Category: Data Analysis – Completed Project – Staff

Catchment Area Data Trends in Cancer Indicators and Risk Factor Behaviors in Texas, 2010-2020

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1. Background

Experts have routinely outlined cancer prevention recommendations and defined evidence-based interventions that effectively prevent cancer and detect it at early stages. Despite this body of evidence, an immense gap exists between what we know about cancer prevention and what we do, including what individuals and families incorporate into their personal lives as well as actions taken by educators, policymakers, employers, government agencies, and others to promote healthier, cleaner environments, and a culture that values and enables health and wellness.

2. Goals

To better understand the extent to which rates of preventable cancer risk factors and cancer morbidity and mortality have changed in UT MD Anderson Cancer Center's catchment area, we reviewed key demographic indicators and behavioral risk factors as well as cancer incidence, late-stage incidence, and mortality between 2010 and 2020. We examined data related to all cancer types and five preventable cancers in particular: female breast (breast), cervix uteri (cervical), colon and rectum (colorectal), liver and intrahepatic bile duct (liver), and lung and bronchus (lung).

3. Solutions and Methods

We calculated changes in rates of cancer incidence and mortality at the state and public health region (PHR) level, as well as changes in rates of obesity, smoking, physical activity, and cancer screening behaviors. Error bars were calculated to display the variability and uncertainty in the data and help determine statistical significance.

4. Outcomes

During the study period, cancer mortality rates in our catchment area decreased notably, from 162.1 to 143.6 per 100,000 population. This decline was observed across most PHRs. Specific cancer types showed varying trends: breast cancer mortality decreased from 20.7 to 19.8, while colorectal cancer mortality fell from 15.0 to 13.7 per 100,000 during the same period. Lung cancer mortality rates also decreased notably, from 37.5 to 31.0 per 100,000. In contrast, cervical cancer mortality showed no change, and liver cancer mortality slightly increased from 7.8 to 8.2 per 100,000. Risk factors play a crucial role in understanding changes in cancer incidence and mortality. Over the study period, the catchment area saw mixed progress in addressing behavioral risk factors. Obesity rates increased by 3.8 percent, while physical inactivity remained a challenge despite some improvements. Smoking rates declined slightly, and HPV vaccination rates for adolescents rose steadily, surpassing 50 percent by 2020. Cancer screening rates increased for colorectal cancer and breast cancer, while they declined modestly for cervical cancer.

5. Lessons Learned and Future Directions

Progress on key risk factor behaviors in the catchment area has been mixed and shows the need to focus more on obesity and physical activity. When comprehensive statewide approaches for cancer prevention are applied, they can be expected to have a positive impact on cancer risk reduction at the population level. Overall, continuing or scaling up efforts to implement evidence-based strategies could significantly reduce the cancer burden in Texas. Currently these strategies are too rarely or

inconsistently practiced, but they could be transformative for our population, not only in reducing cancer risks, but in promoting health and wellness more broadly. Texas should continue to monitor progress on indicators related to cancer prevention to assess how cancer prevention strategies are supporting population health goals.