Background

Geocoding New Jersey State Cancer Registry (NJSCR) case addresses has presented challenges particular to NJ. Often addresses cannot be accurately geocoded because 1) NJ zip codes often do not follow municipal boundaries, 2) the common use of historical or alternative place names in lieu of the city names used by current street address databases, and 3) common misspellings of city names. In collaboration with the NAACCR Geocoding Workgroup, the authors proposed the creation of a NJ-specific Municipal Alias (NJ-MA) list to address these challenges.

Collaboration

Through the NAACCR Geocoding Workgroup the NJSCR partnered with Texas A&M University and NAACCR leadership to develop a plan to create, implement and evaluate a NJ Municipal Alias List to improve geocoding accuracy. We would like to acknowledge Information Management Services (IMS) for their valuable support in creating updates to the DMS system that made implementation and evaluation possible.

Objectives

Evaluate changes in geocoding quality after implementation of the NJ-MA list.

Methods

The NJ-MA list was assembled using a collection of historical local names that linked to at least 30 address municipal values in the NJSCR from 1979-2016. This process also identified common misspellings of local and municipal names that occurred in NJSCR which were used to supplement the NJ-MA list. The geocoding scientists from Texas A&M University (TAMU) modified the NAACCR geocoder to include an option for the address search to account for the NJ-MA table. Using a subset of cases diagnosed from 1979-2017.

The final NJ-MA list is manually assembled using these results ensuring that NJ-MA listings are unique to each county.

This process will capture common municipal misspellings and abbreviations, which will be useful as NJ-MA listings.

Examples of common municipal name variations

Buena Vista Township will also appear as
Buena Vista Town
Buena Vista Towns
Buena Vista Twp
Collings Lake
Milmay
East Vineland

The NJ-MA listing was tested in NJSCR DMS Test Site for cases diagnosed from 2000-2017.

A comparison of the DMS Development Geocoder results without NJ-MA verses with NJ-MA was performed.

Results

Table 1

The addition of the NJ-MA listing increased the number of matched addresses by 19,369 (2.0%); the number of addresses needing review and the number of addresses not matching decreased by 18,803 and 566, respectively.

Table 1: Match Status Change with Alias

| NJSCR Cases 2000-2017, N=955,839 |
|-----------------|-----------------|----------------|
| Address Match Status | Town Name Aliasing | Difference |
| Match           | 757,285          | 776,654      | 19,369        |
| Non-Match       | 60,849           | 60,283       | -566          |
| Review          | 137,705          | 118,902      | -18,803       |
| Total           | 955,839          | 955,839      | 0             |

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References

Historical listing of NJ local municipal names associated with an incorporated municipality released by the NJ Department of Transportation in 2004

Conclusions

– Inclusion of an MA table has been shown to improve geocoding accuracy and efficiency.

– Inclusion of a Municipal Alias list is like to improve geocoding outcome and reduce staff resources among state cancer registries.