

5 Residential care facility (RCF) settings

Clustering of cases of invasive Group A Streptococcus (iGAS) in residential care facilities (RCF) is more likely compared to households, and older people with iGAS infection are much more likely to have a fatal outcome. A study of confirmed iGAS cases in England found that long term RCF (LTRCF) residents aged over 75 years had a higher risk of iGAS (1.7 incidence rate ratio, 95% Confidence Interval 1.3 to 2.1) and death (odds ratio 2.3, 95%CI 1.3 to 3.8) compared to community cases of the same age (21). The overall rate in RCF residents above 75 years was 16.1 per 100,000 (21).

An international study in the US reported similar findings: iGAS incidence was 6 times higher among long-term care facility residents (≥ 65 years) than community-based elderly residents (41.0 versus 6.9 cases per 100,000 population) and the LTRCF residents were also 1.5 times more likely to die from infection than community-based residents (97). Cases of iGAS infection in residential care and nursing homes may have a mix of presentations, and the interval between cases may vary (100, 101). Sources of outbreaks in RCFs can include peripatetic staff (for example hairdressers, podiatrists, hospital chaplains or contract cleaners, homecare nurses, or home help support staff) and environmental contamination. Thus, cases in RCFs require careful assessment with ongoing surveillance for linked cases.

5.1 Risk assessment

A single case of iGAS infection linked to an RCF or similar setting should prompt a detailed risk assessment. Residents are not usually considered close contacts unless they share a bedroom. However, a Public Health Risk Assessment (PHRA) should be carried out on a case-by-case basis. (Please see [Algorithm 5 Management of a single case of iGAS infection in a Residential Care Facility](#))

The main aims of the PHRA are to:

- ascertain the source of infection
- minimise the risk of transmission to other residents or staff
- assess the severity of the situation and establish if there are linked cases

- Determine size or layout of home, number of staff and residents, and staffing movements
- Advise on infection prevention and control as per acute healthcare guidelines if the iGAS case is being managed in residential care facility,
- Ask if there were other iGAS or Group A Streptococcus (GAS) cases in previous 6 months in that residential care facility (see [Algorithm 6](#) if additional cases identified).

5.2 Public health actions: single case of iGAS in an RCF

5.2.1 Source of infection

Establish if the infection is likely to have been acquired in the RCF by checking for symptomatic staff, residents, or visitors. If the resident has spent time in a separate health care facility in the 7 days prior to the onset of symptoms consistent with GAS, manage the case in conjunction with the [acute healthcare](#) guidance and ensure hospital and community infection prevention and control (IPC) team are informed.

For cases likely to have been acquired in the RCF, ask the RCF if they know of any other cases of iGAS or GAS infection in residents, staff, or their families. Review microbiology, and surveillance records for any other notifications from the RCF in the past 6 months; if further cases identified, go to [Section 5.3](#).

Key information required from the RCF:

- is the resident independently mobile? It may be useful to ask if the resident is confused/walking with purpose
- which areas of the RCF did they spend the most⁷ time in?
- identify staff who provided care over the previous 6 months e.g. has the resident been cared for by home healthcare providers (for example, homecare nurses or home help support staff, podiatrists etc.)? If yes, use the guidance in this section alongside **Section 6.4**.

⁷ In general, the person will be in one unit all the time, and only have access to all open areas of that specific unit, but nowhere else in the RCF unless there is an area such as a chapel or a co-located activity room.

5.2.2 Control measures

a) Infection prevention and control

IGAS is a diagnosis generally made in an acute hospital setting. Most cases of iGAS would be transferred to hospital. The decision on treatment options available resides with the attending physician with support from Acute/Public Health colleagues in consultation with the resident and their families/carers.

Table 5 is a checklist of infection prevention and control measures that may be used in an RCF.

b) Isolation

- Ensure residents with iGAS infection who **do not** require admission to hospital and remain in residence in the RCF have their own dedicated equipment and single ensuite bedroom⁸. If there are coincidental cases of GAS in the RCF, residents who begin treatment should remain in their room for 24 hours post commencement of antibiotic treatment.
- Arrange swabbing (throat or skin lesions) for staff with active symptoms of GAS (fever, sore throat, minor skin infections, scarlatiniform rash) and immediate exclusion from the workplace (until 24 hours after treatment has been received).
- Undertake treatment of infection in liaison with the individuals GP or healthcare provider
- Do not wait for culture results, but ensure antibiotics are appropriate once antimicrobial susceptibility testing results are available.
- Cases with discharging wounds or ulcers should be isolated until the discharge has ceased and preferably until a swab taken 24 hours after completing antibiotics is negative. Refer to [HSE Wound Management Guidelines](#)

⁸ There is inconclusive evidence as to whether the rate of infection or carriage is higher in residents who have close contact with a roommate who is a case or carrier (22). Consider only those sharing a bedroom as 'household contacts' and manage according to Algorithm 1. There may be no additional benefit in relocating a roommate as they will already have been exposed to the infection.

- Provide relevant [information](#) and raise awareness of the signs and symptoms of GAS and iGAS to staff, residents, and family members, particularly in vulnerable contacts (immunocompromised, high-risk contacts).
- RCFs must strike a balance between the need to manage the risk of introduction of communicable infectious diseases by people accessing the RCF and their responsibility for ensuring the right of residents to meaningful contact is respected in line with regulatory obligations. Full access should be facilitated to the greatest degree practical for all residents. Access may be very limited for a period of time in the early stages of dealing with an outbreak, but a total withdrawal of access is not appropriate. If limitations on access are considered necessary, this should be based on a risk assessment that is reviewed regularly in view of the prevailing public health circumstances in the population served by the RCF.

c) Personal hygiene

Check if there are any staff who have had close contact, such as during dressing an open infected wound. Suggest review of standard and transmission-based precautions practices within the RCF. Educate RCF management to recognise [signs and symptoms of GAS and iGAS infection](#) and advise to seek medical attention if staff or any of the residents develop such symptoms.

d) Environmental decontamination, linen, and waste disposal

- Complete a cleaning of the environment of the resident who has infection as GAS can be found to remain in dust (82-86) as well as on furniture and equipment.
- A terminal clean of resident's bedroom and bathroom should be carried out after the infectious period or after their transfer or discharge, including care equipment.
- Keep surfaces clear of unnecessary equipment to allow thorough cleaning to occur.
- As a minimum recommendation, cleaning with detergent and water followed by disinfection using hypochlorite at 1,000 ppm of available chlorine or a combined product, should be used for equipment and hard surfaces, including commodes and hoists (88, 102, 103)(87)

- Whilst a resident is considered infectious, their clothing, linen and waste must be handled as hazardous (88, 102, 103) (104). Healthcare facilities must have documented policies on the collection, transportation, and storage of linen. Healthcare facilities that process or launder linen must have documented operating policies. All used linen should be handled with care to avoid dispersal of microorganisms into the environment and to avoid contact with staff clothing. Please refer to the [National Clinical Guideline: Infection Prevention and Control](#) for more information.

e) Swabbing

Recommend swabbing of contacts sharing the same room or bathroom as the index case especially if they have open wounds or ulcers or are symptomatic. The microbiology lab should retain isolates for up to 6 months and send positive samples directly to the Irish Meningitis and Sepsis Reference Laboratory (IMSRL) for molecular typing. Epidemiological investigation should not be delayed while awaiting results of typing.

f) Transferring residents

Avoid transferring a resident with GAS to another unit for non-clinical reasons to minimise the risk of cross-infection. If transfer to a healthcare facility for treatment is unavoidable, communicate details of the risk of infection effectively to the ambulance service, the receiving ward or department or facility, the receiving IPC team, and the local Area Public Health Team.

g) Prospective surveillance

The Area Public Health Team should be notified. Ask RCF to report new cases amongst staff and residents in the next 30 days. Add RCF (and homecare nurses or home help support staff where relevant) as a context on case and incident management system, so that any linked cases are easily identified by the Area Public Health Team for a prospective period of 6 months.

5.3 Public health actions: outbreak of iGAS infection OR one iGAS case and one or more cases of non- invasive GAS infection

As referred to earlier in this guidance, an outbreak is defined as two or more cases of probable or confirmed iGAS infection related by person, place, and time.

A single case of iGAS infection with one or more cases of non-invasive GAS infection, although not considered an outbreak, may still warrant investigation and ongoing management taking into consideration time interval, number of cases, and epidemiological links. Actions should not wait for results of isolate sequence typing, however checking the antimicrobial susceptibility profile ('antibiogram') may be useful, that is, if isolated susceptibility profiles are very discrepant, they are unlikely to be linked.

The following could be considered:

- The number of residents and their risk factors/co-morbidities.
- The number of staff and their working patterns, including peripatetic staff (for example, homecare nurses, or home help support staff, podiatrists etc.). Check which staff have had close contact, such as dressing an open wound, or evidence of suboptimal infection prevention and control practices which could have facilitated transmission. If the cases have been cared for by peripatetic staff, initiate dual investigations of the RCF and home support services, using guidance in this section alongside guidance in **Section 6.4**.
- The size of the RCF – the number of buildings or floors, residents on each floor, types of room, shared bathrooms etc.
- Undertaking a retrospective analysis of microbiology and other surveillance records for at least the past 6 months to establish if the new case is sporadic or could be linked to earlier cases of GAS infection.
- Whether the case shares a bedroom with anyone else – roommates should be managed as 'household' contacts.

5.3.1 Source of infection

Undertake epidemiological investigations, including review of microbiology and surveillance records for further GAS/ iGAS cases over past 6 months. The aim of this is to try to identify commonalities between cases in the source or exposures in the 7 days prior to onset to inform public health actions to prevent further transmission.

These include common exposures to staff (including peripatetic healthcare staff, hairdressers etc.), common floors, social contacts, healthcare needs (for example, attending outpatient appointments such as GP dressing clinics), and shared bathrooms. Early assessment of case movements within the RCF (for example, if the individual is bedbound) will provide important insight into potential routes of transmission. Consider active symptoms of GAS in staff and visitors of the cases.

5.3.2 Control measures

a) Convene an Outbreak Control Team

Convene an Outbreak Control Team (OCT) including (but not limited to):

- Administrators (medical and nursing)
- Managers of implicated areas
- relevant Clinical Directors/Chief Clinical Directors
- IPC Professionals
- Clinical Microbiologists
- Public Health Physicians
- Infectious Diseases Physicians
- Epidemiologists
- Occupational Health Physicians
- Chair (Medical Officer of Health, CPHM or SPHM)
- Health Protection Nurse manager
- Cleaning services and estates
- Food services, and others as defined by circumstances
- GP input would be valuable where possible

The OCT should coordinate the overall management and oversee the immediate implementation of control measures. (Please see [Algorithm 6: Identification and management of suspected or confirmed IGAS outbreak in a Residential Care Facility](#)).

b) Follow all control measures for a single case

Undertake additional measures in proportion to the number, time interval and severity of cases ([Table 5](#)). Advise the RCF to isolate new cases and enforce enhanced cleaning measures.

c) Advise closure of the facility

Advise closure of the facility to admissions and transfers (see [Section 5.3.3](#)) for a period of time. This should be for as short a period as possible, to establish control measures, and understand whether there is evidence of transmission to other residents, undertake such swabbing as is advised by OCT, complete a terminal clean of the relevant area/s.

It is typical that such a closure would be for approximately 2 weeks, depending on the above measures being implemented and evidence of control of transmission. This should be communicated to relevant parties (including hospitals, GPs, community organisations etc). If limitations on access are considered necessary, this should be based on a risk assessment that is reviewed regularly in view of the prevailing public health circumstances in the population served by the RCF.

d) Expert advice

Seek expert advice and ensure local laboratory sends samples to the IMSRL (Irish Meningitis and Sepsis Reference Laboratory) as soon as possible to enable rapid typing of isolates, both retrospective and prospective isolates. However, treatment and control measures should not await typing results.

If different *emm* types are detected, this does not exclude that there is an issue as heavy environmental contamination may occur with more than one type. Contact the IMSRL to discuss the possibility of performing Whole Genome Sequencing.

e) Swabbing and chemoprophylaxis

Consideration should be given to screening and/or prophylaxis of residents and staff, for the purpose of identifying additional cases. The use of mass versus targeted swabbing and/or antibiotic chemoprophylaxis should be determined by the OCT Risk Assessment. There is limited evidence on the most effective intervention (22, 105). Actions range from a strategy of surveillance swabbing and targeted prophylaxis to immediate implementation of mass prophylaxis throughout the RCF. A record should be maintained of numbers of cases, numbers screened and investigated, and numbers treated.

Swabbing

- In some situations, consideration can be given to surveillance swabbing of RCF residents and staff, including kitchen staff, ancillary / household staff and community health care workers, for ongoing assessment of the outbreak (but not visitors). The aim of swabbing is to identify routes of transmission that could inform the public health response.
- Mass swabbing could help guide subsequent actions where targeted treatment is used and may identify which individuals require repeat sampling at least 24 hours post-treatment. If this is being considered, it should be planned in coordination with the appropriate laboratory.
- Swabs should be taken from the throat and from sites of broken skin integrity such as wounds and ulcers, new piercing sites, and from exfoliating skin lesions such as eczema and psoriasis. Samples from dry skin lesions should be taken with a swab moistened with sterile fluid. However, swabbing may miss some carriers if carriage is on sites other than those sampled or where only small numbers of GAS are present, so caution must be exercised in interpreting negative results.
- If further cases arise, the OCT could consider further swabbing, including at additional intervals post-treatment. In certain scenarios where local epidemiology links to a particular individual but swabs are negative, swabs from additional sites (for example, vagina, perineum) may be considered.
- In general, post-treatment swabbing is not recommended, as prophylaxis is generally effective at eradication of carriage of GAS.

Sample Management

- Inform and send isolates to Irish Meningitis & Sepsis Reference Laboratory (IMSRL). Clearly label isolates sent to IMSRL as part of a suspected outbreak to prioritise processing. Epidemiological investigations and preventative measures should not await results of typing.

Chemoprophylaxis

- Decisions to use mass prophylaxis for staff and residents should include an assessment of benefits versus risks. Mass prophylaxis can provide treatment for those asymptomatically colonised from developing infection, and/or could remove carriage state, or reduce transmission from carriers. However, there are potential harms with use of antibiotics, and this must be weighed against any potential benefits. If mass prophylaxis is used, initiation of treatment should be synchronized as far as possible to maximise impact. There can be unwanted secondary effects including allergic reactions or, in individuals colonised with *C. difficile*, the risk of precipitating overt disease. The decision to administer antibiotics should be the result of an individual risk assessment
- Staff who were previously positive should be re-swabbed to check for clearance, as per acute healthcare guidelines (54). If they are still positive, risk assess to consider alternative antibiotics and initiate investigation of household contacts. Healthcare facilities that have identified staff as persistent carriers should have processes in place to ensure appropriate staff follow-up is complete.
- Organising mass administration of antimicrobials in RCFs can be challenging and the guideline development group therefore recommend a simple approach consistent with the regimens outlined in Table 4. If this is not successful, alternative regimens may be required and should be prescribed following consultation with a local microbiologist or infectious disease specialist. Lack of compliance with treatment regimens can occur among both staff and residents. For residents who lack capacity to consent and adhere to oral chemoprophylaxis, for example those with dementia, discuss with local microbiologist whether alternative regimens are available and could be administered, with appropriate delegated consent. Before eradication can be achieved, treatment of chronic skin conditions may also be required.

f) Environmental sampling

Environmental sampling is not usually indicated and is unlikely to add to the management of the situation. Risk assessment should be done regarding the need for environmental sampling, as advised by Area Public Health Team or Outbreak Control Team (88). Please see the [National Clinical Guideline No. 30: Infection Prevention and Control \(IPC\)](#) for more information on control measures.

5.3.3 Declaration of the end of an outbreak

As initial control measures are not always successful and given the potentially long intervals between cases (100, 101, 106) ongoing surveillance and vigilance for potential cases and new symptoms is required for at least 6 months. A period of 60 days applies to formal declaration of the end of the outbreak; however, the RCF / Unit can be re-opened to admissions and transfers when:

- all control measures have been implemented
- a terminal clean has been performed
- there have been no new cases for 2 weeks (the 2-week timeframe is a pragmatic, rather than evidence-based, decision)

Staff who were initially identified as symptomatic or positive on screening can return to work 24 hours after treatment has been received.

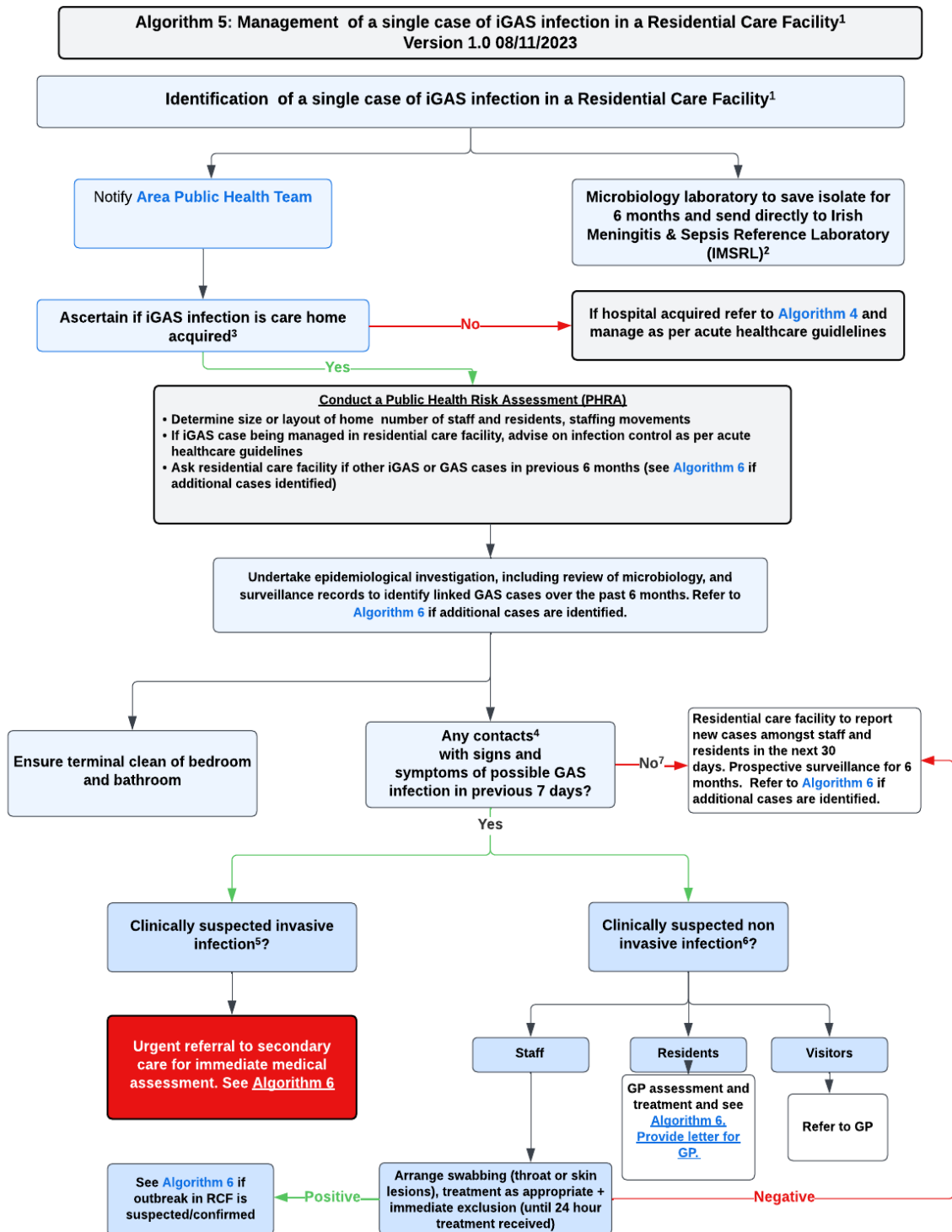
Table 5 Infection, Prevention and Control measures for RCFs

(Adapted from SIGN D) (105, 107).

Indication for use	Control Measures	Strength of evidence
Single case of iGAS	<ul style="list-style-type: none"> • all staff must adhere to strict hygiene as per ‘5 moments of Hand Hygiene’. Support service user to perform hand hygiene as required. • review <i>Management of Attendance</i> policy so staff not encouraged to work while ill • ensure application of standard and transmission-based precautions as required • check if any staff or residents have signs or symptoms of GAS (sore throat, fever, minor skin infections, scarlatiniform rash) • recommend swabbing of contacts sharing the same room or bathroom as the index case especially if they have open wounds or ulcers or are symptomatic. The microbiology lab should retain isolates for up to 6 months and send positive isolates to IMSRL for molecular typing • undertake a point of care risk assessment to identify what personal protective equipment may be required when caring for your resident, see here • implement enhanced surveillance for GAS infection • support all staff to complete hand hygiene education; see here for further resources • restrict staff movement where possible • educate residents, staff and visitors by distribution of GAS information letter • carry out full terminal clean of bedroom and bathroom to reduce possible environmental reservoir of GAS • provide education on transmission-based precautions 	Common, well-accepted

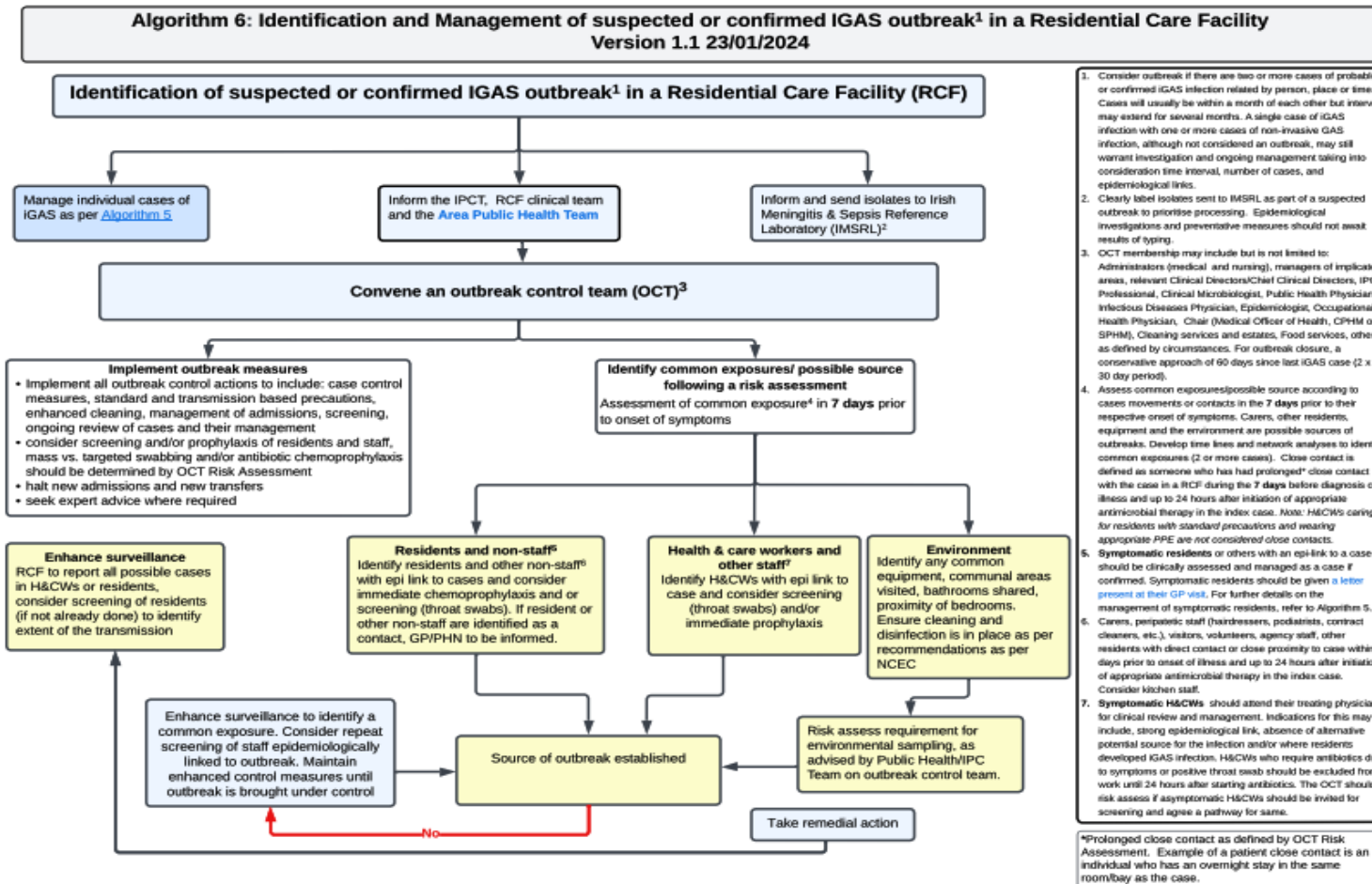
<p>Further cases of iGAS identified</p>	<ul style="list-style-type: none"> • advise closure of the facility to admissions and transfers for a period of time. This should be for as short a period as possible. or defer routine clinic and radiology appointments where possible • consider screening all residents for GAS in throat and wounds • screen staff (throat swab and open skin lesions, for example, eczema) who are symptomatic or are epidemiologically linked to cases (for example, have had contact with cases) • isolate or cohort residents with GAS • trigger for further investigation (≥ 2 cases of iGAS/GAS) • The use of mass versus targeted swabbing and/or antibiotic chemoprophylaxis should be determined by OCT Risk Assessment 	<p>Unproven but unlikely to harm</p>
<p>Outbreak prolonged, consider further measures</p>	<ul style="list-style-type: none"> • role of re-screening • consider further antibiotics • consider environmental involvement • optimum cleaning protocol 	<p>Needs further evidence</p>

Algorithm 5 Management of a single case of iGAS infection in a Residential Care Facility



1. Patient resided in a residential care facility in 7 days prior to onset of symptoms
2. Clearly label isolates sent to IMSRL. Epidemiological investigations and preventative measures should not await results of typing.
3. Consider care home acquired if symptoms or signs of infection not present on entry to care home and no other possible source of transmission identified, such as from recent hospital stay.
4. Carers, peripatetic staff (hairdressers, podiatrists, hospital chaplains, contract cleaners etc.), visitors, volunteers, other patients with direct contact or close proximity to case within 7 days prior to onset of illness and up to 24 hours after initiation of appropriate antimicrobial therapy in the index case. Example of a patient close contact is an individual who has an overnight stay in the same room/bay as the case. Consider kitchen staff.
5. Symptoms suggestive of invasive disease include high fever, severe muscle aches, localised muscle tenderness, increasing pain, swelling and redness at site of wound, unexplained diarrhoea or vomiting. In the absence of a more likely alternative diagnosis then emergency referral to ED (contact ED to advise of incoming patient)
6. Symptoms suggestive of non-invasive GAS infection include sore throat, fever, minor skin infections, scarlatiniform rash.
7. Consider whether asymptomatic staff contacts should be screened. Indications may include strong epidemiological link, absence of alternative potential source and/or where recent transmission of GAS within the home suspected.

Algorithm 6 Identification and management of suspected or confirmed iGAS outbreak in a Residential Care Facility



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