

INTRODUCTION

Cancer is a priority health issue in Cuyahoga County and the Greater Cleveland area. Cancer is the second leading cause of death in Ohio and Cuyahoga County.¹ On average, from 2002-2006, approximately 3,353 persons died from cancer per year in Cuyahoga County. This translates into approximately 9 cancer deaths every day in Cuyahoga County during this time frame.

The Healthy People 2020 Cancer Goal is to “reduce the number of new cancer cases, as well as the illness, disability, and death caused by cancer.”² The target for 2020 is to reduce cancer deaths to a rate of no more than 160.6 per 100,000 people.² To put this in perspective, the 2002-2006 Cuyahoga County cancer age-adjusted (2000 U.S. population standard) death rate was 204.3 per 100,000 people. The rate for Cuyahoga County was higher than the 2002-2006 cancer age-adjusted death rate for the State of Ohio (201.4) and the United States (186.9).³ To achieve the Healthy People 2020 target death rate for cancer, the Cuyahoga County age-adjusted cancer death rate must be reduced by 21.4%, or by a rate of approximately 44 cancer-related deaths per 100,000 people.

Despite the importance of cancer death statistics, the estimated impact of cancer in a community cannot be measured by one indicator. As the population ages and more advanced cancer diagnostics are utilized, cancer incidence information (i.e. newly diagnosed cases) matched with and against cancer mortality statistics becomes an increasingly important piece of the community health assessment puzzle.

Establishing and understanding a community’s cancer burden is a complex task. Cancer is not just one disease. It is a group of more than 200 very different diseases characterized by uncontrolled growth and spread of abnormal cells.³ Each type of cancer differs in risk factors, prevention, early detection, treatment, and survival. Unfortunately, many of the causes and risk factors are unknown. Experts commonly classify risk factors into two major groups, non-modifiable and modifiable risk factors. Non-modifiable risk factors are factors that cannot be changed, such as a person’s age, gender, and family medical history (i.e. genetics). Modifiable risk factors are factors that can be changed, such as lifestyle choices (e.g. tobacco use, diet, physical activity level) and personal behaviors (e.g. using protective measures to avoid exposure to the sun, occupational hazards, and sexually transmitted diseases).

According to the American Cancer Society, it is estimated that smoking accounts for 30% of cancer deaths.⁴ Additionally, poor dietary habits and lack of physical activity also play a significant role in a person’s risk for cancer. Only a small percentage of cancers are attributable to environmental pollutants in the air, soil, water, and food. Even with this knowledge, a 2008-2009 report by the President’s Cancer Panel suggests that exposure to chemicals and environmental factors needs to be further investigated.⁵ The primary causes of many cancers have yet to be identified, and multiple factors often interact to increase an individual’s risk of developing cancer.

In terms of morbidity, the American Cancer Society has estimated that approximately 1 of every 2 males and 1 of every 3 females will develop invasive cancer in his or her lifetime.⁶ Invasive cancer is defined as cancer that has spread beyond the layer of tissue in which it developed, and is growing into the surrounding healthy tissues.⁷ Furthermore, 1 of every 4 males and 1 of every 5 females will die from cancer.⁶ From 2002-2006, over 37,705 individuals in Cuyahoga County were diagnosed with cancer. This translates to an average of approximately 21 cases of cancer diagnosed everyday in Cuyahoga County during this time period. The direct age-adjusted (using the 2000 U.S. population standard) cancer incidence rate calculated from the 2002-2006 Cuyahoga County incidence figure is equal to 477.1 per 100,000 persons, which is about 2.2 percent higher than the Ohio rate of 466.4 per 100,000 and about 3.0 percent higher than the United States rate of 462.9 per 100,000.³

It is necessary to continuously examine cancer incidence data and potential risk factors that may contribute to both cancer death and incidence in the local area, to provide a strong scientific base for directed public health interventions in the local setting. Many of these potential risk factors are directly or indirectly related to sociodemographic factors.⁸ For example, the association between poverty and higher rates of cancer morbidity and mortality has been well documented by researchers.⁹⁻¹² Studies demonstrate that higher cancer incidence and mortality rates among the socioeconomically disadvantaged are the result of several factors, including: (i) a higher prevalence of major cancer risk factors such as cigarette smoking; (ii) delays in cancer diagnosis resulting in lower probabilities for treatment effectiveness; and (iii) lack of access to prompt adequate treatment following cancer diagnosis.⁹⁻¹⁰ Much of the information regarding the above mentioned cancer risks, as well as other risks not specifically mentioned, can often be characterized along arbitrary geographic boundaries such as zip codes or census tracts.

Many questions regarding the provision of health care are related to geography. Health problems vary geographically, as do the distribution and need of the people. By striving to understand the distribution and diffusion of cancer and its relationship to geographic-specific socio-demographic, environmental, and behavioral health characteristics, prevention and control specialists can make informed decisions and provide appropriate resources to those in greatest need.

Reduction in Cuyahoga County rates of cancer death and incidence requires a comprehensive, coordinated, and directed public health prevention, control, and education effort by local health professionals, hospitals, various service agencies, political leaders, the media, and the state. Prevention and control efforts can be significantly helped by knowing what type of cancer is being diagnosed in whom, at what stage, and where diagnosed individuals live, work, and play in the community. Such a strategy has broad implications for intervention and educational efforts which currently lack information and direction specific to our community.

The current review of 2002-2006 Cuyahoga County cancer data will serve as the baseline for future analysis of local cancer incidence trends and will function as a reference for

measuring the community's progress toward reducing the cancer burden present in Cuyahoga County. The Ohio Department of Health has recently created a mechanism for local health departments to have more immediate access to detailed information regarding the "who", "what", and "where" of cancer cases diagnosed in their community. Lead by The Cuyahoga County Board of Health (CCBH), the local public health departments in the county (which includes CCBH, the City of Cleveland Department of Public Health, and the Shaker Heights Health Department), are excited to provide the first comprehensive cancer report for Cuyahoga County. It is our sincere hope that the broad implication for such work is aimed at targeting resources in the health community toward cancer prevention and control efforts.

REFERENCES

1. Leading Causes of Death, Number and Average Age Adjusted Death Rates per 100,000 population, Ohio and Counties, 2008. The Ohio Department of Health. Center for Public Health Statistics and Informatics. <http://www.odh.ohio.gov/ASSETS/9B60CDAA82FA467F86D9F4D58E23AB8A/08leading.pdf> (Accessed February 23, 2011).
2. Healthy People 2020 Objectives. United States Department of Health and Human Services, Public Health Service. <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=5> (Accessed January 19th, 2011).
3. *Cancer Incidence and Mortality among Ohio Residents, 2002-2006*. Ohio Cancer Incidence Surveillance System, Ohio Department of Health and The Ohio State University, Columbus, Ohio, December 2009. http://www.odh.ohio.gov/ASSETS/79F9E92E210F477D885F8EAC864E2F27/0206Monograph_Final.pdf.
4. Cigarette Smoking. The American Cancer Society. <http://www.cancer.org/Cancer/CancerCauses/TobaccoCancer/CigaretteSmoking/cigarette-smoking-who-and-how-affects-health>. (Accessed January 10, 2011).
5. Reducing Environmental Cancer Risk, What We Can Do Now. 2008-2009 Annual Report. President's Cancer Panel. U.S. Department of Health and Human Services. National Institutes of Health. National Cancer Institute.
6. Lifetime Risk of Developing or Dying From Cancer. The American Cancer Society. <http://www.cancer.org/Cancer/CancerBasics/lifetime-probability-of-developing-or-dying-from-cancer>. (Accessed January 10, 2011).
7. National Cancer Institute. Dictionary of Cancer Terms. <http://www.cancer.gov/dictionary/?CdrID=45741>. (Accessed January 20, 2011).
8. Bruanson RC, Remington PL, and Davis JR (Editors). Chronic Disease epidemiology and Control. American Public Health association; 1993.
9. Freeman HP. Cancer Mortality: A Socio-Economic Phenomenon, 1981. American Cancer Society's Twenty-Third Science Writers' Seminar; 1981.
10. American Cancer Society. Cancer in the Economically Disadvantaged. New York, New York; 1986.

11. Adler NE, Boyce MT, Chesney MA, Folkman S, Syme SL. Socio-economic inequalities in Health. *Journal of the American Medical Association*, 1993; 269(24); 3140-3145.
12. Douglas M. Risk Acceptability According to the Social Sciences. Pg. 6-11, New York: Russel Sage Foundation; 1985.