

## Methods and Limitations Overview

### Geographic Description of Cuyahoga County

Cuyahoga County is comprised of 36 neighborhoods within the City of Cleveland and 58 suburban municipalities. To better understand the diversity of the county, data has been analyzed at the neighborhood/municipality level, when possible. Additionally, to help illustrate this diversity, the rates displayed in many tables break down the neighborhoods/municipalities into three sections(*see appendix I for an indexed map*):

- 1) City of Cleveland neighborhoods (those neighborhoods comprising the city itself),
- 2) First Ring municipalities (those municipalities that share a border with the City of Cleveland), and
- 3) Outer Ring municipalities (those Cuyahoga County municipalities that do not share a border with the City of Cleveland).

### Mapping

The maps presented in this report were created using ArcGIS, a geographic information system (GIS) software program. Class breaks are identified that best group similar values and that maximize the differences between classes. The use of natural breaks in the data portrays a geographic visual representation of cancer incidence and mortality data in Cuyahoga County. Age-adjusted incidence and mortality rates were suppressed (depicted as a blank/white area on the map) if total case counts were less than 5 cases per 5 year time period. Specific cancer types were not mapped if there were a significant number of areas that needed suppression. See rate calculations and definitions section above for additional details.

### Data Sources

#### *Ohio Cancer Incidence Surveillance System (OCISS)*

Cancer incidence data used in these analyses were obtained in part from the OCISS, a cancer registry partially supported in the National Program of Cancer Registries at the Centers for Disease Control and Prevention (CDC) through Cooperative Agreement # 6NU58DP003936. Use of these data does not imply that ODH or CDC agrees or disagrees with the analyses, interpretations or conclusions in this report (or publication or presentation. Information about OCISS can be obtained at: [http://www.odh.ohio.gov/healthstats/ocisshs/ci\\_surv1.aspx](http://www.odh.ohio.gov/healthstats/ocisshs/ci_surv1.aspx)<sup>1</sup>

Ohio Revised Code Section 3701.26 requires that all physicians, dentists, hospitals, and other persons providing diagnostic services to patients with cancer report the diagnosis within six months of the date of diagnosis to OCISS.<sup>2</sup> Basal and squamous cell skin cancer and cervical cancer, *in situ*, are not required to be reported.<sup>1</sup> Cancer cases were classified as to residence at diagnosis obtained from the source reporting the cases.<sup>1</sup> Data included in this report were confirmed cases of cancer based on data quality assurance procedures determined by the OCISS.<sup>1</sup>

### *Ohio Department of Health's (ODH) Bureau of Vital Statistics*

Cases of cancer mortality were identified in the death files obtained from the Ohio Department of Health's Bureau of Vital Statistics. Information about the ODH Bureau of Vital Statistics can be found at: <http://www.odh.ohio.gov/healthStats/vitalstats/vitalstatsmainpage.aspx><sup>3</sup>

### *State and National rates*

State Cancer Profiles. Incidence Rate Report by County (2008-2012).  
<http://statecancerprofiles.cancer.gov/index.html> Accessed June 2016.<sup>4</sup>

## **Rate Calculations and Definitions**

Data in this report are presented as incidence or mortality rates per 100,000 persons. **Incidence** rates are the number of new cases of cancer within a specified time period divided by the total population at risk in that time period. **Mortality** rates are the number of cancer deaths within a specified time period divided by the total population at risk in that time period.

Rates were calculated using the 2010 U.S. Census to determine the population at risk. Each cancer site/type was analyzed according to geography, age, gender, and race to assist with the identification of disparities/inequities.

This five year timeframe (2007-2011) was selected because counts and rates are subject to random variation and often fluctuate from year to year. This is especially the scenario when counts are very low, thus rates can become unstable and sometimes need to be interpreted with caution. For these reasons, rates have not been calculated when there are fewer than five cases in any given category and are denoted with a "\*". Also, please note that according to the United States Cancer Statistics Report Technical Notes, rates may be unstable when case counts are less than 16. Therefore, in these instances, these rates should be interpreted with caution.<sup>5</sup>

Furthermore, to help limit disclosure of confidential personal information, the *Ohio Department of Health Disclosure Limitation Standard* was used.<sup>6</sup> This *Standard* requires data to be suppressed when the denominator value minus the numerator value is less than 10 for any given tabulation/level of analysis.<sup>6</sup>

### *Age-Adjustment*

Rates have been adjusted based on the age distribution of the population, because increasing age is strongly associated with cancer.<sup>1</sup> In this report, rates are direct age-adjusted to the U.S. 2000 standard population. This method is useful in comparing incidence and mortality rates from one population to rates in another population.<sup>1</sup>

### *Average Annual Cases/Deaths*

The average annual number of cancer cases and deaths were calculated for the time period 2007-2011.<sup>1</sup> This was done by adding the number of cases or deaths diagnosed during 2007-2011 and then dividing that number by 5, and rounding the value to the nearest whole number.<sup>1</sup>

### *Invasive Cancer*

Invasive cancer is cancer that has spread beyond the layer of tissue in which it developed, and is growing into the surrounding healthy tissues.<sup>7</sup> Invasive cancers include ones that are diagnosed

in the localized, regional, distant, and unstaged/unknown stages.<sup>1</sup> Incidence counts and rates include invasive cancers only, with the addition of *in situ* bladder cancers. The inclusion of *in situ* bladder cancers in the calculation of incidence rates is consistent with methodology of the SEER program.

## **References**

1. Ohio Cancer Incidence Surveillance System, Ohio Department of Health and The Ohio State University, Columbus, Ohio. [http://www.healthy.ohio.gov/cancer/ocisshs/ci\\_surv1.aspx](http://www.healthy.ohio.gov/cancer/ocisshs/ci_surv1.aspx) (Accessed May 2, 2016).
2. Ohio Revised Code 3701.26.2 (3701.262). *Rules; cancer registry; duty to report cancer cases and grant access to records; public reports.* <http://codes.ohio.gov/> (Accessed May 2, 2016).
3. Bureau of Vital Statistics, The Ohio Department of Health. <http://www.odh.ohio.gov/healthStats/vitalstats/vitalstatsmainpage.aspx> (Accessed May 2, 2016).
4. State Cancer Profiles. Incidence Rate Report by County (2008-2012). <http://statecancerprofiles.cancer.gov/index.html> (Accessed June, 2016).
5. Centers for Disease Control and Prevention. National Program for Cancer Registries. *Suppression for reliability.* [http://www.cdc.gov/cancer/npcr/uscs/2006/technical\\_notes/stat\\_methods/suppression.htm](http://www.cdc.gov/cancer/npcr/uscs/2006/technical_notes/stat_methods/suppression.htm). (Accessed May 2, 2016).
6. The Ohio Department of Health. *Data Methodology Standards for Public Health Practice.* <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/data%20statistics/standards/methodological%20standards/disclimit.ashx> (Accessed May 2, 2016).
7. National Cancer Institute. *Dictionary of Cancer Terms.* <http://www.cancer.gov/dictionary/?CdrID=45741>. (Accessed May 2, 2016).