NORTH DAKOTA

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Geo-Coding activity at the NDSCR

NATIONAL PROGRAM OF CANCER REGISTRIES

SUCCESS STORY

SUMMARY: Health is connected with location and its spatial component – address. No wonder one of the primary tasks for a central cancer registry is to answer questions, such as: “What are the cancer rates in location A? How do these rates compare to rates in other places adjacent or close to location A? How do these rates compare to standard rates in the state, region, or nation? Are there spatial patterns and trends that should be studied?” and so on.

The geographic information system (GIS) is a framework for gathering, managing, and analyzing data. A Geocoding tool such as NAACCR GEOCODER is capable of converting addresses (like a street address) into geographic coordinates (latitude and longitude), which can be used to locate a place on a map, or position the map. The North Dakota Statewide Cancer Registry (NDSCR) has started to develop its GIS capability in 2015 in order to answer those questions and improve its data quality. Its annual cancer reports include maps of cancer incidence and mortality rates for each county. However, the efforts have been focused more on geocoding cancer cases, rather than on spatial and statistical analyses of the geocoded data due to small population in North Dakota and patient confidentiality concern.

CHALLENGE: The current challenge related to Geo-Coding technics is to try an alternative approach to overcome current limitations for producing incidence rate maps at a more refined scale than the county level.

SOLUTION: Attended Geo-Coding webinar training.

RESULTS: The NDSCR has performed Geo-Coding successfully since 2015. By conducting GeoCoding, the NDSCR was able to assign / re-assign latitude, longitude, and census tract to a larger number of reportable cases in the NDSCR database. As a result, the number of cases with Unknown Residence Addresses decreased simultaneously, the census tract completeness increased in NDSCR database. This allows data users to obtain more accurate survival analysis data, and to access standardized and geocoded addresses. Unfortunately, a comparison to identify the discrepancies between “county at diagnosis” versus “geocoded county” was not yet conducted.

Furthermore, the NDSCR has used geocoded DxCounty value for its current annual cancer reports on cancer incidence and mortality rates. However, the efforts on GIS have been focused more on geocoding cancer cases, rather than on spatial and statistical analyses of the geocoded data. The current annual cancer incidence and mortality rates are reported by single county, not by its sub-units, such as Census Tracts, Block Groups and Census Blocks - due to cancer patient confidentiality concern. Since North Dakota has a small population, cancer counts on specific sites for some counties are very low, even at the county level. Therefore there are limitations to reporting case counts at a subscale of the county level.

SUSTAINING SUCCESS: Since 2015, Geo-Coding activity continued annually at the NDSCR, and the results have been updated into its database, as well as incorporated into the dataset for the annual data submission to CDC/NPCR and NAACCR.

NPCR
NATIONAL PROGRAM OF CANCER REGISTRIES

CDC
Centers for Disease Control and Prevention
National Center for Chronic Disease Prevention and Health Promotion