

ADNI Biostat 7 November 2006

Present on call: Tristan Massey FDA, Monica , Qian, John Kornak, Mike Weiner.

Update on analytic plan: Not much has changed from the version circulated prior to the October ADNI meeting in Chicago. We may want to add more detail but all the major ideas are there. Things we might want to add:

- FAQ's about study and analysis.
- Simple examples of how to use cross-validation.
- Clarification of the study limitations – e.g. not designed to assess diagnostic potential.

A lot of images are now backed up at Mayo waiting for the batch-of-batches program. Then people will be able to process. We are still months away from imaging summaries. The same is true of PET data. We expect to have data in January or February. Biological markers are also all sitting in the freezer, waiting for enrollment to be completed or even till everyone has six months of scanning; that looks like a year away.

Mike would like to see latest version of analytic plan. Danielle will work on that and circulate the revisions; they are small, basically clarifications. We want to have a final version approved by Executive Committee and Steering Committee by end of calendar year.

We will plan to have a final version to this group by next call, and send it to Mike as soon as revisions are included, so it can go to Exec Committee and get approved.

John says little new on voxel based. There is general approval of our two versions of the split halves (or 60-40) and the leave-k-out. Another way might be to bootstrap instead of leaving k out; we could certainly mention this as a possibility.

Monica says that we can probably get access to longitudinal clinical data through LONI. She will check with folks and let us know what the best route is for access.

We also need to implement the randomization scheme for the validation and set up something through LONI. We just need to work with LONI so they add two fields, one for the leave-k-out and one for the 60-40 split. We planned to stratify on diagnosis and arm. We might also stratify on older-younger. We should talk with Karen Crawford about best way to get this in. At UCSD, we can talk to Michael Donahue or just send to ADNI at UCSD mail. We will work with them to find best way to implement.

Current enrollment is 519 baseline, 193 have done month 6.

John brings up one more question: in the voxel-based group, John was going to be doing quite a bit of work on assessment of the various voxel-based techniques and how they behaved wrt signal-to-noise, etc, and thus the impact on bias. The second part was to come up with a meta-analysis or Bayesian analysis. A lot of time was spent developing

ideas. We don't have ideas on how to pursue this. Maybe we can get Hao Zhang to work on this. He is a bright person in stat, just passed his writtens at beginning of his second year.

Danielle clarified that the people most likely to be using the leave-k-out or other cross-validation are the voxel-based folks because much of this is data driven. PET in particular has search regions that don't follow structural anatomy so they wanted a more flexible approach where the boundaries are allowed, within some limits, to be controlled by data. For volumetric measures or change measures, we won't need this for hypothesis testing.

Next call is in two weeks: 21 November at 10 AM Pacific time.