

Progress Report: Quantitative Measures of fMRI Reproducibility for Pre-Surgical Planning
Subaward No: HHSN268201000050C (9a)
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Reporting Period: months 1-3

Deliverables:

1. Select, test and install standardized computational sequences including the AMPLE algorithm coordinated with Voyvodic project.

Completed except for receipt of automated ROI algorithm from Dr. Voyvodic needed to implement the automated version of the AMPLE algorithm. Expected completion in 2 weeks once Dr. Voyvodic returns from vacation.

2. Data compilation/Preprocessing: Data for 8 subjects organized in local imaging data base with table entries to facilitate scripted data queries and analysis.

Completed.

3. Registration of MRI scans with standard atlas brain, generation of brain activation maps, and calculation of image-based quality assurance QA metrics (image motion, signal drift, signal spikes, task activation).

Algorithm for registration with MNI standard brain installed and tested. Initial Q/A metrics completed. All data sets accepted for next stage processing. After discussions with Dr. Voyvodic, it was agreed that it will be necessary to identify which Q/A metrics actually affect the reproducibility estimates in a significant manner in order to recommend the most effective measures for inclusion in the fMRI profile. This necessarily must await the computation of the reproducibility metrics to begin in the next period.

In addition, advanced testing of the analysis of functional specificity has been piloted and will be refined in the coming period since these measures will be needed during the analysis in months 6-12.

Work in the coming period will focus on the primary computation of reproducibility metrics as originally proposed.