

# Group A Streptococcus 2022 outbreak In Children

Guidance to be updated as situation evolves updated 9/12/22



Updated:

9/12/22: Updated [national guidance](#) with PenV first line, secondary care guidance, contacts and schools.

8-9/12/22: Penicillin duration updated to 10 days as per [SCAN guidelines](#)

8/12/22: Advice from [Specialist Pharmacy Service \(SPS\) about using solid oral dosage form antibiotics in children](#)

7/12/22: Updated [SCAN guidelines](#) with reduced threshold of antibiotics

Given current increased rates in the community of Group A Streptococcus and admissions with invasive Group A Streptococcal (iGAS) complications guidance below is in line with **UKHSA advice and [SCAN antibiotic guidance](#) until rates decrease.**

1. Reduced threshold for antibiotics
2. Antibiotic choices if supply shortage
3. When to take a swab
4. Notify the local health protection team (HPT) promptly within 3 days by completing a [notification form](#) if a diagnosis of scarlet fever is suspected.
5. Clear Safety netting for early detection of streptococcal complications [Scarlet Fever \(Group A Strep\) :: Frimley HealthierTogether \(frimley-healthiertogogether.nhs.uk\)](#)
6. [Clear Safety netting](#) for those not prescribed antibiotics
7. [Isolation guidelines](#) for schools and nurseries
8. [Referral guidance to secondary care](#)
  - a. If meet criteria as per [fever pathway](#) OR
  - b. Signs of iGAS OR
  - c. Signs of post streptococcal complications
9. iGAS in secondary care
  - a. Assessment and management
  - b. Notification by telephone to [HPT](#) ASAP
10. Management of contacts
11. Management in schools

## Group A Streptococcus Scarlet Fever presents with:

1. Prodromal symptoms: if seen at this stage safety netting is key
2. Sore throat
3. Fever
4. Painful cervical lymphadenopathy
5. Strawberry tongue
6. The rash is often accentuated in flexural creases but tends to spare the palms and soles of the feet. The redness may be harder to see on [brown and black skin](#).  
The rash is not pruritic but has a characteristic sand-paper feel to it. The rash does not appear on the face, but the cheeks can look red but pale around the mouth. The flushed face may appear more 'sunburnt' on darker skin.
7. Peeling skin on the fingertips, toes and groin area, as the rash fades.

If the child only has a runny nose, cough or diarrhoea, without the other signs they are unlikely to have scarlet fever.



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## Complications are iGAS

1. Sepsis
2. Streptococcal pneumonia
3. Lymphadenitis
4. Cellulitis, necrotizing fasciitis, and streptococcal toxic shock syndrome
5. Endocarditis, septic arthritis, osteomyelitis and liver abscess
6. Meningitis and cerebral abscess
7. Mastoiditis, peritonsillar abscess

Children who have recently had chickenpox or influenza are more likely to develop more serious infections.

## Post complications include:

1. Acute post-streptococcal glomerulonephritis (typically 2 or more weeks after the acute infection)
2. Acute rheumatic fever with endocarditis and reactive arthritis

## 1. Reduced threshold for antibiotics

### TONSILLITIS

Most young children presenting with tonsillitis have a viral aetiology. No significant difference in pain score at day 3 in children treated with antibiotics compared to those treated with placebo. Antibiotic NNT greater than 4000 to prevent one case of quinsy.

**Optimise management of pain** - regular paracetamol or ibuprofen for pain (right dose for age or weight at the right time and maximum doses for severe pain).<sup>1,2</sup>

Base decision about antibiotic treatment on **FeverPAIN**<sup>1,2</sup> score (1 point for each of fever, purulence, attend within 3 days of onset or less, severely Inflamed tonsils, no cough or coryza):

- **Score 0-1:** less than 20% likelihood of isolating streptococcus: use **NO** antibiotics
- **Score 2:** 20-40% likelihood of isolating streptococcus, use **back up/delayed** antibiotic OR **NO** antibiotic
- **Score 3 or more:** over 40% likelihood of isolating streptococcus, use **immediate** antibiotic

Score validated in children 3 years and over - younger children are less likely to have a bacterial aetiology and are less likely to develop complications.

(7/12/22: The scores have been updated in light of increased Invasive Group A Strep incidence and deviate from NICE guidance)

### SCARLET FEVER:

All require antibiotic treatment as below for 10 days.

## 2. Antibiotic choice for potential Group A Strep infections

8/12/22: Updated guidance 'off label' if oral suspension not available: <https://www.sps.nhs.uk/articles/using-solid-oral-dosage-form-antibiotics-in-children/>

9/12/22: [Updated National Guidance](#) below. [Updated SCAN Guidelines](#) with change from first line amoxicillin awaited.

• **Phenoxymethylpenicillin remains first line** due to its high effectiveness, no reported resistance, and narrow spectrum of activity. In the event of non-availability, amoxicillin, macrolides and cefalexin are alternative agents in decreasing preference.

• **In non severe-penicillin allergy**, macrolides are the option of choice, with cefalexin as an alternative.

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- **In severe penicillin allergy**, macrolides remain the option of choice. Co-trimoxazole is an option in the event of macrolide non-availability and penicillin anaphylaxis. A severe penicillin allergy is when there is a history of allergy to penicillin with effects that are clearly likely to be allergic in nature such as anaphylaxis, respiratory distress, angioedema or urticaria.
- **Both cefalexin and co-trimoxazole** are broad-spectrum agents that may promote the development of antimicrobial resistance. Resistance to macrolides and co-trimoxazole is currently 7% and 10% respectively.
- **Antibiotic treatment length for sore throat** should follow NICE guidance. For phenoxymethylpenicillin: “Five days of phenoxymethylpenicillin may be enough for symptomatic cure, but a 10-day course may increase the chance of microbiological cure”. In the current circumstances clinicians should be aware that a five day course will be appropriate for many children, at the discretion of the treating clinician. **Scarlet Fever** 10 days of treatment.
- **Children 5 years and above, may be able to swallow tablets/capsules** signpost parent/carer to the [pill swallowing information on the Healthier Together website](#).
- **If required, NHS Specialist Pharmacy Service have provided advice on how to give doses by dispersing or crushing tablets, or opening capsules.** Use in this way is outside the product license ('off-label'). <https://www.sps.nhs.uk/articles/using-solid-oral-dosage-form-antibiotics-in-children/>

## **3. Consider taking a throat swab in:**

- a. diagnostic uncertainty
- b. allergic to penicillin (to determine antimicrobial susceptibility)
- c. treatment failure (persistence of clinically relevant symptoms)

## **4. Notify the local health protection team promptly within 3 days by completing a [notification form](#) if a diagnosis of scarlet fever is suspected.**

## **5. Clear Safety netting for early detection of streptococcal complications [Scarlet Fever \(Group A Strep\) :: Frimley HealthierTogether \(frimley-healthiertogether.nhs.uk\)](#)**

## **6. [Clear Safety netting](#) for those not prescribed antibiotics**

## **7. [Isolation guidelines](#) for schools and nurseries**

Advise the family to keep child away from school/nursery for 1 day after starting antibiotic treatment, wash their hands frequently, avoid sharing eating utensils and towels, dispose of tissues promptly, and avoid contact with anyone at particular risk of infection (e.g. people with valvular disease or who are immunocompromised).

## **8. Referral guidance to secondary care**

- a. If meet criteria as per [Fever Pathway](#) **OR**
- b. Signs of iGAS **OR**
- c. Signs of post streptococcal complications

## 9. iGAS in secondary care

### a. Assessment and management

- **Invasive GAS (iGAS)** is an infection where the bacteria is isolated from a normally sterile body site, such as the blood, joints or the lungs.
- **Maintain a low threshold for considering pulmonary complications of GAS**, especially if presenting with an illness compatible with bacterial pneumonia, and concurrent or recent scarlet fever, or GAS infection or the patient was recently in contact with a case of scarlet fever/GAS infection.
- **Prompt initiation of appropriate antibiotics** remains key.
- **Take a throat swab, blood cultures and other appropriate samples** including respiratory culture, tissue and fluid samples.
- **In the case of culture-negative fluid specimens**, consider the use molecular diagnostics such as GAS-specific PCR or 16S rDNA PCR, as guided by microbiology specialists. Send all positive isolates (or DNA extract if molecular diagnosis only) to UKHSA reference lab for further typing and investigation.
- **Treatment of suspected or confirmed iGAS** should be as directed by local trust guidelines or contact local microbiology for advice.

### b. Notification by telephone to HPT ASAP

- **Importance of rapid notification by telephone of all cases of severe GAS infection** (including pneumonic complications/ empyema) to Health Protection Teams (HPTs) to facilitate rapid assessment of contacts and identification of epidemiological links with other cases, according to [national public health guidelines](#).
- **Severe GAS cases encompass both cases of invasive disease** defined through the isolation of GAS from a normally sterile site, **plus additional cases where GAS is isolated from a nonsterile site in combination with clinical signs consistent with a severe infection** (streptococcal toxic shock syndrome, pneumonia, necrotising fasciitis, puerperal sepsis, meningitis, septic arthritis). This includes cases diagnosed via culture or molecular methods.
- **Details of HPTs** are available at <https://www.gov.uk/health-protection-team>
- **In the event of a sudden death of a child** potentially due to GAS infection, clinicians are asked to liaise with microbiology and histopathology colleagues to ensure appropriate postmortem clinical specimens are taken to facilitate diagnosis.

## 10. Management of contacts

Contacts will be identified by HPTs. HPTs will advise on who requires prophylaxis.

For information, the following individuals who are close contacts of cases are recommended for antibiotic prophylaxis due to higher risk of severe outcomes:

- pregnant women from  $\geq 37$  weeks gestation
- neonates and women within the first 28 days of delivery
- older household contacts ( $\geq 75$  years)
- individuals who develop chickenpox with active lesions either seven days prior to onset in the iGAS case or within 48 hours after the iGAS case commences antibiotics, if exposure is ongoing.

Close contact is defined as: Prolonged contact with the case in a household-type setting during the 7 days before onset of symptoms and up to 24 hours after initiation of appropriate antimicrobial therapy in the index case.

## 11. Management in schools

For schools or early years settings, HPTs should be contacted when:

- schools have one or more cases of chickenpox or Influenza in the class that has scarlet fever at the same time
- experiencing an outbreak of scarlet fever in a setting/class that provides care or education to children who are clinically vulnerable
- the outbreak continues for over 2 weeks, despite taking steps to control it

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- any child or staff member is admitted to hospital with any GAS infection (or there is a death)
- any issues that are making it difficult to manage the outbreak.

As per national guidance, prompt notification of scarlet fever cases and outbreaks to UKHSA HPTs, and exclusion of cases from school or work until 24 hours of antibiotic treatment has been received, remain essential tools to limit spread