



## Information Pack for Managing Scarlet Fever and Group A Streptococcal (GAS) Infections in Childcare or Educational Settings – London (January 2024)

There has been a general increase in the number of scarlet fever cases (and other Strep A infections) in the community. In some childcare or educational settings, this increase is coupled with cases of chickenpox, flu, and other viral illnesses.

- Group A Streptococcus (or Strep A) is a common type of bacteria that can be found in the throat and on the skin of some individuals. People may carry it and have no symptoms of illness at all - or they may develop an infection.
- Strep throat (or pharyngitis), scarlet fever or a skin infection such as impetigo are common Strep A infections. It can easily spread between people through sneezing and skin contact.
- Most Strep A infections are mild and treated with a course of antibiotics.
- On rare occasions, the same bacteria can cause more severe infection (also known as Invasive Group A Streptococcal infection - iGAS). Further details on clinical presentations can be found in Section 4.

**This pack has been produced to assist educational settings and sets out actions you can take to stop the spread of infection. It includes the following sections:**

Section	Contents.
1	When to notify your Health Protection Team (HPT)
2	Action card - Prompts for consideration, including infection prevention and control
3	Self-assessment checklist & flow chart
4	Further information/resources.
5	Template letters for different scenarios & factsheet

Note: Whilst the focus of this pack is scarlet fever, it is important to note that where there are other Strep A infections in a school such as Strep throat, the same infection prevention and control measures still apply.

### 1. When to notify your local Health Protection Team (HPT) criteria

You need to notify your local health protection team (HPT) if you suspect outbreak of group A strep. Especially when you notice one or more of the following

1. Any child or staff member is **seriously unwell** and **admitted** to hospital with Group A Strep (GAS) infection, or there is a death due to GAS as this is indicative of invasive GAS disease or you are advised of a suspected invasive GAS case linked to the school- The HPT will complete a risk assessment with you and based on this will advise on what information should be sent to parents or staff in to ensure that appropriate timely messages are shared.
2. You have cases of clinically confirmed chickenpox or influenza (Flu) in the same classes that have scarlet fever case(s)
3. The scarlet fever outbreak (or high numbers of strep throat cases) continues beyond 3 weeks, **and** you are concerned that case numbers are still rising - despite following ALL the actions in the *Headteacher Scarlet Fever Outbreak Action Card* /checklist below.
4. You are a SEN setting and are experiencing an outbreak of scarlet fever in a class that provides care or education to children who are clinically vulnerable and have questions not covered in this pack or the online resources.
5. If you are a setting that is dedicated to children who are clinically vulnerable and have an outbreak of scarlet fever/GAS infections

**Please note** at this time when there are elevated levels of circulating GAS infection there is no need to contact the Health Protection Team about:

- A child who attended A&E or their GP practice, was not admitted, and discharged home with treatment and advice.
- Single cases, or new cases of scarlet fever or GAS as part of an existing outbreak

## 2. Head Teacher Scarlet Fever Outbreak Action Card

An outbreak of scarlet fever is defined as two or more cases in a class (with close mixing between the group) that occurs within a 10-day period. *Single cases in different classes or groups do not constitute an outbreak.*

### Key Actions for you to take

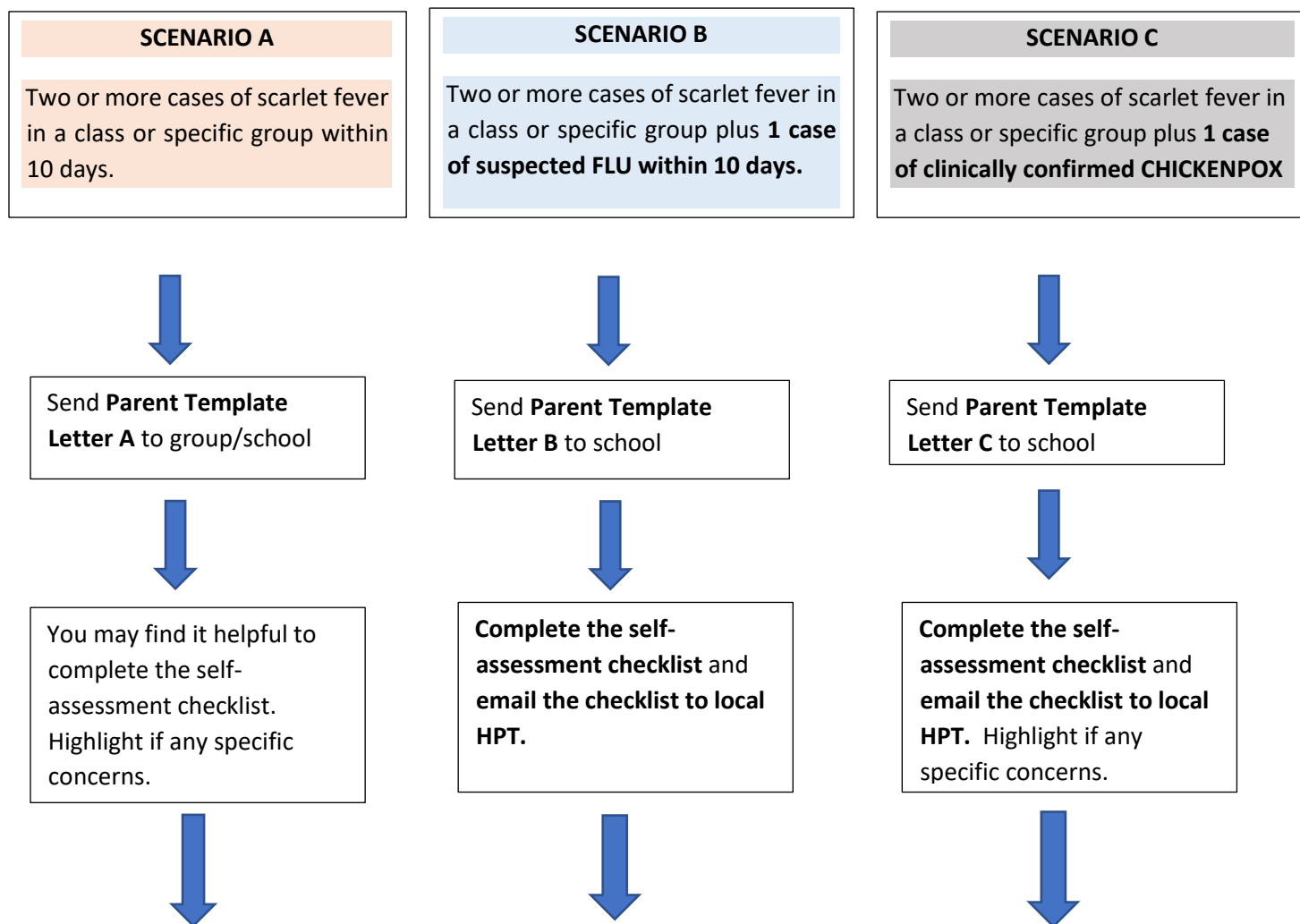
<b>Exclusion</b>	<ul style="list-style-type: none"> <li>• Cases (children and adults) with suspected or confirmed scarlet fever should be advised to <b>stay at home and away</b> from the setting for at least <b>24 hours after starting the antibiotic treatment</b>, to avoid spreading the infection.</li> <li>• <b>Contacts</b> of scarlet fever (or strep throat) cases (including siblings or household members) who are well and do not have symptoms <b>do not</b> require antibiotics and can continue to attend the setting. <u>They should seek treatment if they become symptomatic.</u></li> </ul>
<b>Self-assessment checklist</b>	<ul style="list-style-type: none"> <li>• Complete the attached self-assessment checklist</li> <li>• If your outbreak/scenario meets the “when to notify the HPT” criteria, then please email your completed risk assessment to your Local HPT, who will contact you.</li> </ul>
<b>Parent &amp; staff info</b>	<p>If you have two or more cases of scarlet fever in a class or specific group within 10 days – send relevant information letter to parents/carers/staff (see flow chart below):</p> <ul style="list-style-type: none"> <li>• <b>Template letter A:</b> Two or more cases of scarlet fever in a class – send template letter A to affected class(es)</li> <li>• <b>Template letter B:</b> Two or more suspected/confirmed cases of scarlet fever and <b>at least one case of clinically suspected flu</b> in a class within a 10-day period – send template letter B to affected class(es)</li> <li>• <b>Template letter C:</b> Two or more suspected/confirmed cases of scarlet fever (and <b>at least one case of clinically suspected chickenpox</b> in a class within a 10-day period – send template letter C to affected class(es)</li> <li>• A factsheet should also be sent to parents and staff in the wider school community in any of the above scenarios.</li> </ul>
<b>Closures</b>	It is not necessary to close the setting, unless there are operational reasons such as significant staff absence, which would be a decision for the setting in conjunction with the relevant Local Authority. There is no requirement to cancel extra-curricular activities or visits.

### Infection Control Advice for Limiting Transmission

<b>Hand and respiratory hygiene</b>	<ul style="list-style-type: none"> <li>• Children should be supervised and/or encouraged to wash their hand regularly and paper towels or hand dryers should be used for drying hands (wastepaper bin provided for disposal of towels)</li> <li>• Remind staff to wash their hands throughout the day. Hand washing needs to be done after changing nappies and helping children use the toilet.</li> <li>• Hand washing with liquid soap and warm water is preferred over alcohol gel.</li> <li>• Encourage good respiratory hygiene, using and disposing of tissues, followed by hand washing.</li> <li>• <a href="http://Home(e-bug.eu)">Home (e-bug.eu)</a> has a range of educational resources for ages 3-16 to learn about microbes, infection prevention and control, antibiotics and vaccination.</li> </ul>
<b>Cleaning and disinfection</b>	<ul style="list-style-type: none"> <li>• Daily cleaning using standard cleaning products such as detergents and bleach (Hypochlorite at 1000 ppm of available chlorine) for equipment, hard surfaces, hard toys, and sleep mats is an important part of reducing transmission. Single use cloths or paper towels should be used for cleaning. Soft toys should be machine washed.</li> <li>• Carpets and soft furnishings should be vacuumed daily.</li> <li>• Frequently touched surfaces such as taps, toilet flush handles, and door handles, should be cleaned regularly throughout the day.</li> <li>• Complete a deep clean at end of outbreak (at least 10 days with no new cases in the defined group). Carpets and rugs should be cleaned with a washer-extractor. Curtains, soft furnishing covers, and all linen should be removed, and washed at the hottest compatible temperature. Soft furnishings without removable covers should be steam cleaned. This could be done during an evening, weekend or over the school holidays.</li> </ul>

<b>Broken Skin</b>	<ul style="list-style-type: none"><li>• Make sure that all cuts, scrapes, bites and wounds are cleaned and covered. This is because breaching the skin barrier provides a portal of entry into the body for bacteria.</li></ul>
<b>Additional infection control measures</b>	<ul style="list-style-type: none"><li>• Sand, Play-Doh/plasticine, water and cookery activities should be suspended during the outbreak (existing Play-Doh/plasticine should be thrown away).</li><li>• Use of communal water fountains should be suspended during the outbreak and sharing of food, e.g. fruit and vegetable bowls, should be suspended during the outbreak</li></ul>

## Summary Flow Chart of Advice Letters to be Sent to Parents/Carers/Staff in the Event of a Scarlet Fever/Strep throat Outbreak



### Self-Assessment Checklist & enhanced infection control:

- Complete the attached self-assessment checklist and ensure that you have implemented the key infection control arrangements.
- Ensure that you add your unique HPZ Ref number (which will have been provided in the email subject header).



SELF ASSESSMENT  
CHECKLIST 270323 B

[Click here](#) to find your local HPT

### Remember:

- An outbreak of scarlet fever can be declared over when 10 days have passed without any new cases in the group.
- Clinicians have a duty to notify the Health Protection Team of all cases of invasive Group A Streptococcus (iGAS). In this situation we will contact the relevant setting, complete a risk assessment, and recommend further actions (as appropriate).
- Should you become aware of an IGAS case before being contacted by the HPT, please contact them asap to discuss.

#### 4. Further information

The following resources will remain up to date with any national updates and should be used as the point of reference

##### ❖ Educational setting resources

- [Health protection in education and childcare settings](#)
- [A table explaining exclusion period for different childhood infections](#)
- Hand hygiene [resources](#) for educational settings

##### ❖ Key Definitions

###### Outbreak of Scarlet Fever

- An outbreak of Scarlet Fever is defined as two or more cases in a class or specific close mixing group that occurs within a 10-day period. Follow the actions above if threshold is met.
- There are no actions required for a single case of Scarlet Fever. If an outbreak in a defined class or group is continuing beyond 3 weeks, please review your infection control measures and action as detailed above.
- Single cases in different classes or groups do not constitute an outbreak.

###### Chickenpox and influenza (flu) & scarlet fever

- Having chickenpox or flu at the same time as scarlet fever raises the risk of more serious disease, so there are different advice letters if chickenpox or flu are circulating in the setting at the same time as scarlet fever.

###### Other Group A Streptococcus Infections

- The same bacteria which cause scarlet fever can also cause a range of other types of infection such as skin infections (impetigo) and severe sore throat. Actions that are relevant for these infections are as follows and additional information can be found via the hyperlinks provided below:
  - **Sore throats:** No specific actions required by the setting for other Group A strep infections such as sore throats (and many sore throats are caused by viruses).  
Action: If anyone is prescribed antibiotics for a sore throat, they should stay away from the setting for at least 24 hours after starting antibiotic treatment.
  - **Impetigo:** This is a bacterial skin infection that mainly affects infants and young children. It is very infectious, and the sores can develop anywhere on the body but tend to occur as reddish sores on the face, especially around the nose and mouth and on hands and feet. After about a week, the sores burst and leave golden brown crusts. It can sometimes be painful and itchy.  
Action: Affected individuals need to stay away from the setting until all lesions (sores or blisters) are crusted over or until 48 hours after commencing antibiotic treatment.
    - [NHS – Scarlet Fever](#)
    - [NHS - Impetigo](#)
    - [Scarlet fever: symptoms, diagnosis, and treatment](#)
    - [NHS - Chickenpox](#)
    - [NHS - Influenza](#)
    - [NHS – Strep A](#)

###### Invasive Group A Streptococcus (iGAS)

- In very rare cases, the bacteria can get into the bloodstream and cause an illness called invasive Group A strep (iGAS).
- Whilst still uncommon, there has been an increase in iGAS cases this year, particularly in children under 10 years old. It is very rare for children with scarlet fever to develop iGAS infection. However, it is important that parents and carers understand the signs and symptoms of invasive disease and seek medical attention promptly if a child develops these symptoms. Therefore, we ask the settings to send out advice letters when there are cases alongside scarlet fever in the setting.

**5. Parent Letter templates - please use the relevant letter, delete/amend the highlighted text to reflect the situation at your school and add to your headed paper and send with the factsheet.**

**PARENT TEMPLATE LETTER A - TO BE USED WHEN THERE ARE 2 OR MORE CASES OF SCARLET FEVER/GAS infection IN A CLASS OR DEFINED GROUP**

00 Month 20XX

Dear Parent/Guardian/Carer,

We have been informed that several children who attend [xxxxxx] school/nursery/other childcare setting (delete as appropriate) have been diagnosed with scarlet fever/Group A strep infection

We have received the following advice from local Health Protection team to share with you.

- The symptoms of scarlet fever include sore throat, headache, fever, nausea, and vomiting. This is followed by a fine red skin rash which typically first appears on the chest and stomach, rapidly spreading to other parts of the body. The face can be flushed red, but pale around the mouth. On brown and black skin, it might be harder to see a change in colour, but you can still feel the sandpaper-like texture of the rash and see the raised bumps
- Scarlet fever is treated with a course of antibiotics to minimise the risk of complications and reduce the spread to others.

**WHAT YOU SHOULD DO NEXT**

**1. If you think your child has a Group A Strep infection**

- See your GP or contact NHS 111 as soon as possible. It is also preferable that a throat swab is taken to confirm the diagnosis.
- Make sure that your child takes the full course of any antibiotics prescribed by the doctor/healthcare professional.
- Anyone with symptoms suggestive of scarlet fever should stay at home, away from nursery, school, childcare setting or work for at least **24 hours after starting the antibiotic treatment**, to avoid spreading the infection. If it is impetigo, they will need to remain away from setting for 48 hours.

**2. If your child has had chickenpox or influenza (flu) infection recently**

Children who have had chickenpox or flu recently are more likely to develop more serious illness during an outbreak of scarlet fever and so you should remain vigilant for additional symptoms such as a persistent high fever, skin infections and swollen, painful joints. **If you are concerned, then please seek medical assistance immediately**

**3. If your child has an underlying condition which affects their immune system**

You should contact your GP or hospital doctor to discuss whether any additional measures are needed

**4. Be aware of invasive Group A Streptococcus (iGAS) infection**

Please read the enclosed Group A Streptococcus (GAS) and Scarlet Fever factsheet which includes information about iGAS

**As a parent, you should trust your own judgement.**

Further information on scarlet fever and Strep A is also available on the NHS website:

[Scarlet fever - NHS \(www.nhs.uk\)](http://www.nhs.uk)

[Strep A - NHS \(www.nhs.uk\)](http://www.nhs.uk)

Yours sincerely,  
Sender's details

**PARENT TEMPLATE LETTER B - TO BE USED WHEN THERE ARE TWO OR MORE SUSPECTED/CONFIRMED CASES OF SCARLET FEVER/GROUP A INFECTION AND AT LEAST ONE CASE OF SUSPECTED FLU CASE WITHIN A 10 DAY PERIOD WITHIN A SPECIFIC CLASS OR GROUP**

Dear Parent/Guardian/Carers,

We have been informed that several children who attend **school / nursery/childcare setting** (delete as appropriate) have been diagnosed with suspected/confirmed **scarlet fever/Group A strep infection** and influenza (flu).

Where both diseases are circulating at the same time there is a slight increased risk of more serious infection.

We have contacted our local Health Protection team, who have provided us with the following advice to share with you.

### **Influenza**

- **Symptoms:** Most children will have a mild illness and will recover at home without needing treatment. Flu-like symptoms include fever (38 degrees Celsius or greater), cough, sore throat, runny nose, and headache.
- **Isolate:** Those with suspected flu should stay off school/nursery until they are free of symptoms.
- **Vaccination:** The children's flu vaccine is offered as a yearly nasal spray to children to help protect them against flu. The nasal spray flu vaccine will not only help protect your child against flu, but the infection will also be less able to spread from them to their family, carers and the wider population. Please discuss with your GP if your child is eligible for flu vaccine and has not received this. See <https://www.nhs.uk/conditions/vaccinations/child-flu-vaccine/> for more details.

### **Group A Strep infections**

- Most Group A Streptococcus illnesses are relatively mild, with symptoms including a sore throat ("strep throat"), scarlet fever or a skin infection such as impetigo
- If you suspect your child has a "strep throat" or impetigo they will need to see your GP or contact NHS111 as they will require antibiotic treatment.

### **Scarlet fever**

- **Symptoms:** Scarlet fever is a mild childhood illness caused by the Group A streptococcus bacteria. Symptoms include a sore throat, headache, fever, nausea, and vomiting, followed by a fine red rash (feels like sandpaper) which typically first appears on the chest and stomach, rapidly spreading to other parts of the body. The face can be flushed red but pale around the mouth. As the rash fades the skin on the fingertips, toes and groin area can peel. On brown and black skin, it might be harder to see a change in colour, but you can still feel the sandpaper-like texture of the rash and see the raised bumps
- **Treatment:** Scarlet fever requires antibiotic treatment. If you think your child has scarlet fever, then please:
  - See your GP or contact NHS 111 as soon as possible. Advise them that the school/nursery has provided you a letter detailing that influenza and Scarlet Fever is co-circulating at school.
  - Make sure that you/your child takes the full course of any antibiotics prescribed by the doctor
- **Isolate:** stay at home, away from nursery, school or work for at least 24 hours after starting the antibiotic treatment, to avoid spreading the infection

### **Invasive Group A Strep (iGAS)**

- **Symptoms:** The same bacteria which cause scarlet fever can also cause a range of other types of infection such as skin infections (impetigo) and sore throat. In very rare cases, the bacteria can get into the bloodstream and cause an illness called invasive group A strep (iGAS). Whilst still very uncommon, there has been an increase in iGAS cases this year, particularly in children under 10 years old. It is very rare for children with scarlet fever to develop iGAS infection.
- **Treatment:** As a parent, you should trust your own judgement. If you suspect your child has iGAS you must seek urgent clinical advice.

## Complications

Children who have recently had influenza are more at risk of developing serious infection during an outbreak of scarlet fever and so parents should remain vigilant for symptoms such as a persistent high fever, cellulitis (skin infection) and arthritis (joint redness, pain or swelling).

**If you are concerned for any reason, please seek medical assistance immediately.** If your child has an underlying condition which affects their immune system, you should contact your GP or hospital doctor to discuss whether any additional measures are needed.

Finally, it is important to recognise that children and staff in schools/nurseries are particularly susceptible to infections which increase over the winter months such as acute respiratory infection (ARI) in particular, seasonal influenza (flu), COVID-19 and stomach infections (such as norovirus). Practising regular effective hand washing and infection control measures is key in reducing further transmission of all viruses and bacteria.

You can find more information on chickenpox, influenza and Strep A on the NHS website: [www.nhs.uk](http://www.nhs.uk).

Also, the following blog may be useful:

- Group A Strep [Group A Strep - What you need to know - UK Health Security Agency \(blog.gov.uk\)](https://www.blog.gov.uk/2017/03/20/group-a-strep-what-you-need-to-know/)

Yours sincerely

Sender's details



**PARENT TEMPLATE LETTER C – TO BE USED WHEN TWO OR MORE SUSPECTED/CONFIRMED CASES OF SCARLET FEVER AND AT LEAST ONE CASE OF CHICKENPOX WITHIN A 10 DAY PERIOD WITHIN A CLASS OR SPECIFIC GROUP**

00 Month 20XX

Dear Parent/Guardian/Carer,

We have been informed that several children who attend [xxxxxx] school/nursery or childcare setting (delete as appropriate) have been diagnosed with suspected/confirmed scarlet fever/Group A strep infection (delete as appropriate) and chickenpox.

We have contacted our local Health Protection team, who have provided us with the following advice to share with you.

### **Chickenpox**

Chickenpox is a common childhood illness. It causes a rash of red, itchy spots that turn into fluid-filled blisters. They then crust over to form scabs, which eventually drop off. To prevent spreading the infection, keep children off nursery or school until all the spots have crusted over.

For most children, chickenpox is a mild illness that gets better on its own. But some children can become more seriously ill and need to see a doctor. Contact your GP straight away if your child develops any abnormal symptoms, for example:

- if the blisters on their skin become infected
- if your child has a pain in their chest or has difficulty breathing

### **Group A Strep infections**

- Most Group A Streptococcus illnesses are relatively mild, with symptoms including a sore throat ("strep throat"), scarlet fever or a skin infection such as impetigo
- If you suspect, you child has a "strep throat" or impetigo they will need to see your GP or contact NHS111 as they will require antibiotic treatment.

### **Scarlet fever**

- Scarlet fever is a common childhood infection caused by group A Streptococcus (GAS). It is also a mild childhood illness but unlike chickenpox, requires antibiotic treatment. Symptoms include a sore throat, headache, fever, nausea, and vomiting, followed by a fine red rash which typically first appears on the chest and stomach, rapidly spreading to other parts of the body. The face can be flushed red but pale around the mouth. As the rash fades the skin on the fingertips, toes and groin area can peel. On brown and black skin, it might be harder to see a change in colour, but you can still feel the sandpaper-like texture of the rash and see the raised bumps

If you think your child has scarlet fever:

- See your GP or contact NHS 111 as soon as possible. It is also preferable that a throat swab is taken to confirm the diagnosis.
- Make sure that your child takes the full course of any antibiotics prescribed by the doctor/healthcare professional.
- Anyone with symptoms suggestive of scarlet fever should stay at home, away from nursery, school, childcare setting or work for at least **24 hours after starting the antibiotic treatment**, to avoid spreading the infection.

Children who have recently had chickenpox infection are more at risk of developing serious infection during an outbreak of scarlet fever and so parents should remain vigilant for symptoms such as a persistent high fever, cellulitis (skin infection) and joint redness, pain or swelling. *If you are concerned for any reason, then please seek medical assistance immediately.*

### **Invasive Group A Strep (iGAS)**

The same bacteria which cause scarlet fever can also cause a range of other types of infection such as skin infections (impetigo) and sore throat. In very rare cases, the bacteria can get into the bloodstream and cause an illness called invasive group A strep (iGAS). Whilst still very uncommon, there has been an increase in iGAS cases this year, particularly in children under 10 years old. It is very rare for children with scarlet fever to develop iGAS infection.

As a parent, you should trust your own judgement.

If your child has an underlying condition which affects their immune system, you should contact your GP or hospital doctor to discuss whether any additional measures are needed.

Further information on scarlet fever and chickenpox are also available via the NHS website ([www.nhs.uk](http://www.nhs.uk)):

[Scarlet fever](#)

[Chickenpox](#)

[Group A Strep - What you need to know - UK Health Security Agency \(blog.gov.uk\)](#)

Yours sincerely,

**Sender's details**



## Fact sheet for schools and parents about Group A Streptococcus (GAS) and Scarlet Fever

### What is Group A Streptococcus?

Group A Streptococcus or *Streptococcus pyogenes* is a bacterium that can be found in the throat and on the skin. People may carry it and have no symptoms of illness or may develop infection.

### How is it spread?

Group A Streptococcus survives in throats and on skin for long enough to allow easy spread between people through sneezing and skin contact. People who are currently carrying the bacteria in the throat or on the skin may have symptoms of illness or they may have no symptoms and feel fine. In both cases, these bacteria can be passed on to others.

### What kinds of illnesses are caused by Group A Streptococcus?

Most Group A Streptococcus illnesses are relatively mild, with symptoms including a sore throat ("strep throat"), scarlet fever or a skin infection such as impetigo. However, on rare occasions, these bacteria can cause other severe and sometimes life-threatening diseases.

Although scarlet fever is usually a mild illness, it should be treated with antibiotics to minimise the risk of complications and reduce the spread to others. Children should **stay at home until at least 24 hours after starting the antibiotic treatment** to avoid spreading the infection.

The **symptoms** of scarlet fever include a sore throat, headache, fever, nausea and vomiting. This is followed by a fine red rash which typically first appears on the chest and stomach, rapidly spreading to other parts of the body. On brown and black skin, it might be harder to see a change in colour, but you can still feel the sandpaper-like texture of the rash and see the raised bumps.

Children who have had **chickenpox** or **influenza ('flu)** recently are more likely to develop more serious infection during an outbreak of scarlet fever and so parents should remain vigilant for symptoms such as a persistent high fever, cellulitis (skin infection) and arthritis (joint pain and swelling). If you are concerned for any reason, please seek medical assistance immediately.

### What is invasive Group A Streptococcal (iGAS) disease?

The same bacteria which cause scarlet fever can also cause a range of other types of infection such as skin infections (impetigo) and sore throat. In very rare cases, the bacteria can get into the bloodstream and cause an illness called invasive group A strep (iGAS). Whilst still very uncommon, there has been an increase in iGAS cases this year, particularly in children under 10 years old. It is very rare for children with scarlet fever to develop iGAS infection.

As a parent, you should trust your own judgement.

Contact NHS 111 or your GP if:

- your child is getting worse
- your child is feeding or eating much less than normal
- your child has had a dry nappy for 12 hours or more or shows other signs of dehydration
- your baby is under 3 months and has a temperature of 38C, or is older than 3 months and has a temperature of 39C or higher
- your baby feels hotter than usual when you touch their back or chest, or feels sweaty
- your child is very tired or irritable

Call 999 or go to A&E if:

- your child is having difficulty breathing – you may notice grunting noises or their tummy sucking under their ribs
- there are pauses when your child breathes
- your child's skin, tongue or lips are blue
- your child is floppy and will not wake up or stay awake

### **Do contacts of a case of scarlet fever require antibiotics?**

Contacts of Scarlet Fever cases (including siblings or household members) who are well and do not have symptoms **do not** require antibiotics and can continue to attend the setting. They should seek treatment if they develop symptoms.

There is no increased risk of complications for pregnant women but if you are concerned, please discuss with your midwife.

### **What else can I do to prevent my child from becoming unwell?**

Because Group A Streptococcal disease is spread through coughing, sneezing and skin contact, it is important to have good hand hygiene and catch coughs and sneezes in tissues and throw these away. If you are unwell, stay at home and seek medical advice. This will all help limit the spread of other infections, which are common this time of year.

**Acknowledgement:** Adapted from SE Region UKHSA resource.