

# Standard Operating Procedures

**Subject:** Code Review

**Date:** 15Jun2006

**Purpose:** The purpose of this Standard Operating Procedure (SOP) is to define the minimum standards of code review. Code review ensures that programmers are writing programs that accurately meet the needs of individual projects.

**Scope:** This procedure applies to all programmers in the FPG Data Management and Analysis Center (DMAC).

**Responsibility:** Every programmer has the responsibility for reviewing his/her own code to ensure that the programs are correct and that they accurately achieve the purpose of the request. The programmer's supervisor is responsible for reviewing some of the programmer's code for accuracy. If a different senior programmer is assigned to the project other than the programmer's supervisor, then it is the responsibility of that senior programmer to review the programmer's code. Once the supervising programmer is satisfied that the programmer's code is consistently accurate and complete, then review of all programs is not required.

## Types of Code Review:

- Input and correction programs:
  - Program logs should be reviewed to ensure there are no errors in the program.
  - The number of observations and number of variables should always be checked from the previous version of the data. All inconsistencies should be resolved.
  - Scoring code, when present, should be included in all input and correction programs.
  - It is recommended that a comparison (PROC COMPARE or the in-house comparison procedure) between the newly created data and the previous version of the data set be run and all changes, variable additions or deletions, etc. are confirmed as intended.
  - Checking of individual observations: Verify that initial values are set to missing, verify that missing values are truly missing, verify extreme values, etc.
- Scoring programs: All scoring programs should be reviewed by another programmer and/or project staff for accuracy. Tables entered for scoring should be verified by up to three employees or project staff.
- External Project Verification of Data: It is requested that all projects verify printouts of the data sets to ensure the accuracy of the input and scored data. A minimum of a 10% verification is recommended on all data, with 100% verification recommended on new instruments.

## Definitions:

- Data verification: Checking the data form against data entered into the database.

- Scored data: Data for which values have been created to help describe the data. Means, sums, etc. are types of scored variables.