APPENDIX A

WEIGHTS USED IN THE STUDY

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We used two sets of weights in this study: (1) center weights for estimates of the total number of student-days spent on work projects and (2) project weights for estimates of the average value produced per student-day worked on projects and the total value of output. This appendix describes the derivation of these weights.

A. CENTER WEIGHTS

Each center was given a weight equal to the inverse of the probability of selecting the center. The centers were chosen using stratified sampling, with the probability of selection proportional to the number of slots at the center. Hence, the probability of selecting center j in stratum h (where h=1, 2, or 3) was:

$$\frac{n_h s_{jh}}{s_{h+}}$$

where n_h is the number of sampled centers in stratum h, s_{jh} is the number of slots in center j in stratum h, and s_{h+} is the total number of slots in stratum h.

The probability of selecting a center in a given 3-month reference period was:

$$\frac{n_h s_{jh}}{4 s_{h+}}$$

Hence, the center weight for center j in stratum h, W_{jh}, is equal to the inverse of this probability:

$$W_{jh} = \frac{4 s_{h+}}{n_h s_{jh}}$$

B. PROJECT WEIGHTS

Two projects were randomly selected from a list of projects that took place in the 3-month reference period at each sampled center. The probability of selection was equal to the number of student-days spent on the work project in the three reference months as a proportion of *all* student-days spent on work projects at the center in the three reference months. Hence, the probability of selecting a project i at center j in stratum h was:

$$\frac{2d_{ijh}}{d_{jh+}}$$

where d_{ijh} is the number of student-days spent on project i at center j in stratum h during the reference months and d_{jh+} is the total number of student-days spent on work projects at the center during the reference months.

The probability of selecting a project i at center j in stratum h in a given 3-month reference period is the product of the probability of selecting project i at center j times the probability of selecting center j:

$$\frac{2d_{ijh}}{d_{jh+}} \cdot \frac{n_h s_{jh}}{4s_{h+}}$$

The project weight, W_{ijh}, is equal to the inverse of this probability:

$$W_{ijh} = \frac{d_{jh+}}{2d_{ijh}} \cdot \frac{4s_{h+}}{n_h s_{jh}}$$

or

$$W_{ijh} = \frac{d_{jh+}}{2d_{ijh}} . W_{jh}$$

Because we did not complete the studies of two projects (at one center), we adjusted the weights for nonresponse. The weights for projects for which we completed the study were multiplied by an adjustment factor, ADJ_h, where:

$$ADJ_h = \frac{\sum_{ij} W_{ijh}}{\sum_{ij \in R} W_{ijh}}$$

where R is the set of projects for which a study was completed. The two projects for which we did not complete the in-depth study were given weights of 0.

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