# Systematic Identification and Investigation of Catchment Area Cancer Control Priorities

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## BACKGROUND

- Cancer centers are obliged to understand and address the cancer burden specific to their catchment areas.
- Doing so can
  - Inform research priorities
  - Reveal new research questions
  - Guide decision making around community outreach and engagement

## GOALS

- Describe a framework for systematically identifying cancer control challenges in our 15-county northeast Ohio catchment area
- Detail the steps of a resulting investigation into one of the catchment area cancer control challenges which emerged

## METHODS

We developed a publicly available report titled **"Cancer Statistics, Case Comprehensive Cancer Center Catchment Area"** modeled on the perennial "Cancer Statistics" national report by Siegel et al published in *CA: Cancer Journal for Clinicians.*

- Statistics by cancer site, sex, race/ethnicity, and county
- Comparisons to state and national levels
- Figures and tables emulate those of the national report
- Data sources
  - Ohio Cancer Incidence Surveillance System (OCISS), 1996-2020
  - SEER*Stat, 2016-2020

We detail an ensuing investigation into one of the report's findings related to liver and intrahepatic bile duct cancer racial disparities. That investigation utilized

- OCISS, 2016-2020
- CDC Population Level Analysis and Community Estimates (PLACES), 2021
- Ohio Medicaid claims for cancer patients (2016-2020)

## RESULTS

a.

Cancer Statistics, Case Comprehensive Cancer Center Catchment Area

*A White Paper from the Case Comprehensive Cancer Center Population Cancer Analytics Shared Resource*

Executive Summary

*Here, we summarize the cancer burden of the Case Comprehensive Cancer Center catchment area, which covers a 15-county region of northeast Ohio. Using data from the Ohio Cancer Incidence Surveillance System and SEER*Stat, we provide cancer statistics by major cancer site, by sex, by racial and ethnic groups, and by county. Throughout the report, we also provide state and national comparators to place the catchment area's unique cancer burden in context. Broadly, cancer incidence and mortality in the catchment area substantially exceed those of the nation. We highlight a number of instances in which the burden of specific cancer types in certain groups—within the catchment area as a whole or within single counties—is better or worse than expected. In particular, we highlight the high burden of lung cancer, especially in non-Hispanic Black residents of the catchment area and in Ashtabula County residents; the high mortality from breast cancer in Non-Hispanic Black women; and the high mortality from colorectal cancer in Ashland County.*

Introduction

The Case Comprehensive Cancer Center (CCC) is one of 56 comprehensive cancer centers designated by the National Cancer Institute (NCI). Situated in the northeastern corner of Ohio, the Case CCC catchment area is comprised of 15 counties: Ashland, Ashtabula, Cuyahoga, Erie, Geauga, Huron, Lake, Lorain, Mahoning, Medina, Portage, Stark, Summit, Trumbull, and Wayne (See **Figure 1**). Based on the National Center for Health Statistics (NCHS) urban-rural classification scheme[1], the Case CCC 15-county catchment area centers on a large central metropolitan county (Cuyahoga), with four large fringe metropolitan, five median metropolitan, and five micropolitan (non-metropolitan) counties.

With a population of 3,958,168 residents, the Case CCC catchment area comprises about 33.7% of the total population of the state, and records just over a third of the new cancer diagnoses in Ohio each year. While the majority of the population identifies as White (79.3%), there are pockets of high racial and ethnic diversity in urban centers like Cleveland (47% Black) and Akron (26% Black), and in counties like Lorain (11% Hispanic).[2] **Table 1** summarizes the racial and ethnic distribution of Case CCC residents.

The catchment area is characterized by considerable socioeconomic diversity, with poverty rates as low as 6.1% (Geauga county) and 6.4% (Medina county), and as high as 18.1% (Cuyahoga County) and 20.3% (Ashtabula County).[3] The city of Cleveland is reported to be the second poorest urban center in the country with a 31.2% poverty rate[4], disproportionately affecting non-Hispanic (NH) Black residents.[5]

FIGURE 1 – Map of the 15-county Case Comprehensive Cancer Center (CCC) catchment area indicating metropolitan status based on National Center for Health Statistics designations.

Addressing unique catchment area needs is a vital function of NCI-designated cancer centers and of Case CCC. This can be accomplished on multiple fronts, including by tailoring research to address specific areas of disproportionate cancer

*Population Cancer Analytics Shared Resource, March 2024* 1

b.

**Fig2a. Estimated New Cases in the Catchment Area, 2016-2020**

| | Males | | Females | |
|---|---|---|---|---|
| Prostate | 15,781 | 25.2% | Breast | 17,901 | 29.1% |
| Lung & bronchus | 8,883 | 14.2% | Lung & bronchus | 8,574 | 13.9% |
| Colon & rectum | 5,258 | 8.4% | Colon & rectum | 4,879 | 7.9% |
| Urinary bladder | 4,683 | 7.5% | Uterine corpus | 4,485 | 7.3% |
| Melanoma of the skin | 3,763 | 6.0% | Melanoma of the skin | 2,733 | 4.4% |
| Non-Hodgkin lymphoma | 2,732 | 4.4% | Thyroid | 2,681 | 4.4% |
| Kidney & renal pelvis | 2,479 | 4.0% | Non-Hodgkin lymphoma | 2,264 | 3.7% |
| Oral cavity & pharynx | 2,312 | 3.7% | Pancreas | 1,880 | 3.1% |
| Pancreas | 1,980 | 3.2% | Kidney & renal pelvis | 1,621 | 2.6% |
| Leukemia | 1,882 | 3.0% | Leukemia | 1,329 | 2.2% |
| **All Sites** | **62,599** | **100%** | **All Sites** | **61,501** | **100%** |

**Fig2b. Estimated Deaths in the Catchment Area, 2016-2020**

| | Males | | Females | |
|---|---|---|---|---|
| Lung & bronchus | 6,320 | 26.5% | Lung & bronchus | 5,281 | 24.1% |
| Prostate | 2,318 | 9.7% | Breast | 3,249 | 14.8% |
| Colon & rectum | 1,997 | 8.4% | Colon & rectum | 1,860 | 8.5% |
| Pancreas | 1,734 | 7.3% | Pancreas | 1,763 | 8.1% |
| Liver & intrahepatic bile duct | 1,211 | 5.1% | Ovary | 988 | 4.5% |
| Esophagus | 1,052 | 4.4% | Uterine corpus | 870 | 4.0% |
| Leukemia | 1,018 | 4.3% | Leukemia | 782 | 3.6% |
| Urinary bladder | 985 | 4.1% | Non-Hodgkin lymphoma | 683 | 3.1% |
| Non-Hodgkin lymphoma | 883 | 3.7% | Liver & intrahepatic bile duct | 600 | 2.7% |
| Brain & other nervous system | 705 | 3.0% | Brain & other nervous system | 518 | 2.4% |
| **All Sites** | **23,879** | **100%** | **All Sites** | **21,896** | **100%** |

c.

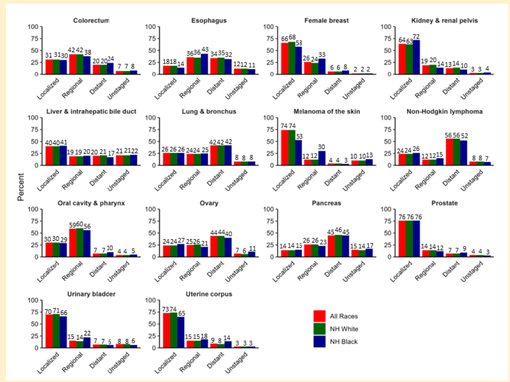
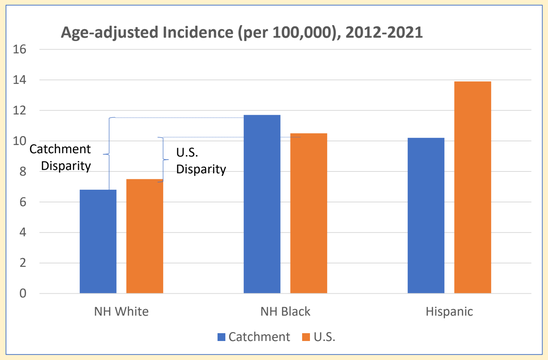



**Figure 1** – a) Cover of "Cancer Statistics, Case Comprehensive Cancer Center Catchment Area", b) Top 10 highest incidence and mortality cancers in the 15-county Case Comprehensive Cancer Center catchment area, c) Stage distribution for selected cancers by race, 2016 to 2020

One surprising finding in the report was that catchment area Black-White disparities in liver and intrahepatic bile duct cancer (LIBDC) far exceeded what is seen nationally.

a.




b.

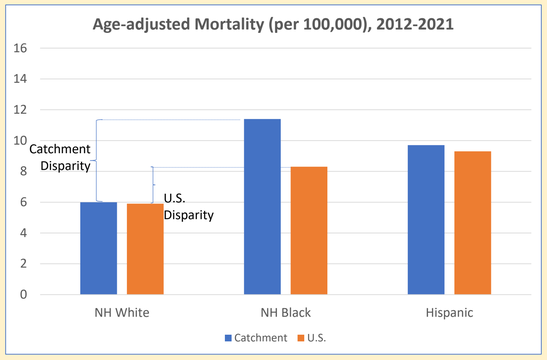



**Figure 2** – Age-adjusted a) incidence and b) mortality rates for liver and intrahepatic bile duct cancer in the catchment area vs. U.S. from 2016-2020, stratified by race and ethnicity

To investigate potential drivers of these disparities, we further stratified incidence and mortality by sex, examined geographic patterns, estimated the extent of risk factors within the catchment area, and analyzed Medicaid claims to identify potential causative factors.

## RESULTS (Cont'd)

- Highest burden was among Black men
- Highest burden in our northern/eastern catchment
- In the catchment, relative to the U.S., prevalence of binge drinking (17.8% vs. 15.5%) and smoking (19.5% vs. 18.1%) were elevated.
- Medicaid Claims for Hepatitis C were elevated in Black men (Figure 3).

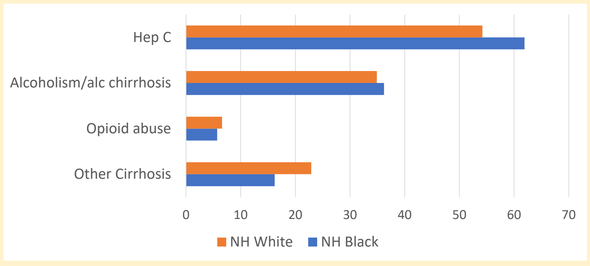



**Figure 3** – Medicaid claims in the catchment area for conditions increasing the risk for liver and intrahepatic bile duct cancer, stratified by race

## DISCUSSION

- A systematic approach to surveilling catchment area cancer burden can inform cancer center members and the public—and can help identify opportunities for improving outcomes.
- The discovery of a large Black-White disparity in liver/intrahepatic cancer burden triggered an investigation leveraging multiple data sources.
- This investigation suggested that heightened outreach and case finding to reduce hepatitis C morbidity in Black residents could reduce liver/intrahepatic bile duct cancer disparities in northeast Ohio.

## LINK / ACKNOWLEDGMENTS

The report "Cancer Statistics, Case Comprehensive Cancer Center Catchment Area" is available by scanning here:

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