Public Health England

Protecting and improving the nation's health

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

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About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Contents

1. Summary of key changes to the guidelines

- Information on scarlet fever epidemiology updated.
- Emphasis on alerting health professionals and schools of upsurge in activity at the beginning of the season to improve case ascertainment.
- Addition of checklist to assist Health Protection Teams (HPTs) with their risk assessment.
- New information about risk associated with co-circulating group A Streptococcus and influenza.
- Highlighting trigger points for school to seek further help from HPT: reports of complications, hospitalisations, co-circulating chickenpox or influenza.

2. Background and epidemiology

Scarlet fever is a common childhood infection caused by *Streptococcus pyogenes* (also known as group A Streptococcus [GAS]). These bacteria may be found on the skin, throat and other sites 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 septicaemia.

Scarlet fever was once a very common and dangerous disease in the UK, but antibiotic treatment means it is now much less serious. Following marked decreases in incidence over the last century, 3,000 to 4,000 cases were diagnosed each year in England during the early 2000s. In 2014, an unusual increase in incidence occurred with over 14,000 cases diagnosed in England with high incidence continuing into 2015 and 2016 and over 16,000 cases notified in each of these years. The characteristics of patients remained the same as in previous years with the infection affecting all ages but most commonly children between the ages of two and eight years (median 4 years). Outbreaks of scarlet fever have always occurred in nurseries and schools but these have become considerably more numerous since 2014 with over 400 outbreaks and clusters logged in each of 2015 and 2016.

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 can mirror that of superficial manifestations of GAS infection [1]. The prevalent *emm* types associated with scarlet fever and those causing invasive GAS disease are very similar. Monitoring scarlet fever cases nationally can provide an early warning of potential increases in invasive disease. Cases of scarlet fever occur throughout the year but have a seasonal pattern with highest incidence between December and May, peaking in March or April.

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 see an escalation in reports of suspected cases and outbreaks from health professionals and schools, nurseries and other childcare settings.

3. Purpose

These guidelines were first developed by the national Incident Management Team (IMT) in response to the upsurge in scarlet fever in April 2014 and subsequently updated by a subgroup of the IMT in 2016/17 to reflect the changing epidemiology, evidence and feedback on implementation in practice. The aim of the guidelines is to support HPTs to control outbreaks of scarlet fever in schools, nurseries and child care settings.

4. Case management

4.1 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 may occur at the tips of fingers and toes and less often over wide areas of the trunk and limbs.

4.2 Complications

Although scarlet fever is usually a mild illness, some patients may require hospital admission to manage symptoms or complications. These include ear infection, throat abscess (quinsy), pneumonia, sinusitis or meningitis. Whilst such complications arise in the early stages, sequelae including acute glomerulonephritis and acute rheumatic fever can arise at a later stage. A proportionate increase in scarlet fever hospital admissions has been identified during the recent upsurge period with 1 in 30 cases being seen in secondary care for management of scarlet fever or allied complications[2]. Prompt treatment with appropriate antibiotics significantly reduces the risk of complications. Clinicians should advise patients, or their parents/guardians, to keep an eye out for any symptoms which might suggest these complications and to seek medical help immediately if concerned.

4.3 Case definitions

Confirmed case: clinical diagnosis of scarlet fever by a health professional and GAS detected on a throat swab

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

Possible case:

i) case reported by a reliable source (e.g. nursery manager, school secretary), presenting with signs and symptoms consistent with scarlet fever, and a close epidemiological link e.g. 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.

4.4 Notification and public health action

In England, Wales and Northern Ireland, Registered Medical Practitioners have a legal requirement to notify all suspected cases of scarlet fever (and invasive GAS infection). Most notifications in England 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 HPZone notification panel, as per routine. This is essential for national surveillance of scarlet fever. HPTs are not expected to actively follow up notifications of single, sporadic cases.

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 at least **24 hours** after the commencement of appropriate antibiotic treatment
- consider taking a throat swab to assist with differential diagnosis or if the patient is:
    i. thought to be part of an outbreak.
    ii. allergic to penicillin, to determine antimicrobial susceptibility. GAS can be resistant to non-penicillin options such as macrolides and clindamycin. This will facilitate a prompt treatment change if required.
    iii. in regular contact with vulnerable individuals such as the immunocompromised, the comorbid, or those with skin disease, who are at risk of complications of *S. pyogenes* including streptococcal toxic shock syndrome (e.g. healthcare workers[3]). This will facilitate prompt public health action and help with differentiating the diagnosis from mimicking illnesses such as rubella and measles.

Further information on clinical management of scarlet fever can be found in the NICE CKS for Scarlet Fever.

For scarlet fever reports (not from a health professional) HPTs are asked to advise that the case should be clinically assessed by a health professional in order to establish a diagnosis, treat and notify HPT as appropriate.

4.5 Communication with local nurseries, schools and health professionals

Increases in scarlet fever can be expected during late winter and spring of each year, reflecting its normal seasonal pattern, although cases and outbreaks will occur throughout the year. During seasons when scarlet fever activity is particularly high at the national or local level, HPTs should cascade information on the management of scarlet fever cases and suspected outbreaks to:

- nurseries, schools and school nurses
- local clinicians including GPs, and microbiologists

Standard letters for health professionals, schools, and microbiology laboratories (Appendices 1, 2, 3) are provided which can be adapted to reflect local arrangements.

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 from the onset of symptoms. The bacteria are spread by contact with the mucus or saliva of the infected person. These might even be on cups, plates, pens, toys or surfaces such as tables, used or touched by someone carrying the bacteria. Transmission is thought to also occur through breathing infected droplets produced by an infected person coughing or sneezing [4].

5.1 Reporting scarlet fever outbreaks

Schools, nurseries and other child care settings should promptly notify their local HPT of suspected scarlet fever outbreaks. GPs and other health practitioners caring for patients with scarlet fever should also report suspected outbreaks to their local HPT.

5.2 Outbreak definition

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.

Risk assessment

5.3 Initial actions to confirm the outbreak

5.4 Assess risk of spread: number of cases, age, class and year group, denominator

5.5 Assess risk of severe cases: complications, hospitalisations, co-circulation of chickenpox or influenza

5.3 Initial actions to confirm the outbreak

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 (see NICE CKS for

Scarlet Fever). Details of the clinical presentation of the first few suspected cases should be obtained and the cases classified as confirmed, probable or possible (see 4.3). A checklist has been developed to support HPTs conducting a risk assessment (see Appendix 5).

Parents should be encouraged to take their child to see their GP for a clinical diagnosis and appropriate testing. Mass swabbing of children in an outbreak is not recommended. However, clinicians can play an important role in confirming the aetiology of outbreaks by taking a throat swab for culture of GAS from the first few suspected scarlet fever cases they see with a link to a school or nursery. In some circumstances, (e.g. where there are children with more serious infection/hospitalisation or high levels of concern) the HPT may wish to follow up the results of such samples, to inform decisions around outbreak management. For microbiology advice in outbreaks, you can contact the **Lead Public Health Microbiologist** for the relevant region.

5.4 Assess risk of spread

Preliminary information should assess 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:

- approximate 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)
- date of next school holiday
- numbers at risk, age breakdown

5.5 Assess risk of severe cases

Schools, nurseries and other childcare settings have on rare occasions been the focus for clusters of iGAS disease, especially when there are concomitant outbreaks of chickenpox or influenza with GAS infection. Evidence suggests that chickenpox is the most common risk factor for iGAS disease in children [5-8].

As part of the initial risk assessment the HPT should ask the school/nursery specifically whether there is co-circulation of chickenpox or influenza (contemporaneous to the scarlet fever) or if they are aware of any complications or hospitalisations, which may trigger a stepped-up response (see section 6).

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

5.6 Record keeping

The following actions should be taken:

- HPTs should record outbreaks of scarlet fever in any setting as a **situation** on HPZone
- all **specific 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 HPZone notification panel, as per routine (see 3.4) - these cases can be linked to the school or nursery situation.
- more detailed line listing is not routinely required as it will not influence the management of the majority of outbreaks.

Outbreak control

5.7 Infection control advice: exclusion, hand washing, breaching the skin barrier

5.8 Communication with staff and parents / guardians: Letter and FAQ

5.7 Infection control advice

In schools and nurseries 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. As recommended in the current *Guidance on Infection Control in Schools and other Child Care Settings* [9], staff and parents should be reminded that children and adults with scarlet fever should not return to nursery or school until at least 24 hours after starting treatment with an appropriate antibiotic.

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 sneezing and 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, especially bites, should be thoroughly cleaned and covered.

5.8 Communication with school staff and parents / guardians

In outbreak situations, HPTs should provide a standard letter (Appendix 4) and Scarlet Fever Frequently Asked Questions 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 taken at least 24 hours of antibiotics.

6. Stepping up public health actions

The HPT should review the need for an Outbreak Control Team (OCT) in the following scenarios:

- if there is co-circulating chickenpox or influenza
- if the outbreak does not appear to be subsiding within three weeks or if the school raise other concerns
- if complications and or hospitalisations are reported
- if iGAS infection is reported

If it is deemed necessary to set up an OCT then the additional control measures outlined here should be considered in turn, depending on the particular scenario.

6.1 Escalation of infection control measures

The environment can play a significant part in transmission as GAS can be found to remain in dust as well as on furniture and equipment[10-15].

Cleaning of the environment, including toys and equipment, should as a minimum be carried out daily during the outbreak and a very thorough terminal clean should be undertaken when the outbreak is declared over.

Touch points such as taps, toilet flush handles, and door handles, should be cleaned regularly throughout the day.

Hypochlorite at 1000 ppm of available chlorine, preceded by cleaning if any dirt is visible, is recommended for cleaning of equipment, hard surfaces, hard toys and sleep mats. Horizontal surfaces should be kept clear of unnecessary equipment and ornaments to allow thorough cleaning to occur.

Carpets and soft furnishings should be vacuumed daily; the vacuum cleaner should have a high efficiency filter on its exhaust. Single use cloths or paper towel should be used for cleaning. Where soft toys cannot be avoided, they should be machine washed; hard surface toys are more easily washed and disinfected. Consider replacing low cost items that may be difficult to clean thoroughly e.g. pencils, crayons, play dough and plasticine.

During the terminal clean, carpets and rugs should be should be cleaned with a washer-extractor. Curtains, soft furnishing covers and all linen should be removed, and washed at the hottest compatible temperature. After this they should not be placed in the same laundry basket or other container that was used for the uncleaned items. Soft furnishings without removable covers should be steam cleaned taking care to hold the nozzle of the steam cleaner sufficiently close to the surface and for long enough for all surfaces (particularly contact areas) to ensure they heat up thoroughly.

6.2 Further information for staff, parents / guardians and health professionals

If there is co-circulating chickenpox or influenza, or if complications or hospitalisations are reported, additional information may need to be included in the standard letter for parents/guardians (Appendix 4).

The OCT should consider sending a letter to local health professionals to alert them of the outbreak and request that cases related to the outbreak are swabbed and samples clearly labelled.

The local microbiology laboratory should be alerted to the outbreak and requested to send isolates (clearly labelled with outbreak details) to the Respiratory and Systemic Bacteria Section of the Respiratory and Vaccine Preventable Bacteria Reference Unit (RVPBRU) for *emm* typing using the R1 request form.

For microbiology advice, contact the Lead Public Health Microbiologist for the relevant region or RVPBRU on 020 8327 7887.

6.3 Chemoprophylaxis

In school / nursery settings, antibiotic chemoprophylaxis is not routinely recommended for contacts of non-invasive GAS infection. Chemoprophylaxis can eradicate carriage in those who may be at risk of infection or pose a risk to others through onward transmission. However there is no good evidence of its effectiveness in routine outbreak control in this setting. It can be considered in exceptional circumstances by the OCT, for example when there are reports of severe outcomes, or hospitalisations. Advice should be sought from the national team (see contact details in the Resources section). 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 [16].

6.4 Varicella vaccination

Evidence suggests that chickenpox (varicella) is the most common risk factor for iGAS disease in children [8]. Sentinel surveillance data 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 [17]. In a UK and Ireland study using British Paediatric Surveillance Unit methodology 112 children under 16 years of age were found to be hospitalised with severe complications of chickenpox during a 13 month period in 2002/03. Fifty-two (46%) of these had secondary bacterial infections and of these, where an organism had been identified (49/52), 26 had evidence of GAS infection. (J C Cameron, 2007) An analysis of chickenpox Office of National Statistics (ONS) mortality data from 2001 to 2007 in England and Wales identified 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, the OCT could consider post-exposure prophylaxis with varicella vaccine. Advice can be sought from the national team on a case by case basis (see contact details in the Resources section). Varicella vaccine administered within three days of exposure may be effective in preventing chickenpox and its use has been documented in a number of iGAS outbreaks in this setting [5;18]. 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.

6.5 Antivirals and flu vaccination

Influenza has been identified as a risk factor for iGAS disease [19-23] including amongst children[24]. Severe cases of GAS disease, including deaths, in school influenza outbreaks have been reported although the risk of iGAS infection in this context has not been quantified. Flu vaccination is not routinely recommended as post-exposure prophylaxis in this context. Two weeks are required for the immune response to vaccination to develop and so this is unlikely to prevent secondary cases.

Detailed recommendations about the use of antiviral neuraminidase inhibitors (i.e. 'antivirals') can be found in the PHE guidance on use of antiviral agents for the treatment and prophylaxis of seasonal influenza[25]. In keeping with current recommendations by NICE,[26] PHE recommends the targeted use of antivirals as follows:

- for treatment of uncomplicated influenza among specific at-risk groups (ideally within 48 hours of onset of symptoms);
- treatment of complicated influenza regardless of underlying individual risk factors.

There may be rare outbreak situations when wider use of post-exposure prophylaxis with antivirals in the nursery or school settings could be considered. Ideally swabbing of a small number of recent cases should be used to confirm influenza (and GAS) circulation. Advice should be sought from the national team on a case by case basis (see contact details in the Resources section).

Resources

PHE scarlet fever FAQs https://www.gov.uk/government/publications/scarlet-fever-symptoms-diagnosis-treatment

Guidance on infection control in schools and other childcare settings. https://www.gov.uk/government/publications/infection-control-in-schools-poster

NICE CKS for Scarlet Fever http://cks.nice.org.uk/scarlet-fever#!topicsummary

Hand hygiene resources for schools: http://www.e-bug.eu/

Useful contact details:

- Theresa Lamagni, Senior Epidemiologist
  Healthcare Associated Infection & Antimicrobial Resistance Department
  theresa.lamagni@phe.gov.uk 020 8327 6628
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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 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 to:
  - i) assist with differential diagnosis,
  - ii) if you suspect that the patient may be part of an **outbreak**
  - iii) if the patient is allergic to penicillin or
  - iv) in regular contact with vulnerable individuals (e.g. healthcare worker)

- **Prescribe antibiotics** without waiting for the culture result if scarlet fever is clinically suspected:

Choice	Drug	Age	Dose (by mouth)	Frequency and duration
1	Penicillin V*	<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
**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, including information on the school/nursery attended if relevant.

Clinicians should be mindful of a potential increase in **invasive GAS (iGAS)** infection which can follow trends in scarlet fever. 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 to 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 darker skin, 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 [ ] for advice
- Your Health Protection Team will provide you with a **letter** and **Frequently Asked Questions** 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 FAQ: https://www.gov.uk/government/publications/scarlet-fever-symptoms-diagnosis-treatment
2. Guidance on infection control in schools and other childcare settings. Available here: https://www.gov.uk/government/publications/infection-control-in-schools-poster
3. Hand hygiene resources for schools: http://www.e-bug.eu/

Appendix 3. Increased incidence of scarlet fever - letter for microbiologists

Dear colleagues,

Re: Increase in scarlet fever notifications

We are writing to inform you of the continued national increase in notifications of scarlet fever to Public Health England, above seasonally expected levels. Scarlet fever is a notifiable disease and this is a reminder for laboratory professionals of the actions to be taken for suspected or laboratory confirmed scarlet fever cases.

Recommended actions

- Please notify cases to your local Health Protection Team, including information on the school/nursery attended if those details are provided.
- For suspected or confirmed cases in healthcare workers, the affected individual should be excluded from work until 24 hours after commencing appropriate antibiotics.
- When unusual outbreaks of scarlet fever occur, for example there are reports of complications or hospitalisations (see Section 6 of guidance) isolates should be clearly labelled and retained for *emm* typing. Please liaise with the Respiratory and Vaccine Preventable Bacteria Reference Unit (RVPBRU) on 020 8327 7887 for advice.

Microbiologists should be mindful of a potential increase in **invasive GAS (iGAS**) infection which may follow trends in scarlet fever. 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 4. Scarlet fever outbreak - letter for parents/guardians

Dear parent / guardian,

We have been informed that a small number of children who attend [ ] 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.

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 (joint pain and 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.

You can find more information in the attached **Frequently Asked Questions** and further advice can also be obtained from the Health Protection Team on [ ] during office hours.

Yours sincerely,

Appendix 5. HPT risk assessment and action checklist – scarlet fever outbreak in nursery or school

Name of school/nursery	
Checklist completed by	
Date completed	

Risk assessment	**Checked**
Assess extent of spread: number of cases and onset dates; age; class; year group and denominators?	
Is there co-circulation of chickenpox and/or influenza?	
Have any children/staff members been hospitalised due to scarlet fever?	
Have any children/staff members suffered severe complications as a result of scarlet fever?	
General advice	**Advised**
Advise parents of children with suspected scarlet fever to take the child to their GP for assessment, investigation (throat swab) and treatment as appropriate	
EXCLUSION: Children with scarlet fever should not return to school/nursery, and adults to work, until a minimum of 24hrs after starting antibiotic treatment	
Cascade letter and FAQ to all staff and parents/guardians	
Please inform the HPT if the outbreak does not subside over the next three weeks or there are reports of complications / hospitalisations etc.	
Infection control	**Advised**
Good hand hygiene should be enforced for all pupils and staff and a programme should be put in 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.	
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	
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	
Record keeping on HPZone	
Record outbreaks of scarlet fever in any setting as a “situation”	
Record the context (school/nursery)	
Communication	
Fax or email the nursery/school, reiterating the above advice and with the suggested parameters for “if” and “when” to call the HPT with an update. Include link to the guidance and the template letter for parents and factsheet (FAQ).	
Consider stepping up public health action (Discuss with CCDC/CHP)	**Yes/No**
If the outbreak does not appear to be subsiding within three weeks or if the school raises other concerns (e.g. special needs school with many vulnerable individuals)	
If there is co-circulating chickenpox or influenza (contemporaneous to the scarlet fever)	
If severe infections, hospitalisations or a case of iGAS arises	

Appendix 6. Algorithm for the public health management of scarlet fever cases and outbreaks in schools, nurseries and other childcare settings