

A Digital Pathway to Streamline Complex Care: Making MRI Available to Patients With Pacemakers and Defibrillators

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500,000 people in the UK have a pacemaker or defibrillator.

Many face challenges accessing magnetic resonance imaging (MRI).

Devices can undergo MRI, but the care pathways involved are complex.

Efficient information exchange for shared decision-making is necessary to improve safe access and manage workflows sustainably.

Aims

- To **improve the pathway** for MRI access for pacemaker patients requiring cancer, stroke and cardiac care
- To **create resources** to facilitate the process in other centres

Methods

- ### Educational Resources
- A multidisciplinary **training course**
 - Patient and referrer **leaflets/videos**
 - Developed with multiple professional societies
- ### Referrals platform www.pace-mri.org (Figure 1)
- Cloud based
 - ISO27001 accredited, NHS DSP Toolkit Level 3 (exceeding NHS security criteria).
 - Designed to **save time, protocol scans safely, facilitate communication.**
 - Initially **single tertiary referrals centre** (Barts Heart Centre, London), but offered as a digital platform to other centres if successful.

Quality Improvement measures

- Course attendance
- Educational videos and leaflet development
- Service referral volume, accuracy and time saving six-months before and after implementation.
- Survey of staff satisfaction and time use.

Results

- ### Education
- Videos and leaflets (Figure 2) peer-reviewed and distributed by **7 societies and 3 patient charities.**
 - **Trained 120** multidisciplinary clinicians (71 hospitals and 7 countries).
- ### Digital Referral Platform
- **385 referrals**, 129 completed scans.
 - 22 external referral centres (Table 1).
 - Increased **referral volume** (5.6±1.6 to 6.6±2.2 per week [p=0.003]),
 - Increased **external referrals**
 - **Fewer inaccuracies** in referrals (Table 1).
 - **Reduced logistical burden**, ~1 day/week of cumulative time saved.
 - **4 new centres** now using the platform.

Conclusions

- A digital referral platform for patients with cardiac devices:**
- **Safely improved access to MRI** reliant NHS care in an underserved population
 - **Reduced logistical demands** on staff.
- We were able to:**
- **Enhance training** locally and across the UK
 - **Improve patient education** and referrer awareness.
- MRI centres can register to use the platform at: www.pace-mri.org.**
- Educational resources are available at: www.mrimypacemaker.com.**

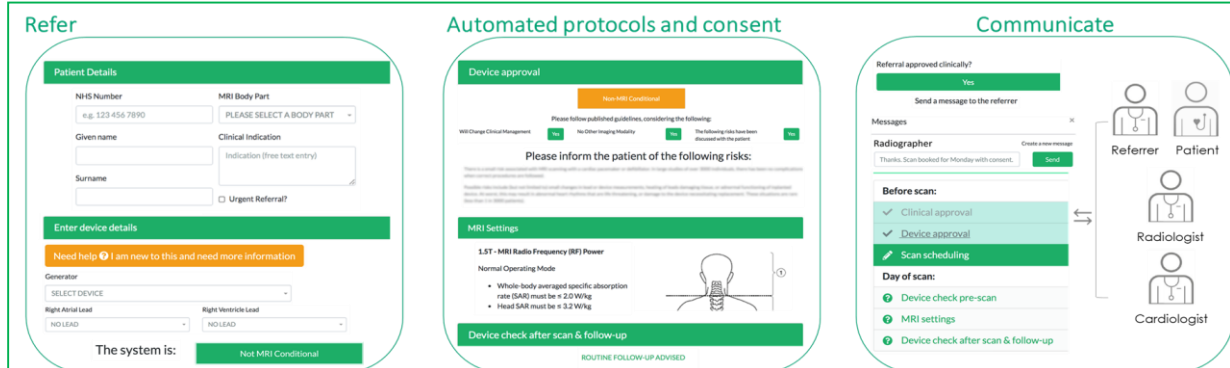


Figure 1 Workflow through the cloud-based MRI-pacemaker referrals platform. Includes streamlined referrals (left), automated device/MRI protocols (centre), facilitated communication (right) with cardiology, radiology, referrer and administration.

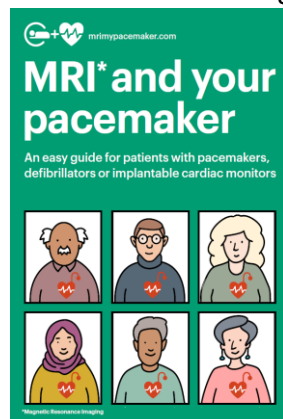


Figure 2 Front cover of patient leaflet. Videos for patients and referrers available online.

Completed referrals over a 6 month period pre and post platform implementation	Pre-Online Referral Platform		Utilising www.pace-mri.org	
	N (116)	%	N (129)	%
External Referral	62	53%	100	78%* p<0.05
Cardiology Referral	55	47%	46	36%
In-patient Referral	27	23%	20	16%
Urgent Referrals	73	63%	83	64%
MRI for Cancer Diagnosis	35	30%	38	29%
MRI for Cord Compression	5	4%	11	9%
MRI for Stroke	6	5%	14	11%
Device Conditionality Correct	43	37%	95	74%* p<0.05
Device Information Inadequate	88	76%	46	36%* p<0.05

Table 1 Referral volume, source and accuracy before and after using the electronic platform.