

Magnetic Resonance Research Center
University of Pittsburgh
MRRC 001: New MRI Protocols

PURPOSE

The purpose of this standard operating procedure document is to outline setting up a new protocol.

POLICY

Step 1. Initiate conversation with MRRC

Touch base with MRRC faculty and let us know you intend to submit an MRI grant or have a recently funded MRI grant. Important contact information:

- Research Operations: Andrew Reineberg (aer126@pitt.edu)

Step 2. Intent Form

Please complete the MRRC intent form and send us a copy of your specific aims. The form is located here:

<https://www.rad.pitt.edu/mrrc-onboarding.html>

The MRRC Intent Form gives us a good idea of what to expect regarding usage, assist in the creation of a new imaging protocol, and ensure your study is supported appropriately. Based on these documents and the follow-up discussion:

- An MRRC physicist will be assigned to the protocol to assist with sequence-related decisions
- An account will be created for future billing purposes. The billing account code is an important internal reference number that you can include on any future communication to expedite most processes
- An account in the scheduling software will be created
- An onboarding fee may be assessed at this time for industry-sponsored projects

Note: All billing and scheduling accounts for studies funded through the Department of Psychiatry are created and maintained by the Department of Psychiatry. To create an account for an MRRC study funded through the Department of Psychiatry, you must notify Jackie Toboz at psychmrrcbill@pitt.edu as soon as you receive notice your study is funded. The MRRC will create the billing and scheduling account for all other Departments.

Step 3. Protocol Meeting

Details of the MRI protocol must be finalized. To do this we will schedule a zoom or in-person meeting between MRRC faculty, MRI technologist(s), and the study team. Be prepared to discuss the following important topics and more:

- General goals of the project
- Ideal sequences, parameter specifics, and equipment needs (e.g., which/how many scanners are needed, which coils are needed)
- Details of the participant population and whether any special accommodations are needed
- Scheduling needs
- Possible times to schedule a pilot test

Step 4. Protocol Refining / Phantom Testing

Via email, the study team and MRRC physicist will finalize protocol details.

- The MRRC physicist assigned to the protocol will port the final protocol to the scanner/scanners
- MRRC will conduct standard internal testing of the protocol using a phantom to validate sequence parameters and notify study team of success
- Study team should meet with Steve Hegedus (sjh38@pitt.edu) to ensure compatibility of experimental paradigms (e.g., eprime) and validate MR compatible devices

Step 5. Human Pilot Testing

MRRC allocates one no-cost scanning session to every prospective protocol. The study team should email Andrew, lead MR technologist, and assigned MRRC physicist when scheduling the pilot session. The MR technologist will operate the scanning computer during testing. The testing session is for *validation purposes only*. The MR physicist will monitor data quality throughout the testing session. Additional pilot testing time is possible but will be billed at the regular hourly scan rate.

When scheduling, note the scheduled time must include enough time for getting the subject into the magnet at the start of the session and out of the magnet at the end of the session. Users who go over the scheduled time must shorten the amount of time dedicated to sequences. It is best practice to plan for 10 minutes of setup for routine studies. Studies that require more extensive monitoring or study specific devices/procedures may require more time for setup.

Step 6. Protocol Confirmation

After the testing session, the study team is required to review the data in detail to ensure the images meet expectations. We recommend analyzing the data through all stages of pre- and post-processing. Once the study team is satisfied:

- The final protocol PDF will be provided to the user to review and approve
- The final protocol PDF and exam file will be deposited in MRRC's internal repository
- The MRI technologists will be informed so they can familiarize themselves with the protocol

Step 7. Scanning

The study team can begin scheduling sessions using MRRC's scheduling software (only available while connected to the UPMC network either locally or via VPN). Post-scan responsibilities of study team:

- 1-7 days post-scan: check to ensure all data was transferred
- Within 90 days of scan: validate data quality