

## TITLE

Tracing Methods for Obtaining Residential Street Addresses for Non-Street Mailing Addresses in State Cancer Registry Records

## THEME

Advance Environmental Public Health Science and Research

## KEYWORDS

geocoding, GIS, P.O. box, POB, tracing, street address, death certificate, cancer registry

## BACKGROUND

Public health geographic information systems (GIS) increasingly are being used to evaluate the relationship of environmental factors with disease morbidity and mortality. A critical early step in GIS-based environmental health studies is the geocoding, or address matching, of health-outcome datasets. Geocoding is commonly based on residential address at the time of the health event of interest, and, if successful, results in the assignment of a coordinate location, such as latitude/longitude, as well as area-level assignments, such as census block group or census tract. One problem that frequently arises in geocoding public health surveillance data is variability in the quality of address information used for address matching. Of particular concern are non-street mailing addresses that cannot be geocoded, such as post office boxes (POB<sub>s</sub>), general delivery addresses, highway contract boxes, and star/rural routes. A common practice is to assign coordinate location to these addresses based on the centroid, or geographic center, of the associated five-digit zip code, which is likely to introduce misclassification as well as potential biases into the analysis.

## OBJECTIVE(S)

The objectives of the study were to assess geographic variability in the quality of address data available for geocoding in 1988–2001 state cancer registry records and explore tracing methods for obtaining residential street addresses for records containing POBs and other non-street mailing addresses.

## METHOD(S)

Records for all cancer cases registered with the New Mexico Tumor Registry between January 1, 1988 and December 31, 2001 were obtained and assigned address-type codes based on address-at-diagnosis information available in each record. Address types included: (a) street address; (b) facility name (e.g., nursing home); (c) general location (e.g., mile marker 11, Highway 80), (d) post office box; (e) rural/star route; (f) general delivery; and (g) highway contract route. Distributional frequencies for address type were generated at the county and municipal level. A statistical sample of records containing non-street mailing addresses was subjected to a formal review of all existing registry records and information, including death certificates, physician follow-up records, current address information, and original case abstracts. Additional tracing resources included reverse directories, telephone books, and internet search functions.

## RESULT(S)

We found significant geographic variability in the quality of address information at the county and municipal level in New Mexico cancer surveillance records. The prevalence of non-street mailing addresses, mainly POBs, generally followed an urban-rural continuum, with rural areas having the highest prevalence. Existing cancer registry records, abstracts, and related information used in conjunction with standard tracing resources frequently identified residential street addresses for case records containing non-street addresses. Death certificate residence information proved particularly useful, especially in areas covered by reverse directories.

## DISCUSSION/RECOMMENDATION(S)

Retrospective assignment of residential street addresses to disease registry records containing non-street mailing addresses may be feasible when vital status follow-up is performed, particularly for age-dependent diseases such as cancer, and especially when disease duration is relatively short.

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