NHS Greater Glasgow and Clyde

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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 Original Assessor(s):	Rebecca Stace	**Post Held:**	Clinical Scientist
	Blair Johnston		Clinical Scientist
	John Foster		MR Safety Expert
Department:	**Imaging**	**Date of initial review:**	**27/01/2020**

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

Scanning of patients in MRI for whom a full clinical history cannot be ascertained (e.g. incapacitated/unconscious patients).

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

When unable to obtain a full clinical history, implants may be undeclared/undetected and thus there is an increased risk of injury from the static magnetic field, RF power and/or imaging gradients. The patient may also be unable to report any relevant medical conditions (e.g. those that compromise their safety for contrast-enhanced examinations).

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.

Undeclared or undetected implants may be MR Conditional or MR Unsafe and thus there is the potential for patient injury if scanned. In this patient group, there is a greater risk of unknowingly scanning implants off-licence due to not being identified or identified incorrectly during the screening process. Similarly, pre-existing medical conditions may preclude certain MRI examinations (e.g. pregnancy or previous reaction to Gadolinium-based Contrast Agent, GBCA). Adverse events could include: force-related injury, thermal injury, malfunction of an active implant and/or unforeseen reaction to GBCA. Therefore there must be a significant clinical need for an MRI scan to proceed, as justified by a Radiologist.

The risks of scanning a pregnant patient using GBCAs or First Level Controlled Mode are considered in separate risk assessments.

The risks from scanning GA patients with a full clinical history are considered in a separate risk assessment.

Existing Precautions

Summarise current controls In place	Describe how they might fail to prevent adverse outcomes.
1. Power of Attorney, next of kin, knowledgeable family member or carer may be able to complete the screening form on behalf of the patient in addition to healthcare provider familiar with the patient's medical history. 2. Previous imaging should be reviewed for implants through PACS. Clinical records should be checked for evidence of prior surgery. 3. To ensure absence of contraindicated	1. No Power of Attorney, next of kin, knowledgeable family member or carer available or appropriate to provide full clinical history. Absence of sufficient medical history/ potentially inaccurate medical history to complete screening form. Additional checks on medical records and prior imaging must be performed to address this. Further screening is also available. 2. PACS only covers Scotland, patient

devices or other metallic material, screening radiographs may be obtained of the head/chest/abdomen/orbits. 4. A risk/benefit analysis must be performed by a Radiologist, documenting the approval and medical necessity for MRI examination. 5. The use of GBCAs should be avoided, where possible, to reduce the risk to the patient (e.g. pregnant patients or patients with poor renal function). Standard procedures for determining suitability should be followed prior to the administration of GBCA, such as a recent GFR or eGFR. If the safety of administering a GBCA cannot be determined, seek clinical advice. 6. A physical exam should be performed to detect implants or other metallic materials in or on the patient's body that may have been missed by previous imaging and screening. This includes searching for any unexplained surgical scarring or deformities that warrant plain-film radiography prior to the MRI scan. 7. Radiographers are instructed to bring patients into the scanner room slowly, and, where patients are able, they should be asked to report any pulling or unusual sensations. 8. Radiographers are instructed to take particular care when positioning patients in scanner (e.g. use of non-conductive padding and any cables should not be in contact with patient skin and should be oriented parallel to the bore, where possible), removing any conductive materials from patient skin and making sure no potential circuit loops are present as could be created by the patient and/or equipment. The patient should be kept cool (i.e. no blankets and in-bore fans switched on). 9. Where patients are able, they must be warned about the risk of heating and told to press the patient call button should they feel any heating or unusual sensations. 10. Patients may require monitoring in the MR Environment. This may be in the form of ECG monitoring, checking the patient between sequences or having a member of staff in the scanner room during the examination. The appropriate level of monitoring should be decided on a case-by-case basis.	may have had previous imaging outside of Scotland or before images were sent to PACS that may be difficult to locate/access. Similarly, medical records may be incomplete due to movement between Health Boards. The risk/benefit analysis should take this uncertainty into account and refer for further screening if required. 3. As the whole body is unlikely to be screened, certain implants may be missed. These are less likely to be located near critical structures/organs. 4. N/A 5. N/A 6. Patients or carers may be unwilling to consent to such an examination. There is the potential to miss scarring (e.g keyhole surgery or due to hair growth). 7. Patients may not report pulling/unusual sensations or may not be able to. The importance of reporting this should be explained to the able patient during screening. 8. Patients may move after positioning. Radiographers should ask able patients to maintain their original position on set up. 9. Patients may not report heating/unusual sensations or may not be able to. The importance of reporting this should be explained to the able patient during screening. 10. Checking the patient between sequences or having a member of staff in the scanner room may not be sufficient to detect heating (e.g. for GA patients). This would likely increase the severity of the outcome. 11. N/A 12. Patients may not report heating/unusual sensations or may not be able to. 13. T/R coils are not available for all anatomical regions nor at all MRI sites.

11. Scans should be performed in Normal Mode or lower and should be performed on the lowest field strength scanner available, unless there is significant justification otherwise. 12. Cold compresses/ ice packs are readily available in MRI departments and can be placed on areas at risk of heating during scanning, if required. 13. Depending on the clinical query, it may be possible to select a local Transmit / Receive coil which would limit the amount of the body that is exposed to the RF and therefore reduce the risk 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**	**Action**

		date	**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