

**MARS**  
Monitoring Arm Recovery After Stroke

Ulrike Hammerbeck - Senior Lecturer MMU

1

**MARS**  
Monitoring Arm Recovery After Stroke

### What is MARS?

A patient held app that tracks arm recovery

- Patients input data in response to weekly prompts
- Therapists can view and upload information
- Developed with PPI and Clinician group

Initiated early after stroke during in-hospital stay  
Can be used on Smartphone/tablet/desktop (Web app)  
Data will be integrated in NHS systems

2

**MARS**  
Monitoring Arm Recovery After Stroke

### What is MARS?

Functionality of app		
1	<b>Recovery</b>	Weekly Pain, Fatigue, Spasticity Monthly Arm movement, Quality of Life
2	<b>Recovery graphs</b>	
3	<b>Info</b>	Services My Stroke Guide, local groups, .. Contacts Stroke Association, Social services Home Positioning graphs, adherence, up-to-date Exercise Goals
4	<b>Contact therapist</b>	Chat function

3

**MARS**  
Monitoring Arm Recovery After Stroke

### The patient portal

4

**MARS**  
Monitoring Arm Recovery After Stroke

### The patient portal

**Uploading arm recovery data**  
Developed with PPI group

- Frequency: weekly, prompted by app
- Add images to aid understanding
- Wider bars for easier data input
- Google “text to speech” and “speech to text”
- Large font and spacing
- Option to change the colours/background
- Increase size of icons and place low on screen

- Variation in questions from week to week
- Ability to use the app to interact with therapists
- Feedback of recovery

5

**MARS**  
Monitoring Arm Recovery After Stroke

### Clinician portal

**Developed with Clinician group**

- Different uses in acute and community services
- Promote information transfer
- Up-to-date exercises and easy access

6

**MARS**  
Monitoring Arm Recovery After Stroke

**Who will benefit by MARS**

Benefits	Patients	Clinicians	Organisation
Patient-held data	Green		Yellow
Active role in recovery	Green		
Easy communication with clinicians	Green		
Visualisation of recovery	Green	Blue	
Centralised Information portal	Green	Blue	
Measure of exercise adherence		Blue	
Remote monitoring of change		Blue	Yellow
Remote intervention	Green	Blue	Yellow
Easy of data sharing	Green	Blue	Yellow

7

**MARS**  
Monitoring Arm Recovery After Stroke

**Summary, ongoing work and scope**

MARS is a patient held, NHS integrated app that monitors recovery  
Development is ongoing with patient and clinician groups  
In next steps (with funding) we will establish the app's acceptability

**Future work will aim to:**

- 1) Develop the app to monitor other domains of recovery: walking, language, cognition, .....
- 2) Integrate into a comprehensive app to follow the patient from first contact of ambulance services to a *life after stroke*.

8



**Acknowledgements:**  
PPI group (4 missing)  
Clinician group (GMNISDN)

**Collaborators:**  
Rob Hollingsworth  
Adrian Parry-Jones  
Kate Woodward-Nutt

Please get in touch: [u.hammerbeck@mmu.ac.uk](mailto:u.hammerbeck@mmu.ac.uk)

**MARS**  
Monitoring Arm Recovery After Stroke

**mdsas**  
medical data solutions and services

**Manchester Metropolitan University**

**MANCHESTER**  
The University of Manchester

**SBRI**  
Small Business Research Initiative

9