# Helipad Operational Procedure

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<td>Michael Harper, Chief Operating Officer</td>
<td>Paul Walker, Helipad Operational Manager/Deputy Operations Director</td>
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Associated Documentation:

Trust Controlled Documents
Management of Health & Safety at Work Policy

External Documentation
Standards for helicopter landing areas at hospitals CAP 1264, Civil Aviation Authority 2016

Legal Framework
Health and Safety at Work Act 1974
Air Navigation and Transport Act 1920

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Version History

<table>
<thead>
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(Please note that if there is insufficient space on this page to show all versions, it is only necessary to show the previous 2 versions)

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Executive Summary

Helipad Operational Procedure

Document Objectives: To define the safety and operational procedures for the Sheffield Teaching Hospitals NHS Foundation Trust (STH) Helipad facility

Group/Persons Consulted: Emergency Department, Estates Department, Fire Safety Advisors, Head of Security, Emergency Planning

Monitoring Arrangements and Indicators: Incident reporting via Datixweb

Training Implications: Emergency Department staff working as part of the Helipad Team will require training

Equality Impact Assessment: Initial analysis completed no potential or actual adverse impact on any relevant groups identified

Resource Implications: Resources required to train Emergency Department staff working as part of the Helipad Team

Intended Recipients: All Emergency Department, Estates Maintenance and Planning staff, Security staff

Who should:

- be aware of the document and where to access it: Emergency Department staff, Estates staff, Security staff
- understand the document: ED staff working as part of the Helipad Team, Estates Department.
- have a good working knowledge of the document: ED staff working as part of the Helipad Team, Estates Department.
Contents

1. Introduction ........................................................................................................................................... 6
2. Key Personnel .......................................................................................................................................... 6
  2.1 Duties and Responsibilities ............................................................................................................... 6
    2.1.1 Helipad Executive ....................................................................................................................... 7
    2.1.2 Helipad Manager ....................................................................................................................... 7
    2.1.3 Nurse in Charge ....................................................................................................................... 7
    2.1.4 Helipad Team ........................................................................................................................... 8
    2.1.5 Estates .................................................................................................................................. 8
    2.1.6 Security ................................................................................................................................ 9
3. Helipad Characteristics .......................................................................................................................... 9
  3.1 Location ............................................................................................................................................ 10
  3.2 Emergency services Access ............................................................................................................ 10
4. General Safety and Maintenance ......................................................................................................... 10
  4.1 Planned periodic maintenance and site work affecting flight paths .............................................. 11
  4.2 Helipad Team Training ................................................................................................................... 12
  4.3 Helipad unsafe for Landing/Defect/Fault action ............................................................................ 12
  4.4 Helipad emergency plan for crash landing/ Helicopter fire ......................................................... 12
  4.5 Spillages of blood and other potentially infectious fluids ............................................................. 13
    4.5.1 Leakage from aircraft .............................................................................................................. 13
    4.5.2 Blood and other potentially infectious fluids and sharps ....................................................... 13
    4.5.3 Accidental/malicious discharge of foam from fire suppression system ................................. 14
  4.6 Ice and snow prevention and removal ............................................................................................ 14
  4.7 Lighting ........................................................................................................................................ 14
  4.8 Rescue and Fire fighting provision ............................................................................................... 15
  4.9 Night Flying Procedures ............................................................................................................... 15
  4.10 Large Helicopter Landing ......................................................................................................... 15
5. Helicopter Movements .......................................................................................................................... 16
  5.1 Notification of Helicopter Movement ............................................................................................. 16
  5.2 Security ........................................................................................................................................ 16
  5.3 Communicating with the aircraft ................................................................................................... 16
  5.4 Flight Deconfliction ......................................................................................................................... 16
  5.5 Overdue Aircraft ........................................................................................................................... 16
  5.6 Helicopter stuck on pad / prolonged stay ...................................................................................... 17
  5.7 Unexpected aircraft arrival ............................................................................................................ 17
6. Helipad Log Book .................................................................................................................................. 17
7. Complaints ........................................................................................................................................... 17
8. Safeguarding of flight paths .................................................................................................................. 18

Helipad Operational Procedure (V1)
1. Introduction

The purpose of this document is to define the safety and operational procedures for the Sheffield Teaching Hospitals NHS Foundation Trust (STH) Helipad facility.

As well as being one of three Major Trauma Centres (MTCs) for the Yorkshire and Humber region, STH houses a number of specialist medical and surgical services. Pertinent to the helipad, these include the regional spinal injury unit, and a primary cardiac angioplasty service.

STH is the designated MTC for the South Yorkshire Major Trauma Network.

The STH Helipad provides for medical emergency use for hospital purposes only. It provides landing facilities for Helicopter Emergency Medical Service (HEMS) operations 24 hours a day 7 days a week. The Helipad may also be used for Air Ambulance flights that are transport flights for planned patient movements, at the discretion of the operator. The Helipad will service three principle operators:

- Yorkshire Air Ambulance
- Lincs and Notts Air Ambulance
- Derbyshire/Leicestershire/Rutland Air Ambulance

The STH Helipad may receive other civilian HEMS / Air Ambulance services, UK Search and Rescue / HM Coastguard with helicopters of 10t gross weight or less. Police helicopters are used to transport patients in exceptional circumstances.

Discussions are ongoing regarding a possible role of the STH Helipad in the transfer pathway for children and neonates via the EMBRACE service, and this document will be updated accordingly if this is formalised.

This document and the Helipad Risk Assessment (HRA) will be subject to an annual review, with a quality audit applied to the policy and procedures overall. The objective of the HOP and HRA are to ensure optimal clinical and operational standards apply at all times, through the application of sound practice, in the reception and departure of helicopters.

There will be a separate document containing all up to date Standard Operating Procedures held electronically within the Emergency Department sharepoint folder.

2. Key Personnel

- Helipad Executive
- Helipad Manager
- Nurse in Charge ED
- Helipad Team
- Estates Team
- Security

2.1 Duties and Responsibilities

The main detailed duties and responsibilities of the key personnel are outlined below.
2.1.1 Helipad Executive

The Helipad Executive has overall responsibility for the Helipad and directs the Helipad Manager to implement Helipad policy. The Helipad Executive is The Chief Operating Officer at STH who is Mr Michael Harper at the time of writing.

Helipad Executive contact details:

Michael Harper
Chief Operating Officer, Sheffield Teaching Hospitals NHS Foundation Trust

Michael.harper@sth.nhs.uk  t. 0114 2714559  m. 0779 8570739

2.1.2 Helipad Manager

The Helipad Manager is responsible for the operation of the Helipad, detailed responsibilities are outlined below:

- Compilation of Helipad operational policy
- Responsibility for the implementation of Helipad operational policy
- Decision making and communication regarding Operational or Closed status of the Helipad (see section 4.3)
- Compile reports of Helipad usage as required
- Liaise with the local Fire Authority as required
- Provide in-house training for helipad personnel
- Organise any other training as required
- Ensure Risk / COSHH assessments are updated at least every year
- Incident reporting around Helipad related incidents
- Responding to complaints related to Helipad use
- Regularly review all procedures to ensure they reflect all current regulations and guidance
- Monitor details of Helicopter movements

Helipad Manager contact details:

Paul Walker, Deputy Operations Director – Emergency Care

paul.walker2@sth.nhs.uk  t. 0114 2715421  m. 07468715478

2.1.3 Nurse in Charge (ED)

The ED nurse in charge is responsible for ensuring that pre alert calls for incoming aircraft are dealt with according to the SOP for the Helipad Team, and that day to day Helipad related problems are dealt with, in the absence of the Helipad Manager.

This includes:

- Day to day, 24/7 triage of helipad related issues
- Decision making and communication regarding Operational or Closed status of the Helipad (see section 4.3)
- Receipt of pre alert calls and activation of the Helipad Team
- Day to day coordination of Helipad resources including ensuring the Helipad team is adequately staffed
2.1.4 Helipad Team

The Helipad team is responsible for the collection of the patient from the Helipad and their safe transfer to the ED resuscitation room or other destination within the hospital.

- The Helipad Team consists a minimum of 2 trained ED staff members. They may be nursing staff, health care assistants, orderlies or any other ED staff members who have undergone training.
- The Helipad Team is required to be available 24/7 and to respond immediately to a Helipad call.
- The role of the Helipad team includes activation of the fire suppression system and initiating the STH ‘Helipad Emergency’ plan (section 4.4)
- It is expected that at least one of the helipad team will be an emergency department orderly.

The orderly manager, currently Bob Gregory, is expected to ensure adequate levels of orderly staffing to facilitate this role.

2.1.5 Estates

The Estates Team are responsible for ensuring that the Helipad is kept in a safe and fully operational condition. This includes:

- Conduct a regular maintenance check of the Helipad, as outlined in Appendix H.
- Implementation of a periodic maintenance schedule as outlined in Appendix I.
- Ensuring appropriate signage and the structural security of the Helipad from members of the public on the NGH site.
- Ensuring that the Helipad is clear of snow and ice. The inbuilt heating system should achieve this, but may need additional clearance, provided by estates as required.
- General Maintenance and Cleaning. The Estates Team is required to ensure the helipad deck is appropriately cleaned and maintained. As part of the maintenance regime the Estates Team is required to maintain the painted signs on the Helipad with the correct paint.
- Management of spillages as outlined in section 4.5
- Include as part of all contractors Induction the need to be aware of Helicopter flight path and general safety precautions.
- Informing the Helipad manager and local operators of any on site work at NGH that may affect helicopter operations, outlined in section 4.1.
- Inspection and maintenance of the Helipad lighting.
- Provide a rapid response should the foam suppression equipment be activated for ANY reason.
- In the rare event of an incoming aircraft being over 7.5 tonnes, it is the responsibility of the operator to inform STH, and for Estates to ensure all rooftops under flight path are clear.

Estates contact details for issues pertaining to the above areas:

Estates Helpdesk ext. 68686
2.1.5 Security

Security is responsible for ensuring that the helipad structure, deck and ramp remain accessible only to STH personnel and in particular to manage any breach of the security of this area.

- As part of their daily patrol of the Hospital site Security are to conduct a visual check of the Helipad. In the event that there is a potential issue with the Helipad that might prevent the Helicopter landing the Nurse in Charge and if on site the Helipad Manager should be informed in order that a full check can be undertaken and a decision made regarding the operational status of the Helipad. The relevant individuals and organisations will then be informed as outlined in section 4.3.
- In the event that ED staff or another staff member becomes aware of a security breach of the helipad site, they should contact security for immediate response. Should security be unavailable or require more than 2 members of staff the police should be notified immediately.
- On Notification of helicopter being on route, ED staff will provide ETA to security (via switchboard) who will attend (unless unable due to a current security issue) to warn pedestrians to move away from the flight path and vicinity of the Helipad.
- In the rare event of an incoming aircraft being over 7.5 tonnes, it is the responsibility of the operator to inform STH, and for security to ensure no pedestrian movement within a 50m radius.
- In the event of activation of the fire suppression system, an immediate response is required to prevent damage to the pump system through operation longer than 10 minutes.

Security contact details

Jon Goodison – Security Manager

Security Office 14066

For an immediate response security should be fast bleeped via “2222”

3. Helipad Characteristics

The Helipad is a low level raised structure (CAP1264,7.1) elevated tarmac 27m x 25m helipad build on the top of a building housing a car park and office space, with safety netting along and on the outside off the helipad with a ramp down to the Emergency Department. It shows standard Helipad Markings for a Hospital Helipad on a Green base and is suitable for helicopters up a weight of ten metric tonnes.

There are anchor points for tie downs provided in case a helicopter has to be tied down in very strong winds.

There is an illuminated windsock on the Elevator Shaft to West side of the helipad, and the helipad has lighting sufficient to allow 24/7 operation.

Due the weight loading and the aircraft operations manual it is not suitable for the S92 Search and Rescue Helicopter, which should land at the existing Shirecliffe site as per existing arrangements.
Aircraft of over 7.5 tonnes require internal road closures around the helipad and require the operator informing STH of this eventuality. This is included in an information sheet to be issued to all local operators, found in appendix E.

3.1 Location

The Lat and Long Position is N53.408905 W001.4566474

The OS Grid Reference is SK 36217 90370

The Helipad Elevation is 306.75 feet amsl

3.2 Emergency Services Access

There are dedicated parking areas for two fire engines to the north and west of the helipad.

STH Car Parking / Security are responsible for ensuring that these areas remain free from obstructions at all times, and the Helipad Team SOP includes a visual check of these areas.

On discovery of a fire or potential fire hazard (e.g. fuel spillage) the Fire brigade is to be notified via “2222” who will dispatch an immediate response.

South Yorkshire Fire Brigade are aware of and have been in attendance to the Helipad during construction and the 1st test flight conducted in collaboration with Yorkshire Air Ambulance on the 7th April 2016.

4. General Safety and Maintenance

The general safety rules that apply to the helipad are summarised below:

- Smoking is strictly forbidden anywhere on the operational area

- One of the most common occurrences which cause accidents/incidents on the airside is habit. Familiarity with danger can lead to indifference and carelessness. BEWARE!

- Personnel should always work calmly and methodically, taking everything into account. Hasty movement impairs concentration and control.

- Personnel should beware of other people who may not be observing safety procedures. In such circumstances, staff shall report all incidents to the Helipad Manager.

- Where personnel are working in areas where aircraft manoeuvre, there is a risk of persons being struck by moving aircraft. In order to reduce that risk, the Helipad Team are issued with high visibility clothing so that they stand out as much as possible from their surroundings. The Helipad Team must wait at the top of the ramp until been instructed by a member of the Helicopter crew to proceed towards the Helicopter.

- The high visibility clothing worn by the Helipad Team must conform to the requirements of British Standards BS EN 471:1994 – High Visibility Clothing.
• Helicopter rotors are a constant source of danger particularly as there is little to indicate when they may begin to rotate. The aircraft or helicopter anti-collision lights normally indicate that engines are about to be started. REMEMBER TREAT ROTORS AS POTENTIALLY ‘LIVE’ AND DANGEROUS. NEVER WALK CLOSE TO ROTORS.

• Even at a distance, jet engine suction is strong enough to devour loose debris such as rags, paper, stones, nuts and bolts etc. all of which cause Foreign Object Damage/Debris (FOD) and require costly repairs. It is therefore essential to maintain the area to be as clear from debris.

• Helicopter engine and rotor noise so intense that in the long-term, it can severely damage a persons’ hearing if ears are unprotected, hence Helipad Team staff shall be issued with and use ear protectors whilst in proximity of an aircraft, when its anti-collision lights are on.

• The Helipad area can be a busy area with equipment and personnel operating in a constricted space. It is therefore of paramount importance that all staff working airside complies with instructions, keeps a vigilant eye and operates with extreme care.

• Any damage caused to an aircraft can affect its safety in flight. Damage may also be costly to the operator in terms of repairs. This particularly applies to damage caused to aircraft instruments sensors.

• In the event of an incident, normal STH incident reporting procedures should be followed, which may require reporting to the Civil Aviation Authority together with appropriate Health & Safety legislation compliance.

• Copies of incident reports including in relation to the operator on-site should also be sent to the Hospital, for the attention of the Helipad Manager.

• Only trained personal should be allowed on the Helipad during Helicopter Operations

• Additional guidance can be found in the document CAP 642 - Airside Safety Management

### 4.1 Planned Periodic Maintenance and site work affecting flightpaths

Periodic maintenance will be carried out where required. Specifically the planned periodic maintenance regimes outlined in the manufacturer’s maintenance schedule should be followed closely. The manufacturer’s maintenance schedule is held and updated by the Estates team.

Any planned maintenance needing to be carried out on the operational areas of the helipad will be coordinated with the Helipad Manager and Estates, and where appropriate the helicopter operators shall be informed when the helipad is due to be closed as a result of such works.

When work is being carried out on the STH site that may affect helicopter operations, it is the responsibility of Estates to inform the Helipad Manager who should cascade the information as follows. Such circumstances include cranes, building work near to the helipad that may result in loose articles, and obstruction to access for emergency vehicles.
Crane companies are required to report their activity to NATS and information is also passed on to air ambulance operators via this channel.

Contact details for organisations that need to be informed of planned maintenance and site work affecting air ambulance operations:

- **Yorkshire Air Ambulance Airdesk 01924 584286** – for cascade to YAS, Medical Incident Commanders
- **East Midlands Ambulance Service HEMS desk 0115 9675090** – for cascade to EMAS, HM54, HM29, Medical Incident Commanders
- **West Midlands ‘Whisky Alpha’ desk 01384 246326**

### 4.2 Helipad Team Training

The Helipad Manager is responsible for ensuring that adequate numbers of ED staff are trained to provide a 24/7 Helipad team where required. This includes training updates where needed and annual revision via in house mandatory training.

Summary of training is included in appendix F.

### 4.3 Helipad Unsafe for Landing / Defect / Fault Action

The decision to declare the Helipad unsafe for landing lies with the Helipad Manager when they are on site. If the Helipad Manager is not on site, the ED nurse in charge in consultation with on call estates and security staff, is responsible for making this decision.

The ED Nurse in charge or Helipad Manager should then activate the following cascade:

- **Apply ‘landing prohibited’ banner to helipad deck** (stored in crash rescue box which is at bottom of escape ladder nearest to ramp)
- **Inform hospital site matron**
- **Inform ED Consultant in Charge**
- **Inform Dr Stuart Reid and Dr Justin Squires by email**
- **Inform Trauma Nurse Coordinators**
- **Inform:**
  - **Yorkshire Air Ambulance Airdesk 01924 584286** – for cascade to YAS, Medical Incident Commanders.
  - **East Midlands Ambulance Service HEMS desk 0115 9675090** – for cascade to EMAS, HM54, HM29, Medical Incident Commanders
  - **West Midlands ‘Whisky Alpha’ desk 01384 246326**

### 4.4 Helipad Emergency Plan for Crash Landing / Helicopter Fire

In the event of a serious incident involving the helipad it is most likely that either an internal incident or major incident will need to be declared. The decision to declare either of these will be made by the Trust Executive On Call and therefore the Consultant in charge should immediately contact the Duty Matron to inform of the incident. The Duty Matron will invoke the escalation protocol up to the Trust Executive on Call.
If it is clear that the Fire/ Ambulance / Police are required immediately the Consultant in Charge should dial 2222 and request immediate assistance.

The Emergency Department will immediately set up Bronze Command.

**BRONZE (Operational)**
This level is the front line response to the incident and generally the first on scene. They are responsible for the deployment of resources to tackle the initial consequences of the incident and provide information to the silver level commanders. Where necessary, they will require further resources via the Silver commander. The bronze commander is generally regarded as the operational manager of the incident and will establish such areas as Triage and exclusion zones around the incident for the protection of evidence and casualty evacuation.

For incidents involving an aircraft accident the below will need to be considered:

- The pre-determined attendance of the Fire/Ambulance an Police
- Communications with the Air Accident Investigation Branch of the UK Department for Transport
- Initial response and standard actions by the emergency services
- The Multi agency response teams from external agencies such as press, local council emergency planning officer, welfare officers, corporate communications etc
- The preservation of evidence as a potential crime scene
- Actions relating to the liaison with families of those involved.
- The recovery phase for the aircraft
- The post incident documentation.

The above list is not exhaustive and each incident will have a different scenario which dictates that some actions may be excluded or additional items added.

### 4.5 Spillages of Blood and Other Potentially Infectious Fluids

#### 4.5.1 Leakage from Aircraft
Prior to take off it is the responsibility of the air ambulance crew to check the helipad deck for spillages and loose articles. If these are present the pilot and STH Helipad team should liaise to make a plan and to identify who is responsible for cleaning up the spillage. This may be the helipad team after departure of the aircraft. A large spillage may necessitate a delay in the aircraft leaving whilst the spill is cleaned up.

#### 4.5.2 Blood and Other Potentially Infectious Fluids and Sharps

Minor spillages will be cleaned by the Helipad Team present.

Major spillages will be cleaned by the Estates Dept. This process will inevitably cause the helipad to be taken out of service for the duration of the clean up operation. The helipad team will inform Estates and follow the section 4.3.

In the unlikely event that any sharps are identified on the Helipad a member of staff should remain with the sharp until a sharps box can be brought from ED by a trained member of ED staff to the location of the sharp on the Helipad. The sharp should be picked up by the blunt end and carefully placed in the sharps box. The sharps box is then to be returned to ED.

#### 4.5.3 Accidental/Malicious discharge of foam from fire suppression system
The activation of the fire suppression system will trigger the fire alarm for response by the Trust fire team. It is essential that the suppression system is switched off at the control panel used to activate the system. If the water supply runs out before being switched off, permanent damage to the pumps will occur. There are two control panels the first is located at the bottom of the ramp just inside the gate, the second is located at the top of the ramp on the back wall.

Estate must also be fast bleeped to shut the pumps down from the helipad plant room.

The ED Nurse in Charge, STH Fire Officer and Helipad Manager should be informed in the event of this happening, and the procedure in section 4.3 should be followed. The helipad should remain closed as unsafe for landings until the foam is removed and assurance has been gained from Estates and the STH Fire Team that the Fire Suppression system is ready for activation again.

4.6 Ice and Snow Prevention and Removal

The automated heating system should mean that no snow or ice accumulates on the pad. In the event of snowfall estates are responsible for carrying out regular visual inspections to ensure that the pad remains operational. The nurse in charge of the ED can also contribute to these checks via resus staff, CCTV and a visual check of the site.

Under no circumstances should salt / grit be used in the area of the Helipad as this will present a potential debris hazard on helicopter landing.

4.7 Lighting

The Helipad lighting has been configured as follows taking account of the best approach been from the East and West

- 32 x Green LED Inset Helipad edge lights spaced equally around the outside edge of the helipad
- 4 x Anti glare floodlights; one in the centre of each side of the Helipad
- Illuminated windsock with Red Obstruction Light on the top of the Elevator shaft
- 1 x Obstruction Light on Huntsman Building
- 1 x Obstruction Light on Day Surgery Unit
- 1 x Obstruction Light on A&E Department
- 1 x Obstruction Light on Brearley Wing
- 1 x Obstruction Light on to of windsock

All the obstruction lights are ‘double service + standby’ so if there is a failure the standby will automatically come on.

Maintenance of the lighting is the responsibility of the Estates team.

The Helipad Lighting can be operated by three methods as follows: -

1) switched on by Operator from the mimic in ED at the Resus desk or from the RLC below the helipad
2) Switch on by Pilot from the Helicopter on a VHF Frequency
3) Switch on by GSM by text message from a mobile phone

Note: only Operational Staff and the Helicopter Operators will have details of the VHF Radio Frequency and the GSM mobile phone number
ED staff are responsible for ensuring that the lights have come on as part of their checks for any aircraft arriving.

4.8 Rescue and Fire Fighting Provision

The Fire Fighting and Rescue equipment and The Sheffield Northern General Hospital Helipad consists of the following equipment:

- Two Oscillating Foam Monitors, which are situated at diagonally opposing points on the helipad, taking into account the whole of the helipad which are operated by an emergency control switch at both the top and bottom of the access ramp. Each monitor is capable of delivering 500/min of foam in 10 minutes.
- Two Fire Pumps a primary pump and a back-up pump are provided, both pumps are connected to the system so there will be a minimum delay in change over in the event of a failure.
- Foam Supply Adequate foam supplies are provided to delivery foam for 10 minutes with a 100% back-up of supply.
- Back-up Extinguishing Agent 50kgs of dry power and 20kgs of Co2 are provided at in the Helipad compound as back-up supplies.
- Water Supply A 5,500 litre storage tank to feed the monitors is provided, the tank is topped up from a high volume water main.
- Helicopter Crash Rescue Equipment Scale H2 a box with the following crash rescue is provide which is located at the bottom of the fire escape ladder underneath fire pump nearest top of ramp
  - 1 Adjustable Wrench
  - 1 Axe aircraft type -Large
  - 1 bolt cropper 60 cm
  - 1 crowbar 105 cm
  - 1 Grab hook
  - 1 Heavy Duty Hacksaw complete with 6 spare blades
  - 1 Fire Resistant Blanket
  - 1 15m x 5m lifeline
  - 1 harness knife with sheath
  - 1 fire resisting blanket
  - 2 pairs fire resisting gloves
  - 1 set screwdrivers
  - 1 Side cutting Pliers –Aviation Snips
  - Harness Knife and Sheath
  - Eclipse type saw

- 3m Ladder “marked Helipad Use only” stored with Crash Rescue Equipment

4.9 Night Flying Procedures

There is no change to daytime procedures for night flying, but it is particularly important to remember that STH is responsible for informing the air ambulance operator if the pad is not operational for a landing, for example failure of lighting or an immovable object.

4.10 Large helicopter landing

It is the responsibility of Operators to inform STH of any helicopters over 7.5 tonnes, on receipt of this information or ED nurse in charge must inform:
  - Helipad Manager (in working hours)
  - Security (to close road and pedestrian access around helipad)
  - Estates (to ensure staff/contractors on rooftops under flight path are aware.)
This should be done via the contact numbers detailed earlier and providing ETA.

5. Helicopter Movements

A Helicopter movement is defined as a landing, or take off / departure, of the Helicopter.

5.1 Notification of Helicopter Movement

HEMS and Air Ambulance Operators are required to alert the Emergency Department at STH regarding all flights wishing to land at the Helipad. This is via the ‘red phone’ number 0114 2437981 direct to the staff in the ED resus room.

The Helipad Team Standard Operating Procedure is then activated.

5.2 Security

The Security team will assist the operations of the helipad when there is unauthorised access to the Helipad or other situation where their intervention is appropriate.

On Notification of helicopter being on route, ED staff will provide ETA to security who will attend (unless unable due to a current security issue) to warn pedestrians to move away from the flight path and vicinity of the Helipad.

In the rare event of an incoming aircraft being over 7.5 tonnes, it is the responsibility of the operator to inform STH, and for security to ensure no pedestrian movement within a 50m radius.

5.3 Communicating With the Aircraft

It is not envisaged that STH should need to communicate with an incoming aircraft, except to inform them that the Helipad is unsafe for landing. In this, or other exceptional circumstances, the following agencies should be contacted:

- **Yorkshire Air Ambulance Airdesk 01924 584286** – for cascade to YAS, Medical Incident Commanders
- **East Midlands Ambulance Service HEMS desk 0115 9675090** – for cascade to EMAS, HM54, HM29, Medical Incident Commanders
- **West Midlands ‘Whisky Alpha’ desk 01384 246326**

5.4 Flight Deconfliction

It is the responsibility of the STH ED staff to inform an aircrew who are pre alerting a patient, if there is another aircraft already on the pad or inbound. It is then the operators’ responsibility to liaise as regards to landing priorities.

5.5 Overdue Aircraft

In the event that there is an excessive delay in the arrival of an aircraft compared to the expected time given at pre alert, the Helipad Team should contact the relevant operator desk:
5.6 Helicopter Stuck on Pad / Prolonged Stay

In the event that a helicopter is unable to take off from the helipad, the aircrew should liaise with the Helipad Manager or ED Nurse in Charge and the following should occur:

- Alert other operators as per section 4.3 that helicopter landing is prohibited
- Involve STH Security as Aircraft will need to be safe
- Apply ‘landing prohibited’ banner to helipad deck (if possible)

5.7 Unexpected aircraft arrival

If an aircraft is seen or heard to be landing on the Helipad without a pre alert call, a visual check of the helicopter should be made. If the livery on the helicopter is recognised the helipad team should assemble on the ramp and the patient should then be transferred in the usual fashion to the ED for triage and appropriate clinical management.

If the helicopter is unrecognised Security should be contacted via “2222”, no approach should be made.

The unexpected arrival should be reported to the Helipad Manager for further investigation.

6. Helipad Log Book

It is the responsibility of the Helipad operators to record all of their operational activity (movement being arrival or departure). This may be checked by the Border Agency; records should be kept for up to 12 months for their inspection.

A current log sheet (Appendix K) will be kept for completion by air crew prior to departure. Historic movement log sheets will be kept in Helipad Managers office and PDF scanned to a dedicated folder.

7. Complaints

In order to comply with the requirement to handle and monitor any complaints received by the Trust in relation to the Helipad operations, the following procedure will be adopted:

All complaints and queries received by telephone will be referred to the Helipad Manager through the Switchboard or directly at the numbers above, If the Helipad Manager is not available Switchboard will record the name and address of the caller, and when possible forward details by email to the Helipad Manager. The Helipad Manager will follow STH incident reporting procedure if appropriate.

8. Safeguarding of flight paths

Sheffield City Council Planning and Development department have been issued an ArcGIS shape file showing the agreed primary flight paths to integrate into their planning notification
system. Should any development be proposed within these flight paths at such a height which may cause obstruction, the Council will notify Paul Walker, Helipad Manager for A&E with details of the proposal. An assessment of impact on the flight path should be made and comments given back to Sheffield Council. Consideration to the requirements for obstruction lighting should also be considered.
Appendix A – compliance with CAP 1264

SHEFFIELD NORTHERN GENERAL HOSPITAL
HELIPAD AUDIT REPORT ON HANDOVER INSPECTION

Introduction
A site visit and inspection was undertaken on 26th February 2016 in accordance with the ICAO Annex 14 Volume 2, The Department of Health, Health Building Note 15-03 “Hospital Helipads” and Peter’s Rover’s Feasibility Report.
The follow persons were present during or part of the site visit and inspection:
Terry Marsden Airport Operational Services Ltd
Leigh Shearstone Estates Sheffield Northern General Hospital
Lewis Black James Totty Partnership
Ryan Spencer Henry Boot Construction Ltd
John Ibbotson Fire Officer Sheffield North General Hospital (For RRRS Issues only)

This Document forms the outcome of the site visit and Inspections including details of any Actions required. This Helipad checklist is taken from CAP 1264 “Standards for Helicopter landing areas at Hospital” was used as the check list to carry on the Inspection and therefore fully complies with CAP 1264 which was issued by the CAA in March 2016.

1. Helipad Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>27m x 25m</td>
<td>None</td>
</tr>
</tbody>
</table>

2. Surface Landing Area Conditions

<table>
<thead>
<tr>
<th>Surface</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowcrete Hard wearing solvent free fire and slip resistant water proof membrane, All New</td>
<td>None</td>
</tr>
<tr>
<td>FEC Safety Netting drop test certificate supplied by the manufactures, no gaps found</td>
<td>None</td>
</tr>
<tr>
<td>Helicopter tie downs installed</td>
<td>None</td>
</tr>
<tr>
<td>Tested no Leaks found</td>
<td>None</td>
</tr>
<tr>
<td>No protruding bolts found</td>
<td>None</td>
</tr>
</tbody>
</table>

3. Helideck Lighting

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designed to Building note 15-03 requirements</td>
<td>None</td>
</tr>
<tr>
<td>Visual Night Test Carried out – Satisfactory good visual Patten</td>
<td>Night flight check to be carried out</td>
</tr>
<tr>
<td>Lighting on wall of ramp, all street lamps that were close to the Helipad were lower below the level of the helipad or removed</td>
<td>None</td>
</tr>
<tr>
<td>The Helipad is connected to the Hospital’s standby generator system</td>
<td>None</td>
</tr>
</tbody>
</table>
### 4. Environment

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Required</th>
<th>Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Wind Tunnel Testing</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.2 Minimum 3m Air Gap beneath</td>
<td>Yes</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>4.3 Turbulence generators, Flues and other exhausts</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>4.4 Adjacent fixed mobile structures, and turbulence generators</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>4.5 Choice of preferred approach and departure paths</td>
<td>Two approach and departure paths separated by 150° in azimuth free of obstructions 30m wide one into the prevailing wind</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Obstacle Protected Surfaces

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Obstacle free Sectors</td>
<td>There are two flight paths separated by 180° all obstacles that are close to the flight path within the hospital complex carry red obstruction lights. A safeguard chart to be lodged with local planner is been prepared out to 3kms at 5%</td>
<td>None Safeguard Chart in place with Sheffield City Council Planning Department</td>
</tr>
<tr>
<td>5.2 Obstacles on the or close to the Operational Surface</td>
<td>There are no obstacles within the operational surface exceeding 25mm. There is a safety rail on the roof of the Metabolic Bone Unit which the top rail to be marked with reflective Red/White Markers a sign “Hi Line” to be remove</td>
<td>None Rail now marked with Red/white tape and sign removed</td>
</tr>
</tbody>
</table>

### 6. Visual Aids

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Markings</td>
<td>All markings in Flowcrete which is a Slip resistant product when wet or dry</td>
<td>None</td>
</tr>
<tr>
<td>6.2 General Condition</td>
<td>All markings are new; the Yellow touchdown/lift circle needs a second coat</td>
<td>Yellow Circle second coat applied 9th April</td>
</tr>
<tr>
<td>6.3 Hospital Markings</td>
<td>The white cross with a red “H” displayed</td>
<td>None</td>
</tr>
<tr>
<td>6.4 Touchdown/Lift off Circle</td>
<td>A Yellow Touchdown/Lift off displayed but requires a second coat</td>
<td>Second Coat Applied 9th April</td>
</tr>
<tr>
<td>6.5 “D” Value Marked</td>
<td>Not required</td>
<td>None</td>
</tr>
<tr>
<td>6.6 Maximum allowable mass</td>
<td>10.0 t displayed</td>
<td>None</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>6.7</td>
<td>Illuminated Wind Indictor</td>
<td>An 8-foot Dayglow orange illuminated wind indictor is displayed None</td>
</tr>
<tr>
<td>6.8</td>
<td>Perimeter Lighting</td>
<td>32- Green LED perimeter lights are displayed spaced at 3m None</td>
</tr>
<tr>
<td>6.9</td>
<td>Floodlighting</td>
<td>4- LED Anti glare at the centre of each side of the helipad None</td>
</tr>
<tr>
<td>6.10</td>
<td>Obstruction Lights</td>
<td>There are the following LED Obstruction lights on Hospital buildings 1- Bev Stokes building 1 – Day Surgery Unit 1- Sorby 1- Huntsman 1-on Windsock all obstruction lights are service + Standby None</td>
</tr>
<tr>
<td>6.11</td>
<td>Marking of dominant obstacles</td>
<td>There is a safety rail and a sign at the side nearest to the helipad on the Metabolic bone unit None Rail Marked Red/White tape and sign removed</td>
</tr>
<tr>
<td>6.12</td>
<td>CCTV</td>
<td>There is a CCTV Camera trained on the Helipad with a monitor at the Resus desk in the ED Department None</td>
</tr>
<tr>
<td>6.13</td>
<td>Anemometer</td>
<td>There is a Anemometer that can be accessed by mobile phone which also gives Temperature, Dew point and QNH None</td>
</tr>
<tr>
<td>6.14</td>
<td>Helipad de-icing facility</td>
<td>The Helipad and Ramp and fitted with a de-icing system None</td>
</tr>
<tr>
<td>6.15</td>
<td>Shielding of ambient lighting</td>
<td>All the street lights close to the helipad have been lowered below in height or removed but a night flight check need to be carried out Carry out night flight check</td>
</tr>
<tr>
<td>6.16</td>
<td>Glide slope</td>
<td>Not Required None</td>
</tr>
<tr>
<td>6.17</td>
<td>Helipad Beacon</td>
<td>Not Required None</td>
</tr>
<tr>
<td>6.18</td>
<td>Other Lighting</td>
<td>None required None</td>
</tr>
</tbody>
</table>

### 7. RFFS Provisions

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>RFFS Protection</td>
<td>H1 up to but not including 15m None</td>
</tr>
<tr>
<td>7.2</td>
<td>Day and Night</td>
<td>Available both day and night None</td>
</tr>
<tr>
<td>7.3</td>
<td>Refuelling</td>
<td>No refuelling available None</td>
</tr>
</tbody>
</table>

### 8. Extinguishing Equipment and Media

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td>Fire Protection and Completion Certificate</td>
<td>Not yet Issued, Pending Certificate to be issued</td>
</tr>
<tr>
<td>8.2</td>
<td>Principal Fire fighting agent and certificate of conformity</td>
<td>Foam, waiting for foam test of system Re Test Carried 1st April Test Certificated issued</td>
</tr>
<tr>
<td>8.3</td>
<td>Location</td>
<td>Below Helipad in Plant room None</td>
</tr>
<tr>
<td>8.4</td>
<td>Quantity</td>
<td>300 litres</td>
</tr>
<tr>
<td>-----</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>8.5</td>
<td>Shelf life</td>
<td>10 years</td>
</tr>
<tr>
<td>8.6</td>
<td>Foam Monitor</td>
<td>There are two Foam Monitors</td>
</tr>
</tbody>
</table>

**9. Extinguishing Media (Water)**

| 9.1 | Water Supply rate | 500 litres per minute | None |

**10. Platform**

<table>
<thead>
<tr>
<th>10.1</th>
<th>Access</th>
<th>There are three access points to the Helipad</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2</td>
<td>Fire Fighting Platforms</td>
<td>There are two Fire fighting platforms</td>
<td>None</td>
</tr>
<tr>
<td>10.3</td>
<td>Emergency egress</td>
<td>There are three Emergency egress points</td>
<td>None</td>
</tr>
<tr>
<td>10.4</td>
<td>Waterproof storage cabinet</td>
<td>Yes</td>
<td>None</td>
</tr>
<tr>
<td>10.5</td>
<td>Rescue Equipment</td>
<td>Yes</td>
<td>None</td>
</tr>
</tbody>
</table>

**11. Discharge Test**

<table>
<thead>
<tr>
<th>11.1</th>
<th>Water and Foam discharge output test</th>
<th>Water and foam Tested</th>
<th>Re Test Carried on 1st April 16 certificate issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.2</td>
<td>Isolate each monitor</td>
<td>Tested</td>
<td>None</td>
</tr>
<tr>
<td>11.2a</td>
<td>Jet Range</td>
<td>Tested full cover of Helipad</td>
<td>None</td>
</tr>
<tr>
<td>11.2b</td>
<td>Spray Pattern</td>
<td>Tested full cover of Helipad</td>
<td>None</td>
</tr>
<tr>
<td>11.3</td>
<td>Operate hose line</td>
<td>N/A</td>
<td>None</td>
</tr>
<tr>
<td>11.4</td>
<td>Refill Test</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
<tr>
<td>11.5</td>
<td>Foam Sample Test</td>
<td>Tested</td>
<td>Tested 1st April 16 Certificate issued 4th April 2016</td>
</tr>
<tr>
<td>11.5a</td>
<td>Induction</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
<tr>
<td>11.5b</td>
<td>Expansion</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
<tr>
<td>11.5c</td>
<td>Drainage</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
<tr>
<td>11.6</td>
<td>Flush System</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
<tr>
<td>11.7</td>
<td>Replenish</td>
<td>Tested</td>
<td>Tested 1st April 16</td>
</tr>
</tbody>
</table>

**12. RFFS Domestic Accommodation**

| 12.1 | Accommodation facility | N/A | None |

**13. Fire-fighters PPE**

| 13.1 | Helmets, Tunic etc | N/A | None |
### 14. Staffing Levels and Emergency Procedures

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>Normal and Emergency access/egress points</td>
<td>The normal access to the Helipad is via the Ramp there are to Emergency egress points one each side of the Helipad</td>
</tr>
<tr>
<td>14.2</td>
<td>Building/LFB Alert system</td>
<td>There is a telephone provided at the top of the ramp</td>
</tr>
<tr>
<td>14.3</td>
<td>Normal and emergency communication</td>
<td>Normal and Emergency is by telephone provided at the top of the ramp</td>
</tr>
<tr>
<td>14.4</td>
<td>Warning signs</td>
<td>Helicopter warning signs in place</td>
</tr>
<tr>
<td>14.5</td>
<td>No Fly Flag</td>
<td>Not required as use of Helipad is strictly PPR</td>
</tr>
<tr>
<td>14.6</td>
<td>Provision of a Helipad operating manual</td>
<td>Been written out a present as a draft document</td>
</tr>
<tr>
<td>14.7</td>
<td>RFFS Crew Levels</td>
<td>Crews from Hospital staff, training completed</td>
</tr>
<tr>
<td>14.8</td>
<td>RFFS Training</td>
<td>Training completed to the standard required by the Hospital Fire Officer</td>
</tr>
<tr>
<td>14.9</td>
<td>RFFS Rescue Equipment</td>
<td>H1/H2 Rescue box with 3m Ladder</td>
</tr>
<tr>
<td>14.10</td>
<td>Medical Equipment</td>
<td>Medical Equipment at A&amp;E Department on the bottom of the ramp</td>
</tr>
<tr>
<td>14.11</td>
<td>Emergency Planning</td>
<td>Meeting required with South Yorkshire Fire and Rescue Service</td>
</tr>
<tr>
<td>14.12</td>
<td>Arrangements with LAFRS</td>
<td>A familiarisations visits are required By South Yorkshire Fire and Rescue Service</td>
</tr>
<tr>
<td>14.13</td>
<td>Off helipad Incident response</td>
<td>This will be a 999 call to for the emergency services to attend this will be in the Hospital emergency procedures</td>
</tr>
<tr>
<td>14.14</td>
<td>Bird Scaring</td>
<td>This will be the Human method</td>
</tr>
</tbody>
</table>

### 15. Safeguarding

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1</td>
<td>Safeguarding Map</td>
<td>A safeguarding map should be prepared for the local planners</td>
</tr>
</tbody>
</table>

The Document forms the outcome of the site visit and inspection including details of Actions required

Report produced by:
Terry Marsden

Terence D. Marsden

Airport Operational Services Ltd  29th February 2016  Updated 12th April 2016
Appendix B: Fire Safety Certificate

Foam System Test Certificate.

System: Sheffield Hospital Helideck
Manufacturer: FireMix FM800/3
Date of Test: 01-04-2016
Tester: K Pearson
Service Test: Foam Percentage Test

<table>
<thead>
<tr>
<th>Description</th>
<th>Monitor</th>
<th>Left H/Line</th>
<th>Right H/Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Induction Percentage</td>
<td>3.4%</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note: CAP 168 Appendix 8E expresses following requirements:
Foam Induction for 3% foam is between 3-4%

Conclusion:
The induction for the foam system to monitor is satisfactory as per sample test.

Signed: A G Hawkes
Name: A G Hawkes
Date: 08-04-2016
Appendix C: Landing Site Directory
HAZARDS AND AVOIDS AFFECTING THE SITE

Hospital buildings surround site but most are below level of the helideck
Windsock on building in NW corner – avoid approaches/departures in this sector
Pilots must remain alert to the possibility of pedestrians and vehicular movements in vicinity of helipad / abort any landings/take-offs which may prove hazardous to 3rd parties on the ground and seek assistance from hospital security staff
Automatic fire suppression requires manual activation by the ED porter
Local weather information available from automated weather station on site. Text U0000s to 07825 326523 and local weather information will be received back
Emergency exits are via hatches and vertical ladders
### Appendix D: Risk Assessments

#### RISK ASSESSMENT FORM

<table>
<thead>
<tr>
<th>Department / Directorate</th>
<th>Description of risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helipad, Emergency Medicine</td>
<td></td>
</tr>
</tbody>
</table>

**Helipad – Downwash from helicopters**

**Risk** - The downwash (gusting winds generated by helicopter rotors) from helicopters landing and departing from the helipad may affect pedestrians in the immediate vicinity of the helipad, causing them to become destabilised and potentially fall +/- injury. Elderly or physically frail people may be at greater risk.

**Information - Civil Aviation Authority Standards for helicopter landing areas at hospitals**

The severity of downwash experienced is related to the mass of the helicopter, the diameter, and design of the rotor disc and the proximity of the helicopter to the surface. The characteristics of downwash from some helicopters are known to exhibit a hard jet, as opposed to a soft cushion, which although more localised in its impact, a hard jet tends to be more intense and disruptive on the surface. The intensity of the downwash may be affected by the dissipating action of any wind present or by the screening effect of local features such as buildings, trees, hedges etc. The downwash in an area beneath large and very large helicopters, and beneath even a small helicopter operating at high power settings (such as are used during the upwards and rearwards portion of take-off manoeuvre by some air ambulance types) can be intense, displacing loose hoardings and blowing grit and debris at persons, property or vehicles in the vicinity of the heliport.

All helicopters in flight create a downward flow of air known as downwash. The severity depends on the weight of the helicopter, the dissipating effect of wind, and disruption by screening in the form of buildings, trees, hedges and walls. The downwash in a small area underneath large SAR and military helicopters can be intense, displacing loose hoardings and blowing grit and debris at people, cars and buildings in the immediate vicinity. The loose objects can then be a risk to the helicopter if they are carried into the rotor blades or engines by re-circulating airflows. Old and infirm people are particularly susceptible to the wind strength of downwash. For small, light ambulance helicopters, the effect is greatly reduced but should still be considered; a 30 m downwash zone around the helipad should be kept clear of people, parked cars and buildings. However, the most effective mitigation is to raise the helipad above areas used by the public and NHS employees. Raised sites reduce the downwash effects considerably, and high elevated or rooftop sites remove the risk.

**Test flight**

A test flight was undertaken by the Yorkshire Air Ambulance on 7th April 2016. STH staff were positioned on pavements surrounding the helipad during landing and take-off. It was evident that the downwash was significant for staff stood directly under the flight path of the helicopter at a distance of 6 metres from the helipad, as the staff
member’s balance was affected, causing her to become unsteady. Therefore there is a significant risk to patients/staff/members of the public of falls +/- injury due to becoming destabilised from the downwash of the helicopter.

Signage to indicate that there is a helicopter landing zone and helicopter warning signs. Early warning of approaching/departing helicopter due to noise and physical presence. Steep angle of approach/departure by the helicopter will reduce the force of the downwash, meaning that the most significant effect of the downwash will be confined to the helipad itself. Pilots can identify any potential risks during approach/departure (less so at night, but also many less pedestrians in the area at night)

Discussed at CIT on 28th April 2016. Chief Operating Officer and Deputy Chief Nurse accepted the risk with action plan below.

<table>
<thead>
<tr>
<th>Existing controls in place when risk was identified</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial Risk Score i.e. with existing controls in place</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequence (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>Likelihood (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>Risk Score (1-25)</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action Plan to reduce the risk to an acceptable level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of actions</td>
<td>Cost</td>
</tr>
<tr>
<td>Register risk on DATIX (for all risks &gt; 3)</td>
<td>nil</td>
</tr>
<tr>
<td>Security will attend (unless dealing with a current security incident they cannot leave) to warn pedestrians to move away from the flight path</td>
<td>Nil</td>
</tr>
<tr>
<td>Helipad Team will ask pedestrians to move away from the flight path</td>
<td>Nil</td>
</tr>
<tr>
<td>Put additional signage both inside and outside the Metabolic Bone Centre warning patients/visitors/staff of the risk of downwash from low flying helicopters</td>
<td>Deputy Director of Estates</td>
</tr>
<tr>
<td>Ensure patients attending the Metabolic Bone Centre are aware of the risk by including information on appointment letters</td>
<td>Lead Governance Coordinator - MSK</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Risk Score i.e. after full implementation of action plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequence (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>Likelihood (1-5)</td>
<td>3</td>
</tr>
<tr>
<td>Risk Score (1-25)</td>
<td>9</td>
</tr>
<tr>
<td>Date for completion</td>
<td>June 2016</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment undertaken by:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Job title</td>
</tr>
<tr>
<td>Lead: Paul Walker</td>
<td>Deputy Operations Director / Helipad Operational Manager</td>
</tr>
<tr>
<td>Esther Fulls</td>
<td>Risk Lead, Emergency Care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of assessment</th>
<th>Date of next review</th>
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<tbody>
<tr>
<td>20th April 2016</td>
<td>October 2016</td>
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</table>
## RISK ASSESSMENT FORM

<table>
<thead>
<tr>
<th>Department / Directorate</th>
<th>Description of risk</th>
<th>Existing controls in place when risk was identified</th>
</tr>
</thead>
</table>
| Helipad, Emergency Medicine | Task – Transfer of patient from helicopter to Emergency Department (ED)  
Risk of injury to staff due to spinning helicopter blades/tail rotor/fenestron  
Risk of injury to staff/patients from moving and handling patient from helicopter to ED  
Risk of slips, trips and falls on helipad or ramp | Helipad departmental protocol stating safe position to wait on ramp until signalled by crew to approach the helicopter  
Moving and handling risk assessment  
Suitable patient movement trolley (Stryker EMS Power Pro)  
Underfloor heating on ramp and helipad will prevent formation of ice  
Personal protective equipment – high visibility jackets  
Staff training to include the helipad departmental protocol |

### Initial Risk Score i.e. with existing controls in place

<table>
<thead>
<tr>
<th>Consequence (1-5)</th>
<th>Likelihood (1–5)</th>
<th>Risk Score (1 – 25)</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
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</table>

### Action Plan to reduce the risk to an acceptable level

<table>
<thead>
<tr>
<th>Description of actions</th>
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<th>Responsibility (Job title)</th>
<th>Completion Date</th>
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<tbody>
<tr>
<td>Register risk on DATIX (for all risks &gt; 3)</td>
<td>nil</td>
<td>Risk Lead</td>
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### Target Risk Score i.e. after full implementation of action plan

<table>
<thead>
<tr>
<th>Consequence (1-5)</th>
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<th>Risk Score (1 – 25)</th>
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### Assessment undertaken by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Job title</th>
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<tbody>
<tr>
<td>Lead: Paul Walker</td>
<td>Deputy Operations Director / Helipad Operational Manager</td>
</tr>
<tr>
<td>Esther Fulls</td>
<td>Risk Lead</td>
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</table>

<table>
<thead>
<tr>
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<th>Date of next review</th>
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</thead>
<tbody>
<tr>
<td>25th February 2016</td>
<td>October 2016</td>
</tr>
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</table>
## HAZARDS PRESENT

- Risk of injury to YAA staff from falling off the Heli-pad.
- Risk of crashing on the Heli-pad due to Aircraft Failure.
- Risk of falling down the escape ladders in case of emergency on the Heli-pad.
- Risk of damage to vehicles and injury to hospital staff and pedestrians on landing and take-off from the Heli-pad.

### CURRENT RISK LEVEL

**Risk Probability – likelihood of hazard causing harm**

- Almost inconceivable
- Improbable
- Remote
- Occasional
- Frequent

**Risk Severity – degree of harm, should it occur**

- Negligible
- Minor
- Major
- Hazardous
- Catastrophic

### CURRENT RISK EVALUATION

- Very Low
- Low
- Medium
- High
- Very High
Northern General Sheffield Heli-pad

CONTROL MEASURES REQUIRED

- The heli-pad is fitted with catch meshing 360 degrees round and tested by the site safety team.
- Always follow the YAA HLS directory procedures for flying onto and out of the Heli-pad. The Heli-pad is fitted with 2 fire suppression hoses that can be activated by any member of attending hospital staff from the top and bottom of the ramp and the bottom of both escape hatches.
- Both escape hatches are identical positioned in opposite corners of the Heli-pad. Make yourself familiar with these on your first visit. There is an electronic push button at the bottom of each ladder to exit the door.
- Due to the proximity to the A&E approach road vehicles and pedestrians could be under the flight path from most approach headings, Northern General Hospital have done their own risk assessment on the down draft and will monitor. It possible it would be prudent to close the approach road to A&E for the few seconds it takes to fly over it on arrival and departure.
- All YAA crews are to do a day landing to familiarize themselves before conducting night operations to the Heli-pad.

Measures in place

YES  NO

FURTHER CONTROLS REQUIRED

Helicopter landing site directory produced by YAA to be adhered to at all times.
Safety of crews and members of the public are paramount to YAA and we must ensure correct safety protocols are followed at all times.

RESIDUAL RISK LEVEL

Risk Probability – likelihood of hazard causing harm

- Almost Inconceivable
- Improbable
- Remote
- Occasional
- Frequent

<table>
<thead>
<tr>
<th>Risk Severity – degree of harm, should it occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
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<td>1</td>
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RESIDUAL RISK EVALUATION

<table>
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<tr>
<th>Probability</th>
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<tr>
<td>Very Low</td>
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<tr>
<td>Medium</td>
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<tr>
<td>High</td>
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<td>Very High</td>
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<table>
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<th>Value</th>
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<tr>
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<td>4.5</td>
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<td>6</td>
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</tbody>
</table>

Actions

- Risk Assessment incorporated by Safety Manager
- Reviewed by Safety Manager

Signature

Date

© Yorkshire Air Ambulance 2015
Appendix E – Information to local operators

Sheffield Northern General Helipad
Advice for helicopter operators and ambulance control rooms

All incoming helicopters to the helipad must be alerted to the Emergency Department (ED) pre alert phone 0114 2437981, this facilitates the helicopter being met by staff able to move a patient from the helipad and who are able to deal with any emergencies which may arise and gets the lights turned on, pad checked by CCTV etc.

If your helicopter is greater than 7500kg all up weight, please make us specifically aware on the pre alert, as we have to close the road etc due to down draft – this is not calculated to be necessary for all of our usual air ambulances in 2016.

If the lights are on, you can assume we are ready for you to land. You will see people in high vis jackets too. If the lights are not on, please do not land: contact us immediately via control.

As standard, any helicopter will be met by 2 staff with a trolley set up for a major trauma patient. If you are bringing a less injured patient eg because of their location / medical patient this is fine – but please make this clear on the pre-alert call.

An ED porter will keep in contact with the aircrew and will return to the helipad once the helicopter is ready to re-start. Please do not start until they are in place – they are there for emergency actions. Once helicopter has lifted off and no longer visible, they will return to the ED and turn off the lights.

The gate to the base of the ramp will be kept securely locked at all times. We will issue an access card to Helimed 29, 53, 54, 98, 99, so they can get back onto the pad themselves.

Local weather information is available from an automated weather station on site. Send a text message U0000s to 07825 326523 to access this and it will text you back local weather information. [This does not turn on the lights – only we will turn the lights on and off, even though as you may be aware they can be activated by text and radio.]

Anchor points are available on the pad to enable blades to be tied down if needed.

Emergencies:

In case of obviously significant helicopter fire, there is a fire suppression system on the helipad, which needs manual activation, usually by the ED porter. They will normally wait until given direction by the pilot unless there is an obvious catastrophic fire. Fire extinguishers are available for aircrew use and if safe certain trust staff also, as is a box of rescue equipment. There are 2 escape hatches on the helipad in case the access ramp becomes unusable due to an emergency.

If anything leaks from a helicopter, we will ask you to liaise with our estates team to help identify whatever it is and any precautions which may need to be taken.

Notes:

Patients accepted for PPCI by the cardiac catheter lab must also be phoned to the ED red phone by ambulance control to allow the above actions to happen. These patients will be taken directly to the cath lab by the ED porter and the air ambulance crew, unless otherwise agreed.

The helipad surface and ramp are heated so should be clear of ice and snow. The pad is available 24 hours a day, every day of the year.

There is a water supply tap on the ramp for your use.

Please let us know of any comments as soon as possible after they occur – ideally by email to both stuart.reid@sth.nhs.uk and justin.squires@sth.nhs.uk, or by phone to 0114 2714741 if urgent.
Appendix F - Helipad Team, Summary of Training

Summary of Helipad Training
Initial (longer) training sessions, including input from external fire trainers: 2hr 30 mins
48 persons attended one of the longer sessions.

Subsequent shorter in-house sessions: 40 minutes
52 persons attended one of the short sessions (as of 13.04.16) but more every week.

<table>
<thead>
<tr>
<th>Content of Helipad Training</th>
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<tbody>
<tr>
<td>(Classroom session followed by walk-through of process and familiarisation to area)</td>
</tr>
</tbody>
</table>

**Standard procedures:**
- Receiving pre-alert call
- Operation of landing lights via 'Mimic'
- Check of Landing Area
- Safety apparel (PPE)
- Transfer equipment (trolley, sheet, oxygen, suction)
- Standard gate access
- Waiting area
- Safe approach to aircraft
- Warning pedestrians in vicinity of helipad
- Patient transfer
- Patient movement (to ED or to Cardiac catheters)
- Observe safe take-off
  - Nature of hazards associated with helicopter operation*
  - Further information on helicopter fires*

**Contingencies/emergencies**
- Gate: manual override procedure
- Diverting aircraft if landing area not clear
- Procedures to clear landing area and surroundings (estates/security)
- Raising alarm in case of emergency
- Fire: activating fire suppression.

*these subjects covered on longer sessions but not on short session
Appendix G – Helipad Team Activation Card

Helipad Activation Action Card

1. STH ED alerted to incoming helicopter by ambulance control / air ambulance crew, via ED red phone, ETA given. Should there be another inbound helicopter, one already on the pad etc., inform the air crew and ask them to liaise with the other helicopter. [If they say they need to inform us that they are in a heavy helicopter (>7500kg), bleep security on 2222 to request closure of roads round helipad to protect from greater downdraft – this does not apply to any of our usual helicopters.]

2. Ten minutes before ETA, 2 trained staff, probably one ED orderly and one other trained staff member:
   - Turn on the helipad lights at the control panel in resus. Press silver button top right and enter 0000. Press silver key top left, then again when activate and again to confirm. The lights will activate in around 30 seconds time, the box will alarm when they are activated and should be silenced with the red CAN button
   - Check on resus CCTV monitor that pad is clear of obvious debris. If there is anything visible attend pad to remove it (if safe) prior to helicopter being visible, otherwise contact ambulance control – numbers at end of document and inform them the pad is not to be used, turn off the lights, then ask nurse in charge to contact estates (for object on pad) or security (unauthorised person on pad) to resolve problem.
   - Check Fire engine bays are empty (landing can proceed but security must be aware)
   - Phone 2222, tell switchboard: “incoming helicopter please inform security”
   - Put on STH high vis clothing as appropriate [located in corridor to CT from resus.]

3. Take helipad trolley [located between resus external doors] to helipad ramp. Undo its combination lock code 2222.

4. Open helipad ramp gate using your security access card on the card reader. If the gate fails, this can be over-ridden (see gate override process). The gate will automatically shut after 20 seconds unless sensor indicates obstruction to gate closing.

5. Activate ramp lights as required, (low level switch to left side). Take trolley to waiting area at top of ramp. If time permitted perform circuit of helipad and warn pedestrians of helicopter arrival. STOP ON THE RAMP before the sign and await helicopter and give verbal warning to anyone seen under flightpath.

6. On landing, when rotors fully stopped, the aircrew step out and indicate you to approach, bring trolley to side of helicopter and transfer patient.

7. Convey patient to resus. Trolley supported by ED staff and aircrew.

8. An ED orderly will keep in contact with the aircrew and will return to the helipad once the helicopter is ready to re start.

9. Ask helicopter crew to complete movement log

10. The lights need to be on for take off, so if they have gone out on the timer, turn them back on again as above.

11. Liaise with pilot for direction of take off, warn pedestrians under flight path to stand clear
12. Once helicopter has lifted off AND NO LONGER VISIBLE, the ED orderly will:

- visually check the pad for any obvious signs of fuel leak or damage, if these are visible inform the nurse in charge to contact estates to resolve problem and in case of potential fuel leak contact ambulance control to inform aircrew.

- Turn off the helipad lights at the control panel in resus: Press silver button top right and enter 0000. Press silver key top left, then again to de-activate and again to confirm. The lights will switch off in around 30 seconds.

**Emergencies:**
In case of obviously significant helicopter fire, activate fire alarm break glass call point, then dial 2222. Wait for aircrew to evacuate if they are able to do so, then activate remote extinguisher system via switch in cabinet. [Select position I or II according to conditions and separate training]
In case of helipad crash landing or any other emergency, dial 2222.
Immediate assistance may be available for any emergency on the helipad from the emergency department, send someone to pitstop in first instance after above actions carried out.
Be aware there are 2 emergency escape hatches on the helipad which can be used in case of the ramp being involved in an emergency.
Any emergency fire fighting is subsequently carried out by South Yorkshire Fire Service.
There is a box of rescue equipment under the nearest helipad emergency escape hatch at ground level, primarily for Fire Service use.

**Notes:**
Usual trolley is a Stryker trolley with a sheet on top. *(Once in resus transfer the patient on their scoop stretcher to resus trolley with trauma mattress and bair hugger in place, leave the sheet on the helipad trolley on transfer. If not necessary eg minor trauma from remote location or a medical patient including for PPCI, a resus trolley and sheet is sufficient, without the bair hugger and trauma mattress.)*
Patients accepted for PPCI must also be phoned to the ED red phone by ambulance control to allow the above actions to happen. These patients will be taken directly to the cath lab by the ED porters and the air ambulance crew, unless otherwise agreed.

**Gate override process:**
The gate to the base of the ramp will be kept securely locked at all times.
If the helipad access gate fails to open there are manual override keys kept in the ED reception key store. One key will undo the magnet and one will undo the gate arm. You need to use both, then manually slowly open the gate.

**Ambulance controls:**
Yorkshire air desk: Helimeds 98, 99: 01924 584286
East Midlands HEMS desk: Helimeds 29, 53, 54: 0115 967 5090 or 0115 884 5465.
West Midlands HEMS desk (Whisky Alpha): Helimeds 03, 06, 09: 01384 246326
Contact Yorkshire air desk for a helicopter not listed and ask them to liaise.
## Appendix H – Maintenance checklist

### Helipad Fire Suppression System – Weekly Check

<table>
<thead>
<tr>
<th>Date</th>
<th>Suppression System Checked</th>
<th>Pump Reset</th>
<th>Foam Supply Reinstated</th>
<th>Interceptor System Reinstated</th>
<th>Fire Alarm Reset</th>
<th>Lights Checked</th>
<th>Comments</th>
<th>Print Name</th>
<th>Signature</th>
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</thead>
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</table>

Helipad Operational Procedure (V1)
Appendix I – Helipad Maintenance Schedule

Helipad Foam Suppression System Testing Procedure

Weekly Test
- Report to Senior Nurse or person in charge at A & E and inform them that weekly check is taking place.
- Disable Fire Suppression switch input on the Fire Alarm Panel (*panel is located adjacent to the main door in the ground floor of the main building*).
- Isolate the foam compound supply.

- Isolate the Interceptor System by operating the key switch in the main plant room.

- Activate a monitor (nozzle) by operating the 3 position switch (*Position ‘1’ activates the monitor (nozzle) nearest the plant room, position ‘2’ activates the other monitor, position ‘0’ is the default position when the system is off*). Switches are
located on the bottom and top of the ramp and on the bottom of both escape stairs. These switches are marked 1-4 and should be operated in rotation, a different one each week. Also, the monitors should be tested in rotation, a different one each week.

- Operate monitor for 1 min and check it oscillates fully providing water coverage across the pad.
- Turn off monitor by operating the 3 position switch back to the ‘0’ position.
- Turn off and reset pump (check both pumps as both may have operated,

Note:- pump will not turn off until the system pressure returns to 8 bar (see gauges) located in plant room

- Reset Fire Pump Remote Alarm Panel (Located above main pump control panels)
- Reinstate foam supply

- Re-enable Fire Alarm Suppression system switch.
- Reinstate interceptor.
- Check helipad has drained correctly.
- Activate helipad lights and check correct operation.
- Fill in log book (*located in foam plant room*)
- Inform A & E Senior Nurse of test completion
### Appendix K – Example Helicopter Movement Log sheet

**SHEFFIELD NORTHERN GENERAL HOSPITAL HELIPAD MOVEMENTS LOG**

<table>
<thead>
<tr>
<th>DATE</th>
<th>REG</th>
<th>TYPE</th>
<th>OPERATOR</th>
<th>FROM</th>
<th>ATA</th>
<th>TO</th>
<th>ATD</th>
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<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Apr 16</td>
<td>GCEMS</td>
<td>MD901</td>
<td>Yorkshire AA</td>
<td>Rotherham</td>
<td>11:04</td>
<td>Nostell</td>
<td>11:32</td>
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</table>
# Appendix L – Summary of Useful Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Harper</td>
<td>Chief Operating Officer</td>
<td>0114 2714559</td>
<td><a href="mailto:Michael.Harper@sth.nhs.uk">Michael.Harper@sth.nhs.uk</a></td>
</tr>
<tr>
<td>Paul Walker</td>
<td>Deputy Operations Director</td>
<td>0114 2715421</td>
<td><a href="mailto:Paul.walker2@sth.nhs.uk">Paul.walker2@sth.nhs.uk</a></td>
</tr>
<tr>
<td>Stuart Reid</td>
<td>Consultant Emergency Medicine</td>
<td>0114 2269249</td>
<td><a href="mailto:Stuart.Reid@sth.nhs.uk">Stuart.Reid@sth.nhs.uk</a></td>
</tr>
<tr>
<td>Justin Squires</td>
<td>Consultant Emergency Medicine</td>
<td></td>
<td><a href="mailto:Justin.Squires@sth.nhs.uk">Justin.Squires@sth.nhs.uk</a></td>
</tr>
<tr>
<td>Andy Lister</td>
<td>YAA – Chief Pilot</td>
<td>07785 622428</td>
<td><a href="mailto:A.Lister@yaa.org.uk">A.Lister@yaa.org.uk</a></td>
</tr>
<tr>
<td>Gary Spender</td>
<td>Derby, Leicester and Rutland – Air Ambulance</td>
<td>01604 790 595</td>
<td><a href="mailto:GSpender@sloanehelicopters.com">GSpender@sloanehelicopters.com</a></td>
</tr>
<tr>
<td>Paul Smith</td>
<td>Lincs and Notts Air Ambulance</td>
<td></td>
<td><a href="mailto:paulmcsmith@hotmail.com">paulmcsmith@hotmail.com</a></td>
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### Appendix M

#### Equality Impact Analysis

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<th>Impact Analysis</th>
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<tr>
<td>RACE</td>
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<tr>
<td>SEX (I.E. MALE / FEMALE)</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>GENDER REASSIGNMENT</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>DISABILITY (including consideration of the impact on carers of a disabled person)</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>RELIGION OR BELIEF</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>SEXUAL ORIENTATION</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>AGE</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
<tr>
<td>PREGNANCY or MATERNITY</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
</tr>
</tbody>
</table>

- Is there a potential or actual negative impact associated with this policy on people or individuals who share a ‘protected characteristic’? i.e. does this policy directly or indirectly discriminate?
- Can this policy be used to promote equality between people who share a protected characteristic and people who do not

<table>
<thead>
<tr>
<th>NOTES</th>
<th>changes/additions/ further information or advice needed</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

Helipad Operational Procedure (V1)
<table>
<thead>
<tr>
<th>Does this Written Policy or Guidance impact on the following areas?</th>
<th>NOTES changes/additions/ further information or advice needed</th>
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<tbody>
<tr>
<td>HUMAN RIGHTS i.e. Fairness Respect Equality Dignity Autonomy</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
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<tr>
<td>SOCIAL DEPRIVATION / TACKLING HEALTH INEQUALITY</td>
<td>Neutral. No positive or negative impact associated with this policy</td>
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**ACTION**

Have you identified any action that is required in addition to any changes made to the policy during policy development? Please note in brief below for reference

<table>
<thead>
<tr>
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Helipad Operational Procedure (V1)
Dr Stuart Reid and Dr Justin Squires  
Emergency Department Consultants and HEMS Doctors, The Air Ambulance Service

Paul Walker  
Deputy Operations Director – Emergency Care and Helipad Manager

Sheffield Teaching Hospitals NHS Foundation Trust  
Northern General Hospital  
Herries Road  
Sheffield  
S5 7AU

Helipad Operational Procedure (V1)