



Fever in Children under 5 Years

Scenario 1 "S"

- ▶ Kevin is 2 years old. He attends the GP with his Mom. Mom is concerned as Kevin has had a fever for the past 24hrs. And this morning developed a widespread rash.
- ▶ Allergies: Penicillin (Rash)
- ▶ Medications: Nil
- ▶ Past Medical History: Nil
- ▶ Social Hx: Nil
- ▶ Family Hx: Nil



Scenario 1 "O" (1)

▶ ABC Objective Findings:

▶ T: 39 HR: 140 RR: 28 Sats (95%) CRT: 2 **A**VPU

1. **CNS:** GCS Score
2. **CVS:** T: 39 HR: 140 RR: 28 Sats (95%) CRT: 2 **A**VPU
3. **Respiratory:** Chest clear just transmitted upper respiratory sounds. No increased work of breathing. Effort and efficacy of breathing adequate.

Further Clinical
Observations



Scenario 1 "O" (2)

- ▶ Child is coryzal, pink, bright, alert, sitting up on mother's lap.
- ▶ Cross when examined.
- ▶ No neck stiffness.
- ▶ Faint blanching macular pap rash mainly on trunk but also limbs and neck.
- ▶ Ears- both TMs red but cone of light intact.
- ▶ Tonsils mildly inflamed no exudate, small cervical LNs.



Scenario 1 "A"

► What do you do next for Kevin? His mom is anxious.

Click on the most appropriate answer from the choices below:

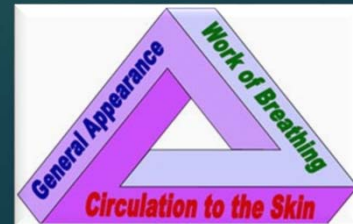
1. Likely bacterial tonsillitis, prescribe penicillin based antibiotic and ask to see Kevin in 10 days.
2. Likely viral illness, prescribe anti-virals and ask mom to contact practice or out of hours service if Kevin deteriorates or fever persists beyond 48hrs.
3. Likely viral illness. Recommend fluids and paracetamol prn. Advise mom to contact practice or out of hours service if Kevin deteriorates or fever persists beyond 48hrs.
4. Likely viral illness that is self limiting and does not require further follow up.



Scenario 1 "A"

- ▶ (1) is incorrect. Bacterial tonsillitis is unlikely in this case. According to FeverPAIN criteria, Kevin scores 2 which is associated with approx. 34% likelihood of isolating streptococcus. It is important to note that acute tonsillitis is often self-limiting and triggered by a viral infection of the upper respiratory tract. Please refer to resources for further information.

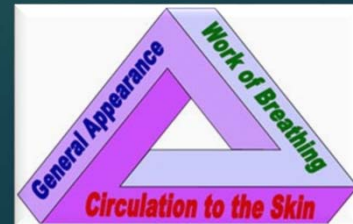
Return to Quiz



Scenario 1 "A"

- ▶ (2) is incorrect. Antivirals are inappropriate in this case. Viral infections are generally self limiting within 3-7 days in healthy individuals. There is evidence that some people in high risk groups to include >65yrs., <6 months, pregnant women, and people with chronic conditions or immunosuppression are at higher risk of complications and thus may benefit from anti-viral therapy. Please refer to resources for further information.

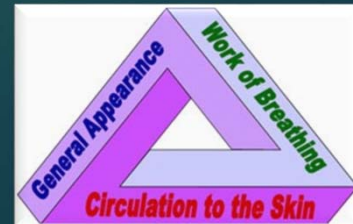
Return to Quiz



Scenario 1 "A"

- ▶ (4) is incorrect. As there are Amber features of the NICE sepsis risk stratification tool evident arrangements for direct access to further follow-up/assessment if necessary are required. Please refer to NICE guideline in resources.

Return to Quiz



Scenario 1 "P"

- ▶ This is the correct answer. Kevin is likely to have a viral illness. Thus the recommendation is fluids and paracetamol.

Fever without an obvious focus is an everyday clinical presentation in primary care. If <3 months with a fever, referral to a paediatric centre should always be considered. All febrile infants should have a urinalysis performed. Always offer parents safety-netting advice and in writing whenever possible. Paracetamol and ibuprofen are suitable and safe antipyretics in young children.

The average duration of febrile illness in children is three days. However, there are conditions which are characterised by persistent fever such as Kawasaki. Reassessment after five days if the illness has failed to dissipate is not an unreasonable approach. This also provides reassurance to parents.

End Consultation



Scenario 1 "S"

- ▶ Mom returns with Kevin to the GP the following day. Kevin deteriorated over night. His breathing became rapid. He has been hot and restless. He vomited twice over night.



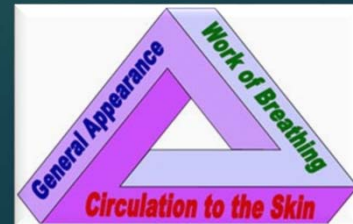
Scenario 1 "O" (1)

▶ ABC Objective Findings:

▶ T: 39.2 HR: 160 RR: 60 Sats: 93% CRT: 3 AVPU

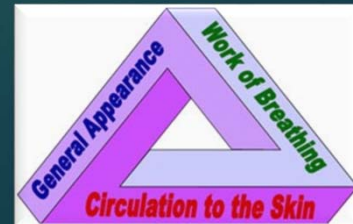
1. CNS: Responds to voice. Kevin appears drowsy and mottled.
2. CVS: T: 39.2 HR: 160 RR: 60 Sats: 93% CRT: 3 AVPU
3. Respiratory: Intercostal and subcostal recession evident. Accessory muscle use noted. Effort and efficacy of breathing more laboured.

Further Clinical
Observations



Scenario 1 "O" (2)

- ▶ Kevin is floppy and pale.
- ▶ Not responding normally to social cues. Wakes only with prolonged stimulation.
- ▶ No neck stiffness.
- ▶ Faint non-blanching macular pap rash unchanged.
- ▶ Ears- both TMs red but cone of light intact.
- ▶ Tonsils now inflamed with exudate.
- ▶ Cervical LNs more enlarged.



Scenario 1 "A"

► Please choose the most appropriate diagnosis from the choices below:

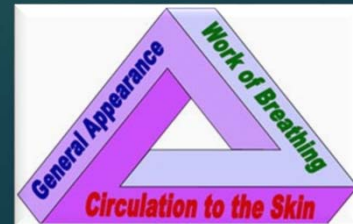
1. Sepsis
2. Pneumonia
3. Meningococcal Meningitis
4. Herpes Simplex Encephalitis
5. Urinary Tract Infection
6. Bone Disease (Septic Arthritis/Osteomyelitis)
7. Kawasaki Disease



Scenario 1 "A"

- ▶ (2) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever + any of the following: tachypnoea, chest crackles, nasal flaring, chest indrawing, cyanosis, O2 sats of 95% or less. Please refer to NICE guideline.

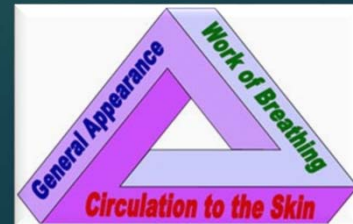
Return to Quiz



Scenario 1 "A"

- ▶ (3) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever + any of the following: neck stiffness, bulging fontanelle, decreased consciousness, convulsive status epilepticus. Please refer to resources for further information.

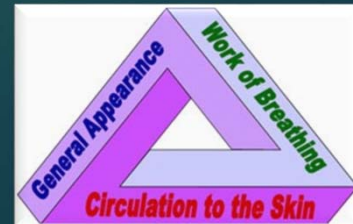
Return to Quiz



Scenario 1 "A"

- ▶ (4) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever + any of the following: focal neurological signs, focal seizures, decreased consciousness. Please refer to resources for further information.

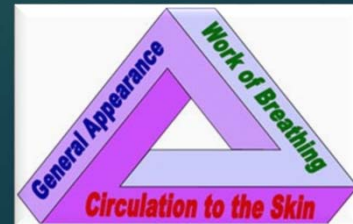
Return to Quiz



Scenario 1 "A"

- ▶ (5) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever + any of the following: vomiting, poor feeding, lethargy, irritability, abdominal tenderness, urinary frequency or dysuria. Please refer to resources for further information.

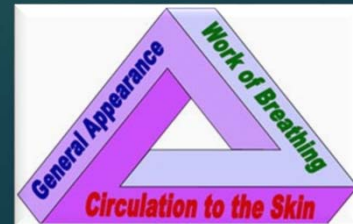
Return to Quiz



Scenario 1 "A"

- ▶ (6) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever + any of the following: swelling of limb/joint, inability to utilise extremity, non-weight bearing. Please refer to resources for further information.

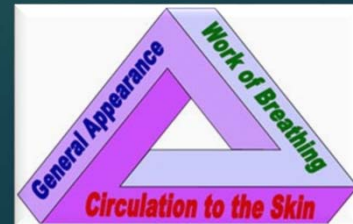
Return to Quiz



Scenario 1 "A"

- ▶ (7) is not the most appropriate diagnosis in this case. However, it should be considered in any child presenting with fever for >5days duration + 4/5 following features: bilateral conjunctival infection, change in mucous membrane in upper respiratory tract, change in extremity, polymorphous rash, cervical lymphadenopathy. Please refer to resources for further information.

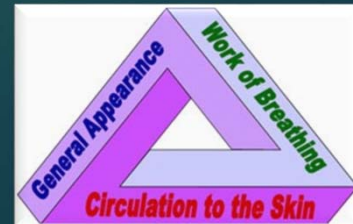
Return to Quiz



Scenario 1 "P"

► What is your next course of action?

1. Prescribe Penicillin V. Send home with a follow-up appointment in 1 week.
2. Refer to local paediatric ED. Own transport.
3. Request emergency ambulance transfer to local ED. Start oral antibiotics.
4. Request emergency ambulance transfer to ED. Establish IV access if possible, give high flow o2.



Scenario 1 "P"

- ▶ In this scenario Kevin is likely to have sepsis as per the NICE sepsis stratification criteria.

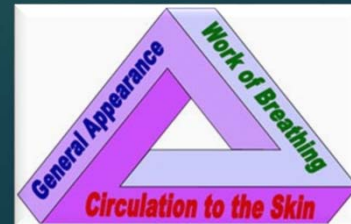
Therefore it is necessary to request an emergency ambulance transfer to the local emergency department.

If any of the high risk criteria are met the patient should be transferred urgently to emergency care.

Next

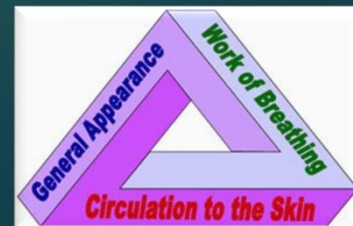
High risk criteria

- Behaviour:
 - no response to social cues
 - appears ill to a healthcare professional
 - does not wake, or if roused does not stay awake
 - weak high-pitched or continuous cry
- Heart rate:
 - aged under 1 year: 160 beats per minute or more
 - aged 1–2 years: 150 beats per minute or more
 - aged 3–4 years: 140 beats per minute or more
 - heart rate less than 60 beats per minute at any age
- Respiratory rate:
 - aged under 1 year: 60 breaths per minute or more
 - aged 1–2 years: 50 breaths per minute or more
 - aged 3–4 years: 40 breaths per minute or more
 - grunting
 - apnoea
 - oxygen saturation of less than 90% in air or increased oxygen requirement over baseline
- Mottled or ashen appearance
- Cyanosis of skin, lips or tongue
- Non-blanching rash of skin
- Temperature:
 - aged under 3 months: 38°C or more
 - any age: less than 36°C



Scenario 1 "S"

- ▶ While awaiting ambulance transfer. Kevin deteriorates further.

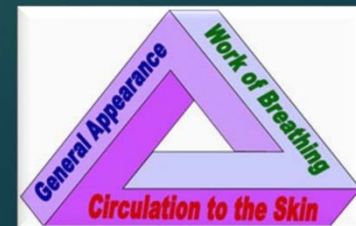


Scenario 1 "O"

▶ ABC Objective Findings:

▶ T: 39.4 HR: 18 RR: 60 Sats: (92%) CRT: 4 AVPU

1. CNS: Responds to voice. Ashen appearance.
2. CVS: T: 39.4 HR: 18 RR: 60 Sats: (92%) CRT: 4 AVPU
3. Respiratory: Intercostal and subcostal recession evident. Accessory muscle use noted. Effort and efficacy of breathing more laboured.



Scenario 1 "A"

- Please choose the most appropriate assessment of Kevin's condition
1. Deteriorated
 2. Stable
 3. Improved



Scenario 1 "A"

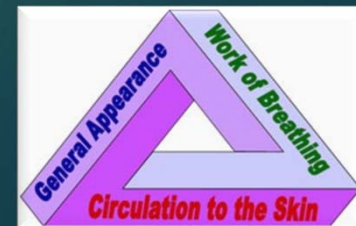
- ▶ Yes in this case, Kevin's condition is deteriorating. As per NICE sepsis stratification guidelines Kevin is a high risk for sepsis and without immediate emergency care, he is at risk for septic shock. This illustrates the importance of continuous assessment of the paediatric patient.
- ▶ Sepsis results from a dysregulated immune response to infection. It can present with non-specific, non-localised symptoms. Sepsis should be considered in any child with suspected infection and signs of systemic inflammatory response syndrome.



Scenario 1 "P"

- ▶ Please choose the 4 most appropriate medications to give Kevin right now:

1. High flow O2 via non re-breathing mask
2. High flow O2 via nasal prongs
3. Benzylpenicillin/ Ceftriaxone
4. Diazepam Rectal
5. IV Fluid Bolus 20mls/kg
6. Paracetamol/Ibuprofen
7. Salbutamol
8. IV Dextrose 10% 5mls/kg
9. Adrenaline



Scenario 1 "P"

- ▶ Yes this is the best answer.
- ▶ O₂ through a non re-breathing mask should be given to children with fever and O₂ sats (<92%) on room air. The non re-breathing mask is to ensure maximum efficacy.
- ▶ Immediate parenteral antibiotics should be considered for children with fever and reduced level of consciousness. A 3rd generation cephalosporin/benzylpenicillin is optimal for broad spectrum cover.
- ▶ Immediate intravenous fluid bolus is required. Initial fluid should normally be 0.9% sodium chloride.
- ▶ Consider paracetamol/ibuprofen in children with fever who appear distressed. Do not use antipyretics with the sole aim of reducing body temperature.

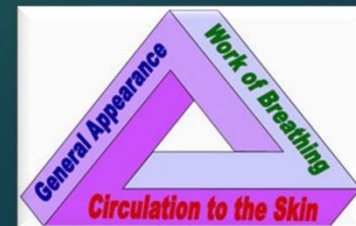
Next



Scenario 1

► Please choose the 1 intervention that would be INAPPROPRIATE at this time:

1. Request emergency ambulance transfer and alert hospital
2. Monitor BP
3. Give high flow o2 to titrate o2 saturation to appropriate level
4. Take blood glucose measurement
5. Establish IV access
6. Pulse oximetry and capillary refill assessment



Scenario 1

- ▶ Monitoring BP in this scenario is the most inappropriate answer. Hypotension in a child signifies a late sign in the pathogenesis of sepsis. This is due to compensation by the child prior to septic shock followed by rapid decompensation. Thus monitoring BP is not an accurate indicator of the severity of the child's illness.

Finish

