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REFINEMENTS OF A METHODOLOGY FOR DETECTING MARRIED COUPLES IN THE MEDICARE DATA*

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We are gratified by Kestenbaum's interest in our work (Iwashyna et al. 1998). We would like to make a few points in response.

First, we appreciate Kestenbaum's efforts in conducting parallel analyses in the distinct data sets of the Social Security Administration (SSA). He confirms the main points of our argument: (1) that husbands and wives may be linked in these administrative data sets; (2) that use of the cross-reference file over greater time horizons increases the number of couples that can be linked; and (3) that in even relatively short periods of follow-up (e.g., less than five years), a clear majority (73% in Kestenbaum's analysis) of the married couples in the United States can be uniquely identified, and their complete Medicare records of health care utilization can be linked together via existing administrative records.

Second, we acknowledge his insight that the cross-reference file ("Method 2" in our original article) can be used to link classes of husbands and wives beyond the "higher earning spouse who predeceases the lower earning spouse," which we presented as prototypical in our article. In our ongoing work, we have linked couples in the Health Care Financing Administration 1993 Denominator File (that is, everyone in Medicare at least age 65 on January 1, 1993) using a cross-reference file with six years of follow-up (Hatten 1980; Kestenbaum 1992). We were able to link 2,594,084 couples (5,188,168 individuals) directly (i.e., by "Method 1"), and 1,719,137 additional couples using the cross-reference file ("Method 2"). Because a 1993-vintage cross-reference file is not available to us, we cannot directly test Mr. Kestenbaum's assertion that many of these additional couples could have been linked in 1993 in the HCFA cross-reference data, as they could in the SSA data. We find, however, that the primary beneficiaries of our cross-reference-linked couples have a much higher mortality than do the primary beneficiaries of our directly linked couples: 61.5% of cross-reference-linked primary beneficiaries predeceased their dependents within six years, as opposed to

31.0% in the direct linkage. This finding is consistent with the nature of our prototype as a principal but not an exclusive mechanism by which couples enter the cross-reference file. The remaining couples from the cross-reference file may represent other sorts of events, including (for example) cases in which the lower-earning spouse entered Medicare first, or in which one spouse formerly had received Medicare as a disabled beneficiary.

Third, and finally, although Kestenbaum emphasizes the heterogeneity of couples detected in the cross-reference file, we believe that his projections of total efficacy in detection also bear emphasis. Kestenbaum points out that the rate of increase of detectable couples in the cross-reference file (as continually updated) which lies at the heart of Method 2 is slower than we suggested. In the SSA files, this appears to be true. Nonetheless, at every point within at least the four-year follow-up, the SSA analyses suggest that our methods (combining Method 1 and Method 2 couples) are *more* powerful than we originally estimated; at four years' follow-up, we predicted that 55% of couples could be linked, whereas Kestenbaum finds that 73% can be linked. Assuming linear growth of detection rates for the sake of simple discussion, our original estimates of overall detection efficacy for both methods combined are lower than Kestenbaum's estimates through nine years of follow-up. Thus the SSA data suggest that our original estimates of the combined methods' performance were conservative. That is, by nine years of follow-up, if we assume linear growth, nearly four out of five elderly married couples in the United States could be identified uniquely.

We stand by our original contention that the methods discussed in Iwashyna et al. (1998) offer a powerful way by which demographers can obtain very large samples of linked married couples; in our ongoing work we have successfully linked 4,313,221 couples. These couples' use of inpatient, outpatient, skilled nursing, and hospice services can be obtained in detail, with consequent information about their health and mortality status. Moreover, these large samples of computerized administrative records can be obtained in a context of near-zero marginal cost; also, HCFA, unlike SSA, has made its data widely available to outside scholars. We hope this tool proves a useful complement to survey-based studies of the elderly, and we look forward to working with fellow scholars on refining it.

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