



Public Health
England

Interim guidelines for the public health management of scarlet fever outbreaks in schools, nurseries and other childcare settings

About Public Health England

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1. Background and epidemiology

Scarlet fever is a common childhood infection caused by *Streptococcus pyogenes* (also known as group A streptococcus [GAS]). These bacteria are found on the skin or in the throat, where they can live without causing problems. Under some circumstances GAS can cause non-invasive infections such as pharyngitis, impetigo and scarlet fever. On rare occasions they can cause severe disease, including streptococcal toxic shock syndrome, necrotising fasciitis, and invasive GAS (iGAS) infection.

Scarlet fever was once a dangerous disease in the UK, but antibiotic treatment means it is now much less serious. Around 3-4,000 cases are diagnosed each year in England with 80% occurring in children under ten years old. It is most common in children between the ages of two and eight years, with four year olds most likely to develop the illness. Occasionally, outbreaks of scarlet fever occur in nurseries and schools.

Routine national surveillance data for invasive and non-invasive GAS infections suggests a cyclical pattern with higher incidence peaks evident in notifications approximately every four years. Incidence of invasive disease tends to mirror that of superficial manifestations of GAS infection in many but not all years.ⁱ As such, monitoring scarlet fever cases nationally can provide an early warning of increases in invasive disease. Seasonal trends show that increased levels of GAS infections typically occur between December and April, with peak incidence usually in March

In England, statutory notifications of scarlet fever, based on clinical symptoms consistent with this diagnosis, are submitted to local health protection teams (HPTs). During periods of increased incidence, when there is sustained local transmission, HPTs may also see an escalation in reports of suspected cases and outbreaks from health professionals and from schools, nurseries and other child care settings

2. Purpose

These guidelines were developed by the national Incident Management Team in response to the Level 3 scarlet fever incident in April 2014.ⁱⁱ They are interim guidelines based on a rapid review of the evidence and expert advice and they will be reviewed as new evidence emerges from the field. Once amended they are intended for routine use in the management of scarlet fever outbreaks.

The aim of the guidelines is to support HPTs to control outbreaks of scarlet fever in schools, nurseries and child care settings and protect vulnerable children and adults.

3. Case management

3.1 Signs and symptoms

The symptoms of scarlet fever are non-specific in early illness and may include sore throat, headache, fever, nausea and vomiting. After 12 to 48 hours the characteristic red, generalised pinhead rash develops, typically first appearing on the chest and stomach, rapidly spreading to other parts of the body, giving the skin a sandpaper-like texture. On more darkly-pigmented skin, the scarlet rash may be harder to spot, although the “sandpaper” feel should be present. Patients typically have flushed cheeks and pallor around the mouth. This may be accompanied by a ‘strawberry tongue’. During convalescence peeling of the skin occurs at the tips of fingers and toes and less often over wide areas of the trunk and limbs.

3.2 Complications

Although scarlet fever is usually a mild illness, patients can develop complications such as an ear infection, throat abscess (quinsy), pneumonia, sinusitis or meningitis in the early stages and acute glomerulonephritis and acute rheumatic fever at a later stage. Prompt treatment with appropriate antibiotics significantly reduces the risk of complications developing. Patients, or their parents/guardians, should be advised to keep an eye out for any symptoms which might suggest these complications and to seek medical help immediately if concerned.

3.3 Notification and public health action

Most scarlet fever notifications are received by post, email or fax from GPs within a few days of diagnosis. HPTs are required to record all cases reported by a health professional as “notified” in the HP Zone notification panel, as per routine. This is essential for national surveillance of scarlet fever. HPTs are NOT expected to actively follow up sporadic notifications to ensure public health action has been taken, although at a time of increased activity general advice to local clinicians may be provided. See information included in the letter for health professionals (**Appendix 1**)

Where there is an opportunity to do so, for example notifications made by phone, HPTs should remind clinicians of the following actions:

- prescribe an appropriate treatment course of antibiotics
- advise **exclusion** from nursery / school / work for **24 hours** after the commencement of appropriate antibiotic treatment
- consider confirming the diagnosis by throat swab (eg if case is reported to be part of an outbreak - see 4.2)

For scarlet fever reports (i.e. not from a health professional) HPTs are asked to:

- ensure the case has been assessed by a health professional, and a clinical diagnosis of scarlet fever made and notified

4. Outbreaks: case definitions, initial actions, risk assessment

Schools, nurseries and other child care settings should promptly notify the HPT of suspected scarlet fever outbreaks. (See **Appendix 2** - Increased incidence of scarlet fever - letter for schools)

4.1 Case and outbreak definitions

Confirmed case: clinical diagnosis of scarlet fever by a health professional and microbiological confirmation of GAS infection from a throat swab

Probable case: clinical diagnosis of scarlet fever by a health professional

Possible case:

- i) case reported by a reliable source (eg nursery manager, school secretary), presenting with signs and symptoms consistent with scarlet fever, and a close epidemiological link eg household contact of a confirmed case; or attending school where there is a confirmed scarlet fever outbreak
- ii) cases reported by a health professional where scarlet fever is part of a differential diagnosis and other infections may be just as likely

Outbreak:

For the purpose of these guidelines an outbreak of scarlet fever is defined as a credible report of two or more **probable** or **confirmed** scarlet fever cases attending the same school / nursery or other childcare setting notified within ten days of each other (two maximum incubation periods) with an epidemiological link between cases, for example they are in the same class or year group.

Initial risk assessment

- 4.2 Confirm aetiology of the outbreak: swab first few cases
- 4.3 Assess risk of spread: number of cases, age, class and year group, denominator
- 4.4 Assess risk of severe cases: complications, hospitalisations, co-circulation of chickenpox, vulnerable contacts

4.2 Initial actions to confirm the outbreak: swabbing

Initial investigation of the outbreak should begin within one working day of notification to the HPT. Key facts must be established to inform all subsequent decisions and actions.

It is good practice to establish whether this is truly an outbreak of scarlet fever or another childhood infection. Differential diagnoses will include measles, glandular fever and slapped cheek infections. Details of the clinical presentation of the first few suspected cases should be obtained and the cases classified as confirmed, probable or possible (See 4.1). In an outbreak scenario microbiological confirmation should be sought for the first few cases (up to five) and the HPT should advise their GPs to take a throat swab for culture of GAS. Results can be available within 24 to 48 hours, depending on local arrangements.

The HPT should alert the local microbiology lab and request that isolates from cases related to the outbreak are clearly labelled as such and sent to the Respiratory and Systemic Bacteria Section for typing as this will help ascertain the molecular epidemiology of scarlet fever during periods of high incidence.

Mass swabbing of children in schools is not routinely recommended.

For microbiology advice in outbreaks, you can contact the **Lead Public Health Microbiologist** for the relevant region, or the **Respiratory and Vaccine Preventable Bacteria Reference Unit** T. 020 8327 7887.

4.3 Assess risk of spread

Preliminary information should confirm the **epidemiological link** between cases, for example cases in the same nursery, class or year group. At the initial risk assessment, describe the epidemiology including:

- number of cases
- age of cases
- class and year group affected
- date of onset of symptoms (or use date reported to school as a proxy)
- denominator at risk, age breakdown and likely health status

4.4 Assess risk of severe cases

Schools, nurseries and other childcare settings have been the focus for clusters of iGAS disease, especially when there are concomitant outbreaks of chickenpox and GAS infection. Evidence suggests that chickenpox is the most common risk factor for iGAS disease in children.^{iii,iv,v,vi}

As part of the initial risk assessment the HPT should ask the school specifically if they are aware of any:

- hospitalisations
- co-circulation of chickenpox (contemporaneous to the scarlet fever)

Schools should be asked to contact the HPT for additional advice if they become aware of any of the above or if the outbreak does not appear to be subsiding over the next three weeks, or if they are concerned for any other reason.

For outbreaks in settings of vulnerable individuals (eg schools for learning difficulties, or children’s hospices) additional advice on management may be required (See section 5.3).

4.5 Record keeping

- HPTs should record outbreaks of scarlet fever in any setting as a **situation** on HPZone
- all **contexts** such as a school or nursery should also be recorded
- **cases** that are reported by a health professional should be recorded as “notified” in the HP zone notification panel, as per routine. These cases can be linked to the school situation.
- more detailed line listing is not routinely required as it will not influence the management of the majority of outbreaks

5. Control of scarlet fever outbreaks

Scarlet fever is highly contagious and if not treated with antibiotics, can be infectious for two to three weeks after the symptoms appear. The bacteria are present in the mouth, throat and nose of the infected person and are spread by contact with that person's mucus or saliva. These might even be on cups, plates, pens, toys or surfaces, such as tables which might have been used or touched by someone carrying the bacteria. Transmission can also occur through breathing of infected airborne droplets produced through an infected person's coughing or sneezing.^{vii}

Outbreak control

- 5.1 Infection control advice: exclusion for 24 hrs after starting treatment
- 5.2 Letter for parents and staff
- 5.3 Advice for vulnerable children and adults
- 5.4 Stepping up public health actions

5.1 Infection control advice

In schools and nurseries it is recognised that infections can be spread through direct physical contact between children and staff and through shared contact with physical surfaces such as table tops, taps, and handles. Schools should be reminded of the current Guidance on Infection Control in Schools and other Child Care Settings^{viii} which advises that children with scarlet fever should not return to nursery or school and adults to work until a minimum of 24 hours after starting treatment with appropriate antibiotics.

Hand washing remains the most important step in preventing such infections. Good hand hygiene should be enforced for all pupils and staff and a programme should be put into place that encourages children to wash their hands at the start of the school day, after using the toilet, after play, before and after eating, and at the end of the school day. It is important that hands are washed correctly (See Resources for link to hand hygiene resources for schools).

Liquid soap via a soap dispenser should be made available and there should be a plentiful supply of paper towels.

Children and adults should be encouraged to cover their mouth and nose with a tissue when they cough and sneeze and to wash hands after using or disposing of tissues. Spitting should be discouraged.

Breaching the skin barrier provides a portal of entry for the organism, therefore children and staff should be reminded that all scrapes or wounds should be thoroughly cleaned and covered while at school.

5.2 Cascade information to school staff and parents / guardians

HPTs should provide a standard letter (Appendix 3) and Scarlet Fever Q+A (See Resources) for schools to cascade to parents / guardians and staff, advising on the signs and symptoms of scarlet fever and the need for symptomatic children to stay off school, see their GP and remain at home until they have received 24 hours of antibiotics.

5.3 Advice for vulnerable children and adults

Immunocompromised individuals, those with underlying medical conditions such as diabetes, women in the puerperal period and individuals with chickenpox are at increased risk of developing iGAS^{vi} and so it is important to maintain a high index of suspicion in these groups. Schools, nurseries and child minders will normally have been made aware of children or staff members who are vulnerable to infections for the reasons outlined above.

The HPT should ask the school to alert vulnerable staff and the parents / guardians of vulnerable children to seek medical advice. Clinicians caring for such patients may consider exclusion and/or chemoprophylaxis on an individual basis and may therefore seek advice from the HPT to confirm the nature of the outbreak.

5.4 Stepping up public health actions

The HPT should consider setting up an Outbreak Control Team (OCT) in the following scenarios:

- if the outbreak does not appear to be subsiding within three weeks or if the school raise other concerns
- if there is co-circulating chickenpox (contemporaneous to the scarlet fever)
- if hospitalisations are reported
- if iGAS infection is reported
- if this is a special needs school / nursery (because of the increased risk of iGAS in vulnerable children as defined in 5.3)
- if complications are reported (see 3.2)

The OCT should consider implementing additional control measures including:

Escalation of infection control measures

Cleaning of the environment, including toys and equipment, should be frequent and thorough. Touch points, eg taps, toilet flush handles, door handles, should be cleaned regularly. Toys used by the children should be washed and if possible disinfected. Soft toys should be machine washable; hard surface toys are more easily washed and disinfected. Consider throwing away low cost items that may be difficult to clean thoroughly eg pencils, crayons.

Varicella vaccination

Evidence suggests that chickenpox (varicella) is the most common risk factor for iGAS disease in children.^{vi} Sentinel surveillance data^{ix} for chickenpox and a sero-prevalence study (unpublished data) conducted in England show that by the age of five 65% of children will already have had chickenpox, therefore the majority of children susceptible to chickenpox are in the younger age groups. An analysis of chickenpox mortality data from 2001 to 2007 in England and Wales reported five deaths where co-infection or secondary infection with GAS was a risk factor and all of these were in children under five years (unpublished data).

If chickenpox is co-circulating with scarlet fever in a nursery or pre-school setting, then the OCT could consider post-exposure prophylaxis with varicella vaccine^x to interrupt transmission of chickenpox and prevent iGAS cases occurring. Varicella vaccine administered within three days of exposure may be effective in preventing chickenpox and its use has been documented in a number of outbreaks.^{iii,xi} Children from one year of age and staff with no clear history of chickenpox could be offered two doses of varicella vaccine, four to eight weeks apart.

Chemoprophylaxis

In school / nursery settings, chemoprophylaxis is not routinely recommended for contacts of non-invasive GAS infection. Antibiotic prophylaxis can be considered in exceptional circumstances by the OCT. Advice can be sought from the Public Health Regional Microbiologist or the national team (See contact details in the resources section). Chemoprophylaxis aims to eradicate carriage in those who may be at risk of infection or pose a risk to others through onward transmission. The recommended antibiotic regimen is the same as for treatment (See Appendix 1).

If a case of iGAS infection is reported in a school where there is an outbreak of scarlet fever please refer to the relevant guidance on the PHE website.^{xii}

Further information for staff, parents / guardians and health professionals

Additional information should be included in the letter to parents/guardians if there is co-circulating chickenpox, or if complications or hospitalisations are reported (Appendix 4). Consider sending a letter to local health professionals to alert them of the scarlet fever

outbreak, with specific reference to the co-circulation of chickenpox and the increased risk of acquiring iGAS disease. (Appendix 5)

Resources

1. Scarlet fever Q+A:
http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317140949203
2. Guidance on infection control in schools and other childcare settings. Available here:
http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947358374
3. Hand hygiene resources for schools: <http://www.e-bug.eu/>
4. Useful contact details:

- Theresa Lamagni, Senior Epidemiologist
Healthcare Associated Infection & Antimicrobial Resistance Department
theresa.lamagni@phe.gov.uk T. 020 8327 6628
- Meera Chand, Consultant Microbiologist
Microbiology Services
meera.chand@phe.gov.uk T. 020 8327 6989
- Tim Harrison, Head
Respiratory and Vaccine Preventable Bacteria Reference Unit
tim.harrison@phe.gov.uk T. 02083277887
- Vanessa Saliba, Consultant Epidemiologist
National Immunisation Team
vanessa.saliba@phe.gov.uk T. 020 8327 7392

Appendix 1. Increased incidence of scarlet fever - letter for health professionals

Dear colleagues,

Re: Increase in scarlet fever notifications

We are writing to inform you of a national recent increase in notifications of scarlet fever to Public Health England, above seasonally expected levels. Scarlet fever is a notifiable disease, and we would like to take this opportunity to remind practitioners of the signs and symptoms and the actions to be taken if you see a case.

Signs and symptoms of scarlet fever

Scarlet fever is a common childhood infection caused by *Streptococcus pyogenes*, or group A streptococcus (GAS). The symptoms are non-specific in early illness and may include sore throat, headache, fever, nausea and vomiting. After 12 to 48 hours the characteristic red, generalised pinhead rash develops, typically first appearing on the chest and stomach, rapidly spreading to other parts of the body, giving the skin a sandpaper-like texture. On more darkly-pigmented skin, the scarlet rash may be harder to spot, although the 'sandpaper' feel should be present. Patients typically have flushed cheeks and pallor around the mouth. This may be accompanied by a 'strawberry tongue'. During convalescence desquamation of the skin occurs at the tips of fingers and toes, less often over wide areas of the trunk and limbs.

The differential diagnosis will include measles, glandular fever and slapped cheek infections.

Complications of scarlet fever

Although scarlet fever is usually a mild illness, patients can develop complications such as an ear infection, throat abscess, pneumonia, sinusitis or meningitis in the early stages and acute glomerulonephritis and acute rheumatic fever at a later stage. Patients, or their parents, should keep an eye out for any symptoms which might suggest these complications and if concerned advised to seek medical help immediately.

Recommended actions

- Suspected scarlet fever can be confirmed by taking a **throat swab** for culture of Group A streptococcus, although a negative throat swab does not exclude the diagnosis. Consider taking a throat swab in patients with clinically suspected scarlet fever and in children with an undiagnosed febrile illness without an obvious focus of infection.
- **Prescribe antibiotics** without waiting for the culture result if scarlet fever is clinically suspected:

Choice	Drug	Age	Dose (by mouth)	Frequency and duration
1	PenicillinV*	<1m	12.5mg/kg (max 62.5mg)	Every 6 hours for 10 days
		1m to <1yr	62.5mg	
		1 to <6yrs	125mg	
		6 to <12yrs	250mg	
		12 to 18yrs	250-500mg	
		Adults	500mg	
2**	Azithromycin**	6m-<12yrs***	12mg/kg (max 500mg)	Once a day for 5 days
		12yrs and over	500mg	

*For children who are unable to swallow tablets, or where compliance to Penicillin V is a concern, Amoxicillin 50 mg/kg once daily (max = 1000 mg) or 25 mg/kg (max = 500 mg) twice daily may be used as an alternative^{xiii}.

**if allergic to penicillin

***unlicensed indication

- Advise **exclusion** from nursery / school / work for **24 hours** after the commencement of appropriate antibiotic treatment
- **Notify** your Health Protection Team

Clinicians should be mindful of a potential increase in **invasive GAS (iGAS)** infection which tends to follow trends in scarlet fever. Although such an increase is not yet evident above the expected level for this season it is important to maintain a high index of suspicion, especially in relevant patients (such as those with chickenpox, and women in the puerperal period). Early recognition and prompt initiation of specific and supportive therapy for patients with iGAS infection can be lifesaving.

Yours sincerely,

Appendix 2. Increased incidence of scarlet fever - letter for schools

Dear colleagues,

Re: Increase in scarlet fever

We are writing to inform you of a recent [national/local] increase in notifications of scarlet fever to Public Health England, above seasonal expected levels.

We would like to take this opportunity to remind you of the signs, symptoms and the actions to be taken if you become aware of an outbreak at your school or nursery.

Signs and symptoms of scarlet fever

Scarlet fever is a common childhood infection caused by *Streptococcus pyogenes*, or group A streptococcus (GAS). The early symptoms of scarlet fever include sore throat, headache, fever, nausea and vomiting. After 12 to 48 hours the characteristic red, pinhead rash develops, typically first appearing on the chest and stomach, then rapidly spreading to other parts of the body, and giving the skin a sandpaper-like texture. The scarlet rash may be harder to spot on the skin of some Black and Asian people, although the 'sandpaper' feel should be present. Patients typically have flushed cheeks and pallor around the mouth. This may be accompanied by a 'strawberry tongue'. As the child improves peeling of the skin can occur.

Infection control advice

In schools and nurseries it is recognised that infections can be spread through direct physical contact between children and staff and through shared contact with surfaces such as table tops, taps, toys and handles. During periods of high incidence of scarlet fever there may also be an increase in outbreaks in schools, nurseries and other child care settings.

As per national *Guidance on Infection Control in Schools and other Child Care Settings*, children and adults with suspected scarlet fever should be **excluded** from nursery / school / work for **24 hours** after the commencement of appropriate antibiotic treatment. Good hygiene practice such as hand washing remains the most important step in preventing and controlling spread of infection.

Recommended actions if you suspect an outbreak at your school or nursery:

- **Contact** your Health Protection Team on xxxxxxxxx for advice
- Your Health Protection Team will provide you with a **letter** to cascade to staff and parents if appropriate

Although scarlet fever is usually a mild illness, patients can develop complications and if you have any concerns please contact your local Health Protection Team for advice.

Yours sincerely,

Resources.

1. Scarlet fever Q+A: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317140949203
2. Guidance on infection control in schools and other childcare settings. Available here: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947358374
3. Hand hygiene resources for schools: <http://www.e-bug.eu/>

Appendix 3. Scarlet fever outbreak letter for parents/guardians

Dear Parent / Guardian,

We have been informed that a small number of children who attend xxxxx school / nursery have been diagnosed with suspected / confirmed scarlet fever.

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.

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 more darkly-pigmented skin, the scarlet rash may be harder to spot, but it should feel like 'sandpaper'. The face can be flushed red but pale around the mouth.

If you think you, or your child, have scarlet fever:

- See your GP or contact NHS 111 as soon as possible
- Make sure that you/your child takes the full course of any antibiotics prescribed by the doctor.
- Stay at home, away from nursery, school or work for **at least 24 hours after starting the antibiotic treatment**, to avoid spreading the infection

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.

You can find more information in the attached **FAQ** sheet and further advice can also be obtained from the Health Protection Team on xxxxxxxx during office hours.

Yours sincerely,

Appendix 4. Scarlet fever and chickenpox outbreak letter for parents / guardians

Dear Parent / Guardian,

We have been informed that a number of children who attend xxxxx school / nursery have been diagnosed with suspected / confirmed **scarlet fever and or chickenpox**.

Chickenpox

Chickenpox is a mild and common childhood illness that most children catch at some point. 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

Scarlet fever

Scarlet fever is also a mild childhood illness but unlike chickenpox, it 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. On more darkly-pigmented skin, the scarlet rash may be harder to spot, but it should feel like 'sandpaper'. 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.

If you think you, or your child, have scarlet fever:

- See your GP or contact NHS 111 as soon as possible
- Make sure that you/your child takes the full course of any antibiotics prescribed by the doctor.
- Stay at home, away from nursery, school or work for **at least 24 hours after starting the antibiotic treatment**, to avoid spreading the infection

Complications

Children who have had chickenpox 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. 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.

[Add any additional information about vaccination or chemoprophylaxis here]

You can find more information on chickenpox and scarlet fever on **NHS choices**: www.nhs.uk Further advice can also be obtained from the **Health Protection Team** on xxxxxxxx during office hours.

Yours sincerely,

Appendix 5. Scarlet fever and chickenpox outbreak letter for GPs

Dear colleagues,

Re: Outbreak of scarlet fever and chickenpox at xxxx school /nursery

We are writing to inform you of a confirmed scarlet fever outbreak at xxxx school / nursery where there has also been chickenpox circulating at the same time. Scarlet fever is a notifiable disease, and we would like to take this opportunity to remind practitioners of the signs and symptoms and the actions to be taken if you see a case. Evidence suggests that chickenpox is the most common risk factor for **invasive GAS (iGAS)** disease in children.

Signs and symptoms of scarlet fever

Scarlet fever is a common childhood infection caused by *Streptococcus pyogenes*, or group A streptococcus (GAS). The symptoms are non-specific in early illness and may include sore throat, headache, fever, nausea and vomiting. After 12 to 48 hours the characteristic red, generalised pinhead rash develops, typically first appearing on the chest and stomach, rapidly spreading to other parts of the body, giving the skin a sandpaper-like texture. On more darkly-pigmented skin, the scarlet rash may be harder to spot, although the 'sandpaper' feel should be present. Patients typically have flushed cheeks and pallor around the mouth. This may be accompanied by a 'strawberry tongue'. During convalescence desquamation of the skin occurs at the tips of fingers and toes, less often over wide areas of the trunk and limbs.

The differential diagnosis will include measles, glandular fever and slapped cheek infections.

Complications of scarlet fever

Although scarlet fever is usually a mild illness, patients can develop complications such as an ear infection, throat abscess, pneumonia, sinusitis or meningitis in the early stages and acute glomerulonephritis and acute rheumatic fever at a later stage. Patients, or their parents, should keep an eye out for any symptoms which might suggest these complications and if concerned advised to seek medical help immediately.

Vulnerable children and adults

Individuals with skin lesions or wounds, immunocompromised individuals, those with underlying medical conditions such as diabetes, people who inject drugs, women in the puerperal period and individuals with **chickenpox** are at increased risk of developing iGAS and so it is important to maintain a high index of suspicion in these groups. Early recognition and prompt initiation of specific and supportive therapy for patients with iGAS infection can be lifesaving.

Recommended actions

- Suspected scarlet fever can be confirmed by taking a **throat swab** for culture of Group A streptococcus, although a negative throat swab does not exclude the diagnosis. Consider taking a throat swab in patients with clinically suspected scarlet fever and in children with an undiagnosed febrile illness without an obvious focus of infection.
- **Prescribe antibiotics** without waiting for the culture result if scarlet fever is clinically suspected:

Choice	Drug	Age	Dose (by mouth)	Frequency and duration
1	PenicillinV*	<1m	12.5mg/kg (max 62.5mg)	Every 6 hours for 10 days
		1m to <1yr	62.5mg	
		1 to <6yrs	125mg	
		6 to <12yrs	250mg	
		12 to 18yrs	250-500mg	
		Adults	500mg	
2**	Azithromycin**	6m-<12yrs***	12mg/kg (max 500mg)	Once a day for 5 days
		12yrs and over	500mg	

*For children who are unable to swallow tablets, or where compliance to Penicillin V is a concern, Amoxicillin 50 mg/kg once daily (max = 1000 mg) or 25 mg/kg (max = 500 mg) twice daily may be used as an alternative.^{xiii}

**if allergic to penicillin

***unlicensed indication

- Advise **exclusion** from nursery / school / work for **24 hours** after the commencement of appropriate antibiotic treatment
- **Notify** your Health Protection Team

[Add any additional information about vaccination or chemoprophylaxis here]

Yours sincerely,

References

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