membranes Poor feeding in infants Reduced urine output	Reduced skin turgor
Other	None of the amber or red symptoms or signs	Age 3-6 months, temp ≥ 39°C Fever for ≥ 5 days Rigors Swelling of a limb or joint Non-weight bearing limb/not using an extremity	Age <3 months, temp ≥ 38°C Non blanching rash Bulging fontanelle Neck stiffness Status epilepticus Focal neurological signs Focal seizures

Normal Paediatric Values

See Emergency Calculator to view normal heart rate, respiratory rate and blood pressure values.

Management

- No tepid sponging
- Treating fever with antipyretics is **not** recommended if the child is not miserable or in distress
- Treat child for **discomfort** or **pain** with paracetamol or ibuprofen

Neonates with a temperature >37.5°C

- FBC, U&E, CRP and blood cultures
- Urine (SPA specimen)
- Lumbar puncture
- Consider CXR if indicated
- Admit for empiric IV antibiotics.

1 Month - 3 months of age with a temperature >38°C

- FBC, U&E, CRP, blood cultures
- Urine (catheter or SPA specimen)
- Consider lumbar puncture (determined by clinical condition)
- Consider CXR
- Admit under General Paediatric team for IV antibiotics

>3 months of age with a temperature of >38°C

Sick looking child:

- FBC, U&E, CPR, blood cultures
- Urine (clean catch or catheter)
- Consider lumbar puncture (determined by clinical condition)
- Consider CXR
- Admit under General Paediatric team for IV antibiotics

Well looking child:

Obtain urine as per Urinary Tract Infection guideline Urine not required if obvious source of fever present.

Unsure:

Use the Low, Medium, High Risk system to assess and seek Senior Medical advice to guide investigations and treatment.

Lumbar puncture

Consider if:

- Toxic
- Irritable
- Unimmunised
- Partially treated
- Complex febrile convulsion that does not return to normal

For further information regarding lumbar punctures refer to Lumbar Puncture.

Chest X-ray:

Usually only considered if signs of respiratory illness:

- Cough
- Increased respiratory rate

- Crepitations or dullness on auscultation
- Decreased oxygen saturations.

Medications

Paracetamol

- 15 mg/kg 4-6 hourly
- Maximum 60mg/kg/day for < 3 month old child
- Maximum 80mg/kg/day for > 3 month old child.

Ibuprofen

- 10mg/kg 6-8 hourly for > 3 month old child
- Maximum 40mg/kg/day to be given with food.

Health information (for carers)

- Fever does not cause brain damage
- Use of antipyretics does not prevent febrile convulsions
- Do not use antipyretics for more than 3 days without a General Practitioner review
- Advise parents and document the features they need to look out for at home
- Provide Health Fact Sheet: Fever in Children.

References

1. NICE clinical guideline 160. Feverish illness in children. Assessment and initial management in children younger than 5 years. 2013.

Bibliography

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3. Bonita M.D. Stanton, Joseph St. Geme, Nina F Schor. Nelson Textbook of Pediatrics: 20th Edition Robert M. Kliegman, Publisher: Elsevier
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Endorsed by:	Director, Emergency Department	Date:	Mar 2018
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