**Appendix B: Discussion of the Sample Weighting Procedures Used**

The initial sampling frame consisted of 115,440 dentists spread across ten strata (specialty groups). A stratified random sample of 6,825 dentists was drawn (random within each stratum). The original base weight (weight 1) was then calculated by dividing the initial frame counts per stratum by the initial sample size within each stratum. Because three of the 6,825 dentists had missing information with regard to what stratum (specialty) they belonged, a ratio adjustment was made to the original base weight to account for these three dentists. The results of these steps are shown in Table B1. If everyone in the original sample of 6,825 had been eligible and responded they would have weight 1 adjusted which includes the distribution of the 3 practices with missing specialty group. Also, the sum of weight 1 adjusted would have equaled 115,440. However, there were ineligible dentists in the sample.

**Table B1. Number of Dentists in Sampling Frame, Survey Sample, Weight 1, Weight 1 Adjusted for Missing Specialty**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specialty** | **Number in Sampling Frame** | **Number in Survey Sample** | **Weight 1** **(Number in Frame / Number in Sample)** | **Weight 1 Adjusted (Distributes the 3 missing specialty groups proportionally into the other ten strata)** |
| General Practice | 92,502 | 4,747 | 19.4864 | 19.4869 |
| Oral Surgery | 4,598 | 751 | 6.1225 | 6.1229 |
| Endodontics | 2,865 | 110 | 26.0455 | 26.0459 |
| Orthodontics | 7,202 | 258 | 27.9147 | 27.9152 |
| Pediatric Dentistry | 2,834 | 118 | 24.0169 | 24.0174 |
| Periodontics | 3,414 | 751 | 4.5459 | 4.5464 |
| Prosthodontics | 1,746 | 75 | 23.2800 | 23.2804 |
| Oral Pathology | 74 | 5 | 14.8000 | 14.8004 |
| Public Health Dentistry | 193 | 9 | 21.4444 | 21.4449 |
| Oral Radiology | 9 | 1 | 9 | 9.0004 |
| Missing | 3 | 0 | -- | -- |
|  **Total** | 115,440 | 6,825 | Take number in sample\*weight1 and sums up to 115,437 | Take number in sample \*weight1adj and sums up to 115,440 |

Next, the eligibility rate within each stratum had to be determined. Dentists were considered ineligible if their disposition code was any of the following: not in private practice, unclaimed mailing, deceased, or suspended membership status. The ineligibility rate per stratum was calculated as number in the sample divided by the number in the sample who were ineligible. These results are presented in Table B2.

**Table B2. Number of Dentists in Sampling Frame, Survey Sample, Number Ineligible, and Ineligible Rate by Specialty**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specialty** | **Number in Sampling Frame** | **Number in Survey Sample** | **Number Ineligible in Sample** |  **Ineligibility Rate (Number Ineligible in Sample / Number in Sample)** |
| General Practice | 92,502 | 4,747 | 408 | 8.6% |
| Oral Surgery | 4,598 | 751 | 75 | 9.0% |
| Endodontics | 2,865 | 110 | 6 | 5.5% |
| Orthodontics | 7,202 | 258 | 21 | 8.1% |
| Pediatric Dentistry | 2,834 | 118 | 8 | 6.8% |
| Periodontics | 3,414 | 751 | 48 | 6.4% |
| Prosthodontics | 1,746 | 75 | 5 | 6.7% |
| Oral Pathology | 74 | 5 | 3 | 60.0% |
| Public Health Dentistry | 193 | 9 | 3 | 33.3% |
| Oral Radiology | 9 | 1 | 0 | 0.0% |
| Missing | 3 | 0 | -- | -- |
|  **Total** | 115,440 | 6,825 | 577 | 8.5% |

Then, the eligibility rate per stratum was calculated as 1 – the ineligibility rate. Next, the eligibility rate was multiplied by the original frame counts by stratum to get revised eligible frame counts. The revised eligible frame count sums up to 105,655 dentists and the revised eligible sample size is 6,248 dentists. These results are presented in Table B3.

**Table B3. Number of Dentists in Sampling Frame, Eligible Rate, Revised Eligible Number in Frame, and Number of Respondents by Specialty**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specialty** | **Number in Frame** | **Eligible Rate** **(1-Ineligible Rate)** | **Revised Eligible Number in Frame** | **Number of Respondents** |
| General Practice | 92,502 | 91.4% | 84,552 | 2,225 |
| Oral Surgery | 4,598 | 90.0% | 4,139 | 296 |
| Endodontics | 2,865 | 94.5% | 2,709 | 53 |
| Orthodontics | 7,202 | 91.9% | 6,616 | 93 |
| Pediatric Dentistry | 2,834 | 93.2% | 2,642 | 57 |
| Periodontics | 3,414 | 93.6% | 3,196 | 289 |
| Prosthodontics | 1,746 | 93.3% | 1,630 | 25 |
| Oral Pathology | 74 | 40.0% | 30 | 0 |
| Public Health Dentistry | 193 | 67.7% | 129 | 4 |
| Oral Radiology | 9 | 100.0% | 9 | 0 |
| Missing | 3 | -- | 3 | 0 |
|  **Total** | 115,440 | 91.5% | 105,655 | 3,042 |

Next, a revised weight (Weight 2) was calculated by dividing the revised eligible frame counts by the revised eligible sample sizes within each stratum. Two of the ten strata and the stratum containing the three dentists with missing specialty group did not have any respondents, thus their weights were proportionally distributed across the remaining eight strata. The final weight (Weight 2 Adjusted) is post-stratified to the sum of 105,655 dentists. These results are presented in Table B4.

**Table B4. Revised Eligible Number in Frame, Number of Respondents, Weight 2, Weight 2 Adjusted by Specialty**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Specialty** | **Revised Eligible Number in Frame** | **Number of Respondents** | **Weight 2** **(Revised Eligible Number in Frame / Number of Respondents)** | **Weight 2 Adjusted (Distributes the 42 Non-respondents from the three strata that had no respondents proportionally into the other eight strata)** |
| General Practice | 84,552 | 2,225 | 38.0009 | 38.0147 |
| Oral Surgery | 4,139 | 296 | 13.9831 | 13.9969 |
| Endodontics | 2,709 | 53 | 51.1132 | 51.1270 |
| Orthodontics | 6,616 | 93 | 71.1398 | 71.1536 |
| Pediatric Dentistry | 2,642 | 57 | 46.3509 | 46.3647 |
| Periodontics | 3,196 | 289 | 11.0588 | 11.0726 |
| Prosthodontics | 1,630 | 25 | 65.2000 | 65.2138 |
| Oral Pathology | 30 | 0 | -- | -- |
| Public Health Dentistry | 129 | 4 | 32.2500 | 32.2638 |
| Oral Radiology | 9 | 0 | -- | -- |
| Missing | 3 | 0 | -- | -- |
|  **Total** | 105,655 | 3,042 | Sums up to 105,613 | Sums up to 105,655 |

The survey response rate, adjusted for ineligibility is 48.7 percent, while the weighted response rate adjusted for eligibility is a slightly higher 49.7 percent.