

Data Modernization Approach Reinvigorates Urban Reporting in Massachusetts

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SUMMARY

For more than 30 years, the Massachusetts Cancer Registry (MCR) has provided surveillance data describing local population-level cancer experience. Annual reports document the epidemiology of cancer incidence for all invasive and 23 specific cancers for each of the 351 Massachusetts cities and towns. In recent years, the MCR has collaborated with the Massachusetts Department of Public Health Bureau of Climate and Environmental Health (BCEH), providing data for cancer cluster investigations. In 2024, a new collaboration between MCR and BCEH focused on standardization of city/town identification. The project produced a city/town cancer incidence dashboard that paved the way for regular annual release of these data in a more accessible format.

CHALLENGE

- Due to the COVID-19 pandemic, programmatic challenges, and the adoption of new registry software, annual reporting of city- and town-level data had stalled for nearly 5 years.
- Specifically, codes for each of the 351 cities and towns in Massachusetts had not been assigned for incidence data from 2016 to 2020, the most recent 5-year data period as of early 2024.

SOLUTION

For all 2016 to 2020 MCR cases, data fields identifying address (street, city or town, and ZIP Code) were exported from SEER*DMS (the National Cancer Institute's Surveillance, Epidemiology, and End Results Data Management System) to permit identification of town and subsequent assignment of cases to a field named MA MCD (minor civil division), which was formatted to represent all 351 cities and towns in Massachusetts. Note: while MCD in SEER*DMS corresponds to legally defined county subdivisions throughout the country, Massachusetts created MA MCD to specify city or town due to its statewide structure for local public health governance at the city/town level.

A file of 2016 to 2020 cases with assigned city and town code (MA MCD) was created by linking the data from the exported case address file to files containing correct spelling of city and town names and accurate matching of ZIP Code to city or town name. This entailed fixing the spelling of city/town names and correcting ZIP Codes as necessary. Further file review was needed to account for ZIP Codes that include more than one city or town to determine the correct MA MCD code assignment. This process initially involved manually matching street addresses to the appropriate city or town, but collaboration with BCEH facilitated the validation of manual city or town assignments against geocoded assignment software that the BCEH uses. Discrepant codes were reviewed and updated. Subsequent data were clean and ready for city- and town-level analyses.

RESULTS

After a 5-year delay in producing city and town reports, the MCR-BCEH collaboration produced clean 2016 to 2020 data with accurate city and town identification. The data were used to report the city- or town-level cancer incidence data in PDF format and an online dashboard. The process of producing these most current data strengthened the working relationship between the MCR and the BCEH and gave both parties a better understanding of city and town data in the MCR database.

CONCLUDING REMARKS

Informed by the validated crosswalk resulting from this collaboration, a script will be written to populate the MA MCD field based on census tract data produced by a probabilistic geocoding application. MCR staff will monitor and update crosswalk coding assignments as warranted. Additionally, MCR and BCEH will transition to a dashboard-only presentation of city and town cancer incidence data, and the PDF version of the report will be phased out. The collaboration between MCR and BCEH will enhance the city and town dashboard and provide regular updates and dissemination of local data.