Infection Prevention and Control Assurance Standard Operating Procedure 25 (IPC SOP 25)

Alert Organisms – Group A Streptococcus (GAS) and Invasive Group A Streptococcus (iGAS)

**Why we have a procedure?**

To ensure employees of the Black Country Partnership NHS Foundation Trust (BCPFT) have a standard procedure to follow when caring for patients colonised or infected with Group A Streptococcus (GAS) or invasive Group A Streptococcus (iGAS), to minimise and manage the risks of transmission.

The Health and Social Care Act 2008: Code of Practice for the NHS for the Prevention and Control of Healthcare Associated Infections *(revised January 2015)* stipulates that NHS bodies must, in relation to preventing and controlling the risk of Health Care Associated Infections (HCAI), have in place appropriate core policies/procedures. Implementation of this procedure will contribute to the achievement and compliance with the Act.

**What overarching policy the procedure links to?**

- This procedure is supported by the Infection Prevention & Control Assurance Policy.

**Which services of the trust does this apply to? Where is it in operation?**

<table>
<thead>
<tr>
<th>Group</th>
<th>Inpatients</th>
<th>Community</th>
<th>Locations</th>
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<tbody>
<tr>
<td>Mental Health Services</td>
<td>✓</td>
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<tr>
<td>Learning Disabilities Services</td>
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<tr>
<td>Children and Young People Services</td>
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**Who does the procedure apply to? (Staff roles and responsibilities)**

This document applies to all staff employed by or working on behalf of the Black Country Partnership NHS Foundation Trust caring for patients as part of their role and job description.

**When should the procedure be applied? (Context)**

Effective prevention and control of healthcare associated infection (HCAI) must be embedded into everyday practice and applied consistently. This procedure must be applied when caring for patients with known or suspected Group A Streptococcal infections.

**Additional Information/ Associated Documents**

- Infection Prevention & Control Assurance Policy
- Hand hygiene policy
- IPC SOP 1: Standard infection control precautions
• IPC SOP 2: Transmission based precautions
• IPC SOP 3: Surveillance of infection & data collection
• IPC SOP 4: Reporting incidents of infection to PHE or the Local Authority
• IPC SOP 5: Management & recognition of outbreaks
• IPC SOP 7: Decontamination
• IPC SOP 14: Undertaking a patient or environment infection risk assessment
• IPC SOP 16: Sharing information with other health & social care providers in relation to patients with a known or suspected infection
• IPC SOP 18: Undertaking a Post Infection Review (PIR)

AIMS

• To provide guidance to BCPFT staff on Group A Streptococcal (GAS) and Invasive Group A Streptococci (iGAS) infections, for the prevention of healthcare associated infection when caring for patients with this type of known or suspected infection.
• To isolate patients with GAS or iGAS colonisation/infection appropriately to reduce the risks of transmission.
• To administer treatment promptly as/when indicated/prescribed
• To undertake a post infection review (PIR) on patients with serious iGAS infections
• To inform other healthcare providers of the patients infectious status when any transfers of care are planned either internally within BCPFT or to external care providers.

DEFINITIONS:

<table>
<thead>
<tr>
<th>Bacteraemia</th>
<th>Microorganisms present in the bloodstream that may cause infection. The blood is normally a sterile environment, so the detection of bacteria in the blood is always abnormal.</th>
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</thead>
<tbody>
<tr>
<td>Colonization</td>
<td>The first stage of microbial infection is colonization: the establishment of the pathogen at the appropriate portal of entry. Pathogens usually colonize host tissues that are in contact with the external environment. Sites of entry in human hosts include the urogenital tract, the digestive tract, the respiratory tract and the conjunctiva. Organisms that infect these regions have usually developed tissue adherence mechanisms and some ability to overcome or withstand the constant pressure of the host defences at the surface.</td>
</tr>
<tr>
<td>Erysipelas</td>
<td>Erysipelas is a bacterial infection in the upper layer of the skin. It is similar to another skin disorder known as cellulitis, which is an infection in the lower layers of the skin. Both conditions are similar in appearance and are treated in the same way. Erysipelas is usually caused by the Group A Streptococcus bacterium. The infection results in large, raised red patches on the skin. This is sometimes accompanied by other symptoms, including blisters, fevers, and chills. Erysipelas most frequently occurs on the face and legs.</td>
</tr>
<tr>
<td>GAS</td>
<td>Group A Streptococcus (also known as Streptococcus Pyogenes). Group A streptococci (GAS) are a type of bacteria. Many people carry these bacteria harmlessly in their throat or on their skin, and have no symptoms of illness; this is known as being “colonised”. At any one time, up to 1 in 5 people can be colonised with GAS. Infection occurs when people with GAS develop symptoms. GAS infection is contagious</td>
</tr>
<tr>
<td>Healthcare Associated GAS Infection</td>
<td>Healthcare-associated GAS infection is defined as a GAS infection that is neither present, nor incubating at the time of admission but considered to have been acquired following admission to hospital or as a result of healthcare interventions in another healthcare facility. Typically, onset of GAS infection is &gt;48 hours after admission, or post-operatively at any time after admission and for up to 7 days post discharge.</td>
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</table>
Infection | The presence of microorganisms on/in the body that is causing an adverse effect or host-response – the person is unwell and has signs and symptoms of an infection
---|---
IPCT | Infection Prevention & Control Team
iGAS | Invasive Group A Streptococcus - Invasive Group A Streptococcal cases are defined through the isolation of GAS form a sterile site or from a non-sterile site in patients with clinical signs of streptococcal-toxic shock syndrome. In rare cases, GAS can also cause serious or “invasive” infection (iGAS). Where iGAS infection occurs, the bacteria may produce toxins and may cause a number of severe and sometimes fatal conditions.
Necrotising fasciitis | This is characterised by extensive local necrosis of skin and sub-cutaneous soft tissues. Necrotising fasciitis can also be caused by anaerobic streptococci, *Staphylococcus aureus*, Bacteroides species and mixed anaerobic flora.
Risk Assessment | A process used to identify and potential hazards and analyse what could happen and to identify steps to be taken to reduce or minimise the risk.
Streptococcal toxic shock syndrome (STSS) | This is a syndrome of hypotension and multi-organ failure frequently including renal and hepatic impairment, adult respiratory distress syndrome, disseminated intravascular coagulation and central nervous system dysfunction. Toxic shock syndrome can also be caused by *Staphylococcus aureus*, but in that illness there is more frequently a generalised desquamating rash.

1.0 What is Group A Streptococcus (GAS) & Invasive GAS (iGAS)?

**Group A Streptococcus (GAS)** also known as Streptococcus pyogenes, is a bacterium which can colonise the throat, skin and anogenital tract. It causes a diverse range of skin, soft tissue and respiratory tract infections, including:

- Tonsillitis
- Pharyngitis
- Scarlet fever
- Impetigo
- Erysipelas
- Pneumonia
- Cellulitis

In rare cases patients may go on to develop post-streptococcal complications such as rheumatic fever and glomerulonephritis.

Asymptomatic carriage of Group A streptococci (GAS) is common. The prevalence of pharyngeal carriage ranges between 5 and 30% of the general population. GAS can occasionally cause infections that are extremely severe such as necrotizing fasciitis. Any GAS manifestation can be associated with development of streptococcal toxic shock syndrome, although patients with necrotizing fasciitis are at highest risk and have significant mortality.

**Invasive GAS infection (iGAS)** is an illness associated with the isolation of GAS from a normally sterile body site, such as blood, cerebrospinal fluid, joint aspirate, pericardial/ peritoneal/ pleural fluids, bone, endometrium, deep tissue or abscess at operation or post mortem. It also includes severe GAS infections, where GAS has been isolated for a normally non-sterile site in combination with severe clinical presentations such as streptococcal toxic shock syndrome (STSS) or necrotising fasciitis.
Invasive GAS infection and scarlet fever are both notifiable diseases and the local Public
Health England team MUST be informed of suspected cases. (See IPC SOP 4: Reporting
incidents of infection to PHE or the Local Authority). Initial notification of iGAS is normally
made via the Consultant Microbiologist by telephone. (Non-invasive Group A Streptococcal
infection (GAS) is not notifiable).

1.1 Diagnosis

GAS/iGAS is usually diagnosed by microbiological culture of the affected site. Severe group A
streptococcal infections are defined through the isolation of a group A streptococcus
(Streptococcus pyogenes) from a site that is normally sterile (e.g. blood; cerebrospinal fluid;
joint aspirates; pericardial/peritoneal/pleural fluids; deep tissue or abscess at operation or
necropsy; bone) or from a non-sterile site in combination with a severe clinical presentation –
streptococcal toxic shock, necrotising fasciitis, pneumonia, puerperal sepsis, septic arthritis,
meningitis). This definition is a slight expansion on the definition of invasive disease (iGAS)
which is limited to cases with sterile sites only.

1.2 Symptoms of GAS/iGAS

Non-invasive GAS infection - Symptoms suggestive include sore throat, low grade fever, minor
skin infections plus a low index of suspicion of invasive disease.

iGAS disease - Symptoms suggestive include high fever, severe muscle aches, localised
muscle tenderness (a lot of pain but not a lot to see), and otherwise unexplained
gastrointestinal symptoms +/- a high index of suspicion of invasive disease. In the absence of
a more likely alternative diagnosis then emergency referral to A&E or examination by
Infectious Diseases physician is indicated. Risk factors for iGAS infection include:
- those over the age of 65 years,
- recent varicella (chicken pox) virus infection
- those infected with HIV
- underlying disease such as diabetes, heart disease and cancer
- those using high dose steroids or intravenous drugs.
- pregnant women – at the time of or after childbirth
- babies born to mothers infected with GAS

Streptococcal Toxic Shock Syndrome - Patients with invasive and bacteraemic GAS infections
may develop streptococcal toxic shock syndrome, as the result of the release of streptococcal
toxins into the bloodstream. Clinical signs include fever, malaise, nausea, vomiting and
diarrhoea, and a flat rash over large parts of the body. Without treatment, the disease
progresses to shock and multi-organ failure, with a mortality rate of approximately 45%.

Necrotising Fasciitis – an uncommon soft tissue infection which involves fascia, subcutaneous
fat and deep fascia. It is often associated with severe systemic toxicity and is rapidly fatal, with
an overall mortality rate of 6-70% promptly recognised and aggressively treated.

1.3 Reporting

Invasive GAS infection is a notifiable disease in England and Wales since 2010. All iGAS
infections should be discussed with the local Public Health England office (all cases that fit the
case definition to initiate contact assessment according to existing national guidelines).

The Microbiologist should notify BCPFT’s Infection Prevention & Control Team of a confirmed
case so that infection control precautions & treatment regimens can be promptly implemented.
If ward staff are informed of the laboratory result they must ensure that the IPCT are aware by contacting them immediately.

2.0 Routes of transmission

There are three main routes of transmission:

- Person to person
- Healthcare worker to patient and vice-versa transmitted by direct, indirect or droplet contact with secretions from the nose and throat of infected person or by contact with wound secretions or skin lesions of the infected person.
- Environment contamination including patient equipment, showers, bidets and frequent touch points.

Invasion followed by infection occurs 1-3 days after initial colonisation. Correct and consistently applied Infection Control Precautions will significantly reduce and control the spread of infection, (See IPC SOP 1: Standard precautions & IPC SOP2: Transmission based precautions e.g. droplet & contact precautions).

3.0 Caring for patients with GAS/iGAS infection

3.1 Caring for patients in an in-patient setting

Patients with suspected or confirmed GAS/iGAS infection should be isolated in a side room, preferably with en-suite facilities the door should remain closed. If this is not possible, a risk assessment must be included in the nursing notes e.g. patient at risk of falls or self-harm etc. and discussed with the Infection Prevention & Control Team. Isolation should continue until:

- 24 hours of appropriate antibiotics have been administered in cases with pharyngitis, cellulitis and non-complicated wounds (no exudate).
- Either the wounds are healed or negative samples have been obtained in cases with necrotising fasciitis and where there is significant discharge or high risk of shedding. (Samples should be obtained 48 hours post-treatment).
- Standard & transmission based precautions must be implemented. (See IPC SOP 1: Standard Precautions, IPC SOP 2: Transmission Based Precautions & IPC SOP 6: Isolation).
- Strict hand hygiene is of paramount importance and the frequent use of sanitizing gel is encouraged. Patients and visitors must be informed of the need for hand hygiene.

Some patients with severe or extensive GAS infection, for example necrotizing fasciitis may require longer periods of isolation. Isolation should in these cases continue until culture negative or on advice from Microbiology.

Staff must wear gloves and an apron for all direct contact with the patient and their environment. Surgical Masks are unnecessary unless aerosol generating procedures are being performed. All cuts and abrasions must be covered with a waterproof dressing. (See algorithm in appendix 1)

3.1.1. Visitors

Visitors, especially household contacts, must be asked about signs of GAS, e.g. sore throat or infected skin lesions. Those with symptoms of infection should be directed to their GP or the
appropriate NHS Walk-in-Centre for treatment. Visitors with untreated infection should only visit if essential - staff should seek the advice of the IPCT.

N.B. Personal protective equipment (PPE) is not required unless visitors are assisting with personal care. Visitors should be advised on hand hygiene (and shown how to use personal protective equipment, gloves and aprons, if appropriate. Use of PPE should be under the supervision of the staff looking after the patient).

Visitors should be given appropriate information on GAS infection. An information leaflet for contacts of GAS patients is attached in Appendix 3.

3.2 Cleaning

Enhanced routine cleaning of the patient’s accommodation with chlorine releasing agent (concentration = 1,000 PPM), should be undertaken by hotel service staff until instructed otherwise. It is the responsibility of nursing staff to ensure that domestic assistants are aware of this requirement.

N.B When a patient with infection is transferred/discharged the room/bedspace must have a terminal deep clean undertaken before its re-use. Contact the Estates & Facilities Helpdesk to arrange on 0121 612 8010 or ext.: 8010

3.3 Caring for patients in community settings

Patients in their own homes do not require additional infection prevention & control precautions (see IPC SOP 1: Standard Precautions). Restrictions should not be placed on normal social activity of any person living in the community because they have or previously had iGAS.

- Community staff should if possible visit last visit in the morning or afternoon and staff should avoid taking non-essential equipment into the patient’s home.
- Any equipment used which is not single use disposable should be cleaned after use. (See IPC SOP 7: Decontamination).
- Community staff must ensure hand washing and use of a hand sanitizing gel takes place on completion of the visit. (See Hand Hygiene Policy).

3.4 Informing the patient of their infectious status

- The responsibility of informing the patients of their infectious status lies with the clinical team (i.e. consultant/medic) caring for the patient during their in-patient stay.
- Where a new iGAS case is diagnosed following the patients discharge, it is the clinical teams responsibility (i.e. consultant/medic), to inform the patients General Practitioner of the infection for the GP to treat and follow-up as advised by the Microbiologist. (See Appendix 1).
- If iGAS is detected following the patients admission from another healthcare facility, the facility where the patient was transferred from must be informed – the Infection Prevention & Control Team will usually do this.

3.5 Reporting

All cases iGAS reported to the Infection Prevention & Control Nurse will be immediately escalated to the Director for Infection Prevention & Control. Formal reports following the
completion a Post Infection Review will be submitted to the Infection Prevention & Control Committee and the Quality & Safety Steering Group to ensure lessons learned can be shared across the organisation.

3.5.1 Post Infection Review (PIR) for patients with iGAS

iGAS infections can increase a patient’s length of stay in hospital, the likelihood of complications and reduce the chances of a successful recovery.

Enhanced surveillance of iGAS has been undertaken by Public Health England since February 2009. The IPCT recommend that a Post Infection Review (PIR) is undertaken for all cases of iGAS to identify any critical points and contributory factors, and determine whether any preventative action(s) and improvement action(s) can be undertaken to reduce or control incidents of HCAI. (See IPC SOP 18: Undertaking a Post Infection Review & IPC SOP 4: reporting incidents of infection to PHE or the Local Authority)

3.6 Management of a deceased patient

Measures must be taken as follows for patients known to be colonised or infected with GAS/iGAS prior to their death in addition to standard last offices:

- Infection control precautions are the same as those used when the patient was alive
- Cover any wounds/lesions on the body with impermeable dressings.
- The mortuary staff should be informed of the risk of infection. A cadaver bag should be used. (The body can be viewed, but no embalming or other preparation of the body should take place).
- Undertakers should be informed of the risk of infection.
- Ensure a terminal clean of the bed/bedspace is undertaken.

3.7 Patient/Carer information

Information for the patient/carer can be found in the patient information leaflet see appendix 3

3.8 Discharge/transfer of Patients with iGAS

Transfers out - If an iGAS positive patient is to be transferred to another hospital or other care provider the receiving ward/department/care home should be notified prior to transfer – this is the responsibility of the Nurse-in-Charge & the IPCT will inform the IPCT at the receiving hospital. (Also see IPC SOP 16: Sharing information with other health & social care providers in relation to patients with a known or suspected infection).

Transfers between wards – If an iGAS positive patient is to be transferred to another ward the receiving ward/department should be notified prior to transfer this is the responsibility of the Nurse-in-Charge, in addition the IPCT must also be informed of the planned transfer PRIOR to the transfer taking place so that appropriate information & advice can be given.

3.9 Contacts of iGAS infections

Community contacts and Visitors

Close personal contacts are defined as household or kissing contacts within 7 days prior to
the onset of infection. Management of contacts of GAS and iGAS is the responsibility of PHE, who must be notified of cases of iGAS. Close personal contacts should be provided with information on the signs and symptoms of Gas and iGAS and advised on what to do if they become unwell and develop symptoms. If there are 2 or more related cases, antibiotic prophylaxis is recommended for all close contacts. Prophylaxis in the community is the responsibility of PHE through contact with the patient’s own GP.

### 4.0 Outbreaks/periods of increased incidence of GAS/iGAS

An outbreak should be considered if there are two or more cases of suspected GAS/iGAS infection related by person or place. These cases will usually be within a month of each other but the interval may extend to several months. Reference laboratory typing from culture-proven cases is needed to confirm that cases are related.

Hospital outbreaks of GAS/iGAS infection can be devastating and occasionally result in the death of previously well patients. Approximately 1 in 10 cases of severe GAS infection is healthcare associated. Hospital outbreaks of GAS infection can rapidly escalate, be prolonged and result in both patients and healthcare workers being infected. Healthcare workers, the environment and other patients are all possible sources of transmission.

If there is evidence of more than one case of infection or carriage in a ward or unit, the IPC Team will review the cases, and meet with senior medical and nursing staff from the affected area. Additional measures may include:
- Additional environmental cleaning using a chlorine releasing agent combined with detergent, with special attention to the cleaning of communal facilities in the ward such as baths and showers
- The possible closure of the relevant ward to further admissions may be advised following consultation with the Ward Manager, IPC team and Consultant Microbiologist
- Screening of all staff caring for one or more infected patients to include nose, throat and skin lesion specimens
- A confidential review with Occupational Health of any staff who may have sore throats or infected skin lesions e.g. secondary to eczema

The laboratory will send isolates to the reference laboratory and will confirm if they are the same strain by typing. This may take several days.

All cases of GAS/iGAS infection potentially acquired in hospital or through contact with healthcare services should be investigated by the Infection Prevention & Control Team. *(See IPC SOP: Management & recognition of outbreaks).*

**Where do I go for further advice or information?**

- Infection Prevention & Control Team
- Physical Health Matron
- Your Service Manager, Matron, General Manager, Head of Nursing, Group Director
- Your Group Governance Staff

**Training**

Staff may receive training in relation to this procedure, where it is identified in their appraisal as part of the specific development needs for their role and responsibilities. Please refer to the
Trust’s Mandatory & Risk Management Training Needs Analysis for further details on training requirements, target audiences and update frequencies.

**Monitoring / Review of this Procedure**

In the event of planned change in the process(es) described within this document or an incident involving the described process(es) within the review cycle, this SOP will be reviewed and revised as necessary to maintain its accuracy and effectiveness.

**Equality Impact Assessment**

Please refer to overarching policy.

**Data Protection Act and Freedom of Information Act**

Please refer to overarching policy.
Algorithm – management of an single case of GAS/iGAS infection

Suspected or confirmed cluster or outbreak of GAS infection

- Isolate in a single room with en-suite. Manage as an infected patient
- Send relevant specimens to microbiology lab – lab to send isolates to Reference Laboratory for typing
- Inform the IPCT and patient’s clinical team. Ensure adequate information given to the patient, HCWs and close contacts
- IPCT notify the local Public Health England office of all iGAS infections
- Inform the mortuary in the event of death and pathology staff if tissue samples submitted

IPCT to ascertain if community or HAI

Symptoms or signs of GAS infection present on admission

- No contact with hospital or childbirth within the previous seven days
  - Community acquired infection – no further investigation required
- Contact with hospital or childbirth within the previous seven days

Symptoms or signs of GAS infection NOT present on admission

- Consider as hospital acquired infection
- Draw up list of contacts – patients, HCWs and close visiting contacts

Screen HCWs with sore throat, infected skin lesions, dermatitis, excema or vaginitis – with Occupational Health involvement

HCW positive screen – Consultant Microbiologist & Occupational Health to advise on treatment & management

Obtain relevant samples and manage in liaison with GP & PHE
Algorithm – management of an OUTBREAK of GAS/iGAS infection

Suspected or confirmed case of GAS infection

- Infection prevention & control management of individual cases (See appendix 1 above)
- Inform lab & send relevant specimens – lab to send isolates to Reference Laboratory for typing

IPCT to convene an outbreak control meeting & consider contact tracing & screening of patients to establish extent of outbreak (include recent discharges)

- Notify & involve the local Public Health England Office
- Consider screening close contacts if symptomatic (throat & skin lesions)
- Draw up list of contacts in direct contact or close proximity to index cases
- Screen throat & skin lesions, dermatitis, eczema of HCWs epidemiologically linked to cluster. Samples of dry skin lesions should be taken with a moistened swab

Review all current methods of decontamination, cleaning and other infection control practice and adherence to policy & procedures.
- Take immediate action if needed to rectify deficiencies
- Undertake epidemiological investigation & review all routes of possible transmission

- Inform GAU & report as a Serious Untoward Incident if appropriate &
- Initiate a Post Infection Review

Ensure all isolates are sent to reference lab for typing

Review common source equipment including fixed facilities such as baths & showers

Consider environmental sampling of epidemiologically linked facilities

Send isolates of GAS to reference lab for typing

Investigate possibility of direct patient-to-patient spread

Review microbiology & surveillance records for related cases

- Source established

Source established

- YES
  - Take relevant remedial action

- NO
  - Consider repeat screening of HCWs epidemiologically linked to cluster & screen other sites i.e. nose, anus, vagina
  - Consider screening close contacts of HCW strongly implicated in transmission, even if HCW screens negative
  - Continue prospective surveillance for further cases
  - Consider chemoprophylaxis
  - HCW screen positive – treatment as advised by the Microbiologist supported by Occupational Health

Appendix 2
It is very important to complete the full course of antibiotics as prescribed.

Close contacts of a person with GAS infection will also be given antibiotics if they have symptoms suggesting that they are also infected. If a mother or baby in the neonatal period (first 28 days of life) develops iGAS, both will be given antibiotics. Antibiotics may also be given as a control measure in outbreaks. This is to prevent spread of infection.

**How long am I infectious for?**
If left untreated, people with GAS infection are usually infectious for 2-3 weeks after developing a sore throat. If treated with antibiotics, people with GAS infection stop being infectious 24 hours after treatment is started.

**Should I stay away from work/school?**
GAS infection is contagious. You should avoid exposing other people by staying away from work until 24 hours after you begin treatment and until you are well enough to go back. Children who have GAS infection should not go to school or day care during this period.

**How the spread of GAS be prevented?**
- Wash your hands thoroughly with hot soapy water after contact with a person who has been diagnosed with GAS infection and ensure you dry them thoroughly.
- If you have a GAS infection you should wash your hands after coughing or sneezing.
- If you have any lesions on your hands (e.g. cuts and grazes), keep them covered until they have healed.
- If you have a GAS infection, try and stay away from people with a weakened immune system until you have had 24 hours of antibiotics.
- Avoid consuming unpasteurised milk.

If you require further advice or information, please contact the Trust’s Infection Prevention and Control Team or a member of the ward/department staff.

**INFECTION PREVENTION AND CONTROL**

**Proud to be clean, it’s everyone’s business!**

**Group A Streptococcal Infections**

Information for patients and carers
What is Group A Streptococcal infection?
Group A streptococci (GAS) are a type of bacteria. Many people carry these bacteria harmlessly in their throat or on their skin, and have no symptoms of illness; this is known as being "colonised". At any one time, up to 1 in 5 people can be colonised with GAS. Infection occurs when people with GAS develop symptoms. GAS infection is contagious.

What are the symptoms of GAS infection?
The most common symptoms of GAS infection are:
- A mild sore throat or
- A skin infection called impetigo
- There may also be flu-like symptoms and muscle tenderness.

What is invasive Group A Streptococcal infection?
In rare cases, GAS can also cause more serious or "invasive" infection (iGAS). Where iGAS infection occurs, the bacteria may produce toxins and may cause a number of severe and sometimes fatal conditions such as:
- An infection of the bloodstream (bacteraemia)
- Severe infection which spreads to areas of soft tissue below the skin (necrotising fasciitis). This is rare.
- Streptococcal toxic shock syndrome. This is rare but can cause rapidly progressive symptoms of faintness, vomiting, diarrhoea, high fever, rash and confusion.

Complications of iGAS can include:
- Acute rheumatic fever (a disease of the heart)
- Glomerulonephritis (kidney disease).

It is important to realise that although these conditions are serious, they do not occur as commonly as a sore throat or skin infection.

What are the symptoms of iGAS infection?
Early signs and symptoms of iGAS infection include:
- High fever
- Severe muscle aches
- Localised muscle tenderness
- Redness at the site of a wound

It is important to remember that many of these symptoms may be due to other, less severe conditions. However, if you have been in contact with someone who has been diagnosed with iGAS infection within the last 30 days and you develop any of these symptoms seek medical advice immediately. Tell the doctor that you have been in contact with someone recently diagnosed with invasive group A streptococcal disease.

How do you catch GAS?
GAS bacteria is produced in the nose and throat of infected people and spreads between people during sneezing, kissing and touching. The bacteria are more likely to enter the body and cause invasive infection through broken skin. A person may become infected from either their own skin lesions or from contact with an infected person. GAS infection has occasionally resulted from consuming unpasteurised milk or milk products.

Who is most at risk?
People with lower immunity are more likely to become ill. Those most at risk include:
- Very young or elderly people
- People with chronic illnesses such as heart disease, diabetes, HIV infection or cancer
- Those who have recently been infected with chicken pox
- Those undergoing high dose steroid therapy
-Injecting drug users.

How is GAS diagnosed?
The wide range of possible symptoms makes it difficult for doctors to diagnose GAS infection early. If you are suspected to have GAS infection you may have blood samples or nose or throat swabs taken and tested. If you are diagnosed with GAS infection it is sometimes necessary to check relatives or other people in contact with you to see if they are carrying the same strain of GAS. This is normally done by taking nose and throat swabs.

What is the treatment for GAS?
Most people who are colonised with GAS never receive treatment for it. This is because the GAS bacteria can quite happily live on our skins or in our mouths without causing any problems. GAS infection is usually successfully treated with the antibiotic penicillin. If you are allergic to penicillin, you must inform your GP or doctor as soon as possible so that a safe alternative antibiotic can be prescribed.
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<td><strong>Policy Category</strong></td>
<td>Control of Infection</td>
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<td><strong>Executive Director</strong></td>
<td>Executive Director of Nursing, AHPs and Governance</td>
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<td><strong>Policy Lead/Author</strong></td>
<td>Infection Prevention and Control Team</td>
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<td>Infection Prevention and Control Committee</td>
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<tr>
<td><strong>Month/year consultation process completed</strong></td>
<td>September 2019</td>
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<tr>
<td><strong>Month/year SOP was approved</strong></td>
<td>September 2019</td>
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<td>September 2022</td>
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<td><strong>Disclosure Status</strong></td>
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**Review and Amendment History**

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<th>Date</th>
<th>Description of Change</th>
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<td>1.1</td>
<td>Sept 2019</td>
<td>Policy reviewed &amp; updated no changes required <em>(references checked)</em></td>
</tr>
<tr>
<td>1.0</td>
<td>July 2016</td>
<td>New Procedure established to supplement Infection Control Assurance Policy</td>
</tr>
</tbody>
</table>