

## GEOCODING PUBLIC HEALTH DATA

Krieger et al. correctly alert readers to potential sources of error when linking health data to census-derived socioeconomic data.<sup>1</sup> The authors' criticisms of zip code–based data speak to neither the advantages of postal zip codes (ZCs) nor the limitations of other geographies. We would like to correct some minor factual errors in Krieger et al. and to point out that researchers must pay careful attention to spatiotemporal discontinuities in *all* geography-based analyses.

Spatiotemporal discontinuities in calculating rates for specific geographies occur because populations change over time and space. ZCs reflect population change more quickly than census tracts (CTs), and commercial products are available with current estimates of ZC populations. CTs appear more stable only because they are updated less frequently. Using 1999 estimates of cancer incidence in a numerator with 1990 estimates of population in the denominator creates problems regardless of the geographic unit.

Changes in CT boundaries occur as well. Between 1980 and 1990, 23% of CTs had deliberate changes to boundaries (K. Miller, Geographic Areas Branch, US Census Bureau, oral communication, July 12, 2002). Using the CT Relationship Files,<sup>2</sup> we calculate that at least 21% of CTs in 2000 had changes resulting in at least 2.5% of the population's being spatially located in a new tract. Both ZCs and CTs require careful attention to potential spatiotemporal discontinuities.

The authors also state that large areas of ZCs can straddle state lines. In our own research we have found only 6 cases out of more than 30 000 1999 ZCs in which state boundaries were crossed.<sup>3,4</sup>

Data from the 2000 census are being released in zip code tabulation areas. Zip code tabulation areas will be stable until the next decennial census, and they provide highly accurate sociodemographic data.

Although we applaud the authors' contributions to the growing interest in geocoding public health data and recognize the limitations of a research brief, we believe a more balanced presentation of problems with *all* geographic units is called for. ■

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### References

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