



## TITLE: Aspergillus infection in immuno-compromised patients during demolition, construction and renovation activities policy

|   |  |                                  |            |
|---|--|----------------------------------|------------|
| <b>Document Type:</b>                                   | CLINICAL POLICY  |                                  |            |
| <b>Keywords:</b>  | Prevention and control, aspergillosis, fumigates, inhalation, airborne, spores, mould, moulds, fungal and fungi  |                                  |            |
| <b>Version:</b>   | <b>Issue Date:</b>   | <b>Review Date:</b>              |            |
| 2.0   | 31 <sup>st</sup> October 2017  | October 2022 (ext <sup>5</sup> ) |            |
| <b>Supersedes:</b>                                      | v1.0, Issued July 2014 to Review Date July 2017  |                                  |            |
| <b>Approval by (committee/group):</b>                   | Infection Prevention and Control Committee   | <b>Date Approved:</b>            | 24-10-2017 |
| <b>Scope:</b><br>(delete as applicable)                 | Trustwide/ Corporate (for the majority)  |                                  |            |
| <b>Evidence Base/References:</b>                        | <ul style="list-style-type: none"> <li>See section 9, page 14</li> </ul>   |                                  |            |
| <b>Lead Division:</b>                                   | Diagnostics and Outpatients  |                                  |            |
| <b>Lead Specialty:</b>                                  | Infection Prevention and Control   |                                  |            |
| <b>Author:</b>  | Nurse Consultant Infection Prevention and Control – Rosie Dixon  |                                  |            |
| <b>Sponsor:</b>   | Director of Infection Prevention and Control   |                                  |            |
|   | <i>Name the documents here or record not applicable</i>  |                                  |            |
| Associated Clinical Guideline(s)                        | Not Applicable   |                                  |            |
| Associated Clinical Procedure(s)                        | Not Applicable   |                                  |            |
| Associated Clinical Pathway(s)                          | Not Applicable   |                                  |            |
| Associated Standard Operating Procedure(s)              | Not Applicable   |                                  |            |
| Other associated documents<br>e.g. documentation/ forms | Not Applicable   |                                  |            |
| <b>Consultation Undertaken:</b>                         | Infection Prevention and Control<br>Consultant Microbiologist<br>Members of the Healthcare Associated Infection forum<br>Strategic Planning and Commercial Development Directorate<br>Heads of Nursing/Matrons<br>Infection Prevention and Control Committee<br>Health and Safety Officer<br>Occupational Health |                                  |            |
| <b>Template control:</b>                                | v1.2 August 2017 (Appendix to Clinical Documents Procedure)  |                                  |            |

**CONTENTS**

|    | <b>Description</b>   | <b>Page</b> |
|----|--|-------------|
| 1  | Introduction / Background                                    | 3           |
| 2  | Aims / Objectives / Purpose                                  | 3           |
| 3  | Roles and Responsibilities                                   | 4           |
| 4  | Policy Details (including flowcharts)                        | 6-12        |
| 5  | Education and Training                                       | 13          |
| 6  | Definitions/ Abbreviations                                   | 13          |
| 7  | Monitoring   | 14          |
| 8  | Equality, Diversity and Inclusivity and Impact Assessments   | 14-15       |
| 9  | Evidence Base/ References                                    | 15          |
| 10 | Appendices (list)  | 16          |
|    | <a href="#">Appendix A</a> – General Risk Assessment Form    | 17          |
|    | <a href="#">Appendix B</a> – Aspergillus Construction Permit | 18          |

## 1 Introduction / Background

Aspergillus is the name applied to a group of ubiquitous fungi, which are commonly identified in soil, water, organically enriched debris and decaying vegetation. Environmental sources also include dust, organic debris, and the internal surfaces of buildings, plaster and brickwork. Many species of aspergillus have been recognised in nature but only a few have been associated with human diseases.

The microorganisms sporulate freely, releasing large numbers of airborne spores, which are disseminated by air currents. There is a long-standing association between interior and exterior building work and outbreaks of invasive aspergillosis in immuno-compromised patients. The fungus *Aspergillus fumigatus* is acquired by inhalation of airborne spores, which settle and grow in the lung tissue; this is a serious and often fatal disease.

Nosocomial (hospital acquired) outbreaks of Aspergillosis are well-recognised complication of construction, demolition or renovation work in or near hospital wards in which immune-suppressed patients are accommodated. Due to the high mortality rate associated with invasive Aspergillosis in vulnerable patients, it is essential to minimise these risks. While demolition or construction activities are taking place it is necessary that immune-suppressed/vulnerable patients be protected over that period.

When major demolition and/or construction work is planned, the Trust must ensure that a multidisciplinary team is established, the team to comprise of: Strategic Planning and Commercial Development Team, Infection Prevention and Control Team (IPCT), Central Nottinghamshire Hospitals (CNH) and its service providers as appropriate, technical service staff, building/development contractors, designers and relevant clinicians in high risk areas, and that policies and procedures that clearly outline the responsibilities of all personnel involved are put into place to minimise the risk of invasive Aspergillosis.

## 2 Aims / Objectives / Purpose

The aim of this policy is to provide guidance on the required actions when building work is being carried out to protect vulnerable patients from potentially fatal aspergillus infections. Any building work can lead to contamination of the air with aspergillus spores and it is important to contact the Infection Prevention and Control Team (IPCT) prior to this work starting so preventative measures described in this policy can be implemented.

The objective is to identify and define the risks of fungal spore exposure to patients during any building work occurring on the Trust premises and give measures to prevent infection occurring. Although this policy refers to aspergillus, the same principles apply for the prevention of infection due to other moulds, which may be released into the environment during building work.

This policy applies to:

**Staff group(s):**

- Strategic Planning and Commercial Development Directorate
- Infection Prevention and Control Team
- All internal and external contractors during the activities of demolition, construction or renovation
- All clinical staff affected by the activities of demolition, construction or renovation
- All Medirest staff
- All Central Nottinghamshire Hospital Plc staff
- All Skanska Facilities Services staff
- Project teams

**Clinical areas(s):**

- All clinical areas

**Patient group(s):**

- All patients groups

## 3 Roles and Responsibilities

### 3.1 Corporate responsibility

The Trust has a responsibility to promote a high level of compliance with best practice; the Trust will support and encourage compliance by involving the Infection Prevention and Control Team in the planning process for new construction and refurbishment work so that advice can be given on appropriate isolation facilities as emphasised by 'Health Building Note 00-09: Infection Control in the Built Environment' (DH 2013) and the Health and Social Care Act 2008.

### 3.2 Chief Executive

The Chief Executive is ultimately responsible for ensuring that there are effective arrangements for infection prevention and control, and that it is a core element of the Trust patient's safety strategy.

### 3.3 Director of Infection Prevention and Control

The Director of Infection Prevention and Control (DIPC) has Trust wide responsibility for the development of strategies and policies for the management of infection prevention and control.

### 3.4 Infection Prevention and Control Team

The infection prevention and control team (IPCT) must be involved in all phases of any building work where there is a risk to patients e.g. of aspergillus or other fungal spores, whether demolition, construction or internal refurbishment from planning to final hand over of

the project. Attend relevant meeting, provide a source of expert advice to project manage contractors. The IPCT will collaborate with medical and nursing staff to identify patients at risk, determine necessary risk reduction precautions and provide a source of expert advice to project managers and contractors. The IPCT will share responsibility with other operational staff for monitoring contractor areas and behaviour to ensure implementation of preventive measures.

### **3.5 Strategic Planning and Commercial Development Directorate**

Strategic Planning and Commercial Development Directorate has responsibility for ensuring that all capital projects/schemes are appropriately planned and reviewed by a multidisciplinary team that includes infection prevention and control representative, and are carried out in compliance with this policy. Strategic Planning and Commercial Development Directorate personnel share responsibility with other operational staff for monitoring contractor sites and behaviour to ensure implementation of preventive measures.

### **3.6 Estates and Facilities Management**

The Head of Estates and Facilities will ensure that the estates and facilities team liaises with the relevant local planning authorities to receive notification of planning decisions in the locality to ensure that Trust personnel are aware of large-scale demolition/construction/renovation activities external to, but proximal to the hospital and will liaise with the infection prevention and control team to risk assess and institute precautionary measures. Based upon a risk based approach, the estates and facilities working with the IPCT will share responsibility with other operational staff for monitoring the contractor sites and behaviour in maintaining their preventive measures.

### **3.7 Senior Capital Project Manager**

The Capital Project Officer is responsible for ensuring that detailed plans for all capital schemes and projects are communicated to the IPCT and will provide contractors with appropriate documentation to enable the contractor to comply with this policy. The Senior Capital Projects Manager shares responsibility with other operational staff for monitoring contractor sites and behaviour to ensure implementation of preventive measures.

### **3.8 Central Nottinghamshire Hospital Plc. Skanska and Medirest**

Central Nottinghamshire Hospital (CNH) Plc. and Skanska Facilities Services (SFS) staff are responsible for ensuring that all development/refurbishment projects and schemes are undertaken in consultation with the infection prevention and control team and in compliance with this policy. CNH and SFS personnel share responsibility with other operational staff for monitoring contractor sites and behaviour to ensure implementation of preventive measures. Medirest (MR) staff are responsible for the implementation of a comprehensive additional cleaning service, which is predicated on good infection prevention and control practices.

### **3.9 Contractor**

Each building contractor/worker will be required to ensure that all activities and personnel within their control and those sub-contracted, are managed in accordance with this policy and with all other Trust policies as directed.

### 3.10 Clinical staff

Clinical staff need to be aware of this policy and adhere to it, to maintain a high degree of clinical suspicion of invasive fungal infections during any period of building work and to liaise with the IPCT if any concerns arise regarding the work or any individual patient.

### 3.11 Authority

The Trust has identified the following individuals as having the authority to suspend work on any project or scheme where monitoring has identified a breach of the controls required under this policy.

- Hard FM Manager,
- Head of Estates and Facilities,
- Senior Capitol Project Manager

## 4 Policy Details (including Flowcharts)

### 4.1 How do patients acquire invasive fungal infections?

Most healthy people have natural immunity to the aspergillus mould, normally when aspergillus spores are inhaled, the immune system acts quickly and recognises it as a foreign material, it isolates it and destroys the material before it has a chance to spread into the lungs, therefore no infection arises. However, individuals who have a pre-existing medical condition or a weakened immune system breathes in aspergillus spores, they are more susceptible and high risk for the fungus to develop as an infection.

Airborne transmission is the principal route of transmission of aspergillus within the hospital environment. Pulmonary aspergillosis may then develop following inhalation of airborne fungal spores; a dose-response relationship exists between exposure to airborne spores and the risk of pulmonary infection, high spore counts within patient-care areas represent an extrinsic risk factor for invasive disease.

Infection is also believed to occur directly into deep wounds during surgery, however due to the hygiene standards in theatres and the relatively short exposure times involved, this rarely poses a significant risk.

### 4.2 What type of work constitutes a risk?

Building work, which include: any new build, demolition, renovation, refurbishment, redecoration or maintenance work that involves disturbance to any fabric of the building, including ceiling tiles. When hospital construction and renovation activities are in the planning stage, it is important to implement a strategy that attempts to protect patients at high risk from aspergillosis and minimise exposure to high ambient air spore levels. This will necessitate creating and maintaining an environment as free of aspergillus spores as possible.

Construction related indoor fungal aerosol pollution can create unhealthy conditions for susceptible individuals. The source of such aerosols can originate from outdoor or indoor activity, which causes the disturbance of settled spores or the disruption of a locus of growth. The release of indoor spore aerosols may be caused by activities ranging from construction to cleaning. Outdoor sources of indoor fungal aerosols depend on proximity to such activities as construction or lawn mowing and the status of building penetrations by aerosolised mould and/or weather conditions. The source of such an aerosol problem must be reduced and where possible eliminated to protect the health and safety of the building occupants.

### 4.3 Risk assessment

Host immunity plays a major role in determining who may be at risk of developing invasive aspergillosis. When a patient with normal immunity is exposed to aspergillus species (spp), macrophages kill the conidia (spores) while neutrophils are a defence against the mycelia (fungal filaments). When the host is immune-compromised/vulnerable, an increased likelihood of invasion of tissue by aspergillus spp. can occur. The major risk factor for invasive aspergillosis is prolonged and severe neutropenia, both disease and therapy induced. It is imperative that a risk assessment (Refer [Appendix A](#)) is completed at the planning stage of the project.

### 4.4 Classification of high risk patients

Certain types of demolition and construction activities can result in increased incidence of invasive aspergillosis, a condition in which pneumonia caused by inhalation of Aspergillus spores is established and the fungus is disseminated to other organs, among immune-suppressed/vulnerable patients. Patient may be at risk if they have:

- **asthma** – a common long-term condition that can cause coughing, wheezing, chest tightness and breathlessness
- **cystic fibrosis** – a condition in which the lungs and digestive system become clogged with thick, sticky mucus
- **chronic obstructive pulmonary disease (COPD)** – a group of lung conditions that affect breathing
- **tuberculosis (TB)** – a bacterial infection that mainly affects the lungs
- sarcoidosis – where small patches of swollen tissue develop in the lungs
- **HIV or AIDS** – conditions in which the immune system is weakened
- **current or recent cancer treatment** – including radiotherapy and chemotherapy
- **an organ transplant** – as you'll need to take medication that weakens your immune system

A construction permit also needs to be approved prior to commencement of a project, see [Appendix B](#).

### 4.5 Criteria to aid diagnosis of invasive aspergillosis

There is no single diagnostic test that is applicable to all patients groups and the sensitivity and specificity of the available test vary. The current gold standard involves the performance of invasive procedures, which are often contraindicated, until the ability to diagnose this

infection improves, a high index of suspicion in patients at risk of invasive disease is essential

- All clinicians are prepared and able to ensure an early diagnosis of invasive aspergillosis
- A multidisciplinary approach combining clinical, radiological and microbiological criteria is used to predict the probability of invasive disease

#### **4.5.1 Clinical criteria**

Invasive aspergillosis may manifest differently in different patient groups. It is important to ensure that clinicians with high risk patients under their care are aware of the additional risk that occur during construction/renovation activities and that a high index of suspicion is maintained and that clinical expertise in the area of diagnosis and management is readily available. Once a clinical suspicion exists appropriate investigation must be performed.

#### **4.5.2 Radiological criteria**

Radiological examination remains an essential part of the diagnostic strategy and hospitals managing these patients must ensure that appropriate facilities are available. The routine Chest X-Ray is insensitive and patients with clinical features compatible with infection and in a high risk group should have high resolution CT or MRI imaging as soon as practicable after suspecting the diagnosis. The presence of lesions suggestive of invasive aspergillosis should trigger appropriate investigations and consideration of the need for immediate empirical antifungal therapy.

#### **4.5.3 Microbiological techniques**

- Tissue culture: the gold standard is the demonstration of fungal hyphae and the isolation of aspergillus spp. from tissue specimens. However a biopsy is often contraindicated in patients at risk and suspected of having invasive disease and is rarely performed.
- Microscopy and culture: this examination can be performed on a variety of specimens including biopsies, fluid aspirates, broncho-alveolar fluid, tracheal aspirates or sputum. Culture alone is insensitive; however the combination of microscopy and culture will increase the diagnostic yield by 15-20%.
- Serology: fluid, blood and aspirates can be examined for the presence of antibodies and antigen.
- Environmental sampling: air sampling for aspergillus spp. is difficult and not always useful. Generally it is not recommended that sampling is performed routinely even if demolition/construction/renovation activities are taking place. It is particularly important that users understand that a sample will only reflect what is happening at one point in time and hence multiple samples at different sites and times will be required to give an accurate picture. Control measures rather than sampling are more effective.

#### 4.6 Surveillance

It is imperative to maintain a high index of suspicion for the diagnosis of nosocomial Aspergillosis in the high risk patients. This surveillance must be achieved through review of relevant clinical cases at ward level and review of relevant microbiological and/or histological specimens at laboratory level.

#### 4.7 Preventative measures

All appropriate measures must be undertaken to protect high risk patients from exposure to aspergillus spores. There are two main strategies to prevent nosocomial aspergillus infection, the first being to minimise the dust generation thereby minimising the amount of fungal spores released during building activity, secondly to prevent dust infiltration into adjacent patients, especially from high risk patients.

Patients who are high risk must be moved to an area away from the construction area if the air quality cannot be guaranteed during construction. High risk patients (Group 2-4 above) must wear protective masks if it is necessary to transport them through a construction area. These masks must be capable of filtering aspergillus spores, such as particulate filter respirators (FFP2/FFP3), which give a >95% filtration efficacy of 0.3µm particle size.

High risk patient groups associated with aspergillus infection must be cared for in rooms under positive pressure with HEPA filtration ventilation (side room 1), to remove dust and fungal spores (performance specification should be approximately 10-15 air changes per hour maintaining a positive pressure of between 15-20 Pascal's).

Dust accumulation in the healthcare environment should be prevented and regular cleaning of ceiling and air-duct grilles undertaken when rooms are not occupied by patients. All ventilation units within the healthcare facility should be checked regularly to ensure that the filters are properly seated and that the appropriate air changes occur. The filters should be changed at regular intervals.

Other measures include the erection of airtight plastic and dry wall barriers around the building activity site, the use of negative-pressure ventilation, sealing of windows and doors, covering of all air in-take and exhaust vents to prevent the introduction of contaminated air into the hospital heating, ventilation and air conditioning systems, capping the open ends of any existing ventilation ducts in the building activity area, redirection of building activity traffic away from patient areas, regular removal of the building activity debris from the site in sealed containers or at least covered by a damp cloth, the use of sticky mats and damp cleaning.

The environmental control measures implemented will depend on the type of construction/renovation being undertaken in the hospital, proximity of the high risk patients to this site, and will be based on the results of the risk assessment. The preventive measures can be considered under the following headings:

- Demolition, construction and ventilation measures
- Infection prevention and control measures
- Chemoprophylaxis

#### **4.7.1 Demolition, construction and ventilation**

Before any building/demolition or refurbishment work within the healthcare environment or external building/demolition work on the healthcare facility site is commenced a formal risk assessment must be documented involving Estates and Facilities Department, Project Team, Clinical Directors (if applicable) and Infection Prevention and Control Nurse (IPCN), using the Risk Assessment Construction Permit ([Appendix A](#)). The outcome of the risk assessment must be used to inform any necessary measures that are thought to be needed to achieve a safe environment for high risk patients.

A method statement which describe dust reduction/control i.e. damping down, review of wind direction, lock windows, change filters and isolate fans (extract fans without filtration that outlet into inner areas of the hospital must be assessed and consideration given to isolation of them). Contractors must provide certification that any ductwork/grills from extracts have been cleaned prior to sign off.

A number of measures may be implemented by the construction design team and maintenance personnel to protect high risk patients, during building activist. The measures vary from minimal precautions and good housekeeping to major mechanical services intervention involving dedicated HEPA filtered installation systems to protect the clinical area in which the high risk patients are accommodated. These measures could be divided into:

##### **Measures to reduce dust emission from construction area**

The measures implemented to reduce dust emission from the construction area will vary depending on the construction/renovation/building activity.

1. The construction area must be sealed fully during the construction period. A dust barrier must be created from the floor to the slab (true ceiling) and edges sealed. For short-term minor projects this may be plastic sheeting, however for more long-term minor projects then a solid sealed barrier must be installed. It may be necessary to create a lobby (anteroom) if the barrier is the entrance/egress for construction staff
2. All windows, doors, vents, plumbing penetrations, electrical outlets and any other sources of potential air leak must be sealed in the construction area
3. Dust reduction techniques must be used for cutting and hole boring
4. Air pressure in the construction area must be negative compared with adjacent areas; an extract fan may be used for this purpose. Air from the construction area must be exhausted directly to the outside. If this is not possible then the air must be filtered through HEPA filters, which have been properly fitted and strictly monitored before being re-circulated to the hospital

5. Debris must be removed from the construction area at the end of each working day in covered containers, preferably through window openings via chute, or external door in preference to being taken through other areas of the hospitals. A risk assessment must be conducted for the route to be taken prior to the commencement of the construction work
6. Normal good housekeeping procedures must prevail during the operation in particular, holding skips and other containers must be kept moistened and/or covered
7. Consideration should be given to vacuuming daily or more frequently if required, to maintain an environment as free from dust as possible. Consideration must also be given to emptying of vacuums and dust reduction
8. Construction workers must wear protective clothing, which must be removed before leaving the construction site and walking through the hospital
9. Consideration should be given to the use of a mat with a sticky surface placed inside the exit from the construction area to trap dust. This must be vacuumed/changed daily or more frequently when visibly soiled

#### **4.7.2 Infection Prevention and Control**

##### **a) Communication**

Communication is a vital element in the successful implementation of proactive infection prevention and control measures to eliminate and/or reduce the risk of nosocomial invasive aspergillosis. Effective communication is vital between all parties including:

- I. Estates and Facilities Management
- II. Architects
- III. Engineers
- IV. Technical services
- V. Sub-contractors
- VI. Infection Prevention and Control Team
- VII. Medical and nursing staff is essential during all stages of construction work

##### **b) Traffic**

Pedestrian traffic from the construction area must be directed away from patient areas, with workmen having separate access to the construction site. Wherever possible, patients and visitors must be prevented from entering the hospital adjacent to major construction/demolition sites, or where debris or dust is being removed from the works area.

For supplies traffic, alternative routes, which avoid the construction site, will be identified during construction. Clean or sterile supplies or equipment must be transported to storage areas by a route that minimises contamination risks. In some

critical area and in some instances where it may not be possible to alter traffic patterns consideration will have to be given to scheduling construction to 'out-of-hour' periods and weekends. Some areas may need to be relocated or closed temporarily

### **c) Cleaning**

In addition to minimising dust through measures outlined in the construction permit, following a risk assessment it may be necessary to increase the existing cleaning regimes to prevent dust accumulation on surfaces, ceilings and air duct grilles. As the quantity of dust generated will vary depending on the type of building activity, the increased cleaning regimes need to be adjusted according to minimise dust accumulation. Air filtration systems must be regularly checked. Where vacuum cleaners are used, in areas where high risk patients are cared for and in adjacent areas, these must be equipped with HEPA filters and appropriately maintained to minimise dust dispersal. Filters in the air filtration systems and the vacuum cleaners need to be changed regularly and a record/log must be kept of these changes.

#### **4.7.3 Chemoprophylaxis and the prevention of invasive aspergillosis**

Antifungal chemoprophylaxis is recommended in patients expected to be neutropenic (ANC 0.1-0.5 x 10<sup>9</sup>/l) for at least 2 weeks or profoundly neutropenic (ANC < 0.1 x 10<sup>9</sup>/l) for more than 1 week. It is also recommended that neutropenic and transplant patients are nursed with HEPA filters where this is a high institutional rate of invasive aspergillosis or where building works are being undertaken. There is also some benefit to secondary prophylaxis in patients with a history of invasive aspergillosis and undergoing further treatments.

There is lack of evidence for the use of prophylaxis in high risk patients. Bearing this in mind chemoprophylaxis may be considered in high risk groups in the presence of construction work if these patients cannot be protected by environmental measures. An evaluation of the high risk population must be done in consultation with the Consultant Microbiologist to determine if prophylaxis is likely to be of benefit.

### **4.8 Environmental measures**

Patients deemed to be high risk of systemic fungal infection must be assessed on the basis of their underlying disease, their treatment and the area in the hospital in which they are being treated in relation to the proposed building activity.

### **4.9 Contingency plan**

In the event that two or more cases of clinically diagnosed or laboratory confirmed Aspergillus cases, which appear to be related in time and place, an outbreak committee will be convened. Measures to consider will include sampling of the environment through air and environmental dust sampling, sealing off of all dust sources, cleaning of patient areas, ceasing admission of immunosuppressed patients to the area(s) involved, transfer of immunosuppressed patients currently on site and use of prophylactic anti-fungal treatment.

**IPCT to be contacted in the first instance by Skanska when a call is received on the Help Desk for remedial building works.**

## 5 Education and Training

There is no specific training requirement in relation to this policy. If required, further assistance can be sought from senior colleagues and/or the Infection Prevention and Control Team.

## 6 Definitions/ Abbreviations

|  |  |
|--|--|
| <b>Trust</b>                             | Sherwood Forest Hospitals NHS Foundation Trust   |
| <b>Staff</b>                             | All employers of the Trust including those managed by a third party on behalf of the Trust   |
| <b>Immuno-compromised</b>                | Individuals are less capable of battling infections because of an immune response that is not properly functioning   |
| <b>Immunosuppressed</b>                  | Involves an act that reduces the activation or efficacy of the immune system. Some portions of the immune system itself have an immuno-suppressive effects on the other parts of the immune system, may also occur as an adverse reaction to treatment of other conditions |
| <b>Neutropenia</b>                       | Abnormally low number of neutrophils, part of the white blood cell, serves as the primary defence against infections (ANC <1x10 <sup>9</sup> /l)   |
| <b>Allogeneic bone marrow transplant</b> | Procedure in which a person receives stem cells (cells from which all blood cells develop) from a genetically similar, but not identical, donor  |
| <b>Nosocomial</b>                        | Hospital acquired  |
| <b>Ubiquitous</b>                        | Being or seeming to be everywhere at the same time   |
| <b>IPCT</b>                              | Infection Prevention and Control Team  |
| <b>DIPC</b>                              | Director of Infection Prevention and Control   |
| <b>PHE</b>                               | Public Health England  |
| <b>CCDC</b>                              | Consultant of Communicable Disease Control   |
| <b>IPCN</b>                              | Infection Prevention and Control Nurse   |
| <b>CNH</b>                               | Central Nottinghamshire Hospital Plc   |
| <b>SFS</b>                               | Skanska Facilities Services  |
| <b>MR</b>                                | Medirest   |
| <b>ANC</b>                               | Absolute neutrophil count  |
| <b>NICU</b>                              | Neo-natal intensive care unit  |
| <b>CCU</b>                               | Critical Care Unit   |
| <b>SCIDS</b>                             | Severe combined immunodeficiency syndrome  |

## 7 Monitoring

| Minimum Requirement to be Monitored<br><br>(WHAT – element of compliance or effectiveness within the document will be monitored) | Responsible Individual<br><br>(WHO – is going to monitor this element) | Process for Monitoring e.g. Audit<br><br>(HOW – will this element be monitored (method used)) | Frequency of Monitoring<br><br>(WHEN – will this element be monitored (frequency/ how often)) | Responsible Individual or Committee/ Group for Review of Results<br><br>(WHERE – Which individual/ committee or group will this be reported to, in what format (eg verbal, formal report etc) and by who) |
|--|--|---|---|---|
| Practice checks during construction.   | IPCT   | Visual Audits   | As construction takes place   | IPCC  |
| Completed construction permits   | Strategic Planning and Commercial Development                          | Audit   | Annual  | IPCC  |

## 8 Equality, Diversity and Inclusivity and Impact Assessments

### Equality Impact Assessment (EqIA) Form (please complete all sections)

|  |  |   |   |
|--|--|---|---|
| Name of service/policy/procedure being reviewed: Aspergillus infection in immuno-compromised patients during demolition, construction and renovation activities policy                                   |  |   |   |
| New or existing service/policy/procedure: Existing policy  |  |   |   |
| Date of Assessment: 18/08/2017   |  |   |   |
| <i>For the service/policy/procedure and its implementation answer the questions a – c below against each characteristic (if relevant consider breaking the policy or implementation down into areas)</i> |  |   |   |
| Protected Characteristic   | a) Using data and supporting information, what issues, needs or barriers could the protected characteristic groups' experience? For example, are there any known health inequality or access issues to consider? | b) What is already in place in the policy or its implementation to address any inequalities or barriers to access including under representation at clinics, screening? | c) Please state any barriers that still need to be addressed and any proposed actions to eliminate inequality |
| The area of policy or its implementation being assessed:   |  |   |   |
| Race and Ethnicity:  | None   | None  | None  |
| Gender:  | None   | None  | None  |
| Age:   | None   | None  | None  |
| Religion:  | None   | None  | None  |
| Disability:  | None   | None  | None  |

|  |      |      |      |
|--|------|------|------|
| Sexuality:   | None | None | None |
| Pregnancy and Maternity:   | None | None | None |
| Gender Reassignment:   | None | None | None |
| Marriage and Civil Partnership:  | None | None | None |
| Socio-Economic Factors (i.e. living in a poorer neighbourhood / social deprivation): | None | None | None |

What consultation with protected characteristic groups including patient groups have you carried out?

- 

What data or information did you use in support of this EqIA?

- 

As far as you are aware are there any Human Rights issues be taken into account such as arising from surveys, questionnaires, comments, concerns, complaints or compliments?

- No

#### Level of impact

From the information provided above and following EqIA guidance document please indicate the perceived level of impact:

Low Level of Impact

For high or medium levels of impact, please forward a copy of this form to the HR Secretaries for inclusion at the next Diversity and Inclusivity meeting.

Name of Responsible Person undertaking this assessment:

Sally Palmer

Signature:

Sally Palmer

Date:

18/08/2017

## 9 Evidence Base/ References

- Aspergillus website. [www.aspergillus.org.uk](http://www.aspergillus.org.uk)
- Department of Health. 2013. Health Building Note 00-09: Infection Control in the built environment. Department of Health. London
- National Disease Surveillance Centre (Dublin. Republic of Ireland). National Guidelines for the prevention of nosocomial invasive aspergillosis during construction/renovation activities. ISBN 0-9540177-3-0. <http://www.lenus.ie/hse/bitstream/10147/43715/1/3927.pdf>
- NHS Choices. Aspergillosis. <http://www.nhs.uk/Conditions/Aspergillosis/Pages/Causes.aspx#high-risk>

- Department of Health. 2012. Health and Social Care Act 2008: Code of practice for health and adult social care on the prevention and control of infections and related guidance

---

|           |                   |
|-----------|-------------------|
| <b>10</b> | <b>Appendices</b> |
|-----------|-------------------|

---

[Appendix A](#) – General Risk Assessment Form

[Appendix B](#) – Aspergillus Construction Permit

**Appendix A: General risk assessment form**

|   |  |                                  |  |   |  |                         |                 |
|---|--|----------------------------------|--|---|--|-------------------------|-----------------|
| <b>Date:</b>                            |  | <b>Area affected:</b>            |  | <b>Managers name:</b>                       |  | <b>Assessor's name:</b> |                 |
| <b>Identify the activity</b>            |  | <b>Who or what is at risk</b>    |  | <b>Are the risks adequately controlled?</b> |  |                         |                 |
|   |  |                                  |  |   |  |                         |                 |
| <b>Substantial or high risk hazards</b> |  | <b>Existing control measures</b> |  | <b>Further control measures</b>             |  | <b>Lead</b>             | <b>Date due</b> |
|   |  |                                  |  |   |  |                         |                 |
| <b>Date assessment accepted:</b>        |  |                                  |  | <b>Acceptance:</b>                          |  |                         |                 |
| <b>Assessor's signature</b>             |  |                                  |  | <b>Managers signature:</b>                  |  |                         |                 |

**Appendix B: Aspergillus Construction Permit****Activity project:**

To be completed where there is any risk of aspergillus contamination during demolition, construction and renovation activities.

|   |  |   |
|---|--|---|
|   |  |   |
| <b>Description of works:</b>                            |  |   |
| <b>Project start date:</b>                              |  | <b>Project completion date:</b>                           |
| <b>Location of project:</b>                             | <b>Estimated Duration:</b>                                 |   |
|   | <b>Demolition phase:</b>                                   |   |
|   | <b>Construction phase:</b>                                 |   |
| <b>Contractor: Contact Person (Demolition)<br/>Tel:</b> |  | <b>Contractor: Contact Person (Construction)<br/>Tel:</b> |
| <b>Approval</b>   |  |   |
| <b>Estates and Facilities Management:</b>               |  |   |
| <b>Name:</b>  | <b>Signed:</b>   | <b>Date:</b>  |
| <b>Infection Prevention and Control:</b>                |  |   |
| <b>Name:</b>  | <b>Signed:</b>   | <b>Date:</b>  |
| <b>Population risk group:</b>                           | <b>Class of IPC recommendations (minimum requirements)</b> |   |
|   |  |   |