Adenovirus infection is self-limiting in immunocompetent children but can be severe and potentially fatal in immunocompromised children. Cidofovir is used in severe Adenovirus infection in immune compromised paediatric patients as standard practice but its use in immunocompetent children with severe disease is not well described.

We used Cidofovir successfully in a 5-month-old infant with severe Adenovirus infection. Born at 30 weeks gestation weighing 475 g, she suffered from chronic lung disease and presented with a clinical bronchiolitis illness proven to be due to adenovirus. The infection progressed rapidly to severe lung disease needing nitric oxide, high frequency ventilation and inotropes. Initial Adenovirus viral load was 43,000 copies and following MDT discussion and counselling of the family, a 5 mg/kg once weekly course of Cidofovir was administered. Her viral load increased to a maximum of 444,000 copies but this improved to < 400 following treatment. No nephrotoxicity was experienced; she recovered from her illness and was discharged to her local hospital.

We undertook a systematic review of the published evidence of the use of Cidofovir in children and identified 40 articles of which 29 were relevant. The majority of literature reports the use of Cidofovir in immune compromised children with Adenovirus or CMV infection. There was limited evidence of its use in immunocompetent children. The mortality rate of severe adenovirus infection is high in children who are immune compromised, but no clear evidence of benefit in children but can be severe and potentially fatal in immunocompetent children. Cidofovir is used in severe Adenovirus infection in immune compromised paediatric patients as standard practice but its use in immunocompetent children with severe disease is not well described.

A common side-effect of Cidofovir is nephrotoxicity, with up to 28% of patients reported to develop evidence of renal dysfunction. Alternative dosing regimens are recommended if patients are nephropathic or at high risk of acquired renal injury.

We weighed the potential benefit of treatment against the risk of nephrotoxicity in our patient and successfully treated a potentially fatal illness. We believe that Cidofovir could be used in immunocompetent patients with severe adenovirus infection but acknowledge that further research evidence is required before this treatment can be recommended.

Aims This study of children seen in the paediatric emergency department set out to determine how useful the sepsis screening tool was in alerting clinicians to unwell potentially septic children, and to establish if the initial BPEWS (beside paediatric early warning score) was predictive of admission.

Methods A retrospective study of the electronic patient records for patients who had triggered on the sepsis screening tool over a 4-month period. Information gathered included initial BPEWS with breakdown for each parameter, and the outcome – discharged or admission (admission included children observed in the clinical decision unit or use of the nursing outreach service).

Of those who required admission, further information was gathered as to final diagnosis, whether antibiotics were given (IV or oral) and the microbiology results.

Results In the study period 719 patients triggered on the sepsis screening tool of which 713 were analysed. 172 of these were admitted (24%), and of these only 1 had an invasive bacteraemia.

Respiratory infections were a common cause of illness with 19% (33) having upper respiratory tract infection and 17% (29) having lower. 16% (27) of those admitted were ultimately diagnosed with viral induced wheeze. 63 (37%) were positive for one or more viruses on respiratory or stool samples.

Correlation analysis of the BPEWS showed that the higher the initial BPEWS, the more likely that children would be admitted. There was a correlation of 95% between these variables and chi squared analysis of the relationship showed a significant p value of < 0.01.

Conclusion Whilst large numbers of children triggered on the sepsis screening tool, 76% were not admitted and thus raises questions as to the sensitivity of the tool. Increasing BPEWS was found to be predictive in identifying children who require admission. This suggests that perhaps the tool requires some adaptations, such as using high BPEWS as a significant trigger, to allow it to be more sensitive and applicable for this population and workforce.
Aims Fever is an important sign in children with sickle cell disease (SCD), often being the only indicator of serious and potentially life-threatening secondary bacterial infection. Treatment of febrile children with SCD in our Paediatric Emergency Department (PED) can be variable, including escalation of care of those who are unwell and pragmatic management of those who are well. We therefore audited the management of fever with SCD presenting to PED and developed guidance to aid management, particularly looking at whether ambulatory nursing teams can be utilised to manage ‘low-risk’ patients.

Methods We analysed the management of SCD children presenting to PED with fever over a one year period. Using these results, we developed guidance for febrile children with SCD, based on risk stratification.

Results 28 children with SCD presented between July 2018 – July 2019, of whom 22 were admitted and 6 discharged from PED. Diagnoses among these patients are displayed in table 1.

Antibiotic treatment was consistent in the management of fever due to acute chest syndrome, but was otherwise variable. One third of children discharged (2/6) received oral antibiotic treatment to complete at home. None of the discharged children were referred to the ambulatory nursing team for review. Subsequently we developed guidance to standardise clinical assessment, direct antibiotic choice, give clear risk-stratification criteria and advice on management of low-risk fevers of SCD children in the community.

Conclusions Fever may indicate serious bacterial infection in children with SCD, requiring prompt and specific antibiotic treatment. Implementation of a guideline will help tailor treatment to the most likely cause of fever and risk-stratify these children accordingly. Utilisation of ambulatory nursing teams should be encouraged to promote admission avoidance and ensure low-risk children can be managed safely at home.