

The Multi-cohort Eating and Activity Study for Understanding Reporting Error (MEASURE)

Cohort Consortium Steering Committee Presentation
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How Project Established

- NCI had long-standing interest in the structure of measurement error with respect to diet and physical activity assessment tools used in epidemiology
 - Goal: To conduct comparable data collection in multiple cohorts including NIH-AARP Diet and Health Study
 - New data collection required
 - Pool data
 - The project was presented at the 2008 Cohort Consortium annual meeting.
- White paper written by NCI staff provided framework for study design
- FOA published for ARRA funding: White paper referenced (2009)
- Three cohorts funded: (2010-2011)
 - NIH-AARP Diet and Health Study: NCI contract using ARRA funds
 - Harvard Nurses Health Study: ARRA grant funds
 - Harvard Health Professionals Follow-up Study: R01 grant funds
- Coordinating center: NCI contract using ARRA funds

Common Data Elements

- Diet:
 - FFQs
 - ASA24 (web-based 24-hour dietary recall)
 - Food records
 - Recovery biomarkers: 24-hour urinary nitrogen, sodium, potassium
 - Doubly labeled water (DLW): total energy
- Physical activity
 - Physical Activity Questionnaires
 - ACT24 (web-based 24-hour activity recall)
 - Activity monitors
 - DLW

Accomplishments so far

- Cooperation, given differences between studies, to have reasonably comparable study designs and data collection methods allowing for pooled analyses
- Completion of data collection and biologic specimen analyses across all three cohorts
- Cooperation to provide data to NCI Coordinating Center for harmonization for pooled analyses
- Publication policy signed by all collaborators
 - Individual studies will first publish findings
 - Notification to collaborators of analyses being conducted using data from individual studies
- Conference calls as necessary to report progress and plan for future pooling
- Analyses for individual studies well underway; a few publications from NHS (first to complete data collection)

Reflections on Process and Accomplishments

- Generally, all three studies were willing to collect data comparably and consistent with NCI white paper
- Each study included additional data collection specific to their study reflecting different objectives and interests
- Some differences arose between PIs in prioritizing dietary assessment instruments in data collection (ASA24)
- Overall, the level of trust regarding providing data to the Coordinating Center for future analyses was high
- Analyses for individual studies have required cooperation and sharing of experiences: ASA24, ACT24, PA monitors

Future Directions

- Pooled analyses for measurement errors in commonly used diet and physical activity assessment tools
- Other projects that are building on this project
 - None yet!
 - Potential in the future as we analyze pooled data

Involvement of Junior Investigators

- Harvard has brought on several doctoral students and post-doctoral fellows for data analysis
 - Several participated in our recent working group phone call
- Junior investigators at NCI led the NIH-AARP study project.
- NCI publicly released AARP study data and is actively analyzing
 - NCI investigators actively analyzing AARP-based data
 - No new junior investigators currently involved in data analyses, but likely in the future
 - Publicly available data insure that junior investigators have access to NCI data

Success or Challenges

- Successes

- Discussed above – harmonization of methods, data collection, analyses and data files
- Congenial collaboration between Harvard and NCI investigators – some NCI scientists included on Harvard papers

- Challenges

- Obtaining funding for each study to collect new data
- Including more diverse population (age, race/ethnicity)

Lessons Learned

- Data harmonization/standardization is done before data collection.
- A coordinating center is important to efficiently manage the project.
- Regular and frequent communications among investigators
- Quality control plan across DLW labs
- More to come as we work with harmonized data and potential conflicts arising from different approaches

Recommendations to Other Working Groups

- If collecting new data
 - Harmonize data collection and methods as well as possible
 - Agree on publication policy early on
 - Involve all partners in conversations regarding data collection methods and data harmonization, QC, etc.
- Share expertise within each study center for the good of the entire project