

Exhibit 2.2. Number of Children Randomly Assigned to Head Start and Control Groups, by Age Cohort

Age Cohort	Head Start Group	Control Group	Total Sample
3-year-olds	1,530	1,029	2,559
4-year-olds	1,253	855	2,108
Total	2,783	1,884	4,667

As indicated above, about 60 percent of the sample was assigned to the Head Start group, and about 40 percent was assigned to the control group. This imbalance reduces the precision of the impact estimates by less than two percent (compared to a balanced 50-50 design). However, it provided several important benefits: (1) it significantly increased the ability to recruit Head Start grantees and centers by decreasing the number of extra children needed for the control group, (2) the loss of sites due to lack of excess demand was decreased, and (3) the cost of data collection was decreased because Head Start group members require less effort to track and interview over time than children in the control group.

The Success of Random Assignment

A comparison of demographic characteristics of the randomly assigned children and their parents indicated that there were few statistically significant differences³⁵ between the Head Start and control groups. This suggests that the initial randomization was done with high integrity and that the samples can provide the necessary confidence in the validity of the impact estimates.

Random assignment rarely results in perfect adherence to the assigned program status. In the current study, one would expect some children assigned to the Head Start group not to participate in the program (referred to as “no-shows”) and some of the children assigned to the non-Head Start group to enroll in the program (referred to as “crossovers”). During program recruitment, Head Start grantees and centers described no-shows as a common occurrence in ordinary program operations, with rates among enrolled children often in the double digits.

³⁵ Among 16 variables (e.g., child gender, child ethnicity, etc.) collected at baseline, there were differences in very few. For the 3-year-old cohort, there was a significant difference on the parent/caregiver age (Head Start parents/primary caregivers were 0.9 years older, on average, than control group parents/primary caregivers) and a grandparent was more likely to live in the household for the Head Start group than the control group. For the 4-year-old cohort, Head Start group mothers were more likely to report education beyond high school than control group mothers and Head Start group households were less likely to receive TANF than control group households. See Exhibits 2.9-A and 2.9-B in the *Head Start Impact Study Final Report* for a listing of all the variables.

Consequently, it is not surprising that some families who were randomly assigned to the Head Start group subsequently opted for a different care setting for their child.³⁶

Similarly, although every effort was made to maintain the integrity of the control group, perfect conditions could not be implemented. In some instances, local staff intentionally enrolled control group children into Head Start. More commonly, parents simply applied to another nearby Head Start program, especially in densely populated areas with Head Start programs operating in proximity. Due to confidentiality restrictions, information on study participants was not shared with programs not involved in the study, so control group families were not prevented from being served by other Head Start programs.

For analysis purposes (as explained below), it is only the degree of compliance with the random assignment design *in the first year of the study* that matters, since this was the one year in which the study sought to have all Head Start group children—and none of the control group children—participate in Head Start. Exhibit 2.3 provides information on the incidence of Head Start group no-shows and control group crossovers by age group in that year. In the exhibit, children in the Head Start group were considered no-shows if it was determined that they did not participate in Head Start at any time during the 2002-03 program year. Children in the control group were deemed crossovers if they participated in Head Start at any time during the 2002-03 program year. This determination was based on information from parent surveys, checking Head Start enrollment in fall 2002, and the care setting identified at the time of the child's fall and spring assessments. No-shows accounted for 15 and 20 percent of the full randomly assigned Head Start samples for children in the 3- and 4-year-old cohorts, respectively; crossovers accounted for 17 and 14 percent of the randomly assigned control groups.

³⁶ See the *Head Start Impact Study. Final Report* (January 2010) for additional information.

Exhibit 2.3. The Incidence of No-Show and Crossover Behavior for the Sample as Randomly Assigned, by Age Cohort (Weighted Data)

Sample Group	Some Year 1 Head Start Participation	No Year 1 Head Start Participation	Total
All Randomly Assigned (N=4,667):			
3-Year-Old Cohort			
Head Start Group	85.1%	14.9%	100%
Control Group	17.3%	82.7%	100%
4-Year-Old Cohort			
Head Start Group	79.8%	20.2%	100%
Control Group	13.9%	86.1%	100%

Data Collection and Data Sources

Data collection began in fall of 2002³⁷ and continued through the spring of 2008, following children from entry into Head Start through the end of 3rd grade. Data collection included the following components.

- **Direct Child Assessments.** The child assessment battery administered annually focused on language and literacy, including children’s vocabulary knowledge, reading and writing skills and achievement, oral comprehension and phonological awareness, and math skills and achievement. The 45- to 60-minute child assessment battery was typically administered one-on-one by specially trained assessors in the child’s home during the elementary school years. The 3rd grade child assessment included direct measures of the child’s ability in reading and mathematics.
- **Child Survey.** The child survey is a self-assessment of the child’s academic and social skills and was administered at the same time as the child assessment at 3rd grade. It was administered using a Touch Screen on a laptop computer for responses and earphones to listen to the questions.
- **Parent Interviews.**³⁸ In-person interviews were typically conducted in the home of each study child with a parent or primary caregiver living with, and responsible for raising, the child at the fall 2002 baseline point and at each of the subsequent spring data collections through the child’s 3rd grade year. It was possible that the parent or primary caregiver could change over time, but this occurred for a very small percentage of the children. Parent interviews were available in English and Spanish

³⁷ Fall 2002 data collection was completed between the end of September and mid-November for the majority of children and parents (although a small number did extend into December). The discussion of analysis procedures in this chapter and in the *Head Start Impact Study Technical Report* (2010) detail how this late baseline data collection is handled in the analysis of program impacts.

³⁸ In addition, in the winter of 2003, and in the fall of each subsequent year, a 10-minute telephone interview was conducted with the parent/primary caregivers to obtain up-to-date contact information and information regarding the child’s current preschool, child care, or school placement to determine the appropriate setting for the spring data collection waves. If parents could not be reached by telephone, in-person interviews were conducted to collect this information.