8. SUMMARY AND CONCLUSIONS

8.1 Introduction

This chapter summarizes the results discussed in Chapters 3-6 and presents our recommendations. Each of Sections 8.2 through 8.5 discusses the corresponding earlier chapters. Section 8.6 discusses conclusions and recommendations.

8.2 Use of Alternative Measures of Size

The three measures of size considered here included 1980 and 1990 Census counts and 1999 Medicare beneficiary counts. All these measures are highly correlated, though in some specific PSUs, the number of Medicare beneficiaries gave a substantially different measure of size.

The number of certainty selections with an alternative measure of size depends heavily on the choice of the certainty cutoff. If 50 percent is used (i.e., all PSUs with at least 50 percent chance of selection), then the number of certainties with Medicare beneficiary counts would be substantially larger than the current MCBS design. If 100 percent is used, the number of certainties would be substantially reduced.

8.3 Improvements in Precision

The improvements in precision to be gained by using Medicare beneficiaries as a MOS are modest. For most survey variables, we would expect improvements in the range of 7 percent to 10 percent in the design effects, meaning that the sample size could be reduced by that amount and maintain the same level of precision. This improvement would result from balanced sample sizes rather than from reduced between-PSU variance components. There is further evidence that design effects have been moving upward as the current MCBS panel ages.

8.4 Cost of Implementation

The cost of implementation depends heavily on the degree of overlap with the original sample. Assuming 20 certainty PSUs, these costs would be expected to be approximately $900,000 for an overlap of 30 percent (among noncertainty PSUs), $750,000 for an overlap of 50 percent, and $500,000 for an overlap of 70 percent. There are other, less tangible, costs of working with an aging panel design, primarily because of uneven workloads that evolve over time. However, these costs are difficult to quantify.

8.5 Maximizing Overlap with 1988 Sample

Using the 1986 Ernst algorithm, we expect that the overlap for noncertainty PSUs between new and old samples would be approximately 50 percent. This algorithm worked acceptably for us in strata that have less than 55 or so PSUs; with larger strata, we encountered difficulties, although we expect these problems could be resolved. The overlap could be also improved through stratification that is closer to the 1980 stratum definitions.

The 1986 Ernst algorithm appears to effectively control the overlap and would offer the most cost-effective approach in the near term. However, a method due to Ohlsson (1999) offers a better long-range strategy for controlling the overlap between future surveys.

8.6 Recommendations

While the gains in precision would be modest and the alternative measures of size are highly correlated, we recommend moving to the use of Medicare beneficiaries for several reasons. First, while the gains in precision are modest, they are not negligible. Second, there is evidence that design effects have increased with the aging panel structure; if the same PSUs remain in place for another 10 year cycle, further deterioration of survey estimates can be expected to occur. Third, while it is hard to quantify savings of balanced PSU workloads, balanced workloads do facilitate survey operations. Finally, the use of a 20-year-old measure of size (which will become 30 years old by the end of the cycle), seems scientifically inappropriate for a major national survey. No matter how unwarranted, the aging sample and size measure gives an appearance of statistical unsoundness and an opportunity for arguments regarding scientific validity.

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