ID: DR-GGC-RISK-033

Risk Assessment Form

Use this form for any detailed risk assessment unless a specific form is provided. Refer to your Summary of Hazards/Risks and complete forms as required, including those that are adequately controlled but could be serious in the absence of active management. The Action Plan and reply section is to help you pursue those requiring action.

Name of Initial Assessor:	John McLean	**Post Held:**	MR Safety Expert
Department:	**Imaging**	**Date of initial review:**	**17/3/2015**

Subject of Assessment: E.g.: hazard, task, equipment, location, people

Scanning patients in MRI with fixed, passive, internal metal orthopaedic implants under general anaesthetic. That is, metal implants fixed to bone, with no active electrical or magnetic components and entirely implanted within the body.

Hazards (Describe the harmful agent(s) and the adverse consequences they could cause)

The strong static magnetic field of the MRI scanner has the potential to exert translational or turning forces on ferromagnetic objects. It is also known that metal implants will experience a small amount of heating during the MRI scan. There is also a theoretical concern of excessive heating as a result of the RF energy used in MRI coupling to the implant. Many patients have metal implants and are therefore vulnerable to these hazards.

For the case where the patient is anaesthetised the risk is further increased as a result of the patient being unable to respond to any excessive heating they may be experiencing.

Description of Risk
Describe the work that causes exposure to the hazard, and the relevant circumstances. Who is at risk? Highlight significant factors: what makes the risk more or less serious – e.g.: the time taken, how often the work is done, who does it, the work environment, anything else relevant.

Patients entering the MRI environment who have fixed, passive, internal metal implants may be susceptible to these hazards.

Existing Precautions	Describe how they might fail to prevent adverse outcomes.
In preparation for MRI scans being done under GA, patients complete an MRI safety checklist prior to being anaesthetised and brought to MRI. Despite the theoretical concern of excessive heating and burns, in practice, there have been very few severe burns as a result of patient with fixed, internal, passive orthopaedic implants being scanned in MRI. There have been no published cases of injuries to patients with orthopaedic spinal implants as a result of being scanned in MRI	While incidents are rare, there are still theoretical concerns about excessive levels of heating.

Level of Risk - Is the control of this risk adequate?
Give more than one risk level if the assessment covers a range of circumstances. You can use the 'matrix' to show how 'likelihood' and 'consequences' combine to give a conclusion. Also, be critical of existing measures: if you can think how they might fail, or how they could be improved, these are indications of a red or orange risk.

Risk Matrix

Likelihood	Impact/Consequences				
	Negligible	Minor	Moderate	Major	Extreme
Almost Certain	Medium	High	High	V High	V High
Likely	Medium	Medium	High	High	V High
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

Very High High Medium Low

Current risk level

Given the current precautions, and how effective and reliable they are, what is the current level of risk? **Green** is the target – you have thought it through critically and you have no serious worries. Devise ways of making the risk green wherever you can. **Yellow** is acceptable but with some reservations. You can achieve these levels by reducing the inherent risk and or by effective and reliable precautions.
High (Orange) or Very High (Red) risks are unacceptable and must be acted on: use the Action Plan section to summarise and communicate the problems and actions required.

Action Plan (if risk level is **High (Orange) or Very High (Red)**

Use this part of the form for risks that require action. Use it to communicate, with your Line Manager or Risk Coordinator or others if required. If using a copy of this form to notify others, they should reply on the form and return to you. Check that you do receive replies.

Describe the measures required to make the work safe. Include hardware – engineering controls, and procedures. Say what you intend to change. If proposed actions are out with your remit, identify them on the plan below but do not say who or by when; leave this to the manager with the authority to decide this and allocate the resources required.

Proposed actions to control the problem List the actions required. If action by others is required, you must send them a copy	**By Whom**	**Start date**	**Action due date**

Action by Others Required - Complete as appropriate: (please tick or enter YES, name and date where appropriate)

Report up management chain for action	
Report to Estates for action	
Contact advisers/specialists	
Alert your staff to problem, new working practice, interim solutions, etc	

Reply

If you receive this form as a manager from someone in your department, you must decide how the risk is to be managed. Update the action plan and reply with a copy to others who need to know. If appropriate, you should note additions to the Directorate / Service Risk Register.

If you receive this as an adviser or other specialist, reply to the sender and investigate further as required.

Date of last review	As per QPULSE record	**Next review date:**	As per QPULSE record