Group A Streptococcus 2022 outbreak In Children

Guidance to be updated as situation evolves updated 16/12/22

16/12/22: Updated national guidance with SSP (Serious Shortage Protocol). Including antibiotic duration. 9/12/22: Updated national guidance with PenV first line, when to swab, 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 children7/12/22: 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 particularly empyema's 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-healthiertogether.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, sore throat, 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

TONSILIITS

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).[1,2]

Base decision about antibiotic treatment on **FeverPAIN**[1,2] 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

16/12/22: Updated SSP guidance

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.*

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Serious shortage protocol (SSP)

• Due to problems with antibiotic supply a Serious Shortage Protocol has been introduced by the Department of Health and Social Care. This protocol will allow pharmacists to supply a different formulation or alternative antibiotic in the event of non-availability of phenoxymethylpenicillin

• A tiered approach to alternative antibiotics has been sent to pharmacists as part of the Serious Shortage Protocol. This means that families and patients will receive an appropriate antibiotic from their pharmacist. If there is a known reason why a patient cannot have one of the alternatives this should be added to the prescription.

• Phenoxymethylpenicillin remains first line due to its high effectiveness, no reported resistance, and narrow spectrum of activity.

- Clinicians do not need to change any practice, they can prescribe phenoxymethylpenicillin without considering the need for alternative option
- Therefore, when a clinical decision has been made to treat a child with antibiotics please prescribe:
    - **SORE THROAT**: a **5-day** course of phenoxymethylpenicillin
    - **SCARLET FEVER**: a **10-day** course of phenoxymethylpenicillin

For children with penicillin allergy, prescribe:

SORE THROAT: a **5-day** course of clarithromycin

SCARLET FEVER: a **10-day** course of clarithromycin

- Doses remain per BNFc Prescribers and local pharmacy teams should work together to understand availability of antibiotics and formulations locally and prescribe accordingly.

• 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/

Guidance for secondary care when prescribing oral antibiotics for possible group A streptococcus:

• It is recognized that secondary care providers are not required to implement the serious shortage protocol, this guidance is intended to support prescribing within secondary care

• 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, flucloxacillin and cefalexin are alternative agents in decreasing preference.

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

• 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. Contraindicated with allergies to sulfamethoxazole, trimethoprim, sulphonamide medicines

• Both cefalexin, co-trimoxazole and co-amoxiclav are broad-spectrum agents that may promote the development of antimicrobial resistance. Resistance to macrolides and co-trimoxazole is currently 7% and 10% respectively.

• In the current circumstances clinicians should be aware that a five-day course is recommended for sore throat. A 10day course should be prescribed for children with a clinical diagnosis of scarlet fever

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 ≥37 weeks gestation 7
• neonates and women within the first 28 days of delivery
• older household contacts (≥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
• 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