

APPENDIX

DATA TERMS, SOURCES, AND CONSIDERATIONS

Data Terms

Age-Adjustment

Age is the most important risk factor for the incidence of most cancers. Cancer rates derived from populations that differ in underlying age structure are not comparable. Therefore, age-adjustment is a statistical technique that allows for the comparison of rates among populations having different age distributions by weighting the age-specific rates in each population to one standard population.

Incidence Rate

An incidence rate is the number of new cases of a given cancer or other event per 100,000 population during a defined time period, usually one year. Cancer incidence rates in this plan are reported for one year, such as for 2006, or as the average annual incidence rate for several aggregated years, usually 2002 through 2006.

Mortality Rate

A mortality rate is the number of deaths per 100,000 population during a defined time period, usually one year. Cancer mortality data in this plan are reported for one year, such as for 2006, or as the average annual rate for several aggregated years, usually 2002 through 2006.

Rate

A rate is an estimate of the burden of a given disease on a defined population in a specified period of time. A crude rate is calculated by dividing the number of cases or deaths by the population at risk during a given time period. Cancer incidence and mortality rates are usually

presented per 100,000 population during a defined time period. All rates in this plan are either age-specific or age-adjusted using the method described above.

Stage at Diagnosis

The stage at diagnosis describes the extent to which a cancer has spread from the organ of origin at the time of diagnosis. The stage information used in this plan is based on the SEER Summary Stage Guidelines:

- **IN SITU:** The cancerous cells have not invaded the tissue basement membranes. In situ cancers are not considered malignant (with the exception of bladder cancers) and are not included in incidence rate calculations.
- **LOCALIZED:** The tumor is confined to the organ of origin.
- **REGIONAL:** The tumor has spread to adjacent organs or tissue. Regional lymph nodes may also be involved.
- **DISTANT:** The tumor has spread beyond the adjacent organs or tissues. Distant lymph nodes, organs, and/or tissues may also be involved.
- **UNSTAGED:** The stage of disease at diagnosis was unable to be classified or was not reported to the Maryland Cancer Registry.

Survival Rate

A survival rate refers to the percentage of people in a study or treatment group who are alive for a given period of time after diagnosis. This plan generally presents five-year survival rates.

Sources of Maryland Data

THE MARYLAND-SPECIFIC DATA used in this plan were supplied by the Maryland Department of Health and Mental Hygiene (DHMH), including the Maryland Cancer Registry; National Center for Health Statistics (data in CDC WONDER); the Office of Health Policy and Planning; the Center for Health Promotion, Education, and Tobacco-Use Prevention; and the Center for Cancer Surveillance and Control.

Maryland Cancer Registry

Cancer incidence and stage data were provided by the Maryland Cancer Registry (MCR), Center for Cancer Surveillance and Control, Department of Health and Mental Hygiene (201 W. Preston Street, Room 400, Baltimore, MD 21201, www.fha.state.md.us/cancer/registry/, 410-767-4055). We acknowledge the state of Maryland, the Maryland Cigarette Restitution Fund, and the National Program of Cancer Registries of the Centers for Disease Control and Prevention for the funds that support the collection and availability of the cancer data and analysis.

The MCR is a computerized data system that registers all new cases of reportable cancers (excluding non-genital squamous cell or basal cell carcinoma) diagnosed or treated in Maryland. The Maryland cancer reporting law and regulations mandate the collection of cancer information from facilities that are licensed in Maryland, including hospitals, radiation therapy centers, diagnostic laboratories, freestanding ambulatory care facilities, surgical centers, and physicians whose non-hospitalized cancer patients are not otherwise reported. The MCR also participates in data exchange agreements with neighboring states including Delaware, Pennsylvania, Virginia, West Virginia, and the District of Columbia. Information on Maryland residents diagnosed or treated for cancer in these states is included in this plan.

Maryland Behavioral Risk Factor Surveillance System

The Maryland Behavioral Risk Factor Surveillance System (BRFSS) is an annual telephone survey conducted on a random sample of Maryland adult residents. This survey, managed by the DHMH Family Health Administration, Office of Health Policy and Planning, provided cancer risk behavior

(e.g., tobacco use, sun exposure, diet, physical activity) and cancer screening information used in this document. Maryland data can be accessed online at <http://www.marylandbrfss.org>. Both Maryland and state-aggregated national data on health risk behavior can also be obtained from the CDC BRFSS Web site at <http://www.cdc.gov/brfss>.

Maryland Youth Tobacco Survey and Maryland Adult Tobacco Survey

The Maryland Youth Tobacco Survey (MYTS) and the Maryland Adult Tobacco Survey (MATS), managed by the DHMH Family Health Administration, Center for Health Promotion, Education, and Tobacco Use Prevention, are administered to gather information regarding tobacco-use behaviors, attitudes, knowledge, and beliefs among Marylanders. The MYTS focuses on underage Maryland middle and high school youth, while the MATS focuses on Maryland adults age 18 years and older. Survey results are used to monitor progress toward reducing smoking and tobacco use in Maryland, and in apportioning Local Tobacco Use Prevention and Cessation grants among Maryland's 24 major political subdivisions. The MYTS and MATS have been conducted in 2000, 2002, 2006, and 2008. Data have been re-analyzed and revised by the Maryland Tobacco Use Prevention and Cessation Program, as necessary, to address definitional changes (e.g., changes in variables, survey questions) between surveys and to enhance comparability of survey data from different years. Published reports are available on the DHMH Web site at: <http://www.crf.state.md.us/html/stats.cfm> and http://crf.maryland.gov/tobacco_behaviors.cfm.

Maryland Cancer Survey

The Maryland Cancer Survey (MCS) is a biennial telephone survey managed by the DHMH Center for Cancer Surveillance and Control. The purpose of the MCS is to determine cancer screening rates and to measure cancer risk behaviors among persons age 40 years and older living in Maryland, for selected cancers targeted by DHMH. MCS survey data are included for 2002, 2004, 2006, and 2008. MCS data are tabulated and reported as not including missing values; all percentages are based on the number of respondents who answered the question. Some charts in this

document include both MCS and Maryland BRFSS data, as a basis for comparison with Healthy People 2010 targets. Caution should be used when comparing results from the MCS and BRFSS.

Although they are similar, these surveys have certain design and methodological differences, including targeted age groups, scope and timing of the surveys, and weighting. The MCS reports, including detailed information on the survey methods, are available on the Web at http://fha.maryland.gov/cancer/surv_data-reports.cfm.

National Center for Health Statistics

Maryland mortality rates presented in this plan were obtained from the National Center for Health Statistics (NCHS) Compressed Mortality Files in the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) system, a national Web-based data source.

Sources of National Data

National statistics cited in this plan were obtained from the Centers for Disease Control and Prevention (CDC), the Office of Disease Prevention and Health Promotion (part of the US Department of Health and Human Services), the National Center for Health Statistics (NCHS), and the National Cancer Institute (NCI).

Surveillance, Epidemiology, and End Results Program

The Surveillance, Epidemiology, and End Results (SEER) Program, managed by the National Cancer Institute, is an authoritative source of information on cancer incidence, stage, and survival in the US. The SEER Program, which began in 1973, collects, analyzes, and publishes cancer incidence and survival data from population-based cancer registries participating in the program. The SEER Program was expanded in 1992 (creating the SEER 13 registry database) and again in 2001 to increase representation of minority and rural low-income populations including Hispanics/Latinos, American Indian/Alaska Native populations, and rural blacks/African Americans. Since 2000, SEER incidence data have been collected from 15 SEER registries and four expansion registries throughout the US (SEER 17 registry database) and are estimated to represent approximately 26% of the US population. The SEER database

represents cancer incidence in the US population with regard to race, ethnicity, age, gender, poverty, and education, and by collecting data on epidemiologically significant population subgroups.

SEER 17 incidence data are used in this document for comparisons with the most recent Maryland data (2002-2006) because they provide the broadest population coverage that is currently available. For longer-term comparisons that include Maryland data prior to 2000, SEER 13 registry data are used. All SEER 13 and 17 rates were obtained from SEER*Stat (version 6.5.1), a statistical software tool for the analysis of SEER and other cancer-related databases. Further information about SEER can also be found on the Web site at www.seer.cancer.gov.

National Center for Health Statistics

US mortality rates presented in this plan were obtained from the National Center for Health Statistics (NCHS) Compressed Mortality Files in the CDC Wide-ranging Online Data for Epidemiologic Research (WONDER) system, a national Web-based data source.

Healthy People 2010

Healthy People (HP) 2010 is a collaboration of local and national governmental agencies and private organizations that have developed prevention-oriented national objectives to improve the health of Americans. The HP initiative is under the Office of Disease Prevention and Health Promotion at the US Department of Health and Human Services (DHHS). There are 28 focus areas and 467 specific objectives in HP 2010. For cancer prevention, the overarching HP 2010 goal is to “reduce the number of new cases as well as the illness, disability, and death caused by cancer.” To achieve this goal, measurable objectives related to cancer screening and cancer risk behaviors were established, each with a specific quantitative target. In 2006, a Midcourse Review of HP 2010 was completed by DHHS to assess progress toward the original HP 2010 objectives and to revise those objectives for which new data had become available. The HP 2010 targets in this document have been updated to reflect changes resulting from the HP 2010 Midcourse review. Further information about HP 2010 can be found at <http://www.healthypeople.gov> and [MARYLAND COMPREHENSIVE CANCER CONTROL PLAN](http://www.</p>
</div>
<div data-bbox=)

healthypeople.gov/data/midcourse.

In this document, quantitative HP 2010 targets, where available, are compared to Maryland data related to cancer risk behaviors (e.g., smoking, sun exposure) and adherence to cancer screening recommendations. Specifically, HP 2010 targets are compared to data from the Maryland BRFSS and the MCS.

CDC Behavioral Risk Factor Surveillance System

The national counterpart to Maryland's BRFSS system is operated by the CDC's National Center for Chronic Disease Prevention and Health Promotion. National statistics on behavioral health risks, as well as select individual state data may be accessed at <http://www.cdc.gov/brfss>.

National Cancer Institute Physician Data Query

The national cancer institute physician data query (PDQ) provides information for health professionals and the public on various aspects of cancer control such as prevention, screening, treatment, genetics, and clinical trials. The information is reviewed by a scientific editorial board and is updated as new research becomes available. Each statement listed in the PDQ is based on current knowledge as defined by the most recent literature using established levels of evidence. More information about NCI's PDQ can be accessed at <http://www.nci.nih.gov/cancerinfo/pdq/cancerdatabase>.

Smoking-Attributable Mortality, Morbidity, and Economic Costs

The CDC manages the Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC) application to estimate the disease impact of smoking for the nation, states, and large populations. The SAMMEC application is primarily used to measure the deaths and years of life lost due to smoking, but it can also calculate smoking-attributable mortality (SAM), years of potential life lost (YPLL), direct medical expenditures, and productivity costs. More information and SAMMEC data can be accessed at <http://apps.nccd.cdc.gov/sammec/intro.asp>.

Data Considerations

Data Confidentiality

The DHMH regards all data received, processed, and reported to and by the Maryland Cancer Registry as confidential. Data are secured from unauthorized access and disclosure.

The MCR manages and releases cancer information in accordance with the laws and regulations established by the state of Maryland as set forth in the Code of Maryland Regulations, COMAR 10.14.01 (Cancer Registry) and Health-General Article, § 18-203 and § 18-204, Annotated Code of Maryland. To ensure patient confidentiality and to comply with the MCR Data Use Policy, cells with counts of 1-5 cases are suppressed and presented as "<6." Complementary suppression of case counts in additional cell(s) is used, denoted by "s," to prevent back-calculation of numbers in those cells with primary suppression. Incidence rates based on 15 or fewer (non-zero) cases are presented with asterisks (**) because the rates are unstable and do not provide reliable information.

Mortality data in this report, obtained from NCHS Compressed Mortality Files in CDC WONDER, comply with data use restrictions stipulated by both CDC and NCHS.

Gender

Gender is now reported to the Maryland Cancer Registry as (a) male, (b) female, (c) hermaphrodite, (d) transsexual, and (e) unknown. The totals shown in the count for number of cancer cases may not equal the sum of males and females because of cases in these other gender categories.

Rate Analysis and the Year 2000 US Population Standard

Age-adjustment, also called age-standardization, is one of the tools used as a control for the different and changing age distributions of the population in states, counties, etc., and to enable meaningful comparisons of vital rates over time. Federal agencies have adopted the year 2000 US standard population as the new standard for age-adjusting incidence and mortality rates, beginning in data year 1999. Incidence and mortality rates in this plan were calculated and age-adjusted using the 2000 US population as the standard population. Additional information on age-adjustment can be

found at <http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>.

Statistical Significance

Statistical significance, as cited in this plan, was determined by identifying non-overlapping 95% confidence intervals for the age-adjusted incidence, mortality or other rates.

Racial and Ethnic Minority Populations

The 1997 update of Directive 15 of the Federal Office of Management and Budget defined a minimum list of categories for racial and ethnic data collection. In that system of categorization, persons are classified as of Hispanic or Latino ethnicity or not (without regard to race), and then classified into one or more of the following racial categories (without regard to Hispanic ethnicity): black or African American, Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, or white. In Maryland, the Native Hawaiian or Other Pacific Islander category comprises only 0.1% of the population, and is combined with Asian in a category of Asian and Pacific Islander for reporting purposes (which was the categorization before 1997).

In this document, “black or African American” is used where space permits, and “black” is used to represent that group in tables and figures where space limitations exist. Similarly, space considerations lead to interchangeable use of “Hispanic or Latino” with “Hispanic,” “Asian or Pacific Islander” with “Asian,” and “American Indian and Alaska Native” with “American Indian.”

Some data sources report race without regard to Hispanic or Latino ethnicity, and report Hispanic or Latino ethnicity without regard to race. Other data sources report results in categories of non-Hispanic race and Hispanic. Thus, in this document where “white” or “black” appear not specified as non-Hispanic, those data include both Hispanics or Latinos and persons not Hispanic or Latino. Where a race appears preceded by “non-Hispanic” or “NH,” those data refer only to the persons of that race who are not Hispanic or Latino.

The MCR began requiring submission of more detailed data on race and ethnicity beginning in August 1998. Previously, race reported as American Indian/Alaska Native or Asian/Pacific

Islander was counted in the category called “other” race. For many of the chapters of this plan, race and ethnicity reporting is limited to blacks and whites, though in some cases an “other” category is presented. However, for Chapter 3 on cancer disparities, an effort was made to provide as much race/ethnicity detail as possible for the Maryland population.

Hispanic ethnicity data are derived by the MCR using the NAACCR Hispanic Identification Algorithm. This algorithm uses a combination of NAACCR variables to classify people as Hispanic. Those with “Hispanic” ethnicity include people reported to the MCR as Spanish/Hispanic origin plus those with “derived” Hispanic origin. The derivation is an algorithm based on the person’s surname (last or maiden name) and their place of birth, race, and gender.

Healthy People 2010 Objectives, Maryland BRFSS, and MCS

As measures for cancer-related behaviors (e.g., screening tests) and the recommendations for their use change, the Behavioral Risk Factor Surveillance System (BRFSS) and Maryland Cancer Survey (MCS) questions that measure screening and other health behaviors are also updated to reflect these modifications. In addition, the Healthy People 2010 objectives were updated in 2006 to reflect current health-related behavior and screening.

Healthy People 2010 objectives are generally age-adjusted to the year 2000 US standard population, while data from the Maryland BRFSS and MCS are weighted to the age of the Maryland population in that year, but are not age-adjusted to the year 2000 US standard population.

Data Years

Significant efforts were made toward consistency of data years reported throughout this plan. Age-adjusted incidence and mortality statistics are reported through 2006, the most recent data year available at the time of writing.

Behavioral risk factor data from the BRFSS, the MCS, and the MYTS/MATS are reported for the most recent year available at the time of writing, or for several different years in order to establish a trend over time. The most recent data year available for behavioral risk factor data

varies from topic to topic, based on which survey questions were asked in various years.

Target Setting for Goals and SMART Objectives

Some of the Goals and many of the Objectives in the Plan give specific data targets to be met by a particular year (typically 2015). The method below was used to develop the targets. In a few cases, this method was not used; rather, targets were set to mirror those previously set by another plan or program. When this is the case, it is described in a footnote in the Plan.

METHODS

Targets under the goal of decreasing incidence or mortality or increasing risk-reduction strategies: the DHMH Center for Cancer Surveillance and Control staff projected 2015 rates using the Microsoft Excel linear “forecast” function. By this method, known Maryland data values were used to predict a future value for the year 2015 by using linear regression. The projected value was then graphed by adding a linear trendline (in Excel) to the known data points, then extending the line forward to the year 2015.

Incidence and mortality projections were based on Maryland age-adjusted rates for the eight-year period from 1999-2006. Behavioral and risk factor projections are based on data from the Behavioral Risk Factor Surveillance System (BRFSS), the Maryland Cancer Survey, and other sources. These projections use the most recent years of data available for the period from 1999-2008. Data from these sources are more limited, however, because surveys were either not conducted every year (e.g., MCS) or because the question(s) of interest were not asked every survey year. In all cases, a minimum of 3 data points was used for quantitative projections with Excel.

NOTE:

- This linear method of projecting based on actual data does not take into account demographic, screening, or funding factors that may influence the trend through 2015.
- When staff determined that a 2015 projection using this method showed that the projection was not in the direction desired to control cancer, we described the targets as being “greater than” or “less than” the 2006 baseline (depending on whether we sought an increase or decrease over baseline measurement, respectively).

Targets under the goal of decreasing race and/or gender disparities were projected using the linear forecast function described above for each race and/or gender group.

NOTE:

- For Colorectal Cancer incidence targets by race: The above method resulted in projected targets that represented an increase in disparity between two groups; therefore, we modified the target-setting method so that the disparity in 2015 would be no greater than that in the baseline year. We calculated the absolute difference between the age-adjusted rates of the two groups in 2006 and added this rate difference to the projected rate in 2015 of the group with the lower projected rate.
- For Oral Cancer: We excluded target projections by race or by gender-race group because the age-adjusted rates were highly variable due to small populations or low incidence or mortality rates.
- For Liver Cancer mortality targets by race and Breast Cancer incidence targets by race: The above method resulted in projected targets that represented a reversal of the baseline disparity. For the target for liver cancer for Asian/Pacific Islanders and whites, we used the baseline rate in 2006 of the white population. For breast cancer the 2015 projections were very close; therefore, we used for both racial groups the lower rate of the two projections in 2015.