CALIFORNIA'S COMPREHENSIVE CANCER CONTROL PLAN, 2021–2025




CDCC

CALIFORNIA DIALOGUE ON CANCER

Preventing Cancer & Saving Lives through Collaboration

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www.cdoconline.net and www.cdph.ca.gov

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This plan has been collaboratively developed by the California Dialogue on Cancer (CDOC) with multiple stakeholders to represent the best guidance to reduce the cancer burden in California, and as such, the objectives and strategies in this publication are intended to direct collective efforts towards this goal. Because we believe all cancer control stakeholders, including community members, health care providers, community-based organizations, state agencies, institutions, etc., would benefit from implementation of this plan, we encourage use of the plan to guide and direct each organization in its cancer prevention activities when feasible. However, the California Department of Public Health, other government entities, and various organizations that may be named are not responsible for direct implementation and/or funding of proposed efforts.

CDPH California Department of PublicHealth

CDOC CALIFORNIA DIALOGUE ON CANCER
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LETTER FROM CDOC CHAIR

Dear Californians,

This is the fourth iteration of California's comprehensive cancer control plan issued by the California Dialogue on Cancer (CDOC). This plan was developed by cancer control stakeholders that represent the racial, ethnic, gender, economic and geographic diversity of our state. In addition, we engaged all National Cancer Institute designated and emerging Comprehensive Cancer Centers in California, in the development of cancer plan strategies informed by research conducted at these centers. This plan presents an assessment of the cancer burden, goals, objectives, and strategies for this four-year period (2021-2025) and will serve as an essential guide for cancer control efforts in California.

The death rate from cancer in the U.S. declined by 29% from 1991 to 2017, including a 2.2% drop from 2016 to 2017, the largest single-year drop ever recorded, according to a report released by the American Cancer Society in 2020. More people are surviving cancer than ever before, and California has measured consistent success in reducing cancer death rates since the last three cancer plans were implemented. Overall, incidence and mortality rates of most cancers have declined; and we credit the many successful collaborations created through this process, that led to effective prevention, increased screening rates, and better survivorship outcomes. Community and health organizations have incorporated evidence-based cancer control into their policies that have made a significant difference. Furthermore, culturally tailored strategies made inclusion of underrepresented Californians in cancer control possible, thereby making equity achievable.

In 1983, a focused effort in California's Tobacco Control Program resulted in dramatic decreases in smoking rates and tobacco-related cancers. In hopes of duplicating this model of success, CDOC aims to increase colorectal cancer screening. Similarly, we are committed to increasing HPV vaccinations to prevent cancers that significantly contribute to California's cancer burden. CDOC will prioritize opportunities for systems change in order to achieve significant outcomes in both of these cancer prevention areas.

The exemplarily cooperative process of developing this plan is a model for the kind of collaboration needed to accomplish our goals to further reduce California's cancer burden. In all aspects of plan development, our stakeholders have remained focused on ensuring that the plan also describes effective strategies to reduce cancer health disparities among sexual, gender, racial and ethnic minorities in order to achieve health equity in our state. I want to thank all of the experts who generously contributed their time, effort, and expertise to create this plan.

Chair, California Dialogue On Cancer
Director, Community Outreach & Engagement, Cedars Sinai-Cancer

This cancer control plan is dedicated to all Californians whose lives have been affected by cancer, with a special dedication to Dr. Antronette Yancey

DEDICATION

Dr. Antronette “Toni” Yancey, M.D., M.P.H., was a cancer prevention champion. A never-smoker, she died from lung cancer at age 55 in 2013. Dr. Yancey’s passion was to help vulnerable populations improve their health, especially through exercise. She demonstrated a commitment to social justice by working to ensure that research findings would be translated to community programs and policy, to transform lives. Her urgency to achieve health equity yielded a career full of achievements, including membership on the University of California, Los Angeles (UCLA) Fielding School of Public Health faculty, membership on the advisory committee for Michelle Obama’s “Let’s Move” campaign, co-founding of the UCLA-Kaiser Permanente Health Equity Center, and mentorship of hundreds of students, particularly students of color. Dr. Yancey received many awards, including the Pioneering Innovation Award from the Centers for Disease Control and Prevention, a Lifetime Achievement Award from the Association of African American Physicians, and many more.

Dr. Yancey’s signature career achievement was the creation of the Instant Recess™ concept, which focused on integrating brief bouts of physical activity into daily routine, where people live, play, work, or worship. As Director of Chronic Disease Prevention and Health Promotion for the Los Angeles County Department of Public Health, she created a ten-minute exercise video for out-of-shape workers. The success of this video led her to develop culturally flavored ten-minute dance movement videos, featuring salsa, gospel music, Filipino music, and American Indian rhythms, as well as her public health manifesto, *Instant Recess: Building a Fit Nation 10 Minutes at a Time* (2010). Dr. Yancey persuaded diverse stakeholders to embrace the Instant Recess concept, including the San Diego Padres, the United Church of Christ, the Washington Post, and Kaiser Permanente’s employee wellness plan.

Dr. Yancey believed that involving people in periodic ten-minute bouts of physical activity was a practical approach to protecting vulnerable populations from obesity-related diseases, including cancer. Brief exercise breaks do not require special equipment, a change of clothes, gym membership, or prior physical conditioning. Dr. Yancey made it her mission to persuade employers, schools, churches, and community-based organizations everywhere to sponsor short exercise breaks during the workday. By example and by persuasion, Dr. Yancey induced countless thousands of workers, students, worshippers, and executives to incorporate enough daily physical activity to protect them from obesity-related diseases. To recognize her contributions to the California Dialogue on Cancer (CDOC), the CDOC Obesity Prevention Working Group continues to recommend incorporating physical activity into school classrooms. We therefore consider it fitting to dedicate this comprehensive cancer control plan to her.

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Photo provided by the American Cancer Society

Acknowledgments

The California Dialogue on Cancer (CDOC) and the Cancer Plan Advisory Committee wish to acknowledge all of the volunteers who collaboratively developed this critical roadmap for cancer control in California. Over 90 individuals representing state and federal agencies, academic institutions, and community-based and nonprofit organizations worked tirelessly and diligently over many months to produce this blueprint for addressing cancer control in California. We recognize the expertise, commitment, and dedication it took to produce this plan.

CDOC Stakeholder Meeting, April 2019, Sacramento, CA

INTRODUCTION

WHAT IS CALIFORNIA'S COMPREHENSIVE CANCER CONTROL PLAN?

California's Comprehensive Cancer Control Plan, 2021–2025 (the state cancer plan) is a blueprint to reduce the cancer burden in the state. It is designed to provide guidance to individuals and organizations spanning health and social disciplines that have a role in impacting cancer control. Aspects of the cancer continuum, including primary prevention, early detection and screening, and survivorship are addressed, as well as cross-cutting issues, such as equitable access to care, cancer-related health disparities, and surveillance.

The plan's strategies are intended to direct collective efforts toward specific and measurable objectives, which are targeted at reducing the cancer burden. Many of the outcomes will also have health benefits extending beyond cancer to other leading causes of death, such as heart disease and diabetes.

WHO IMPLEMENTS THE STATE CANCER PLAN?

The implementation of the plan is the responsibility of all cancer control stakeholders, including community members, health care providers, community-based organizations, institutions, and others. The Comprehensive Cancer Control Program (CCCP)(https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/Pages/California%20Comprehensive%20Cancer%20Control%20Program.aspx), under the California Department of Public Health (CDPH)(https://www.cdph.ca.gov/), is charged with leading the development, distribution, and coordination of implementation of the plan through the state cancer coalition—the California Dialogue on Cancer (CDOC)(https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/Pages/California-Dialogue-on-Cancer-(CDOC).aspx). Ultimately, statewide cancer control stakeholders and community members are the driving force behind achieving the plan's goals and objectives. Only through collective action will California succeed in reducing the burden of cancer.

CALIFORNIA DIALOGUE ON CANCER

CDOC is a coalition of statewide cancer control stakeholders. Stakeholders represent a variety of organizations and interest areas, including state and local government, private and nonprofit organizations, health, medical, and business communities, academic institutions, researchers, cancer survivors, caregivers, and advocates. The vision of CDOC is to reduce cancer suffering and mortality in California.

CDOC was created in 2003 specifically to develop and implement California's comprehensive cancer control plan. Workgroups have been established based on objectives and strategies identified in the cancer plan, by coalition priorities, and via other relevant issues in cancer control. Each year, the workgroups prioritize and conduct activities that align with the plan.

CDOC offers many opportunities for individuals and organizations to be a part of comprehensive cancer control. A Call to Action What Can You Do? (Appendix VII) and Get Involved (Appendix VIII) provides suggestions and activities in support of implementing California's state cancer plan.

CDOC PRIORITIES:

- Increase colorectal cancer screening
- Reduce the prevalence of obesity
- Accelerate uptake of the human papillomavirus (HPV) vaccine
- Address survivorship needs
- Reduce health disparities

CALIFORNIA'S COMPREHENSIVE CANCER CONTROL PROGRAM

The Centers for Disease Control and Prevention (CDC) created the National Comprehensive Cancer Control Program (NCCCP) (https://www.cdc.gov/cancer/ncccp/index.htm) to help states, tribes, and territories form coalitions to conduct comprehensive cancer control. CDC defines comprehensive cancer control as a collaborative process through which a community and its partners pool financial and nonfinancial resources to reduce the burden of cancer.[1]

CDPH received funding from CDC in 2002 to establish California's comprehensive cancer control infrastructure. The CCCP is housed in the Chronic Disease Surveillance and Research Branch of CDPH. The purpose of CCCP is to administer the statewide comprehensive cancer control coalition (CDOC); a group which helps: determine state priorities related to cancer; coordinate implementation of California's comprehensive cancer control plan; and evaluate the activities being implemented.

The California comprehensive cancer control steering committee was organized on June 7, 2002 and initiated the process to develop California's first cancer plan, *Comprehensive Cancer Control in California, 2004.* This distinguished committee included over 200 diverse representatives from academia, corporations, health care organizations, insurance groups, institutions, consumer and advocacy groups, and others with an interest in cancer control. The committee examined the science of cancer control, evaluating its practice, funding and assets, and barriers and gaps in cancer control efforts. After careful analysis, the committee identified key strategies and tactics to overcome barriers and to produce successful cancer control outcomes.

Since implementing the first cancer plan in 2004, there have been two revisions, one in 2010 and one 2014. The 2014 revision produced a draft of *California's Comprehensive Cancer Control Plan, 2016-2020.* Over 100 stakeholders worked over a year and a half to produce this plan that included measurable goals and objectives to be achieved by 2020. Progress achieved toward objectives in the 2016-2020 state cancer plan is detailed on page 19.

COMPREHENSIVE CANCER CONTROL PLAN REVISION

Under the leadership of CCCP and CDOC, the fourth iteration of California's state cancer plan is the result of a process that began in the fall of 2018. This process included 15 committees and over 90 individuals on behalf of more than 40 institutions representing state and federal agencies, academic institutions, and community-based and nonprofit organizations. California cancer centers and programs were also convened to help inform the development of the plan (read more in chapter four). Goals and measurable objectives to support continued cancer control efforts through 2025 were developed. This plan builds on the hard work and collaborations that have made comprehensive cancer control a success in California. To read more about major successes, see the overview on page 19. The revision process was principally guided by national cancer control priorities set by CDC. The development of objectives and strategies was informed by *Healthy People 2020, Let's Get Healthy California* and aligned with state goals and objectives set for cancer control and cross cutting topics, such as tobacco control and obesity prevention.

Goals and objectives were aligned with CDC's National Priorities for Cancer Control:

- Emphasizing the primary prevention of cancer
- Coordinating early detection and treatment activities
- Addressing the public health needs of cancer survivors
- Using policies, systems, and environmental changes to guide sustainable cancer control
- Promoting health equity as it relates to cancer control
- Demonstrating outcomes through evaluation

EVIDENCE-BASED INTERVENTIONS

To achieve the goals and objectives listed in *California's Comprehensive Cancer Control Plan, 2021–2025*, strategies, practices, interventions, and/or programs must be grounded in evidence. Appendix II lists resources in which you can find examples and more information about using evidence-based programs.

CDOC Stakeholder Meeting, April 2019, Los Angeles
Left to Right: CDOC Leadership, Raquel Arias, Shauntay Davis-Patterson, Zul Surani

POLICY, SYSTEMS, AND ENVIRONMENTAL CHANGE INTERVENTIONS

California's Comprehensive Cancer Control Plan, 2021–2025 is focused on encouraging cancer control and prevention efforts to prioritize policy, systems, and environmental (PSE) change approaches for a community-wide impact.

PSE changes include approaches that can address how to effectively improve health in a community. They prioritize creating or changing infrastructure to support healthy behaviors across populations. They focus on modifying the context in which people live through changing policies, systems, and/or the environment to make healthy choices available and easy for everyone to access. PSE change approaches in cancer control include interventions that impact whole populations instead of individuals and are applicable to all stages of the cancer continuum.

PSE OVERLAP

PSE change interventions can overlap with other health sectors or programs, including programs focusing on diabetes prevention, tobacco use, heart disease, environmental and occupational health, nutrition, and physical activity. Many of the same social and behavioral risks apply to multiple diseases.

Appendix II lists several PSE interventions and resources.

POLICY CHANGE

Policy change interventions are those which drive incremental changes to procedures, rules, ordinances, laws, and regulations. Policy change can occur at macro levels, such as high levels of government, but often occur at micro or lower levels with which we all interface every day, such as health care settings, worksites, companies, organizations, government administrations, etc. Examples of health policy change include taxing tobacco products, implementing the Patient Protection and Affordable Care Act (PPACA or ACA), establishing company policies, banning junk food at schools, enforcing age restrictions for tanning salons, and labeling menus at restaurants.

SYSTEMS CHANGE

Systems change interventions are changes that impact all elements of an organization, institution, or system. Settings in which systems change can take place include health care, insurance, worksite, education, transportation, etc. These types of intervention usually result in changes made to the policies or procedures of an organization. An example of a systems change is cancer screening facilities modifying their hours of operation to make it more convenient for patients to access and/or utilize screening services.

ENVIRONMENTAL CHANGE

Environmental change strategies are those that promote healthy behaviors and lifestyles through changes to the physical environment. Settings for environmental change include the location of health clinics or offices, recreational spaces, community planning in neighborhoods, etc. Examples of environmental change are: installing sidewalks and bike lanes, creating recreational space in communities to promote physical activity, making healthy food options available in neighborhoods, worksites, and schools.

PSE change strategies may overlap across all three categories: policies, systems, and the environment. For example, California's smoking ban in public places is a policy change that led to a systems change for workplaces and restaurants. Prohibiting smoking in these locations created an environmental change that allowed for a more general smoke-free environment, turning it into a social norm.

INTEGRATION AND COORDINATION ACROSS CHRONIC DISEASE PROGRAM AREAS

Cancer control stakeholders, including public health departments, state and federal agencies, public/private organizations, and community partners are increasingly working together to prevent future cancers and to address underlying chronic conditions. Many leading chronic diseases, including cardiovascular disease, colon cancer, chronic obstructive pulmonary disease, and type 2 diabetes, share common and preventable risk factors. Addressing chronic disease and health inequities requires integrated and coordinated public health responses. California's state, federal, and privately-funded efforts to prevent and control chronic disease have adopted collaborative approaches, and an increasing number of partnerships and interventions have been successfully implemented. For more information on CDPH's chronic disease prevention and management programs, visit the Chronic Disease Control Branch webpage.

EVALUATION

CCCP is responsible for developing and implementing an evaluation plan that will assess *California's Comprehensive Cancer Control Plan, 2021–2025*. The definitive measure of the plan's success will be the reduction of cancer mortality rates in California. However, since long term outcomes take years to materialize, short-term impacts will be assessed through progress on measurable objectives in the plan.

Quantitative data obtained from the California Cancer Registry (CCR) will be used to measure improvements in cancer incidence, stage at diagnosis, survival, and mortality. Survey data such as the Behavioral Risk Factor Surveillance System (BRFSS) and the California Health Interview Survey (CHIS), will be used to measure progress on objectives related to screening and risk factors. Additionally, a statewide survey of CDOC stakeholders will be conducted annually by CCCP to collect both quantitative and qualitative data on cancer control activities.

There are 43 measures that have been identified to assess progress on objectives in this plan. All of the measurable objectives will be addressed in progress reports utilizing the most reliable data sources to assess cancer control progress, impacts, and outcomes in California. To review a list of data sources that will be used in the evaluation, please see Appendix III.

While CCCP is responsible for evaluating the plan, stakeholders throughout California will also participate in monitoring progress and utilizing data from available data sources to guide their own specific cancer control activities. Challenges are expected during the implementation and evaluation phases of the plan as a result of changes in science, health care, economy, environment, and political climate. Accordingly, it is acknowledged that the plan is a document that will evolve with time, new information, varying resources, and changing needs.

PROGRESS SUMMARY

California has made progress towards achieving the objectives set forth in *California's Comprehensive Cancer Control Plan, 2016–2020*. The CCCP program, CDOC stakeholders, and other cancer control partners collaborated on a few objectives from the 2016-2020 state cancer plan. Implementation by cancer control stakeholders throughout California has contributed to progress made towards important objectives. The progress reported in this section is toward those measurable objectives for which current data is available. Select interventions targeting multiple objectives initiated by CDOC are also summarized. A final evaluation of the plan will be conducted when data for 2020 is available.

Objectives toward which progress is being made are highlighted in blue. Objectives highlighted in green, have met or exceeded their targets. Most notably, our targets for objectives aiming to reduce cancer incidence and mortality have already been surpassed.

Table 1. Progress of the cancer burden cancer plan objectives that include baseline year, most recent data and the target year for 2020

Cancer Burden			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Cancer Burden: Objective 1 Decrease the rate of combined cancer incidence in California Data Source: CCR	2012 405.5	2017 390	400.5
Cancer Burden: Objective 2 Decrease the rate of combined cancer mortality in California Data Source: CCR	2012 150.6	2017 136.9	140.6

Table 2. Progress of the access to care cancer plan objectives that include baseline year, most recent data and the target year for 2020.

Access to Care			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Access to Care: Objective 2 Increase the proportion of Californians covered by health insurance Data Source: CHIS	2011-2012 85.3%	2018 93%	93%
Access to Care: Objective 4 Increase the proportion of Californians who report having regular access to a primary care provider Data Source: CDC BRFSS	2013 65.2%	2018 65.1 %	75.2%

Table 3. Progress of the cancer related health disparities cancer plan objectives that include baseline year, most recent data and the target year for 2020.

Cancer Related Health Disparities Proportion of late-stage* cancers by race/ethnic group Data Source: CCR			
Objective	**Baseline CCR 2012**	**Most recent available data CCR 2017**	**Target for 2020**
Cancer Related Health Disparities: Objective 3, Reduce the proportion of late-stage diagnosis for colorectal, breast, and cervical cancer among California's racial/ethnic minority populations *Late-stage is defined as regional and distant disease (SEER Summary Stage).			
African American			
Colorectal	52.9%	62.6%	40%
Breast Female	31.8%	31.2%	25%
Cervical	58.1%	66.2%	43%
Hispanic			
Colorectal	55.7%	62.6%	50.0%
Breast Female	33.7%	31.2%	28.7%
Cervical	56.7%	55.1%	40.0%
Asian/ Pacific Islander			
Colorectal Female	51.2%	63.1%	43.0%
Breast	24.3%	26.0%	19.0%
Cervical	48.1%	53.5%	28.1%
American Indian/Alaskan Native			
Colorectal	54.8%	62.2%	49.8%
Breast Female	27.0%	26.7%	22.0%
Cervical	61.5%	54.5%	55.0%

Table 4. Progress of the primary prevention cancer plan objectives that include baseline year, most recent data and the target year for 2020.

Primary Prevention			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Hepatitis B: Objective 2 Increase the proportion of infants in California born to hepatitis B surface antigen (HBsAg)-positive mothers who have received post-vaccination serologic testing within recommended timeframes. Data Source: CDPH Immunization Branch	2013 60.8%	2018 53.5%	66.8%

Primary Prevention			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
HPV: Objective 1 Increase the proportion of boys 13–17 years old who complete the HPV vaccine series Data Source: NIS-Teen	2013 16.6%	2018 41.1%	50.0%
HPV: Objective 2 Increase the proportion of girls 13–17 years old who have completed the HPV vaccine series Data Source: NIS-Teen	2013 45.8%	2018 36.3%	80%
Obesity: Objective 1 Reduce the prevalence of adult obesity (body mass index (BMI) > 30) Data Source: CA BRFSS	2013 24.6%	2018 26.8%	20.0%
Obesity: Objective 2 Increase the percentage of California adults who consume fruits and vegetables five or more times per day Data Source: CA BRFSS	2013 11.2%	2017 20.9%	12.3%
Obesity: Objective 3 Increase the percentage of California adults who participate in moderate or vigorous physical activities Data Source: CA BRFSS	2013 56.3%	2017 57.3%	62%
Obesity: Objective 4 Increase the percentages of California children and teens who consume fruits and vegetables five or more servings per day. Data Source: CHIS	Children 2013 31.0% Teens 2013 24.0%	Children 2018 27.0% Teens 2018 24.0%	Children 34.0% Teens 26.4%

Primary Prevention			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Obesity: Objective 5 Increase the percentages of California children and teens who engage in a minimum of 60 minutes of physical activity per day at least five days each week by 10%. Data Source: CHIS	Children 2013 46.1% Teens 2013 36.2%	Children 2016 45.8% Teens 2016 40.4%	Children 50.7% Teens 39.8%
Tobacco Use: Objective 1: Decrease the prevalence rates of adult cigarette smoking among California's priority populations by 10%. Data Source: CHIS Priority Population	2011-2012	2018	2020
African Americans	20.7%	12.3%	18.6%
American Indian and Alaska Natives	28.7%	45.0%	25.8%
Asian Americans	10.0%	8.7%	9.0%
Hispanics/Latinos	12.3%	10.8%	11.1%
Low-socioeconomic status (0–100 FPL*)	17.9%	17.5%	16.1%
LGBT**	21.6% (BRFSS, 2013)	16.6% (BRFSS, 2018)	19.4%
Rural residents***	19.6%	N/A	17.6%
Members of the military	12.9%	10.8%	11.6%
*Federal Poverty Level (FPL) **The data source for the LGBT population is BRFSS, not CHIS **CHIS is the available data source for this population; however, "rural" counties can have significant metropolitan populations (e.g., Humboldt), and metropolitan counties (e.g., Sacramento) can have significant rural areas. Estimates for homogeneously rural counties are imprecise because of few respondents. County-based estimates for "rural" respondents therefore have more imprecision than other demographic categories (i.e., sex, age, etc.)			
Tobacco Use: Objective 2 Decrease the prevalence of cigarette smoking among California adults Data Source: CHIS	2012 12.7%	2018 11.2%	10.0%

Primary Prevention			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Tobacco: Objective 3: Decrease the prevalence rates of high school youth tobacco use* among the following priority populations by 10%. Data Source: California Student Tobacco Survey, CDPH, California Tobacco Control Program * past 30-day cigarette use * Progress on this objective is based on results of the Statewide 2017-18 California Student Tobacco Survey. These data are not a direct comparison due to the changes in survey methodology.	2011-2012 African Americans – 9.5% American Indian/ Alaskan Native – 24.2% Asian Americans – 5.2% Hispanic/Latinos – 10.4%	2017-2018* African Americans – 1.2% American Indian/ Alaskan Native – 4.7% Asian Americans – 0.8% Hispanic/Latinos – 1.6%	African Americans – 8.6% American Indian/ Alaskan Native – 21.8% Asian Americans – 4.7% Hispanic/Latinos – 9.4%

Table 5. Progress of the early detection and screening cancer plan objectives that include baseline year, most recent data and the target year for 2020.

Early Detection & Screening			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Breast Cancer: Objective 1 Increase the prevalence of women aged 40 years and older who report having had a mammogram within the prior two years by 10% Data source: CA BRFSS	2013 78.8%	2018 72.2%	86.6%
Breast Cancer: Objective 2 Reduce the mortality rate of female breast cancer by 10% Data source: CCR	2012 21.0	2017 19.4	18.9
Breast Cancer: Objective 3 Increase the proportion at which women diagnosed with breast cancer are diagnosed at an early stage by 10% *Early stage defined as in situ & localized stages (SEER Summary Stage). Data source: CCR	2012 71.0%	2017 72.9%	78.1%

Early Detection & Screening			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Breast Cancer: Objective 4: Increase the number of accredited radiology facilities in California that achieve voluntary designation by the American College of Radiology as a Breast Imaging Center of Excellence (BICOE) Data source: American College of Radiology	2015 113	2020 81	154
Cervical Cancer: Objective 3 Decrease the percentage of women 21–65 years without a hysterectomy who have not received a Pap test ever or in the past five years by 24% Data Source: CA BRFSS	2012 10.4%	2018 16.4%	8.0%
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Colorectal Cancer: Objective 1 Increase colorectal cancer screening rates among Californians aged 50 years and older using one of the screening options recommended in the current U.S. Preventive Services Task Force (USPSTF) screening guidelines (2015) by 24.22% Data Source: CA BRFSS	2013 64.4%	2018 68.2%	80.0%
Colorectal Cancer: Objective 2 Decrease the proportion of late-stage diagnoses of colorectal cancer among all Californians by 10% *Late stage defined as Stages III and IV, Stage_SEER AJCC Combined Data Source: CCR	2012 45.1%	2017 50.4%	40.59%
Melanoma: Objective 1 Decrease the proportion of late stage diagnoses of melanoma among all Californians by 15% *Late stage defined as Stages III and IV, Stage_SEER AJCC Combined Data Source: CCR	2012 7.8%	2017 12.1%	6.6%
Melanoma: Objective 2 Slow the projected annual increase of melanoma incidence Data Source: CCR	2012 2.0%	2017 1.9%	1.0%

Early Detection & Screening			
Objective	**Year Baseline**	**Most recent available data**	**Target for 2020**
Melanoma: Objective 3 Decrease the mortality rate of melanoma in California by 8.0% Data Source: CCR	2012 2.5	2017 1.9	2.3
Ovarian Cancer: Objective 1 Increase the proportion at which women diagnosed with ovarian cancer, are diagnosed early (Stages I & II)* by 5% * The American Joint Committee on Cancer staging system. Data Source: CCR	2012 35%	2017 31.9%	40%
Ovarian Cancer: Objective 2 Increase the five-year relative survival rate of women newly diagnosed with ovarian cancer Data source: CCR	2008-2012 50.2	2008-2017 49.7	55.0

Table 6. Progress of survivorship cancer plan objectives that include baseline year, most recent data (BRFSS 2014) and the target year for 2020.

Survivorship			
Objective	**Baseline**	**Most recent available data**	**Target for 2020**
Survivorship: Objective 1 Increase the percentage of cancer patients who have received a survivorship plan after completing treatment by 39% Data Source: CA BRFSS	2014 11.0%	2017 9.9%	50.0%

HIGHLIGHTING PROGRESS INITIATED BY CDOC

CCCP and CDOC workgroups, in collaboration with cancer control stakeholders throughout the state, have implemented several interventions that have contributed to the progress of many of the plan's objectives. Below are a few implemented projects that are aligned with strategies in the 2016-2020 cancer plan.

Improving Cancer Survivorship Outcomes

Most of CDOC's cancer survivorship efforts have focused on educating cancer survivors, health care providers, caregivers, and the public through various approaches. Triage Cancer has been a long-standing partner in this endeavor and has developed and delivered several trainings, webinars, animated videos and educational materials. These services and trainings reached thousands of Californians in their collaboration with CDOC since the 2016 cancer plan implementation. CDOC's Treatment and Survivorship workgroup efforts to collect accurate data related to survivorship aftercare planning continued through 2017. Part of the Survivorship Aftercare Plan Utilization Project implemented in 2014, aimed to increase the use of cancer aftercare plans among health care systems treating cancer patients in California. A component of this project included the development of a new cancer survivorship survey module in the California Behavioral Risk Factor Survey to better understand and evaluate cancer survivorship issues in the state. Data from this module was utilized to develop a cancer survivorship baseline and target for the 2016 plan. Webinars and trainings can be accessed from Triage Cancer's website at https://triagecancer.org.

Increasing HPV Vaccination Rates

CDOC's efforts to increase HPV vaccination were formalized in 2017 when CDOC and the American Cancer Society (ACS) convened key stakeholders from across the state to discuss effective ways to increase vaccination rates. The group consensus was that there would be great benefit in establishing a coalition to accelerate HPV vaccine uptake in the state (modeled after the successful ACS National HPV Vaccination Roundtable(https://hpvroundtable.org/)). The California HPV Vaccination Roundtable(https://www.cahpvroundtable.org/) was established in October of 2018. It includes diverse stakeholders with a mission to work together to prevent HPV-associated cancers and pre-cancers by increasing the California HPV vaccination rate to 80% by 2026. Successful projects of this group include the establishment of California HPV Vaccine Week, provider trainings, and development of a data report that describes HPV vaccination rates at the county level to help guide local and regional action. Find more information on HPV Vaccine Week and the report; *Assessment of Human Papillomavirus (HPV) Attributable Cancers and Vaccination Rates in California: Report of Findings of the California HPV Vaccination Roundtable* at http://cahpvroundtable.org.

California HPV Vaccination Roundtable Annual Meeting
November 2019, Oakland, CA

Tobacco Use Prevention

In 2016, CDOC's Tobacco Stakeholder Advisory Group published a Call to Action document that highlights gaps in cessation services from a national and California perspective for California Cancer Centers and providers. It also identifies opportunities and resources for improving tobacco treatment and cessation services in oncology settings. This document was disseminated widely to cancer control stakeholders and cancer centers. It was also presented on the National Cancer Institute (NCI)'s Research 2 Reality webinar. California's capacity to address tobacco and cancer prevention and treatment continues to grow. To date, three NCI-designated Comprehensive Cancer Centers are funded by the NCI Cancer Center Cessation Initiative to integrate tobacco treatment into cancer care. They are in California, including Davis, UC San Francisco, and Stanford. Other cancer centers may be funded in future funding cycles. Furthermore, the California Cancer Registry is producing its first-ever report on the 12 tobacco-related cancers, in collaboration with the CDPH *California Tobacco Control Program. Access Tobacco Cessation in Cancer Prevention and Treatment: A Call to Action for California Cancer Centers* at https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/CDPH%20Document%20Library/CDOC/TobaccoCessation_CallToAction-ADA.pdf.

Increasing Colorectal Cancer Screening

The California Colorectal Cancer Coalition (C4) is a liaison workgroup of CDOC. C4 leads many efforts in California that contribute to progress on the colorectal cancer objectives in the plan. Past efforts included, among others, collaborative projects that increased screening rates in several clinics in California, as well as the administration of a mini-grant program that funded several clinics organizations to implement projects focusing on systems change, education and awareness, and survivorship issues related to colorectal cancer. C4 has also worked with CDOC in a collaborative effort with CDPH's former colorectal cancer screening program (California Colon Cancer Control Program) and the American Cancer Society (ACS) to guide federally qualified health centers to implement evidenced-based interventions. This project resulted in 19 clinic sites across four health systems reporting increased colorectal screening rates since the program was implemented in 2017. Find more about C4 at: https://www.cacoloncancer.org/.

California Colorectal Cancer Coalition Board, Sacramento, CA 2019

CHAPTER 1

THE CANCER BURDEN IN CALIFORNIA

CHAPTER GOAL

To reduce the number of new cancer cases and deaths due to cancer.

CHAPTER NARRATIVE

California has achieved considerable success in cancer prevention and control over the previous decades. The overall cancer incidence and mortality rates have declined for men and women since statewide cancer reporting became mandatory in 1988. However, cancer continues to be a major public health priority and the second leading cause of death in California, exceeded only by heart disease. Absolute numbers of cancer cases and cancer-related deaths are expected to increase as California's population grows and ages. These statistics may be impacted by changing rates of modifiable risk factors such as tobacco use, excess body mass, alcohol use, and physical inactivity, in addition to comorbidities with other diseases and health determinants.

Despite improvements in incidence and mortality rates, nearly one out of every two Californians born today will develop cancer at some point in his or her life, and nearly one in five Californians will die of the disease. Unfortunately, the cancer burden is not borne equally by all racial/ethnic groups. This chapter highlights some of the cancer burden in California, including: a description of the leading causes of cancer diagnoses and deaths, the distribution and disparities of the disease among racial/ethnic groups, the impact of the disease among children, and survival rates for selected cancer sites.

In order to identify areas of focus for this plan, pertinent data from the California Cancer Registry (CCR) are presented in this section. CCR is recognized as one of the leading cancer registries in the world and has been the cornerstone of a substantial amount of research on cancer in the California population.

Understanding Surveillance Data Terms (National Cancer Institute, 2019)

- Incidence: The number of newly diagnosed cases of cancer during a specific time period.
- Incidence Rate: The ratio of the number of new cancers of a specific site/type occurring in a specified population during a year to the number of individuals who were at risk for the given cancer, generally expressed as the number of cancers per 100,000 persons.
- Mortality: The number of deaths from cancer during a specific time period.
- Mortality Rate: The number of deaths, with cancer as the underlying cause, occurring in a specific population during a year. Cancer mortality is usually expressed as the number of deaths due to cancer per 100,000 persons.
- Percent Change: The percent change (PC) in a statistic over a given time interval: Percent change = (Final value – Initial value) / Initial value X 100. A positive PC corresponds to an increasing trend, a negative PC to a decreasing trend.

CANCER BURDEN OBJECTIVES

Objective 1: By 2025, decrease the rate of combined cancer incidence in California by 3.6%, from the current baseline of 390.6 to 376.5 cancer cases per 100,000 persons.

Objective 2: By 2025, decrease the rate of combined cancer mortality in California by 6.5%, from the current baseline of 136.9 to 128.0 cancer cases per 100,000 persons. Data source: CCR, 2017

Table 1. California Cancer Burden

Table 1 shows the ten leading causes of cancer incidence and mortality for males, females, and both sexes combined. Prostate, lung, and colorectal cancers are the most commonly diagnosed cancers and the leading causes of cancer-related death among males. Similarly, breast, lung, and colorectal cancers are the most commonly diagnosed cancers and the leading causes of cancer-related death among females. For both sexes combined, melanoma of the skin is the fifth most commonly diagnosed cancer, and pancreatic cancer is the fourth leading cause of cancer-related death.

(See Table 1: Top 10 Incidence and Mortality)

Table 1. The ten leading causes of cancer incidence and mortality for males, females, and both sexes combined, 2017

Cancer Incidence, Both Sexes				Cancer Mortality, Both Sexes			
	Rate	Count	% of all Cancers		Rate	Count	% of all Cancers
Female Breast	*	*	16.3%	Lung and Bronchus	26.7	11,561	19.4%
Prostate	*	*	11.9%	Colon and Rectum	12.1	5,285	8.9%
Lung and Bronchus	39.0	16,940	9.9%	Female Breast	*	*	7.7%
Colon and Rectum	33.9	14,699	8.6%	Pancreas	10.4	4,527	7.6%
Melanoma of the Skin	22.7	9,881	5.8%	Prostate	*	*	5.8%
Non-Hodgkin Lymphoma	17.6	7,618	4.5%	Liver and Intrahepatic Bile Duct	7.7	3,462	5.8%
Urinary Bladder	15.9	6,916	4.1%	Leukemia	5.7	2,379	4.0%
Kidney and Renal Pelvis	15.1	6,586	3.9%	Non-Hodgkin Lymphoma	5.2	2,222	3.7%
Corpus and Uterus, NOS	14.0	6,337	3.7%	Brain and Other Nervous System	4.1	1,802	3.0%
Thyroid	12.7	5,248	3.1%	Urinary Bladder	3.8	1,650	2.8%
All Sites	**390.0**	**170,368**	**71.8%**	**All Malignant Cancers**	**136.9**	**59,547**	**68.7%**

Cancer Incidence, Males				Cancer Mortality, Males			
	Rate	Count	% of all Cancers		Rate	Count	% of all Cancers
Prostate	94.6	20,253	24.2%	Lung and Bronchus	31.8	6,068	19.7%
Lung and Bronchus	42.7	8,313	9.9%	Prostate	19.2	3,468	11.3%
Colon and Rectum	38.3	7,692	9.2%	Colon and Rectum	14	2,730	8.9%
Melanoma of the Skin	30.1	5,967	7.1%	Pancreas	11.9	2,334	7.6%
Urinary Bladder	27.8	5,362	6.4%	Liver and Intrahepatic Bile Duct	10.9	2,264	7.4%
Non-Hodgkin Lymphoma	21.2	4,210	5.0%	Leukemia	7.5	1,381	4.5%
Kidney and Renal Pelvis	20.3	4,171	5.0%	Non-Hodgkin Lymphoma	6.7	1,254	4.1%
Oral Cavity and Pharynx	14.7	3,094	3.7%	Urinary Bladder	6.5	1,167	3.8%
Liver and Intrahepatic Bile Duct	13.7	2,958	3.5%	Esophagus	5.1	1,024	3.3%
Leukemia	14.7	2,841	3.4%	Brain and Other Nervous System	5.1	1,023	3.3%
All Sites	**412.5**	**83,653**	**77.5%**	**All Malignant Cancers**	**160.0**	**30,740**	**73.9%**
Cancer Incidence, Females				**Cancer Mortality, Females**			
	Rate	Count	% of all Cancers		Rate	Count	% of all Cancers
Breast	121.7	27,657	31.9%	Lung and Bronchus	22.8	5,493	19.1%
Lung and Bronchus	36.2	8,627	9.9%	Female Breast	19.4	4,589	15.9%
Colon and Rectum	30.1	7,007	8.1%	Colon and Rectum	10.6	2,555	8.9%
Corpus and Uterus, NOS	26.7	6,336	7.3%	Pancreas	9.1	2,193	7.6%
Thyroid	18.9	3,918	4.5%	Ovary	6.8	1,636	5.7%
Melanoma of the Skin	17.1	3,914	4.5%	Corpus and Uterus, NOS	5	1,204	4.2%
Non-Hodgkin Lymphoma	14.7	3,408	3.9%	Liver and Intrahepatic Bile Duct	5	1,198	4.2%
Pancreas	10.3	2,465	2.8%	Leukemia	4.2	998	3.5%
Kidney and Renal Pelvis	10.5	2,415	2.8%	Non-Hodgkin Lymphoma	4	968	3.4%
Ovary	10.5	2,399	2.8%	Brain and Other Nervous System	3.3	779	2.7%
All Sites	**377.6**	**86,715**	**78.6%**	**All Malignant Cancers**	**120.1**	**28,807**	**75.0%**

*Sex-specific cancers can be found in their respective tables.

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Source: California Cancer Registry, California Department of Public Health

Cancer Disparities among Major Racial/Ethnic and Asian Ethnic Groups

The burden of cancer impacts Californians disproportionately, with the risk of developing cancer varying considerably by race/ethnicity. Among both males and females, non-Hispanic whites have the highest incidence of cancer overall, followed by non-Hispanic blacks, Hispanics, and Asian and Pacific Islanders. Overall, persons of Asian and Pacific Islander and Hispanic origin show cancer incidence rates ranging from 30 to 40% lower than those of non-Hispanic whites. However, incidence rates for liver and stomach cancers among Asian and Pacific Islanders and Hispanics are 60% higher compared to rates for non-Hispanic whites. Hispanic females also have a 29% higher incidence rate of invasive cervical cancer compared to non-Hispanic white females. Non-Hispanic blacks have the highest cancer mortality among both males and females, followed by non-Hispanic whites, Hispanics, and Asian and Pacific Islanders. The mortality rate for colorectal cancer among non-Hispanic blacks is 50% higher than the rate for Asian and Pacific Islanders, and 39% higher than the rates for non-Hispanic whites and Hispanics.

(Figures 1 and 2: AAIR and AAMR 2013-2017 by race/ethnicity and sex)

Figures 1 and 2: Cancer Disparities

Figure 1. Five-year, age-adjusted incidence rates by race/ethnicity and sex, all cancers, 2013 - 2017, CA

	Male		Female	
	Rate	Count	Rate	Count
Non-Hispanic white	470.4	249,806	427.0	242,797
Non-Hispanic black	469.9	26,240	388.4	25,668
Hispanic	341.9	77,253	317.3	90,461
Asian/Pacific Islander	290.6	41,706	301.4	54,586

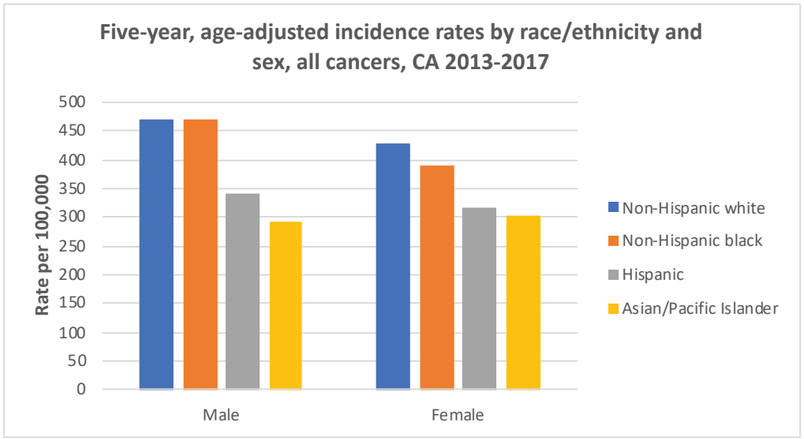
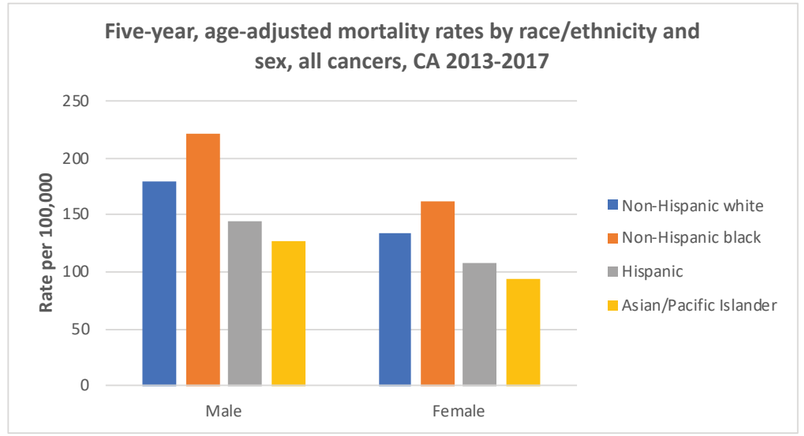


Figure 2. Five-year, age-adjusted mortality rates by race/ethnicity and sex, all cancers, 2013 - 2017, CA

	Male		Female	
	Rate	Count	Rate	Count
Non-Hispanic white	470.4	249,806	427.0	242,797
Non-Hispanic black	469.9	26,240	388.4	25,668
Hispanic	341.9	77,253	317.3	90,461
Asian/Pacific Islander	290.6	41,706	301.4	54,586



*Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

~ Statistic could not be calculated.

^ Statistic not displayed due to fewer than 15 cases.

Tables 2A-2D: Cancer Disparities among California's Major Racial/Ethnic Groups

Tables 2A-2D show the five leading causes of cancer incidence and mortality among four of California's major racial/ethnic groups by sex. For each of the racial/ethnic groups, prostate cancer is the most commonly diagnosed cancer among males, while breast cancer is the most commonly diagnosed cancer among females. Lung and colorectal cancers rank among the top three most common cancers diagnosed among both males and females of the represented racial/ethnic groups. Lung cancer is the leading cause of cancer-related death among both males and females in each racial/ethnic group, apart from breast cancer among Hispanic females.

(see Tables 2A-2D)

2A Top five common cancers by incidence for males, by racial/ethnic group, as compared with the state's male population overall, California, 2013-2017.

All California Males		Non-Hispanic White		Non-Hispanic Black		Hispanic		Asian/Pacific Islander	
	Rate		Rate		Rate		Rate		Rate
Prostate	93.1	Prostate	94.4	Prostate	145.1	Prostate	81.0	Prostate	50.4
Lung and Bronchus	46.4	Lung and Bronchus	50.9	Lung and Bronchus	63.4	Colon and Rectum	37.9	Lung and Bronchus	44.6
Colon and Rectum	39.9	Melanoma of the Skin	48.5	Colon and Rectum	46.2	Kidney and Renal Pelvis	22.5	Colon and Rectum	37.9
Melanoma of the Skin	30.5	Colon and Rectum	40.2	Kidney and Renal Pelvis	24.8	Lung and Bronchus	29.6	Liver and Intrahepatic Bile Duct	20.0
Urinary Bladder	29.4	Urinary Bladder	37.2	Liver and Intrahepatic Bile Duct	18.6	Liver and Intrahepatic Bile Duct	19.8	Non-Hodgkin Lymphoma	17.3

2B Top five common cancers by incidence for females, by racial/ethnic group, as compared with the state's female population overall, California, 2013-2017.

All California Females		Non-Hispanic White		Non-Hispanic Black		Hispanic		Asian/Pacific Islander	
	Rate		Rate		Rate		Rate		Rate
Breast	121.4	Breast	138.8	Breast	127.7	Breast	91.9	Breast	103.3
Lung and Bronchus	37.8	Lung and Bronchus	45.9	Lung and Bronchus	46.4	Colon and Rectum	27.7	Lung and Bronchus	27.6
Colon and Rectum	31.1	Colon and Rectum	32.2	Colon and Rectum	38.2	Corpus and Uterus, NOS	23.7	Colon and Rectum	27.2
Corpus and Uterus, NOS	25.9	Corpus and Uterus, NOS	26.6	Corpus and Uterus, NOS	27.0	Thyroid	19.1	Corpus and Uterus, NOS	21.9
Thyroid	19.4	Melanoma of the Skin	29.0	Pancreas	13.7	Lung and Bronchus	20.7	Thyroid	20.5

2C Top five common cancers by mortality for males, by racial/ethnic group, as compared with the state's male population overall, California, 2013-2017.

All California Males		Non-Hispanic White		Non-Hispanic Black		Hispanic		Asian/Pacific Islander	
	Rate		Rate		Rate		Rate		Rate
Lung and Bronchus	34.8	Lung and Bronchus	38.2	Lung and Bronchus	49.7	Lung and Bronchus	22.3	Lung and Bronchus	32.4
Prostate	19.7	Prostate	20.7	Prostate	43.1	Liver and Intrahepatic Bile Duct	14.8	Liver and Intrahepatic Bile Duct	15.0
Colon and Rectum	14.7	Colon and Rectum	14.6	Colon and Rectum	21.6	Colon and Rectum	14.5	Colon and Rectum	12.9
Liver and Intrahepatic Bile Duct	11.1	Pancreas	12.6	Liver and Intrahepatic Bile Duct	13.7	Prostate	17.8	Pancreas	8.9
Pancreas	11.7	Liver and Intrahepatic Bile Duct	8.3	Pancreas	15.1	Pancreas	10.3	Prostate	9.5

2D Top five common cancers by mortality for females, by racial/ethnic group, as compared with the state's female population overall, California, 2013-2017.

All California Females		Non-Hispanic White		Non-Hispanic Black		Hispanic		Asian/Pacific Islander	
	Rate		Rate		Rate		Rate		Rate
Lung and Bronchus	25.2	Lung and Bronchus	30.9	Lung and Bronchus	32.5	Breast	15.6	Lung and Bronchus	17.5
Breast	19.5	Breast	21.4	Breast	30.3	Lung and Bronchus	13.6	Breast	13.2
Colon and Rectum	10.9	Colon and Rectum	11.3	Colon and Rectum	15.9	Colon and Rectum	9.5	Colon and Rectum	9.1
Pancreas	9.1	Pancreas	9.2	Pancreas	11.7	Pancreas	8.9	Pancreas	7.7
Ovary	7.0	Ovary	7.8	Corpus and Uterus, NOS	9.0	Liver and Intrahepatic Bile Duct	7.1	Liver and Intrahepatic Bile Duct	6.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Source: California Cancer Registry, California Department of Public Health.

Corpus and Uterus, Not Otherwise Specified

Cancer Disparities among American Indian/Alaskan Natives

Among males and females combined, age-adjusted rates from 2013 to 2017 indicate that American Indian/Alaskan Natives have the second highest incidence of cancer after non-Hispanic whites. The overall incidence rate for cancer among American Indian/ Alaskan Native males in comparison to American Indian/ Alaskan Native females is similar (431.4 per 100,000 versus 427.4 per 100,000, respectively). Prostate, lung, and colorectal cancers are the top three most common cancers diagnosed among American Indian/Alaskan Native males, while breast, lung, and colorectal cancers are the top three most common cancers diagnosed among American Indian/ Alaskan Native females. Lung cancer is the leading cause of cancer-related death among both American Indian/ Alaskan Native males and females. Liver, colorectal, and pancreatic cancers rank among the top five common cancer-related deaths among both male and female American Indian/ Alaskan Natives.

(Table 3A-3B: Top 5 AIAN Incidence & Mortality)

Tables 3A-3B: Cancer Disparities among American Indian/Alaskan Natives

3A Top 5 common cancers by incidence among American Indian/Alaskan Natives, by sex, California, 2013-2017.

Males		Females	
	Rate		Rate
Prostate	74.6	Breast	119.1
Lung and Bronchus	55.2	Lung and Bronchus	48.4
Colon and Rectum	43.9	Colon and Rectum	38.0
Liver and Intrahepatic Bile Duct	33.9	Corpus and Uterus, NOS	33.9
Kidney and Renal Pelvis	23.2	Kidney and Renal Pelvis	19.7

3B Top 5 common cancers by mortality among American Indian/Alaskan Natives, by sex, California, 2013-2017.

Males		Females	
	Rate		Rate
Lung and Bronchus	37.1	Lung and Bronchus	32.5
Liver and Intrahepatic Bile Duct	21.4	Breast	17.7
Colon and Rectum	15.9	Colon and Rectum	13.5
Prostate	17.5	Liver and Intrahepatic Bile Duct	10.2
Pancreas	10.4	Pancreas	9.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Source: California Cancer Registry, California Department of Public Health.

Corpus and Uterus, Not Otherwise Specified

Tables 4A-4D: Cancer Disparities Among California's Asian Ethnic Groups

Tables 4A-4D show the five most common cancers for Asian ethnic groups by sex. Although Asian and Pacific Islanders as a collective group have lower rates of cancer incidence and mortality compared to non-Hispanic whites, non-Hispanic blacks, and Hispanics, the burden of cancer varies greatly among the individual Asian subgroups. Prostate cancer is the most commonly diagnosed cancer among Chinese, Japanese, Filipino, and South Asian males. Lung cancer is the most commonly diagnosed cancer among Korean, Vietnamese, Laotian, and Cambodian males. Breast cancer is the most commonly diagnosed cancer among females in each of the Asian subgroups. Lung cancer is the most common cause of cancer-related death among males and females in each of the Asian subgroups, except for breast cancer being the most common cause of cancer-related death among Filipina and South Asian females.

(see Tables 4A-4D)

4A Top five common cancers by incidence for Asian ethnic groups, males, California, 2011-2015.

Chinese	Rate	Japanese	Rate	Filipino	Rate	Korean	Rate
Prostate	51.9	Prostate	67.0	Prostate	75.2	Lung and Bronchus	48.9
Lung and Bronchus	47.6	Colon and Rectum	45.4	Lung and Bronchus	57.6	Colon and Rectum	46.2
Colon and Rectum	41.4	Lung and Bronchus	37.4	Colon and Rectum	39.8	Prostate	37.8
Liver and Intrahepatic Bile Duct	19.5	Non-Hodgkin Lymphoma	19.7	Non-Hodgkin Lymphoma	19.0	Stomach	34.2
Non-Hodgkin Lymphoma	16.3	Urinary Bladder	19.3	Liver and Intrahepatic Bile Duct	17.4	Liver and Intrahepatic Bile Duct	24.6
South Asian	**Rate**	**Vietnamese**	**Rate**	**Laotian**	**Rate**	**Cambodian**	**Rate**
Prostate	63.0	Lung and Bronchus	65.6	Lung and Bronchus	55.1	Lung and Bronchus	52.9
Colon and Rectum	26.5	Liver and Intrahepatic Bile Duct	50.2	Liver and Intrahepatic Bile Duct	52.0	Liver and Intrahepatic Bile Duct	51.4
Lung and Bronchus	24.6	Prostate	45.4	Colon and Rectum	29.4	Colon and Rectum	43.8
Urinary Bladder	20.4	Colon and Rectum	45.2	Stomach	16.9	Prostate	19.5
Non-Hodgkin Lymphoma	19.3	Non-Hodgkin Lymphoma	19.5	Pancreas	15.3	Non-Hodgkin Lymphoma	15.2

4B Top five common cancers by incidence for Asian ethnic groups, females, California, 2011-2015.

Chinese	Rate	Japanese	Rate	Filipino	Rate	Korean	Rate
Breast	89.3	Breast	112.3	Breast	118.5	Breast	67.7
Lung and Bronchus	33.2	Colon and Rectum	34.1	Corpus and Uterus, NOS	26.3	Colon and Rectum	32.8
Colon and Rectum	28.1	Lung and Bronchus	26.3	Colon and Rectum	25.8	Lung and Bronchus	20.7
Thyroid	16.7	Corpus and Uterus, NOS	16.8	Lung and Bronchus	24.8	Thyroid	20.1
Corpus and Uterus, NOS	16.1	Non-Hodgkin Lymphoma	12.9	Thyroid	24.2	Stomach	16.6
South Asian	**Rate**	**Vietnamese**	**Rate**	**Laotian**	**Rate**	**Cambodian**	**Rate**
Breast	104.2	Breast	76.9	Breast	46.0	Breast	47.8
Corpus and Uterus, NOS	21.1	Lung and Bronchus	36.1	Colon and Rectum	36.6	Colon and Rectum	30.1
Thyroid	17.3	Colon and Rectum	33.9	Lung and Bronchus	27.4	Lung and Bronchus	28.8
Colon and Rectum	16.6	Thyroid	17.7	Liver and Intrahepatic Bile Duct	15.9	Liver and Intrahepatic Bile Duct	17.6
Non-Hodgkin Lymphoma	13.9	Liver and Intrahepatic Bile Duct	15.6	Corpus and Uterus, NOS	13.6	Thyroid	13.3

4C Top five common cancers by mortality for Asian ethnic groups, males, California, 2011-2015.

Chinese		Japanese		Filipino		Korean	
	Rate		Rate		Rate		Rate
Breast	89.3	Breast	112.3	Breast	118.5	Breast	67.7
Lung and Bronchus	33.2	Colon and Rectum	34.1	Corpus and Uterus, NOS	26.3	Colon and Rectum	32.8
Colon and Rectum	28.1	Lung and Bronchus	26.3	Colon and Rectum	25.8	Lung and Bronchus	20.7
Thyroid	16.7	Corpus and Uterus, NOS	16.8	Lung and Bronchus	24.8	Thyroid	20.1
Corpus and Uterus, NOS	16.1	Non-Hodgkin Lymphoma	12.9	Thyroid	24.2	Stomach	16.6
South Asian		**Vietnamese**		**Laotian**		**Cambodian**	
	Rate		**Rate**		**Rate**		**Rate**
Breast	104.2	Breast	76.9	Breast	46.0	Breast	47.8
Corpus and Uterus, NOS	21.1	Lung and Bronchus	36.1	Colon and Rectum	36.6	Colon and Rectum	30.1
Thyroid	17.3	Colon and Rectum	33.9	Lung and Bronchus	27.4	Lung and Bronchus	28.8
Colon and Rectum	16.6	Thyroid	17.7	Liver and Intrahepatic Bile Duct	15.9	Liver and Intrahepatic Bile Duct	17.6
Non-Hodgkin Lymphoma	13.9	Liver and Intrahepatic Bile Duct	15.6	Corpus and Uterus, NOS	13.6	Thyroid	13.3

4D Top five common cancers by mortality for Asian ethnic groups, females, California, 2011-2015.

Chinese		Japanese		Filipino		Korean	
	Rate		Rate		Rate		Rate
Lung and Bronchus	23.5	Lung and Bronchus	20.7	Breast	17.0	Lung and Bronchus	15.7
Breast	12.1	Breast	15.7	Lung and Bronchus	16.4	Pancreas	11.6
Colon and Rectum	10.6	Colon and Rectum	11.7	Colon and Rectum	9.0	Colon and Rectum	11.4
Pancreas	8.2	Pancreas	10.6	Pancreas	7.8	Stomach	10.6
Liver and Intrahepatic Bile Duct	6.5	Stomach	6.2	Liver and Intrahepatic Bile Duct	6.1	Breast	10.2
South Asian		**Vietnamese**		**Laotian**		**Cambodian**	
	Rate		**Rate**		**Rate**		**Rate**
Breast	12.5	Lung and Bronchus	18.6	Lung and Bronchus	20.6	Lung and Bronchus	25.7
Lung and Bronchus	6.4	Liver and Intrahepatic Bile Duct	10.9	Colon and Rectum	19.2	Colon and Rectum	13.5
Colon and Rectum	5.1	Colon and Rectum	10.9	Liver and Intrahepatic Bile Duct	13.4	Liver and Intrahepatic Bile Duct	10.4
Ovary	4.8	Breast	9.0	Breast	11.2*	Breast	7.8
Pancreas	4.5	Pancreas	5.7	Pancreas	9.7*	Leukemia	7.3*

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Source: California Cancer Registry, California Department of Public Health.

*Rates are based on counts less than 15 cases.

Note 1: Population estimates were created using linear interpolation and extrapolation of 1990 (adjusted), and 2020 Census counts.

Note 2: NOS= Not Otherwise Specified

Childhood Cancer

Among children across the U.S., overall cancer incidence rates increased an average of 0.8% per year during 2012 to 2016. The most common cancer types among children were leukemia, brain and other nervous system cancers, and lymphoma, with increasing incidence trends for each of these cancers during 2012 to 2016. Among adolescents and young adults, overall cancer incidence rates increased an average of 0.9% per year from 2012 to 2016. This table presents the incidence rates and counts of International Classification for Childhood Cancer (ICCC) groups among children 0 to 19 years of age in California. In the last decade over 1,700 children and young adults under the age of 20 were diagnosed with cancer each year. Among these, over two-thirds are between 0 to 14 years of age. The top three most common types of cancer diagnosed in children under the age of one are leukemias, followed by neuroblastoma, and central nervous system (CNS) tumors. Leukemia is the most commonly diagnosed cancer among children between 1 and 14 years of age, followed by CNS tumors, and lymphomas. Among children and young adults between 15 and 19 years of age, the top three most commonly diagnosed cancers are other malignant epithelial neoplasms and melanomas, closely followed by lymphomas, and leukemias.

(See Table 5: Incidence Rates and Counts of ICCC Cancer Groups Among 0-19 YOs)

Rates are per 1,000,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

* International Classification of Childhood Cancer (http://seer.cancer.gov/iccc/iccc-who2008.html).

Count suppressed due to fewer than 5 cases.

^ Statistic not displayed due to fewer than 15 cases.

Data Source: California Cancer Registry, California Department of Public Health.

Table 5. Incidence Rates and Counts of ICCC Cancer Groups Among 0-19 Year Olds, California, 1988-2017

	<1 year		1-14 years		15-19 years	
Cancer ICCC Group*	**Rate**	**Count**	**Rate**	**Count**	**Rate**	**Count**
All Cancer Types	214.6	3,332	149.0	31,567	210.0	15,403
I. Leukemias, myeloproliferative & myelodysplastic diseases	45.0	698	55.6	11,878	33.5	2,457
Lymphoid leukemias	20.8	323	45.7	9,776	20.5	1,504
Acute myeloid leukemias	18.0	280	7.7	1,636	9.4	692
II. Lymphomas and reticuloendothelial neoplasms	6.6	103	16.1	3,337	44.0	3,225
Hodgkin lymphomas	^	#	6.0	1,234	27.1	1,990
Non-Hodgkin lymphomas (except Burkitt lymphoma)	1.4	22	6.8	1,406	13.9	1,022
III. CNS and misc intracranial and intraspinal neoplasms	29.7	461	29.4	6,205	18.9	1,390
Ependymomas and choroid plexus tumor	4.8	74	2.7	570	1.4	102
Astrocytomas	10.7	166	14.2	2,991	10.8	792
Intracranial and intraspinal embryonal tumors	10.4	162	7.2	1,539	3.0	221
Other gliomas	2.6	40	4.5	944	3.1	224
IV. Neuroblastoma and other peripheral nervous cell tumors	43.9	681	6.4	1,407	0.7	53
V. Retinoblastoma	26.5	412	2.9	633	^	#
VI. Renal tumors	13.3	207	7.0	1,524	1.2	91
VII. Hepatic tumors	11.2	174	1.9	420	1.4	100
VIII. Malignant bone tumors	0.6	10	7.3	1,490	14.6	1,073
Osteosarcomas	^	#	4.4	909	8.9	652
Ewing tumor and related sarcomas of bone	^	#	2.2	460	3.8	281
IX. Soft tissue and other extraosseous sarcomas	14.6	227	9.6	2,013	16.4	1,200
Rhabdomyosarcomas	4.8	75	4.9	1,041	3.4	249
Fibrosarcomas, peripheral nerve & other fibrous	3.7	57	0.7	145	2.0	146
X. Germ cell & trophoblastic tumors & neoplasms of gonads	20.2	313	5.4	1,114	32.5	2,387
Extracranial & extragonadal germ cell tumors	13.0	202	0.6	129	2.5	182
Malignant gonadal germ cell tumors	4.9	76	2.8	578	25.1	1,838
XI. Other malignant epithelial neoplasms and melanomas	1.5	24	6.8	1,406	44.6	3,269
XII. Other and unspecified malignant neoplasms	1.2	18	0.4	82	1.0	76

Cancer Five-year Survivorship

This table describes the five-year relative survival for selected cancer types by stage at diagnosis. At all stages of the disease, female breast, prostate, testis, and melanoma of the skin cancers each have five-year relative survival rates of over 90%. Cancers that are diagnosed at a localized, or early stage of the disease, have higher survival rates than those diagnosed at the regional and distant stages of the disease. Cancers such as female breast cancer and prostate cancer, if diagnosed at a localized stage, have relative survival rates close to 100%. However, pancreatic and liver cancers, if diagnosed at the distant stage, have five-year relative survival rates of only around three percent. Pancreatic cancer is one of the leading causes of cancer-related deaths because there are no detection tools to diagnose the disease in its early stages when surgical removal of the tumor is still possible. Nearly half of all pancreatic cancers in California are diagnosed at the distant stage.

Table 6.: 5-year survival by stage of diagnosis

Cancer Type	All Stages	Localized	Regional	Distant
Female Breast	90.9%	98.7%	85.9%	29.7%
Cervix Uteri	67.3%	91.7%	57.2%	17.9%
Corpus and Uterus, NOS	82.2%	95.0%	69.5%	18.4%
Ovary	51.0%	91.9%	75.6%	31.6%
Prostate	97.7%	100.0%	100.0%	30.8%
Testis	94.4%	98.9%	95.4%	70.2%
Oral Cavity & Pharynx	67.7%	84.7%	67.4%	40.7%
Colon & Rectum	66.6%	90.7%	71.4%	14.6%
Pancreas	9.8%	38.4%	12.2%	2.9%
Liver & Intrahepatic Bile Duct	21.5%	33.3%	12.4%	3.2%
Lung & Bronchus	20.4%	58.9%	31.3%	5.6%
Melanoma of the Skin	92.1%	98.5%	65.6%	22.9%
Hodgkin Lymphoma	86.0%	91.4%	92.6%	78.1%
Non-Hodgkin Lymphoma	71.6%	84.3%	74.8%	63.9%
Leukemia	61.2%	*	*	61.3%
Childhood (0-14 years)	86.2%	*	*	86.2%
Young Adult (15 - 19 years)	71.9%	*	*	71.8%
Adult (20+ years)	57.4%	*	*	57.5%

*All leukemias are staged at distant disease; thus survival cannot be calculated for other stages.

Note: Follow-up is through December 2017. Cancers that were unstaged at time of diagnosis are excluded.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry.

MORE INFORMATION AND RESOURCES

American Cancer Society

Cancer Facts and Figures 2017
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/CDPH%20Document%20Library/CDOC/CA_CancerFactsAndFigures_Revised_June2017.pdf

Cancer Facts and Figures 2020
https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2020.html

California Health Maps
https://www.CaliforniaHealthMaps.org

Centers for Disease Control and Prevention - National Center for Health Statistics
https://www.cdc.gov/nchs/pressroom/states/california/california.htm

National Cancer Institute - Cancer Trends Progress Report
https://progressreport.cancer.gov

Photo provided by the American Cancer Society

CHAMPION OF CANCER CONTROL

REGINA (JENNIE) COOK

If you have been involved in cancer control in any capacity over the past 50 years, you probably know Jennie Cook. She has been a champion of cancer control in California, serving in a wide array of roles from being a volunteer to being one of the first women to hold a major leadership post in the nation's most prominent organization dedicated to cancer, the ACS. Jennie is tough; she is a cancer survivor, winning her own fight against the disease, and, shortly after regaining her health, beginning her lifetime volunteer commitment to cancer prevention and control.

Jennie Cook joined the fight against cancer in 1964 by volunteering to help others in the local unit of ACS in Marin County. She served on the Unit Public Education Committee and was elected President of the Marin Unit. She was invited to serve on the Public Education Committee and helped frame some of the Division's most notable programs, including the first-in-nation Cancer Education Week. The National Office of ACS acknowledged the California Division each year for these programs and adapted some of Jennie's ideas for nationwide use. Jennie served on the Board of Directors of the Division and was elected Chair of the Board in 1987.

These were exciting times for cancer control in California. Jennie helped on several of the most important programs, including legislative efforts to support development and expansion of the CCR, and the sponsorship and passage of the historic tobacco tax measure, Proposition 99. In the 1970s, Jennie helped in the formation of the California Interagency Council on Smoking and Health—the first in the nation—and served on its Executive Committee. Her efforts in advocating for cancer control brought her often to Sacramento, where she met with many key legislators and top government officials.

Jennie was invited to serve on the National Public Education Committee for ACS and also served on its National Board of Directors. In 1999, Jennie was elected Chair of the National Board, helping to lead this important volunteer health agency in its nationwide fight against cancer. She was the second woman to ever hold such a prominent, national leadership position.

Jennie's passion for tobacco control and access to cancer care is well-known with her work on tobacco issues serving as chair for both the Smoke-Free Marin Coalition and CDOC Tobacco Prevention Committee. She served on California's Tobacco Education and Research Oversight Committee (TEROC) from its inception and as its chair for eight years. In 2003, Jennie was a founding member of CDOC and was part of the special effort to develop the first iteration of this comprehensive plan for cancer control for the state. Stressing the importance of diversity, access to care, and early detection for cancer, she chaired the Disparities, Access to Care, and Early Detection Team for CDOC. Jennie is always willing to contribute her knowledge, wisdom, and passion, and her warm, welcoming spirit is felt by all who work with her. We take this opportunity to recognize her tireless work as a champion of cancer control.

Jennie was always willing to contribute her knowledge, wisdom, and passion, and her warm, welcoming spirit was felt by all who worked with her. Jennie passed on January 8, 2021 and will forever be remembered as someone who dedicated her life to making change. We take this opportunity to recognize her tireless work as a champion of cancer control.

Jennie Cook and former CDOC staff, Tina Diepenbrock at a 2014 CDOC Community Coalition training, Irvine, CA

Jennie Cook and former staff Marilyn Kempster at the 2016 CDOC Stakeholder Meeting, Sacramento, CA

CHAPTER 2

SURVEILLANCE

CHAPTER GOAL

To ensure the collection, dissemination, and utilization of comprehensive and understandable cancer-related surveillance data for cancer control evaluation, planning, and monitoring in California.

CHAPTER NARRATIVE

Cancer surveillance, conducted under the auspices of the California Cancer Registry, is based on comprehensive collection, analysis, and reporting of population-based cancer incidence and survival. These data are critical for cancer prevention and control efforts in the state, and serve as the foundation for research, planning, and policy targeting reduction in cancer-related morbidity and mortality.

While existing cancer surveillance data are useful for evaluating cancer risk, improving early detection, and monitoring treatment efficacy, there is a growing need to enrich surveillance data to further identify disparate communities, as well as enhance precision medicine efforts for personalized care. Linkage of cancer registry data with other population databases augments cancer surveillance and research efforts at little added cost. Value is further added through improved medical informatics and deeper annotation of data obtained through the electronic health record. This includes demographics and clinical information that support the identification and surveillance of cancer patterns in biomedically underserved populations.

Given that CCR is a principal resource for the development and evaluation of California's Comprehensive Cancer Control Plan, the following objectives and strategies have been developed to strengthen its capacity to collect, process, analyze, and disseminate statewide cancer surveillance data.

Objective 1: By 2025, expand CCR data dictionary requirements of gender identity categories, establishing a statewide data standard, in alignment with national gender minority initiatives.

Data source: CCR, 2020

Strategies

1. Align CCR requirements by filing an application to add a non-binary gender identity category to the current data dictionary with the goal to enhance data capture as well as to incorporate California State identification Laws.

2. Assemble a working group, for data governance, to identify and align categories including local registrars, Surveillance, Epidemiology, and End Results (SEER) representatives and national and state representatives from the National Institute of Health (NIH) and CDPH to ensure the categories are achievable before updating CCR requirements and conduct a risk analysis of data alignment with national repositories from which the CCR sends data. Also include others who have worked on a similar initiative such as New York State Data Collection Project.

3. Launch an education initiative for cancer tumor registrars (CTRs) and send notification to cancer registries about this update in CCR requirements.

4. Utilize relevant geographic indicators in cancer data analysis to understand reporting numbers by location for gender minority status including non-binary cancer patient categories and use this information in the CCR standard quality review process to monitor year over year progress, and to understand barriers in areas not meeting targets.

5. Integrate census-derived measures of gender minority status categories into the analysis of CCR data to produce reports and maps characterizing and evaluating disparities in cancer risk, access and barriers to screening and proper cancer care, treatment and outcomes for gender non-binary cancer patients.

Objective 2: By 2025, enhance the capacity of cancer surveillance systems to produce and disseminate user-friendly cancer information and data reports that meet the needs of the general public, public health-based organizations, research-based institutions, and other stakeholders.

Data sources: CDPH and CCR

Strategies

1. Utilize relevant socio-demographic and geographic indicators in cancer data analysis to highlight disparities in cancer incidence, detection, and outcomes.

2. Incorporate health survey data collected from the California Behavioral Risk Factor Survey (BRFSS), CHIS, and the California Adult Tobacco Survey (CATS) to expand the analysis of trends in cancer incidence, mortality, and survival as they correlate with health behaviors, prevalence of cancer risk factors, and adherence to cancer screening guidelines in California.

3. Integrate census-derived measures of socioeconomic status into the analysis of CCR data to produce reports and maps characterizing and evaluating disparities in cancer risk, access and barriers to screening and proper cancer care, treatment and outcomes.

4. Promote the availability and accessibility of de-identified cancer data from CCR and statewide surveys through a variety of media, including more user-friendly web applications to graphically display measures of cancer risk, mortality, detection, and outcomes at statewide and smaller geographic areas.

5. Ensure wider dissemination of cancer data by producing culturally and linguistically appropriate cancer reports.

Objective 3: By 2025, enhance the value and use of CCR data to improve population health through the expansion of existing linkages with other population registries, repositories, and relevant data sets from the baseline of 6 to 9.

Data source: CCR, 2020

Strategies

1. Support efforts to enhance CCR data through linkages with administrative medical claims databases to obtain more detailed information on cancer treatment and recurrence. Strive for an All Payer-All Claims database for CCR linkage.

2. Identify sources of environmental data that can be linked with the CCR database to expand population-based studies of the cancer risk in California.

3. Establish a workgroup with the Department of Health Care Services (DHCS) to develop processes and goals for utilization of a linked CCR–Medi-Cal data set for improving the health of the Medi-Cal population in California. Set a timeline for linking all Medi-Cal enrollment data with CCR data.

4. Expand usage of hospital discharge data from the Office of Statewide Hospital Planning and Development (OSHPD) to assess quality of care and to complement case finding of incident cancer diagnoses not captured by the CCR reporting system.

5. Obtain approval from the Vital Statistics Advisory Committee (VSAC) to perform annual linkages of birth files and death files with CCR data to assess vital status, evaluate pregnancy outcomes, and obtain blood spots for research and surveillance from the California Neonatal Biobank.

6. Leverage the National Cancer Institute's collaborations with external commercial and public partners through participation in demonstration projects to link cancer registry data with pharmacy claims and biomarkers/genomic databases to capture new data items relevant for evaluating cancer care outcomes for patients outside of clinical trials.

MORE INFORMATION AND RESOURCES

American Cancer Society
https://www.cancer.org/

California Behavior Risk Factor Surveillance System (BRFSS)
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/Pages/BRFSS.aspx

California Cancer Registry
https://www.ccrcal.org/

California Health Maps
https://www.CaliforniaHealthMaps.org

National Cancer Institute – Surveillance, Epidemiology, and End Results Program (SEER)
https://seer.cancer.gov/

National Institutes of Health – Office of Equity, Diversity, and Inclusion
https://www.edi.nih.gov/people/sep/lgbti/research

The Williams Institute, UCLA School of Law - LGBT Data & Demographics
https://williamsinstitute.law.ucla.edu/visualization/lgbt-stats/?topic=LGBT&area=4#density

CHAPTER 3

EMERGING CANCER TRENDS

EARLY ONSET COLORECTAL CANCER (EO-CRC)

Early onset colorectal cancer (EO-CRC) has variable definitions based on age, but a general guideline is that this refers to patients presenting with colorectal cancer before the age of 50.[1] Approximately 10% of all colorectal cancer cases are diagnosed in patients under 50 and the rates of EO-CRC are predicted to increase by 90% for colon cancer and 140% for rectal cancer by 2030 reflecting a predicted annual increase of two percent per year.2 In California, 1,906 cases of EO-CRC were diagnosed in 2017, and 372 people died from their disease. In addition, these cases were diagnosed at a higher rate of late stage disease, with 67.6% late stage compared to 60.1% for those aged 50-64 and 63.4% for those 65+.[3] Nationally, one in four EO-CRC patients (26%) is diagnosed with metastatic disease compared to 19% of those 65 and older.[4]

To reduce the incidence and stage at diagnosis in EO-CRC, we need to appropriately identify people who are at increased risk for developing the disease. Unfortunately, risk stratification efforts for this group suggest there is much work to be done before identification of those who might develop EO-CRC. Some of the challenges with diagnosing patients at risk include understanding the root causes for early presentation of disease, albeit genetic or familial risk, inflammatory bowel disease, lifestyle, environment, microbiome disruption, or other causes yet to be determined.[5,6] Understanding who might be at increased risk is important for patient advocacy efforts and efficient utilization of limited resources within health systems, such as access to screening colonoscopies at more frequent intervals than is currently recommended for normal risk patients who are 50 years old or older.

Overall, the increase in cases and resulting mortality are a growing public health concern that needs to be addressed to improve the colorectal cancer care continuum for all impacted Californians. The colorectal cancer section includes an objective and strategies that aim to reduce the number of EO-CRC patients diagnosed with late state CRC.

HPV ATTRIBUTABLE CANCERS

The human papillomavirus (HPV) is a common virus that can cause six types of cancer (cervical, vaginal, vulvar, anal, penile, and oropharyngeal). In the U.S., 80% of people will contract HPV and 10% will develop chronicity, putting them at high risk for HPV-associated cancers.[1,2] HPV infection causes 34,800 cases of cancer in U.S. men and women annually. Approximately 10% of these cancers occur among California residents. In 2016, oropharyngeal cancer was the most common HPV-associated cancer nationally and in California, where there were 1875 new cases compared to 1495 new cervical cancer cases. Of particular note is oropharyngeal cancer in men, which has steadily increased by an average of 1.9% per year over the past nine years (2008 2017) in California. Currently, cervical cancer is the only HPV-associated cancer for which screening is recommended.[3]

Fortunately, the HPV vaccine prevents over 90% of HPV-associated cancers. This safe and effective vaccine was first introduced in the U.S. in 2006, but HPV vaccination rates still lag behind those of other pre-teen vaccines. California ranks number 13 in HPV vaccination rates among U.S. states, according to the National Immunization Survey - Teen (2018). There is still much room for improvement as 73% of California adolescents have started the series, but only 53% have completed it. Thus, over one million California teens are unprotected against future HPV-associated cancers.

Increasing HPV vaccination is essential to decreasing HPV-associated cancer incidence. Evidence-based approaches to HPV vaccination uptake include presumptive recommendations from health care providers, patient reminders, and systems strategies such as electronic health record alerts, standing orders, and tracking HPV vaccination rates at the provider level. The California HPV Vaccination Roundtable (https://www.cahpvroundtable.org/) was launched in October 2018 to catalyze the implementation of these approaches across the state. Co-founded by the ACS and CDOC, this coalition of diverse stakeholders is working to increase the California HPV Vaccination rate to 80% by 2026

LIVER CANCER

Liver cancer incidence and mortality are among the most rapidly increasing of all cancer trends in the U.S. Over the most recent decades, incidence and mortality rates decreased in Asian populations who have historically had the highest rates, while rates rose dramatically in all non Asian groups.[1,2] In 2016, the highest mortality rates were observed among American Indian/Alaskan Native and Hispanic populations, and the lowest among non-Hispanic Whites. Liver cancer is the sixth most common cause of cancer-related death in the U.S. California has liver cancer incidence and mortality rates that are among the highest in the nation.[3]

Liver cancer is largely preventable. Prevention and early detection efforts are critical as advanced liver cancer is essentially untreatable; most patients survive less than six months (five year survival=2%).[4] Currently, only 44% of liver cancers are detected at a localized stage. Identification of precise blood-based biomarkers and improving imaging surveillance are active areas of research in the field of liver cancer early detection.

Obesity, diabetes and their related complications are currently the leading risk factors for liver cancer, with a population attributable fraction of nearly 40%.[5] Growing evidence suggests that a healthy diet and regular physical activity may reverse the hepatic manifestations of obesity and diabetes (non-alcoholic fatty liver disease) and reduce liver cancer risk. Alcohol is also responsible for a growing fraction of liver cancer cases. After stopping alcohol intake the risk of liver cancer decreases by 6-7% a year.

Hepatitis B (HBV) infection causes the vast majority of liver cancers among Asians. Universal HBV vaccination in infants, which began in the U.S. in 1991 and several years earlier in some Asian counties, has resulted in a decrease in HBV infection rates. For individuals who are already infected, antiviral therapy can reduce liver cancer risk. Hepatitis C (HCV) remains a top cause of liver cancer in non-Asian U.S. populations. Treatment with a highly effective direct acting antiviral therapy can eradicate HCV infection and reduce liver cancer risk. Screening high risk populations for HCV, followed by eradication prior to development of cirrhosis, has the potential to dramatically reduce future liver cancer incidence.

PANCREATIC CANCER

Pancreatic cancer has poor prognosis with fewer than 10% of patients surviving to five years after diagnosis.[1] Pancreatic cancer is also one of the few cancers for which incidence is increasing in California, with more than 4,500 annual cases, killing more than 4,000 people per year.[2] These trends persist despite the fact that prevalence of smoking, a well-established risk factor for pancreatic cancer, has been decreasing in California. A suspected risk factor for the increasing rate of pancreatic cancer is the rising burden of obesity, in particular, visceral adiposity and associated organ-specific fat.[3-7] Obese individuals face 20-50% increased risk of pancreatic cancer compared to individuals of normal weight.[3,4] As such, preventing and controlling obesity is a priority for pancreatic cancer, as for other obesity-associated cancers.

Early detection is key to improving pancreatic cancer outcomes, but we lack early detection guidelines for the general U.S. population.[8] Endoscopic screening is currently approved for persons with a family history of pancreatic cancer and patients with cystic lesions.[9] However, these comprise a small minority of patients who are ultimately diagnosed with pancreatic cancer. New-onset hyperglycemia and diabetes are common features among pancreatic cancer patients and may signal a growing tumor in the pancreas.[8-12] Nationally and internationally, active research is underway to identify specific features among patients with new-onset diabetes that may indicate a need for pancreatic cancer screening and surveillance. These include development and validation biomarkers and imaging modalities for early detection, and clinical prediction models to identify persons at very high-risk for pancreatic cancer.

THYROID CANCER

The number of people diagnosed with thyroid cancer has nearly doubled over the past 20 years with 52,070 estimated cases in the U.S. for 2019. In California, 5,243 new cases of thyroid cancer were diagnosed in 2017. Thyroid cancer incidence is increasing in both U.S., and worldwide. The increasing incidence trends are largely due to improvements in and widespread use of neck ultrasounds and other imaging tests, which has led to greater numbers of incidentally diagnosed small cancers.[1] Fortunately since 2009, the five-year survival rate for thyroid cancer has remained very high, between 98.2% to 99.9%, depending on the location of the cancer at diagnosis. A number of factors, however, are associated with greater mortality risk, including the development of distant metastasis, age over 55, and medullary or anaplastic subtypes of the disease.

The mainstay of treatment is surgery to remove the thyroid gland followed by medication, to restore the body's supply of thyroid hormone while suppressing the pituitary gland's production of thyroid stimulating hormone. Radioactive iodine treatments and other forms or radiation therapy are often incorporated into treatment for patients with high-risk features. The last decade has brought about several key advances in the treatment of thyroid cancer. Chief among these, is the recognition that inhibitors of the VEGF, RET, and BRAF proteins, which are important in the growth of thyroid cancer, can be effective treatment for those patients with advanced cancer.

UTERINE CANCER

Uterine cancer is the most common gynecologic cancer in the U.S.; in 2020 there will be an estimated 65,620 new cases and 12,590 deaths. In California, 6,336 women were diagnosed with uterine cancer and 1,204 died from it in 2017. Over the last ten years, rates of new uterine cancer cases have been rising 1% each year, on average. Obesity is a known risk factor for uterine cancer. For a woman who is 50 pounds overweight, evidence indicates she is ten times more likely than a woman with a normal BMI to get endometrial cancer. As the rate of obesity in the U.S. increases, so does the rate of endometrial cancer.

Approximately 80% of uterine cancer is diagnosed at an early stage, due to the common symptom of abnormal uterine bleeding which leads to biopsy and eventual diagnosis. For patients with early stage disease, minimally invasive surgery with laparoscopic hysterectomy and staging is the mainstay of treatment. Technological advances now allow surgeons to identify and biopsy the first node (sentinel lymph node) to which a tumor drains, negating the morbidity of performing a complete lymphadenectomy. For advanced endometrial cancer, combination chemotherapy and radiation is the standard treatment.

Improved understanding of the disease has led to molecular profiling and new discoveries of immunotherapy biomarkers. These have significantly impacted the treatment of endometrial cancer and played an important role in personalized medicine. In the recurrent and metastatic disease setting, for example, testing for actionable targets such as HER-neu, PTEN, PIK3CA and PDL-1 have identified specific therapies which may improve survival.

MORE INFORMATION AND RESOURCES

American Cancer Society

Cancer Facts and Figures 2017
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/CDPH%20Document%20Library/CDOC/CA_CancerFactsAndFigures_Revised_June2017.pdf

Cancer Facts and Figures 2020
https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2020/cancer-facts-and-figures-2020.pdf

CANCER STORY: HUMAN PAPILLOMA VIRUS (HPV) ATTRIBUTABLE CANCERS

My whole word stopped when I heard the dreaded words advising that I had cancer. Stage IV Squamous Cell Carcinoma of the Throat (Primary Source Unknown) due to HPV Type 16 with lymph node involvement—who could survive that? I was only 49, felt great, and had so much life left to live with my wife and two kids. After surgery to remove my tonsils and small parts of my tongue/throat, I started a brutal journey involving chemotherapy and radiation over seven weeks. My body was ravaged from the cumulative effects of treatment, including loss of taste, dry mouth, nausea/fatigue, an inability to swallow, and excruciating pain. A feeding tube kept me alive at the end as I lost 70 lbs. I never thought I was strong enough to survive that challenge and would ever be able to get back to an enjoyable life, but you never know how strong you are until being strong is the only choice you have. My goal now is to live a life of service by sharing my story of survival with others, as well as promoting the HPV vaccine so that one day no one will ever have to lose their life or have it changed forever as a result of an HPV related cancer.

-Michael West, HPV-throat Cancer Survivor

UCSF Helen Diller Family Comprehensive Cancer Center, Bakar Precision Medicine Building

CHAPTER 4

CANCER CENTERS AND PROGRAMS

THIS CHAPTER DESCRIBES THE VARIOUS TYPES OF CANCER CENTERS AND PROGRAMS IN CALIFORNIA, THEIR ACCOUNTABILITY FOR CANCER CONTROL ACTIVITIES AND OPPORTUNITIES FOR COLLABORATION TO ADDRESS THE STATEWIDE BURDEN OF CANCER.

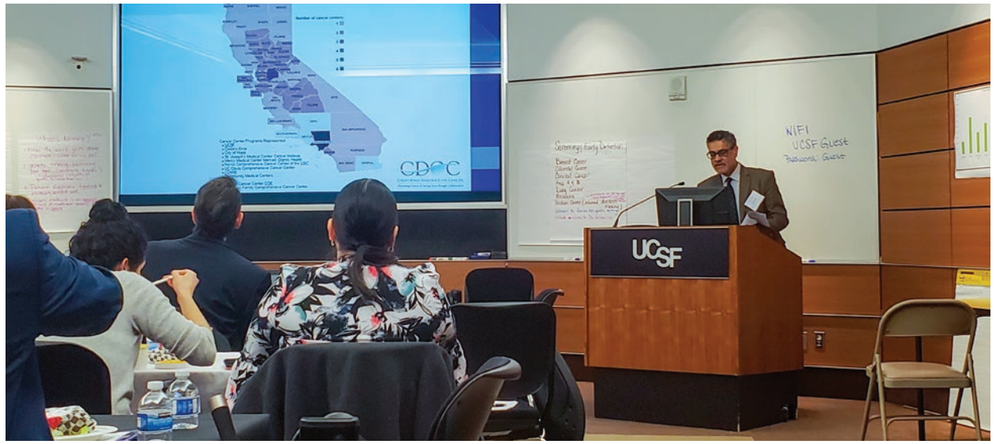
DEFINITIONS & CERTIFICATION

A cancer center or program is a place or group of locations, with the capacity to provide a wide range of cancer care services, across the cancer continuum. California's cancer centers and programs vary by operational structure and certification program participation. Some are physician-based practices with laboratory, infusion, and care coordination capacities; others are combinations of independent businesses (hospitals, laboratories, imaging centers and physician groups) engaged in strategic partnerships. Traditional academic and community-based cancer centers feature affiliated provider groups and participation in networked health systems. Certification programs acknowledge a center's delivery of high-quality cancer care; and established care delivery standards and/or promote quality improvement (QI). Some cancer centers hold tumor specific or diagnostic/treatment specific certification, while larger centers may specialize in treating a variety of cancers. Table 1 summarizes the general requirements for certification.[1-9]

Moores Cancer Center at UC San Diego Health

Table 1. Summary of Cancer Certification Programs

Certification Program	Certifying Body/Sponsor	General Requirements for Certification
Community Hospital Care Continuum Centers of Excellence (CCCOE)	GO2 Foundation for Lung Cancer	• Increase screening, early detection and treatment for lung cancer • Reduce stigma
Breast Imaging Centers of Excellence	American College of Radiology	• Full accreditation in four modalities of diagnostic breast imaging • Allows for partnerships to achieve accreditation in all four modalities
Quality Oncology Practice Initiative (QOPI)	American Society of Clinical Oncology	• Outpatient practice based • Identify, develop and implement quality improvement initiatives • Collect process quality metrics and measure outcomes
Commission on Cancer	American College of Surgeons	• Meet rigorous standards for cancer prevention, education, QI activities, and evidence-based care • Performance tracking and data submission to the National Cancer Database (NCDB) • Continuous quality improvement
National Cancer Institute (NCI) Cancer Centers Program	National Cancer Institute	• Rigorous standards for care delivery, translational research and cancer education and training • Research must reflect the needs of a defined catchment area, including addressing disparities



CDOC Cancer Centers Meeting, February 2019, UCSF Helen Diller Comprehensive Cancer Center, Zul Surani speaking

CATCHMENT AREAS, GAPS & OPPORTUNITIES

California has 113 Commission on Cancer Certified (CoC) programs and eight NCI designated comprehensive cancer centers (Figure 1).

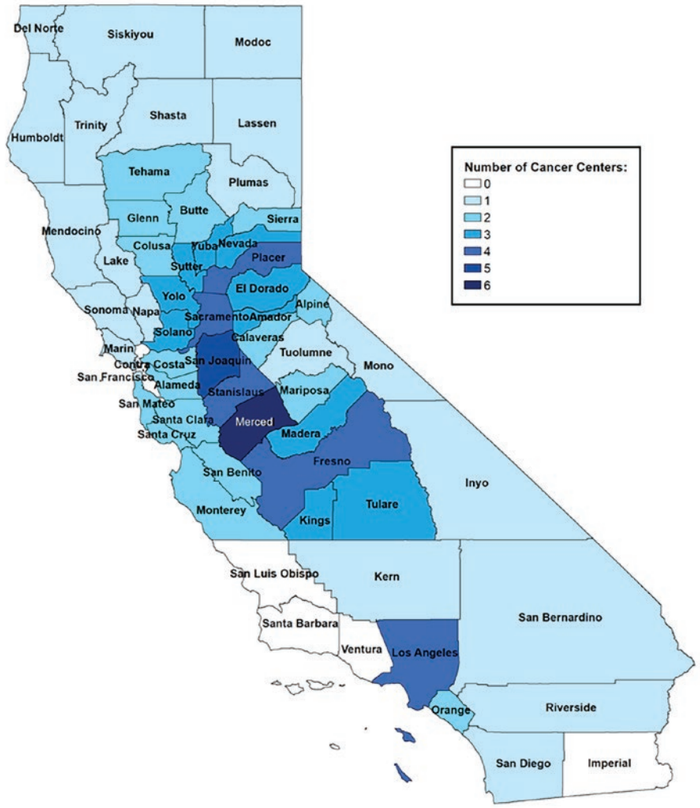
Figure 1. Accreditation Status of Cancer Centers/Programs (***California, 2020***)

California is home to more than 10% of all Comprehensive Centers nationwide. Three out of the eight of these centers are in California. Some of these centers work collaboratively, share knowledge, and set evidence-based guidelines as members of the National Comprehensive Cancer Network (NCCN).[10] However, neither CoC nor NCI strictly require partnership or sustained collaboration for certification.

NCI-designated cancer centers are required to define their geographic catchment area, based upon census tracts, zip codes, county or state lines or other geographically defined boundaries, must include the local area directly adjacent to the cancer center, and may extend beyond that.[11] The Executive Committee of the CDOC convened cancer centers and programs from across California to provide input on the development of California's cancer control plan[12] (See Appendix V).

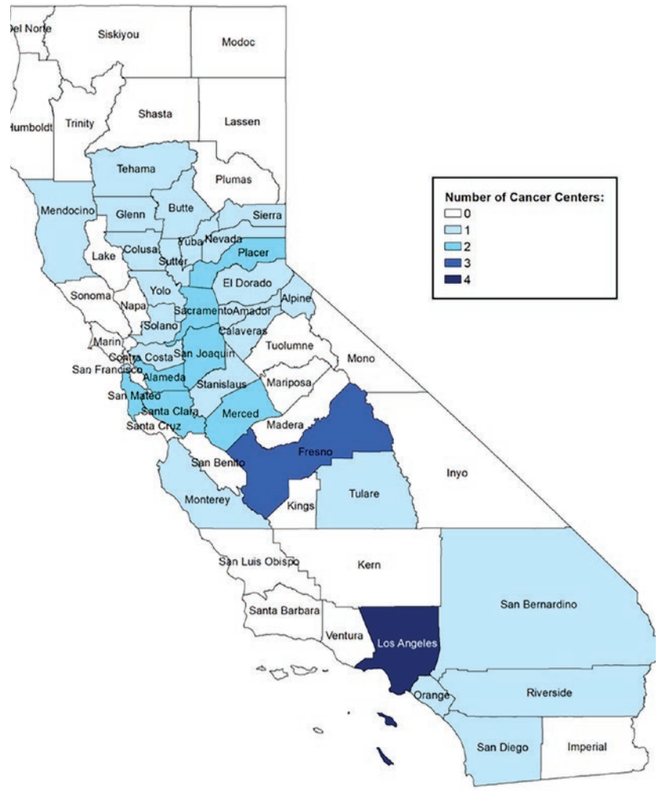
At the convening in February 2019, participants reported on: 1) center and program defined catchment areas; and 2) counties where the center/program have active community engagement or cancer control projects. In Figures 2 and 3, the darker color indicates overlap of catchment areas between centers (Figure 2) and overlapping areas where programs and centers have ongoing engagement activities (Figure 3).

Figure 2. Catchment Area Heat Map *(Comprehensive Cancer Centers and Cancer Programs, California 2020)*



The maps highlight overlap in catchment areas in southern, and parts of northern and central California. For example, Los Angeles, Fresno, Merced and San Joaquin counties are each served by three or more cancer centers. In contrast, select counties are not formally included in any cancer center or program's official catchment area (e.g., Imperial and Ventura counties). These cancer centers are poised to share and disseminate best practices to improve cancer outcomes, reduce inequities and eliminate cancer disparities statewide.

Figure 3. Community Engagement/Cancer Control Activities Heat Map *(Comprehensive Cancer Centers and Cancer Programs, California 2020)*



EXISTING RESOURCES FOR INSTITUTIONAL COLLABORATION AT THE STATE AND NATIONAL LEVEL

CDOC coordinates, develops and implements California's cancer control plan, and works to reduce the burden of cancer through policy, systems and environmental changes.[13] The UC Cancer Consortium (UCCC) unites five of California's largest NCI-designated comprehensive cancer centers (appendix).[14] UCCC cares for nearly 16% of all Californians diagnosed with cancer[15] and hosts over 1,000 clinical trials annually.

The Geographic Management of Cancer Disparities (GMaP) is an NCI supported program that convenes investigators, underrepresented students, trainees, community health educators in regional hubs to share cancer information, resources and tools; strengthens outreach and education; and enhances workforce diversity in cancer care and research.[16] The NCI sponsored National Outreach Network (NON) develops, tests, and disseminates culturally appropriate, evidence-based cancer control interventions via a network of community health educators (CHE).[17]

The Community Outreach and Engagement (COE) component of NCI-CCC provides infrastructure for collaboration. In 2016, NCI made the COE a requirement for comprehensive status. COEs build community capacity for partnership in research; translate and disseminate research findings; and promote inclusion of underrepresented groups in all cancer center activities and services. The Cancer Center Community Impact Forum (CCIF) is a national resource, established in 2019, to facilitate the development of institutional partnerships, linking cancer center COE and community-engaged staff for the exchange of strategies for cancer control.[18]

RECOMMENDATIONS FOR INSTITUTIONAL COLLABORATION ACROSS THE CANCER CONTINUUM.

Prevention and education: Develop a statewide collaborative linking the work of community health educators, and using existing resources (e.g., NCI-NON).

Screening and early detection: Build a repository to hold cultural and linguistic adaptations of evidence-based materials for use with patients in clinical settings. Consider a centralized repository for county-level screening data.

Treatment and clinical trials: Leverage technology to increase efficient information sharing across centers and programs with inconsistent electronic health record and data reporting systems. Develop regional care teams and referral hubs including shared educators and navigators between centers/programs with overlapping catchment areas.

Survivorship: Expand and modify any developed statewide networks (e.g., for treatment and trials) to focus on survivorship, symptom management and support for families and caregivers. Centers and programs with successful interventions should share best practices and metrics for evaluation across the network. Working collectively across the continuum will position centers and programs to drive cancer care policy and advocacy, which is critical to ensure lasting and positive impact on the burden of cancer across the state.

CONCLUSION

Strategic collaboration across California's cancer centers and programs promises improved state level cancer control. Coordinated communication, programming, and dissemination of materials and best practices across centers and programs will increase efficiency, extend reach, and enhance delivery of culturally and linguistically appropriate cancer control programming and care for the state's large and exceptionally diverse population.

MORE INFORMATION AND RESOURCES

American College of Surgeons - Commission on Cancer
https://www.facs.org/quality-programs/cancer/coc

Department of Health and Human Services- Cancer Center Support Grants for NCI Designated Cancer Centers
https://grants.nih.gov/grants/guide/pa-files/PAR-20-043.html

National Cancer Institute

Geographic Management of Cancer Health Disparities Program (GMaP)
https://www.cancer.gov/about-nci/organization/crchd/inp/gmap

National Outreach Network (NON)
https://www.cancer.gov/about-nci/organization/crchd/inp/non

NCI Designated Cancer Centers
https://www.cancer.gov/research/nci-role/cancer-centers

National Comprehensive Cancer Network- Patient and Caregiver Resources
https://www.nccn.org/patientresources/patient-resources/support-for-patients-caregivers

National Institutes of Health- National Cancer Institute (NCI)
https://www.nih.gov/about-nih/what-we-do/nih-almanac/national-cancer-institute-nci

University of California Cancer Consortium
https://www.uccancer.org/

UCI School of Medicine Chao Family Comprehensive Cancer Center

CHAPTER 5

CANCER RELATED HEALTH DISPARITIES

The 2021-2025 cancer plan aims to drive the elimination of cancer-related disparities in California. Each topic in the plan identifies at least one objective addressing health disparities. The National Cancer Institute (NCI) defines cancer-related health disparities as harmful differences found in health risk, measures and outcomes when comparing groups.[1] Health disparities include unequal access to timely, sufficient health resources, medical and supportive care; inadequate quality of care; and poor disease outcomes.[2] Differences in vaccination, cancer screening, disease incidence, access to treatment, severity of disease, disability, quality of life, and death rates often reflect persistent health inequities. These differences add to the damaging ripple effects of social inequality among vulnerable populations across California.

Causes of cancer disparities lie at both the individual and system levels. They include multiple factors such as access to care, provider bias, cultural barriers, inapplicable health models, systemic oppression, low socioeconomic status and other policy or environmental issues that compound on one another. The cancer burden is greater for socially marginalized and socioeconomically depressed communities, with greater loss of life, earlier death, and reduced enjoyment of healthy productive lives. These populations experience further disadvantage as they are understudied in biomedical research and therefore, often excluded from the benefits of new medical advances and improved treatments. The following section highlights some of the ways in which disparities persist.

Race and Ethnicity: Among our most vulnerable populations are racial and ethnic minorities. These groups suffer unequal premature cancer incidence, morbidity and mortality.[3-6] Racial and ethnic disparities are associated with various factors such as genetics/biology, culture, and health care delays or barriers.[7-9] As ethnic minorities become an increasing proportion of cancer survivors, greater attention to the ethnic and cultural aspects of cancer care, outcomes and survivorship is required.

Economic Status: Low-income populations experience unequal, premature morbidity and mortality.[10] Low-income communities often struggle to meet basic needs and are at a disadvantage in obtaining necessary health services, quality care, and access to vital resources. They are likely to be uninsured or underinsured with limited capacity to pay for out-of-pocket expenses. This may hinder access to usual and trusted sources of care and/or discourage seeking care and medication adherence.[11,12]

Sexual and Gender Minorities: Over 5% of the U.S. population identifies as lesbian, gay, bisexual, transgender, queer, or intersex (LGBTQI).[13-15] LGBTQI communities remain invisible in critical cancer research data and knowledge, which includes understanding effective care and communication practices. Their unique health issues and needs often go unrecognized, and therefore are not met in many health care and support service environments.[16,17] A Gallup Poll revealed that LGBTQI individuals delayed seeking medical attention due to fear

of discrimination.[18] Read more about cancer and Sexual and Gender Minorities (SGM) populations in the next section on page 59.

Women: Racial and ethnic minority women have higher mortality rates and poorer cancer survival compared to non-Hispanic white women.[19,20] Current research reveals how cancer burdens are also shaped by intersecting life course factors such as socioeconomic status, identity, and subordination.[21-24]

Geographic Locality: Place of residence in California affects how individuals access and receive health resources and care. Rural communities in particular, often face greater challenges and fewer options for their health care.[25] They can be at a disadvantage with respect to: seeking care close to home; acquiring specialist advice and care; receiving advanced health care services; and accessing clinical trials, supportive services, and end-of-life care.

Many minority and marginalized groups are excluded from pertinent health care resulting in increased cancer and overall disease burdens. There are several cross-cutting factors that impact cancer burdens, requiring policies and interventions unique to specific groups and the California social-geographic contexts. Targeted interventions must address a wide range of issues, including but not limited to, socio-political environment, social cohesion and assets, immigration status, and various system level factors-all critical for improving the overall well being of our diverse California.

The plan takes into account multiple factors influencing cancer-related disparities:

- The complex and interrelated social determinants of health that influence how people "are born, grow, live, work and age".[26]
- California's residents include our society's most diverse racial, ethnic, social, economic, cultural and geographic populations.
- The environmental, institutional, and structural barriers/obstacles exist across the cancer control and care continuum.
- Ethnic minority and diversity inclusion must be incorporated into federal and state health policies and practices.

Challenges to contend with include a widening knowledge gap as well as an inadequate infrastructure for data collection, mining, functionality, and use on marginalized populations. Insufficient inclusion of representative populations remains detrimental to both optimal scientific advancements and equitable care. To significantly reduce the burden of cancer in California, all groups must be represented in cancer data, science and medical care. While there is monumental importance to reduce statewide cancer incidence and mortality, it is essential to diminish persistent disparities towards sustaining a healthy, productive California.

MORE INFORMATION AND RESOURCES

National Cancer Institute- Cancer Disparities

Cancer Disparities
https://www.cancer.gov/about-cancer/understanding/disparities

Health Disparities Resources
https://www.cancer.gov/about-nci/organization/crchd/about-health-disparities/resources

World Health Organization- About Social Determinants of Health
https://www.who.int/social_determinants/sdh_definition/en/

California Department of Public Health Office of Health Equity
https://www.cdph.ca.gov/Programs/OHE/Pages/OfficeHealthEquity.aspx

American Cancer Society

Cancer Facts & Figures for Hispanics 2018-2020
https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-facts-and-figures-for-hispanics-and-latinos/cancer-facts-and-figures-for-hispanics-and-latinos-2018-2020.pdf

Cancer Facts & Figures 2016, Special Report on Asian Americans
https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2016.html#:~:text=Cancer%20Facts%20%26%20Figures%202016%20Special,Native%20Hawaiians%2C%20and%20Pacific%20Islanders

Cancer Facts & Figures for African Americans 2019-2021
https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-facts-and-figures-for-african-americans/cancer-facts-and-figures-for-african-americans-2019-2021.pdf

CANCER AND SEXUAL AND GENDER MINORITIES

SGM is defined as individuals "including lesbian, gay, bisexual, transgender, queer, intersex, gender non-conforming people, and other populations whose sexual orientation or gender identity and reproductive development is considered outside cultural, societal, or physiological norms."[1] Compared to heterosexual and cisgender populations, SGM populations have a higher prevalence of selected health risk factors (smoking, alcohol consumption, substance use) and negative health outcomes (suicide, depression, selected cancers).[2,3] They are also more likely to have poor access to health care and experience discrimination in health care settings. Regarding cancer disparities, the SGM population experiences higher cancer incidence, advanced stage of disease at diagnosis, and worse survival outcomes. Cancers that disproportionately affect this community include HPV-related cancers (such as anal cancer, cervical, head and neck cancers) and breast, colorectal cancer, and lung cancer.[4-6] A nationwide county-level study found that counties with higher density of LGBT populations tend to have higher incidence of colorectal cancer for both men and women[7]. The SGM communities are at high-risk for cancer risk factors. Smoking in the LGBT and Queer community, also known as LGBTQ, is twice as high compared to heterosexuals, with rising rates among LGBT youth, which impacts lung cancer rates.[5,8] In addition, this community experiences inequitable access to regular health services. Approximately 30% of LGBT adults do not seek health care services or lack a regular health care provider compared with 10% of age-matched heterosexuals.[5,9,10] This has downstream effects on cancer prevention, early detection and post treatment follow-up care.

Current measures of sexual orientation and gender identity (SOGI) to obtain an estimate of the size of the SGM population can and should be improved. Understanding the size of the SGM communities is a critical first step to develop public health policy and focus research questions that address health care disparities experienced by SGM populations.[11] Challenges in getting an accurate size of the SGM population originate from differences in definitions of who should be included, lack of consistency in the survey methods and the SGM-status measures across time, and perception that SGM individuals are not willing to disclose SOGI.

STRATEGIES

Addressing the unique health challenges of SGM communities will require a comprehensive approach that consists of improving the collection of SOGI data and enhancing the provision of care for SGM patients through an intersectional lens that acknowledges multiple intersecting identities that are related to one's sexual orientation, socioeconomic status, gender identity, and other identities that indicate the sociocultural power and privilege in the community.[12] The following strategies are recommended to achieve broad gains in the health of the SGM communities:

1. Develop systematic and consistent methods of collecting SOGI information in health care settings and cancer registries (an objective in the Surveillance Chapter aims to include gender identity categories in order to enhance data capture in the California Cancer Registry).
2. Develop Continuing Medical Education courses that meet the Institute of Medicine's Core Competency to "provide patient-centered care" focused on increasing awareness around cancer disparities in SGM populations, acknowledging the heterogeneity within the SGM populations, and recognizing the influence of multiple minority group identities on an individual's health.
3. Create programs that provide free or low-cost prevention, screening, diagnostic and treatment services for the most significant cancers affecting SGM populations and design program evaluation to assess the impact of these programs.
4. Encourage the development of SGM-focused research programs within the University of California Office of the President.

MORE INFORMATION AND RESOURCES

American Cancer Society- LGBTQ People With Cancer Fact Sheet
https://www.cancer.org/content/dam/cancer-org/cancer-control/en/booklets-flyers/lgbtq-people-with-cancer-fact-sheet.pdf

Lambda Legal
https://www.lambdalegal.org/

LGBT Cancer Network
www.cancer-network.org

The Williams Institute, UCLA School of Law - LGBT Data & Demographics
https://williamsinstitute.law.ucla.edu/visualization/lgbtstats/?topic=LGBT&area=4#density

CANCER AND AMERICAN INDIAN ALASKAN NATIVES

Driven by CDPH's CCR report, "Cancer Burden among Native Americans in California(https://www.ccrcal.org/wp-admin/admin-ajax.php?juwpfisadmin=false&action=wpfd&task=file.download&wpfd_category_id=68&wpfd_file_id=7771&token=3a975f391af19a0eb6fade4c969b9db4&preview=1)", this section includes an additional focus on the cancer experiences of the American Indian/Alaska Native (AIAN) population in California. The AIAN population is comprised of California based Tribal people and AIANs who have relocated to California from other areas of the United States:[1] it is a geographically, historically, and culturally diverse group. The beliefs of AIANs are deeply rooted in tradition and culture. However, due to the physical relocations, lack of trust of medical professionals, and the current/historical trauma experienced by AIAN communities, they now suffer from more significant health disparities compared to the general population. They are also more likely to be of lower socioeconomic status. Additionally, AIANs have much higher rates of tobacco use, obesity, diabetes, physical inactivity, heart disease, suicide, and many other chronic diseases compared to the general population.[2]

In addition to the health disparities they face, AIANs are profoundly impacted by cancer; it is the second leading cause of death after heart disease. Limited access to health care contributes to a more significant state-wide systemic problem in which a system of partners is necessary for assisting this particular group in accessing prompt health care services, more specifically, cancer related services. Given their rural distribution, AIANs are typically required to travel long distances for screening and treatment services, which significantly deters the ability for timely diagnosis and treatment of life-threatening cancers and diseases.

When considering the cultural aspects of care for AIAN, the subject of cancer is often taboo, and speaking of or screening for cancer can be viewed as inviting it into the body.[3] Many AIAN experience what is known as provider mistrust and hesitate to be screened or to talk about symptoms with their doctor.[4] In both the short and long-term, these cultural, historical, and geographical disparities combined leave AIANs at an increased risk of late-stage cancer diagnoses, increased susceptibility to cancer-related deaths, and significantly lower cancer survival rates compared to other populations.

Results in Table 1 published from *Cancer Burden Among Native Americans In California* indicate that from 2000 through 2016, a total of 13,669 Native Americans were diagnosed with cancer in California. Compared with whites, a higher proportion of Native American patients were female and of younger age. They were also more likely to live in Purchased/Referred Care Delivery Area (PRCDA) counties, rural areas, and have low socioeconomic status; 39.7% of Native American patients had low socioeconomic status and only 19.6% were of high socioeconomic means (compared to 18% and 46.3% of white patients, respectively). The percent of Native Americans diagnosed at early stage was also significantly lower than the percentage among whites (44.8% vs. 52.1%). In terms of health insurance, 55.8% of Native American cancer patients had private/government health insurance, and 20.3% were covered by Medicaid or other public insurance (compared to 68.4% and 6.9% among white patients, respectively).

Table 1. Characteristics of Native American and White Cancer Patients in California, 2000–2016

	Native American		White		
Characteristic	**N**	**%**	**N**	**%**	**p-value**
All Patients	13669	100.0	1,919,254	100.0	
Sex					
Male	6420	47.0	959.053	50.0	<0.001
Female	7249	53.0	960,201	50.0	
Age at Diagnosis					
0–19	249	1.8	12,556	0.7	<0.001
20–39	979	7.2	73,067	3.8	
40–54	2,897	21.2	293,972	15.3	
55–69	9,544	40.6	685,731	35.7	
70+	3,992	29.2	853,928	44.5	
Cancer Stage at Diagnosis					
In Situ	924	6.8	202,625	10.6	<0.001
Localized	5,199	38.0	796,992	41.5	
Regional	2,872	21.0	343,530	17.9	
Distant	3,184	23.3	404,453	21.1	
Unkown	1,490	10.9	171,654	8.9	
Socioeconomic Status					
Low	5,429	39.7	345,464	18.0	<0.001
Medium	5,560	40.7	684,587	35.7	
High	2,680	19.6	889,203	46.3	
Age of Residence					
Urban	8,790	64.3	1,585,155	82.6	<0.001
Rural	4,879	35.7	334,099	17.4	
County of Residence					
PRCDA[1]	8,061	59.0	716,989	37.4	<0.001
Non-PRCDA	5,608	41.0	1,202,265	62.6	
Type of Insurance					
Private/Government	7,625	55.8	1,312,589	68.4	<0.001
Medicare, no Supplement	2,081	15.2	341,274	17.8	
Medicaid/IHS/Public	2,771	20.3	132.621	6.9	
Uninsured	217	1.6	20,401	1.1	
Unknown	975	7.1	112,369	5.9	

[1] PRCDA: purchased/Referred Care Delivery Area
Source of data: California Cancer Registry, California Department of Public Health. Prepared by the California Cancer Reporting and Epidemiologic Surveillance (CalCARES) Program, Institute for Population Health Improvement, UC Davis Health

CALIFORNIA'S TRIBAL CANCER PLAN

In addition to the CCCP, CDC also funds comprehensive cancer control efforts targeting Tribal communities in California. The California Tribal Comprehensive Cancer Control Program (CTCCCP)(https://crihb.org/ctcccp/) housed within the California Rural Indian Health Board, Inc. has supported California Tribal communities in implementing cancer control, prevention, and survivorship activities since 2017. The CTCCCP strategically recruited members across California Tribal health programs, Tribes, Tribal organizations, and organizations serving Tribal communities to participate in the CTCCCP Coalition (Coalition). These members have a stake in improving the lives of AIANs across California. They have been especially important in identifying the most pressing needs of California Tribal communities and assessing the impact of cancer within tribal communities.

An important task of the Coalition is to develop and implement a tribal comprehensive cancer control plan (tribal cancer plan), formally *The Cancer Control Plan*. The tribal cancer plan includes objectives, evidence-based interventions, and activities that aim to meet the cancer prevention and survivorship needs of the AIAN communities in California. Like the state cancer plan, the goals are aligned with CDC's NCCCP. The goals of the tribal cancer plan are to increase cancer prevention awareness among Tribal communities, increase prevention and screening efforts, improve cancer survivors' quality of life, and increase health equity as it relates to cancer control.

California's tribal cancer plan includes objectives that aim to strengthen Tribal communities with targets to be met by 2023. Although targets are to be met before set targets within this state cancer plan, interventions have already been initiated with opportunities for collaboration. The Coalition and its extended partners, the CCCP and CDOC, intend to continue supporting one another by sharing resources, services, and staff in order to meet the identified objectives, which were developed with the most common health disparities in mind. To review strategies for these objectives, other content, or to get involved with implementation of the tribal cancer plan, please visit: https://crihb.org/ctcccp/

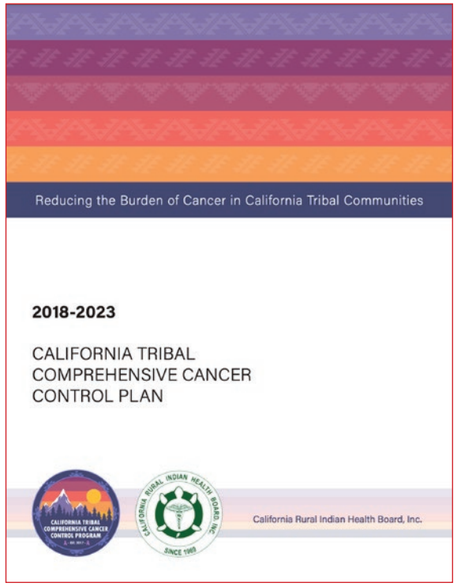
California's Tribal Comprehensive Cancer Control Program Coalition

CALIFORNIA'S TRIBAL CANCER PLAN OBJECTIVES

- By 2023, decrease the percent of AIAN adults who are current smokers, from the current baseline of 14.3% to 10%.
  Data Source: Tribal Behavioral Risk Factor Survey, 2015
- By 2023, decrease the percent of adult obesity prevalence, from 72.1% to 60%.
  Data Source: Tribal Behavioral Risk Factor Survey, 2015
- By 2023, increase the percentage of provider referrals for screening based on national guidelines.
- By 2023, increase the percent of the public's knowledge of the burden of cancer survivorship and issues faced by Native survivors.
- By 2023, increase the percentage of access to quality care (including at cancer centers) for all, but especially underserved populations.

MORE INFORMATION AND RESOURCES

California Tribal Comprehensive Cancer Control Program
https://crihb.org/ctcccp/



California's Tribal Comprehensive Cancer Control Plan 2018-2023

CHAPTER 6

EQUITABLE ACCESS

CHAPTER GOAL

To assure that all Californians have access to resources that promote wellness, and to quality services that address preventive, diagnostic, treatment, survivorship, palliative, and end-of-life cancer care.

CHAPTER NARRATIVE

In order to reduce the cancer burden in the state, all Californians must have opportunities for both healthy living and services to address issues across the cancer continuum. Access to cancer screening and treatment have been the focus of previous access to care narratives. While vitally important, the emphasis on downstream access neglects important interventions that could improve population health, prevent cancer, and mitigate disease consequences.

The issue of equity is at the core of wellness and access to cancer-related services. Equitable access requires that health and care resources exist, and that those in need have the knowledge and ability to avail themselves of those resources. This mandate encompasses financial, geographic, systemic, and cultural challenges that differentially affect certain segments of our population. Barriers to care exist, but vary by group, location, and the systems currently in place. A person's race, ethnicity, sexual orientation, gender identity, age/social generation, education, employment status, economic circumstances, geographic locality, and immigration status all impact both general wellness and care along the cancer continuum. For many, remaining uninsured or underinsured or not having a dedicated primary provider results in greater risk of later cancer diagnosis and early death.

The below objectives and strategies have been developed to ensure that every person has the opportunity to maintain their health and obtain quality services when needed. Key elements of the plan include assessments and data collection so that barriers can be clearly identified and improvement measured, collaborations with partners (including non-profits, health insurers, and care providers), connecting communities with existing resources, educating professionals on barriers to care, and health policy advocacy.

An umbrella recommendation to support the objectives and associated strategies contained in this chapter is the creation of a repository (likely online) of free and low-cost services, possibly listed by county. This would include federally qualified health centers (FQHCs) and similar clinics. This repository would need to be continually updated and widely publicized as a tool available to the public. Though this would entail costs associated with maintaining a website, such a repository would go a long way in supporting those with obstacles to identifying and receiving cancer-related care in California, leading to a reduction of the overall cancer burden in the state.

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 1: By 2025, increase equitable access to quality cancer-related preventive, diagnostic, treatment, palliative, and end of life care for the uninsured and underinsured.

Data Source: TBD

Strategies

1. Establish or reinforce strategic partnerships with academic and community organizations to identify current barriers for under/uninsured to obtain care along the cancer continuum.
2. Work with community-based and non-profit organizations identified in strategy one to determine provider/systems-related barriers to providing screening and treatment for insured/uninsured.
3. Support network of FQHCs and Look-Alike clinics in increasing educational outreach to patients regarding no-cost screening.
4. Support advocacy efforts by Medical Associations at the local, regional and state level with regard to increasing access to screening and treatment services for under and uninsured.
5. Determine through Medicare and Medicaid databases how hospice is currently utilized by the under and uninsured and how to better capture this information.
6. Work with FQHCs and community organizations to identify patient-perceived cultural barriers to accessing end-of-life care that can be addressed through public health programs.

Objective 2: By 2025, reduce financial and geographical barriers to equitable cancer care for all Californians (insured and uninsured).

Data Source: TBD

Strategies

1. Conduct an assessment to identify financial and geographic barriers to accessing cancer-related preventive, diagnostic, treatment, palliative care and end-of-life services.
2. Educate decision makers (legislators and health care plans) on the existing barriers to obtaining health plan coverage, including pharmacy benefits, to access cancer-care services.
3. Work with government agencies and health plans to identify those Health Professional Shortage Areas (HPSAs) in greatest need of cancer care services.
4. Identify financial assistance programs, charity care programs or supportive service organizations to assist with basic needs and medical cost resources.
5. Collaborate with regional transportation/transit planning initiatives to address access to cancer-care services.
6. Work with community organizations to engage community health workers, patient navigators and care coordinators to assist patients with overcoming barriers.

Objective 3: By 2025, reduce systemic and cultural barriers to equitable cancer care for all Californians (insured and uninsured).

Data Source: TBD

Strategies

1. Conduct an assessment to identify the systemic and cultural barriers to equitable cancer care for specific populations.
2. Develop cultural competency work plans (toolkits/roadmaps) to increase and improve the delivery of linguistically and culturally appropriate cancer care services.
3. Identify and work with stakeholders, government agencies and health plans to assist with cultural and language competencies in the cancer space and integrate cultural competencies.
4. Educate decision makers (legislators and health care plans) on how to reduce systemic and cultural barriers to cancer care for Californians.
5. Work with community organizations to engage community health workers, patient navigators and care coordinators to assist patients with overcoming systemic, cultural and language barriers.
6. Develop strategies to monitor and evaluate progress of reducing systematic and cultural barriers.

MORE INFORMATION AND RESOURCES

California Health Collaborative
Healthcollaborative.org

Department of Managed Health Care – Resource List
https://www.dmhc.ca.gov/HealthCareinCalifornia/ResourceList.aspx

National Institutes of Health - Healthcare Teams & Teamwork Processes in Cancer Care Delivery
https://healthcaredelivery.cancer.gov/healthcare/

PALS for Health
palsforhealth.org

CHAPTER 7

PRIMARY PREVENTION

CHAPTER GOAL

To prevent cancer through risk-factor reduction by optimizing social and environmental support for recommended health behaviors. These behaviors include healthy eating, daily exercise, tobacco use avoidance, limiting alcohol consumption,* Ultraviolet (UV) light protection, and recommended vaccination adherence.

CHAPTER NARRATIVE

Primary prevention of cancer refers to actions taken by individuals, communities, or governments to protect against the occurrence of cancer. This includes empowering Californians to adopt healthy lifestyles and environments that support those healthy lifestyles. This chapter lists the major primary prevention strategies for cancer control. The strategies work collectively to minimize the risk of cancer for individuals and their communities. They include behaviors such as minimizing exposure to tobacco, maintaining a healthy diet, exercising regularly, avoiding overweight and obesity, and protecting against excess UV light exposure. More global strategies include implementing environmental regulations, promoting or requiring selected vaccinations, treatment of diseases that predispose one to cancer, and population-based pre-cancer screening.

Individual lifestyle behaviors such as minimizing exposure to nicotine, healthy eating and exercising regularly significantly prevent the major causes of cancer death. These lifestyle practices also reduce non-cancer deaths, such as heart disease, diabetes, and stroke,[1] resulting in happier, higher-quality lives.[2] Studies show that Americans would follow recommended lifestyle practices if their work and home environments made the healthy choice the easier choice.[3] Not having these choices easily built into our spaces are the biggest barriers to adopting and sustaining these healthier lifestyle choices. Public policies can help nudge communities, workplaces, and homeowners to adopt environments and practices that make the healthier choice the easier choice.[4] The development of policies and increasing population health efforts to support these choices are important options to explore at the local and statewide levels.

*Note. This risk factor, while important, was not included in the 2021-2025 California Comprehensive Cancer Plan

HUMAN PAPILLOMA VIRUS (HPV)

The HPV vaccine protects against HPV strains that cause six types of cancers, including cancers of the cervix, oropharynx (throat), penis, vagina, vulva, and anus.[1] Estimates show upwards of 80% of the population will be infected by HPV.[2] Given the widespread nature of the virus, vaccine series completion is recommended by age 13 for optimal cancer prevention.[3] Currently, HPV vaccination lags behind other preteen vaccines.[4] Implementation of best practices to increase HPV vaccination and reduce geographic disparities will ensure all young Californians benefit. Vaccination represents a key pillar for HPV-associated cervical cancer elimination efforts. Health systems are encouraged to increase utilization of the California Immunization Registry (CAIR) (https://cairweb.org/) so that state and local vaccination coverage data can be used to address community needs.[5]

Objective 1: By 2025, increase initiation of HPV vaccine among 13-year olds from the baseline of 57% to 90%.

Data source: California Immunization Registry, 2018

Objective 2: By 2025, increase series completion of the HPV vaccine among 13-year olds from the baseline of 35% to 80%.

Data source: California Immunization Registry, 2018

Objective 3: By 2025, reduce the geographic disparity gap in HPV vaccination rates for 13 year old Californians:

	At least 1 dose HPV Vx by age 13		HPV series completion by age 13	
	Rural	Urban	Rural	Urban
Baseline	50%	59%	26%	37%
Target	90%	90%	80%	80%

Data source: California Immunization Registry, 2018

Strategies for Objectives 1, 2 and 3

1. Increase the number of clinicians strongly recommending the HPV vaccine at the same time they administer meningococcal conjugate and tetanus diphtheria-acellular pertussis (Tdap) vaccines.
2. Incorporate evidence-based strategies to improve HPV vaccination in clinics serving adolescents, including:
   - Issuing standing orders,
   - Using electronic health record (EHR) prompts for providers,
   - Scheduling next appointment, the same day as the first dose is given,
   - Offering vaccine-only appointments,
   - Implementing patient reminder/recall systems,
   - Ensuring a pro-vaccine office culture,
   - Making presumptive recommendations for HPV vaccine, and
   - Educating providers and staff on HPV disease and prevention through vaccination. Resources available to support interventions include Clinician and Health Systems Action Guides available through the American Cancer Society.
3. Partner with Medi-Cal Managed Care and commercial health plans to use available data to identify providers with low HPV vaccine coverage and provide support and assistance to them, including with implementation of strategies listed above.
4. Support improved access to HPV vaccine through school-based clinics, pharmacies, local health departments, and other vaccination clinics (e.g., vaccine only appointments).
5. Increase the number of medical facilities, clinicians, school health centers, and pharmacies contributing HPV immunization data to the CAIR. This can be done by promotion of CAIR to health systems and individual providers, education on the existing mandate for all Medi-Cal Managed Care plans to enter immunizations into CAIR, and education on the Vaccines for Children Program to policy makers.
6. (Objective 1 and 2): Encourage public and private health plans, health systems, and providers to assess HPV vaccination coverage of 13-year-old patients using available data (quality performance metrics, immunization registry, EHR, etc.).
7. (Objective 3): Pilot an HPV-focused learning collaborative following the ECHO model (Extension for Community Health Outcomes) with select rural providers to enable participants to learn from experts and each other, gain access to evidence-based and capacity-building resources, and receive guidance in applying quality improvement processes to address HPV vaccination in their practices.

CANCER STORY: HUMAN PAPILLOMA VIRUS (HPV)

My stirrup story begins in 2006. I was 27 and preg-nant with my first child. I went for my first exam and had an abnormal pap smear. From 2006 to 2015 I had abnormal paps, colposcopies, and loop electrosurgi-cal excision procedures (LEEP) many times.

In November 2015, I received results of another ab-normal pap and scheduled yet another colposcopy. This time the results were malignant. I was diagnosed with Stage 2 Cervical Adenocarcinoma at age 36. At the time, I was a single mother, with two young children. I had laparoscopic surgery, weekly chemotherapy, and 28 rounds of external radiation. This continued for 6 weeks with 3 more rounds of internal radiation. I was subsequently diagnosed with residual cancer less than a year later and had a radical hysterectomy, after which I was told there was No Evidence of Disease.

After surgery, kidney pain led to a discovery of dam-aged ureters due to the radiation on both sides of my body. In January of 2017 I had a major reconstructive surgery on my bladder and ureters. October 5th of 2017, was my first cancer-versary. With a clear PET/CT scan I was officially one year free from my fight with cancer. Unfortunately, my pap, done after the PET/CT showed precancerous cells on my vaginal wall, and I did a topical chemo for 6 weeks that result-ed in a clear pap. My battle is not over yet. I continue to get abnormal pap smears and am monitored every 6 months, and I still remain HPV positive.

-Ana Reyes, Cervical Cancer Survivor

MORE INFORMATION AND RESOURCES

California Department of Public Health – Sexually Transmitted Diseases Branch
https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/HPV.aspx#

California HPV Vaccination Roundtable
http://cahpvroundtable.org

California Immunization Registry (CAIR)
http://cairweb.org/

Centers for Disease Control and Prevention - HPV and Cancer
https://www.cdc.gov/cancer/hpv/statistics/cases.htm

National HPV Vaccination Roundtable - Clinician and Health Systems Action Guides
https://hpvroundtable.org/action-guides/

OBESITY PREVENTION

Promoting environments and policies that optimize adherence to healthy eating and to daily physical activity are effective ways to prevent obesity-related cancers.[1,2] Unfortunately, healthy eating, daily physical activity and avoidance of obesity are major public health challenges in California,[3] especially for low-income, minority populations such as U.S. born, low-income Latinos who live in communities with poor access to fresh or frozen produce, minimally processed.[4] The following objectives provide effective pathways to combat obesity-related cancers. Promoting environments and policies that optimize increased intake of whole fruits,[5] whole vegetables,[6] whole grains[7,8] and fewer sugary beverages[9] is an evidence-based approach to reduce risk of obesity-related cancers. Increasing adherence to federal physical activity guidelines will decrease colon cancer risk by reducing inflammation in the colon[10] and will reduce postmenopausal breast cancer risk by reducing estrogen levels in the breast.[11] Given the limited resources available for health promotion, the focus should be on establishing environments and policies involving children, adolescents and women of child-bearing age that maximize adherence to dietary and physical activity guidelines facilitative of cancer prevention benefit over the lifespan. In particular, school-based health promotion programs that encourage students to eat more fruits and vegetables,[12] consume fewer sugary beverages,[13] and to be less sedentary have been effective.[14] Pregnancy is also a teachable moment[15] that has been used to increase adherence to recommended daily food choices and physical activity.[16,17]

Objective 1: By 2025, increase the number of pregnant women and women of child-bearing age who limit sugary drink intake and consume the recommended servings of fresh or frozen fruit and vegetables, minimally processed, by 10%.

* < 10% increase because of ceiling effect but still a statistically significant increase at p < .05

	Baseline CHIS, 2017	2025 Target
Consume the recommended 2 servings of fruit	20.1%	22.1%
Consume the recommended 3 servings of vegetables	17.6%	19.4%
Limit sugary beverage consumption to less than 3 times per week	90.0%	93.6%*
Meet all 3 nutritional recommendations	7.5%	8.2%

Strategies

1. Make it standard of care for gynecologists and obstetricians to remind their patients of child-bearing age that a diet rich in fresh or frozen fruits and vegetables, minimally processed, and limited added sugar reduces obesity for both her and her baby should she become pregnant.
2. Encourage the providers of Women, Infant and Children (WIC) nutrition programs to increase their subsidies for fresh and frozen vegetables and fruit to make it possible for their low-income pregnant women clients to snack on fresh or frozen fruit and vegetables, minimally processed, every day.
3. Encourage family members or friends to keep the pregnant woman's refrigerator continually stocked with vegetable soup and with fresh or frozen fruits and vegetables, minimally processed.
4. Encourage employers to provide a refrigerator at work in which employees can store fresh fruit and vegetables for lunch and workplace snacking.
5. Work with prenatal and postnatal care providers to encourage pregnant women/recent mothers to consume fresh or frozen fruits and vegetables, minimally processed, regularly.

Objective 2: By 2025, increase the number of children and adolescents who report not drinking a sugary beverage and who consume the recommended daily servings of fresh or frozen fruit and vegetables, minimally processed by 10%.

	Baseline CHIS, 2017	Target
Daily fruit intake		
Children	59.7%	65.7%
Adolescent	61.3%	67.4%
Daily fruit intake		
Children	13.4%	14.7%
Adolescent	15.0%	16.5%
Daily fruit intake		
Children	81.7%	87.0%
Adolescent	67.9%	74.3%
Daily fruit intake		
Children	10.8%	11.9%
Adolescent	9.3%	10.2%

Strategies

1. Encourage communities to promote children's consumption of non-sugary beverages via health education and bans on the sale of sugary beverages in child-friendly community environments, especially schools and public parks.
2. Encourage elementary school teachers to take students regularly on field trips to the local farmers market and local community garden to educate them about fruits and vegetables and good nutrition.

3. Encourage elementary school teachers to include lessons on the nutritional benefits of regularly eating minimally processed fruits and vegetables and avoiding food products with added sugar, especially sugary drinks.
4. Encourage school food service directors to offer a vegetable or fruit that is NOT on the list of the ten most common vegetables or fruits in the school cafeteria at least once a month, to increase students' exposure to a wider variety of fresh or frozen fruits and vegetables, which are minimally processed.
5. Encourage communities, with extra outreach to U.S. born Latino communities, to involve children and teens in community gardening, ideally at school.
6. Encourage communities to have enough sources of fresh/frozen vegetables so that 90% of residents reside within two miles of where they can buy a variety of fresh/frozen vegetables for their families.

Objective 3: By 2025, increase the number of children and adolescents who engage in a minimum of 60 minutes of structured and unstructured physical activity daily each week by 10%.

Data source: CHIS, 2017

	Baseline	Target
Engagement of physical activity for a minimum of 60 minutes/day on at least five days/week		
Children	51.1%	56.2%
Adolescents	38.0%	41.8%

Strategies

1. Encourage parents to walk their children to school.
2. Encourage families to do fun, low-impact, in-home, short-bout exercises using YouTube.com videos such as the Walk at Home series of videos.
3. Encourage elementary school teachers to break up the school day with 10-minute exercise breaks in class.
4. Encourage school boards of education to partner with community organizations (e.g., YMCA) to ensure that their students are able to engage in 60+ minutes of moderate to vigorous physical activity per day.
5. Encourage municipalities to create more opportunities for active recreation, including parks with family recreation programs, biking paths and hiking trails, especially in low-income neighborhoods.
6. Support Safe Routes to Schools programs to make it safer for teens to walk, skateboard or bicycle to school.

MORE INFORMATION AND RESOURCES

California Department of Public Health - Nutrition Education and Obesity Prevention Branch https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/NEOPB/Pages/Nutrition_Education_Obesity_Prevention_Branch.aspx

Instant Recess exercise break at the workplace video https://www.youtube.com/watch?v=tMuZ0_-Y7n4

Safe Routes to Schools Program: An Overview for California Advocates https://www.changelabsolutions.org/sites/default/files/SRTS-Overview_FactSht_FINAL_%28CLS_20120530%29_110504.pdf Instant Recess exercise break at the workplace video

TOBACCO USE

While tobacco use has declined in California over the past 30 years, there is currently an epidemic of youth and young adult use of new tobacco products such as vaping devices, which include electronic cigarettes and pod-based devices. As a result, the tobacco industry is hooking a new generation of users. In addition, disparities in tobacco use continue, especially with Medi-Cal members who comprise over 40% of California's smokers. Cancer centers also are increasingly called upon to integrate tobacco treatment into cancer care, and the improvement of tobacco assessment and treatment is needed. The CCR, the California Smokers' Helpline, cancer centers, schools, providers, and other statewide, regional and local private and public partners play a vital role in helping to: 1) assess the burden of tobacco use among these groups, 2) educate Californians about emerging tobacco products and its dangers, and 3) promote tobacco treatment practices to further reduce the prevalence of all tobacco products. The following objectives and strategies are designed to continue the progress California has made in reducing the morbidity and mortality associated with tobacco use, with special attention to youth and young adults, the Medi-Cal population, and cancer patients.

Objective 1: By 2025, reduce the prevalence of current tobacco product use among high school-aged youth from 12.7%* to 6.3% and young adults 18-25 from 24.6% to 12.3%.**

Data sources: California Student Tobacco Survey (CSTS), 2017-2018* and CHIS, 2018**

Strategies

1. Promote evidence-based curriculums in K-12 schools, such as the Stanford Tobacco Prevention Toolkit, and encourage the California Department of Education to provide Tobacco Use Prevention and Education funding to all schools.
2. Educate local communities about the health risks of emerging tobacco products, including vaping and nicotine salt products, policies such as California's "Tobacco 21" law restricting tobacco product sales to persons under 21 years old, risks from dual use of tobacco products and other substances such as cannabis.
3. Educate school/college counselors and other clinical providers to assess and treat tobacco product use or exposure among youth and young adults, especially with vaping and for patients under 21 years of age, including the use of nicotine replacement therapy if indicated.
4. Promote the use of the California Smokers' Helpline services, including quit vaping services, and other resources such as smokefree.gov, in school/college and clinical settings for youth and young adults with Ask Advise Connect protocols.
5. Decrease tobacco industry marketing on social media platforms and other online sources, which may target youth and young adults.

6. Support efforts that will reduce access and availability of tobacco products to persons under 21 years of age, secondhand smoke exposure to all nonsmokers, and increase enforcement of in-person or online sales restrictions to persons under 21 years old with coordination between California Department of Justice and other programs funded by CDPH and California Department of Education.

Objective 2: By 2025, reduce the prevalence of tobacco use among adults covered by Medi Cal from the baseline of 17.4% to 11%.

Data source: CHIS, 2018

Strategies

1. Produce a report that tracks Medi-Cal tobacco assessment and treatment at a state and regional level, compared to the general population, and characterize populations and disparities; include secondhand smoke exposure among children and treatment of household smokers, as has been collected by the California Child Health and Disability Prevention program.
2. Track tobacco assessment and treatment in cancer screening programs, especially lung cancer screening which requires addressing tobacco use.
3. Encourage providers serving Medi-Cal populations to complete tobacco assessment and treatment training and engage in learning collaboratives or quality improvement initiatives for tobacco, such as that offered by CA Quits.
4. Integrate the California Smokers' Helpline into safety net health systems that serve Medi-Cal members, from providers (including dentists, pharmacists, behavioral health, and cancer providers) and managed care plans to regional health information exchanges.
5. Encourage population-based health strategies with the California Smokers' Helpline to provide FDA-approved tobacco cessation medications, outreach, and engagement including incentives (e.g., Medi-Cal Incentives to Quit Smoking project incentives included mailed nicotine patches and a $20 gift card).
6. Engage and highlight best practices of tobacco assessment and treatment among health and social service organizations that serve the Medi-Cal population such as children's services, maternal health, and behavioral health.

Objective 3: By 2025, increase tobacco assessment rates among patients in the California Cancer Registry from the baseline of 56% to 80%.

Data source: CCR, 2012-2016

Strategies

1. Produce a report of statewide and regional tobacco assessment rates among all patients with cancer, focusing on the 12 tobacco-related cancers and include special populations (e.g., Medi-Cal).
2. Encourage and track California cancer clinics/centers to incorporate tobacco treatment as a program goal or quality improvement project (e.g., American Society of Clinical Oncology's Quality Oncology Practice Initiative tobacco quality metric).
3. Train California cancer providers and registry abstractors/staff about documentation of tobacco status assessment, including e-cigarettes/vaping and secondhand smoke exposure.
4. Increase and track the number of California cancer centers that have tobacco treatment programs and/or electronic referrals to the California Smokers' Helpline.
5. Encourage the adoption of the National Cancer Institute's Tobacco Use Questionnaire, which is validated for cancerclinical trials but can also be used for clinical care.
6. Encourage CDC or CDPH to require data collection about tobacco treatment for cancer registries (not just tobacco assessment), as the Surgeon General concludes suggestive evidence that smoking cessation after a cancer diagnosis improves all cause mortality.

MORE INFORMATION AND RESOURCES

CA Quits
https://www.caquits.com/

California Department of Public Health - California Tobacco Control Program
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CTCB/Pages/CaliforniaTobaccoControlBranch.aspx

California Smokers' Helpline
- https://www.nobutts.org/
- https://novapes.org/

Campaign for Tobacco-Free Kids
https://www.tobaccofreekids.org

Stanford Medicine - Stanford Prevention Toolkit
https://med.stanford.edu/tobaccopreventiontoolkit.html

Tobacco Free CA
https://www.tobaccofreeca.com

Truth Initiative: Inspiring Tobacco Free Lives
https://truthinitiative.org/

ULTRAVIOLET (UV) LIGHT EXPOSURE

The incidence of melanoma and nonmelanoma skin cancers are increasing every year, with more people developing skin cancer from indoor tanning alone, than lung cancer because of smoking. Preventing the disease involves developing an understanding of the risks associated with UV radiation from the sun, as well as from other sources, including indoor tanning beds, and then making lifestyle choices to reduce one's exposure. This process will need to involve partners in the health care system, education, advocacy, and government to develop and implement measures to ensure healthy habits that promote sun-safe behaviors. Communities also need to collaboratively address the social norms regarding tanned skin and the importance of developing policies that support UV radiation protection and warn the public about the dangers of excessive UV exposure from outdoor recreational activities and tanning devices.

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 1: By 2025, reduce UV exposure and the number of sunburns in outdoor occupational workers.

Data Source: TBD

Strategies

1. Establish baseline data for outdoor occupational workers, including people working in construction and agricultural settings. Determine their associated melanoma incidence and mortality by county paired with UV exposure behaviors, number of sunburns, and existing diagnoses of skin cancer via the 2020 National Health Interview Survey (NHIS) of skin cancer risk.
2. Engage employers of outdoor occupational workers to include sun-safety information in workplace wellness programs, encourage wearing of sun protection, schedule breaks in the shade, allow time to reapply

sunscreen, increase the amount of shade available, decrease UV exposure by covering bright surfaces, promote telehealth dermatology educational strategies and outreach, and create work schedules that minimize sun exposure.

3. Develop a social media campaign to educate outdoor occupational workers about the risks of UV exposure, sunburns, and development of skin cancer. Promote adoption of sun safe behaviors with specific emphasis on those at highest risk, including white and Hispanic males using the CDC's Sun Safety Tips for Men, the #SunSafeSelfie campaign, scheduling annual skin checks, and becoming role models for sun safety programs.
4. Reassess UV exposure by outdoor occupation (construction versus agricultural workers). Add 2020 NHIS skin cancer questions to the California Health Interview Survey in 2024 with additional questions on educational outreach (employers, social media, coordinated community interventions) to assess behavior changes that reduce UV exposure, the number of sunburns per year, and associated skin cancer diagnoses.

Objective 2: By 2025, reduce UV exposure and the number of sunburns in people participating in outdoor recreation.

Data Source: TBD

Strategies

1. Upon release of the 2020 NHIS skin cancer data, baseline measurements for UV exposure and the number of sunburns will be established per age-group and distribution in California counties.
2. Assist school districts in improving access to playground shade structures using CDC's Shade Planning for American Schools.
3. Promote skin cancer educational resources (CDC and Wipe Out Melanoma – California Initiative) for use in elementary through junior high curriculums to illustrate the benefits of sun safe behaviors and ways to reduce UV exposure.
4. For outdoor recreational or tourism settings, promote increased use of shade in high use areas, move activities to shade structures, schedule activities during low UV times of day, and make sure plans for new outdoor recreational spaces include shade.
5. Promote staff and visitor sun safe behaviors through established programs, such as the Pool Cool, Sun Safe, and Promoting Sun Safety among Zoo Visitors. Encourage visitors and staff to use sun protection with policies for staff, having staff teach and model sun safety behaviors, posting signs to remind visitors to protect themselves, provide sunscreen dispensers, and allow activity breaks for application of sunscreen.
6. Promote other delivery methods for personal sun safety items, including selling hats with a wide brim, protective clothing, and umbrellas. Provide broad spectrum sunscreen with an SPF of 15 or higher, and post instructions for proper use.

Objective 3: By 2025, reduce indoor tanning use by sexual minority men (gay and bisexual men) in California.

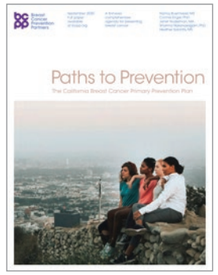
Data Source: TBD

Strategies

1. Establish current baseline rates of tanning bed use throughout California by county, comparing specific demographics, including sexual minority men, using the California Health Interview Survey 2009 tanning bed use questions augmented with questions related to motivations for using tanning beds, distance to tanning beds, diagnosis of skin cancers, and potential skin cancer protection behaviors.
2. Establish a UV Exposure Advisory Board to guide selection of specific strategies and activities to reduce use of tanning beds and associated sunburns in the counties identified in the baseline assessment of exceeding tanning bed use and number of sunburns.
3. Conduct focus groups of sexual minority men who disproportionately use tanning beds to develop appropriate social media campaigns for reduction in UV exposure through use of tanning beds.
4. Develop and evaluate a social media campaign with the aid of the UV Advisory Board targeting sexual minority men, according to the CDC Community Guide for modifying behavior associated with tanning bed use.

OTHER STATEWIDE PRIMARY PREVENTION EFFORTS

Paths to Prevention: The California Breast Cancer Primary Prevention Plan(https://www.bcpp.org/our-work/policy-projects/breast-cancer-plan/) takes the unique approach of calling for systemic change, focusing on societal-level issues rather than individual behaviors, to reduce breast cancer risk at a population level. Developed by Breast Cancer Prevention Partners with input from a wide range of stakeholders, Paths to Prevention combines scientific research and community wisdom to create an action plan of local, regional, and statewide measures to reduce breast cancer risk. Including community wisdom in the development of Paths to Prevention gives voice to the experience of people typically under represented and under-valued in science and public policy. The plan addresses a total of 23 breast cancer risk factors, including topics such as exposures to toxic chemicals; exposure to ionizing radiation; structural barriers to a healthy diet and physical activity; workplace exposures; and the impact of racism and poverty on breast cancer risk. While the focus of Paths to Prevention is breast cancer, the policy recommendations can reduce risk for numerous other cancers and adverse health impacts.



MORE INFORMATION AND RESOURCES

Centers for Disease Control and Prevention – Skin Cancer

- https://www.cdc.gov/cancer/skin/index.htm
- https://www.cdc.gov/cancer/skin/pdf/shade_planning.pdf
- https://www.cdc.gov/cancer/skin/pdf/skincancer_employees.pdf
- https://www.cdc.gov/cancer/skin/pdf/SkinCancer_PARKS-RECREATION.pdf
- https://www.cdc.gov/cancer/skin/tips-for-men.htm

The Community Guide - Skin Cancer

- https://www.thecommunityguide.org/findings/skin-cancer-primary-and-middle-school-based-interventions
- https://www.thecommunityguide.org/sites/default/files/assets/Skin-Cancer-Mass-Media.pdf

National Cancer Institute – Research-Tested Intervention Programs (RTIPs)

- https://rtips.cancer.gov/rtips/programDetails.do?programId=298179
- https://rtips.cancer.gov/rtips/programDetails.do?programId=288737
- https://rtips.cancer.gov/rtips/programDetails.do?programId=560302
- https://rtips.cancer.gov/rtips/rtips_search.topicid=3&cg=40&choice=cguide%20

UNDY Walk/Run March 2020 – San Diego, CA.Pictured (L to R): UC San Diego Moores Cancer Center Community Outreach & Engagement Team
Jesse Nodora, DrPH, Elena Martinez, PhD, Daniel Stony Anderson, MD , Samir Gupta, MD, Karina Moyano, MPH, Corinne McDaniels-Davidson, PhD, Cerys Davidson

CHAPTER 8

EARLY DETECTION AND SCREENING

CHAPTER GOAL

To increase recommended population-based screening among Californians, for the purpose of increasing early detection of cancers, thereby increasing survivorship.

CHAPTER NARRATIVE

Following recommended cancer screening guidelines can prevent many deaths from cancer if positive screens are followed up with prompt and appropriate treatment. Early detection is an effective way to reduce mortality rates. Some cancers, if caught early, have a survival rate in excess of 95% five years after diagnosis. This chapter outlines the strategies to increase screening rates for: lung cancer, breast cancer, cervical cancer, colorectal cancer, and melanoma. Further, informed decision making in discussions between patients and their physicians is emphasized in the objectives relating to prostate cancer.

BREAST CANCER

Breast cancer is the second leading cause of death in American women, only second to lung cancer.[1] Screenings, increased awareness, and evolving treatment options have contributed to a decrease in the death rate of breast cancer.[2-4] Identifying the biases and stigmas different minority groups experience may translate to increased early-stage breast cancer diagnosis and decreased late-stage diagnosis.[5-9]

The following objectives and strategies address the necessity of shifting the efforts of providers, payers, cancer registries, policy makers and patients to decreasing mortality in Non-Hispanic Black women, improved identification of women with a high risk genetic mutation, and increasing the number of breast cancers diagnosed at earlier stages. The support of educational approaches tailored to providers are especially important to address knowledge gaps and unconscious biases that contribute to poorer breast cancer related outcomes. Additionally, the support of integrative approaches to systems improvements in clinics and community-based organizations can lead to better screening completion rates and earlier stages at detection. Only by engaging and coordinating stakeholders from all levels of the health care system can necessary changes be made and successfully implemented, which will subsequently reduce the breast cancer burden in those women who are currently bearing the brunt of the suffering from this disease.

Objective 1: By 2025, increase the percentage of breast cancers diagnosed at Stage 0/1 by 20%, from the baseline of 60% to 80% of total breast cancers diagnosed.

Data Source: CCR, 2017

Strategies

1. In areas of the state known to have higher rates of late stage diagnosis, support clinic-based programs such as client reminders with mailers/ text messaging, nurse navigators to educate on screening, and Electronic Medical Records (EMR)-based provider reminders, which are proven to increase screening rates in women.

2. Support culturally and linguistically tailored educational programs on the

benefits of screening in those populations with lower screening rates and higher rates of late stage of diagnosis.

3. Support efforts to ensure mammography screening is offered without a co-pay, share-of-cost, or deductible and that increase awareness of the Every Woman Counts (EWC) program.

Objective 2: By 2025, increase the percent of women who are referred for genetic assessment of a high risk for breast cancer due to hereditary/familial breast cancer syndromes from the baseline of 25% to 35%.

Data Source: NCI, PMID 30964716

Strategies

1. Using the CDC for Genomic Applications Toolkit for Public Health Departments as a guide, support programs to educate primary care providers and other clinic staff about hereditary and familial cancer syndromes, specifically about the importance of inclusion of a three-generation family history of cancer in each patient's EMR, about the specific NCCN guidelines for appropriate referral for genetic testing and about updating this information on an ongoing basis.
2. Conduct investigations into referral patterns to genetic counselors for women with breast cancer and for women with family members with breast cancer who meet NCCN guidelines for testing, identifying specific barriers to completion of referrals due to e.g., shortage of available genetic counselors, patient willingness to complete referral, etc.
3. Support CCR efforts to investigate adding reporting of germline genetic testing for breast cancer patients to cancer registry reporting forms.
4. Support efforts in clinics and through cancer registries to increase appropriate referrals for unaffected family members of women with known hereditary breast cancer syndromes to undergo cascade testing to determine if they are also carriers of hereditary breast cancer syndrome mutations.
5. Conduct investigations into the geographic availability of high risk breast cancer surveillance programs, especially in those populations with lower rates of referral to such clinics.

Objective 3: By 2025, reduce breast cancer related mortality rates for Non-Hispanic Black women from the baseline of 17 to 12 per 100,000.

Data Source: CCR, 2017

Strategies

1. Increase access to breast cancer screening and treatment facilities for target populations which include identifying specific culturally relevant barriers that contribute to limiting access to screening and treatment for breast cancer.
2. Educate providers and target populations in FQHCs regarding EWC and current screening recommendations.
3. Engage community leaders in public service strategies to increase awareness of poorer breast cancer related outcomes for Non-Hispanic Black women.
4. Address root causes for racial/ethnic disparities in receipt of breast cancer treatment such as provider unconscious bias and develop educational programs to counteract this.
5. Support programs for the education of community sponsored patient navigators who are culturally aligned with racial/ethnic subgroups.
6. Identify strategies for team-based breast cancer care for inclusion of multiple levels of staff/providers and for care across the breast cancer continuum

CANCER STORY: BREAST CANCER

My cancer journey began 39 years ago when I identified a lump in my left breast, I was 28. I spent 3 years requesting a mammogram or biopsy before a physician decided to perform these procedures. The biopsy showed breast cancer. My options were a lumpectomy or a modified radical mastectomy. I selected the mastectomy and requested to have both breasts removed. I was told that was a radical unnecessary approach. The surgery was the next morning. There was no consultation with a plastic surgeon and chemotherapy was out patient, which my insurance did not cover. I muddled through, working and parenting two sons under ten, alone. This necessitated me selling my home and raiding my retirement fund. Ten years later I repeated this process on the right breast. In 2006 when advocating for removal of my ovaries and uterus after testing positive for BRCA2, I would have a similar experience.

The journey didn't end with the surgery or treatment, it never ends. In the quiet corner of my mind lurks a watchdog ever vigilant to detect signs of cancer. Breast cancer is my back story, a story I do not want other women to live.

–Marion Harris, Breast Cancer Survivor

MORE INFORMATION AND RESOURCES

Centers for Disease Control and Prevention - Genomic and Precision Health: Applications Toolkit for Public Health Departments
https://www.cdc.gov/genomics/implementation/toolkit/index.htm

Department of Health Care Services - Every Woman Counts Program
https://www.dhcs.ca.gov/services/cancer/EWC

National Comprehensive Cancer Network - Clinical Practice Guidelines for Breast and Ovarian
https://www2.tri-kobe.org/nccn/guideline/gynecological/english/genetic_familial.pdf

CERVICAL CANCER

Cancer screening has significantly reduced cervical cancer incidence and mortality during the past three decades. Between 1988-2016, California's cervical cancer incidence decreased by 37% and mortality decreased 36%. Despite an array of risk reduction strategies, the burden of disease remains; cervical cancer ranks as the twelfth most common cancer among California women (7.3 new cases per 100,000 women) and the thirteenth most common cause of cancer death (2.2 deaths per 100,000 women).[1] Large racial/ethnic disparities in cervical cancer incidence and mortality continue to exist in California. Among the four major racial/ethnic groups, Hispanic women have the highest incidence rate of 8.8 new cases per 100,000, African American women have the highest mortality rate with 3.0 deaths per 100,000 women.[1-2] Asian/Pacific Islander women report the lowest rates of cervical cancer screening resulting in high cervical cancer incidence and mortality among some Asian/Pacific Islander populations.

Cervical cancer can be eliminated as a public health problem. This World Health Organization goal will be attained when cervical cancer incidence declines to fewer than 4 cases per 100,000 women. California's cancer plan objectives for cervical cancer have been developed with this goal in mind.

Objective 1: By 2025, decrease the percentage of women from all racial/ethnic groups ages 21–65 without a hysterectomy, who have not received a Pap and/or HPV screening test in the past five years from the baseline of 16.4% to 12.5%.

Data source: BRFSS, 2018

Objective 2: By 2025, eliminate the disparity in cervical cancer incidence among non Hispanic Black and Hispanic women in California with known rates higher than non Hispanic white women and Asian/Pacific Islander, reducing cervical cancer incidence rates for all women to 6.5 per 100,000 women.

Women	Baseline	Target
Non-Hispanic Black	7.8*	6.5*
Hispanic	8.8*	6.5*
Asian/Pacific Islander	6.6*	6.5*
Non-Hispanic White	6.6*	6.5*

Data source: CCR, 2017

Objective 3: By 2025, eliminate the disparity in cervical cancer mortality among non-Black Hispanic, Hispanic, and Asian/Pacific Islander women in California with known rates higher than non-Hispanic white women, reducing all cervical cancer mortality rates to 1.8 per 100,000 women.

Women	Baseline	Target
Non-Hispanic Black	3.0*	1.8*
Hispanic	2.8*	1.8*
Asian/Pacific Islander	2.1*	1.8*
Non-Hispanic White	1.9*	1.8*

Data source: CCR, 2017

Strategies for Objectives 1, 2, and 3

1. Begin cervical cancer screening for all women, particularly those with disparate cervical cancer mortality rates such as African American, Hispanic, Hmong, Filipino, and Vietnamese, at age 21. Women ages 21-29 should have a Pap test every three years. At age 30, women should be screened every three years with a PAP test alone, every five years with high risk human papilloma virus (hrHPV) testing alone, or every five years with hrHPV testing in combination with a Pap test (cotesting).
2. Advocate for evidence-based, system-level interventions for all women, including enrollment into comprehensive health care coverage, screening navigation for those rarely and never screened, patient health care navigation, outreach using community health workers, and provider/organization wide cultural and linguistic competency
3. Support primary care practices and other clinics in developing and implementing system changes that improve cervical cancer screening, including electronic health record tools that help providers identify patients for cervical cancer screening and refer patients with abnormal test results for timely follow up testing and treatment.
4. Educate women and providers about cervical cancer screening, including promotion of safety net programs (i.e., EWC) whose target populations are rarely and never screened women (selected Asian/Pacific Islander, Native American, rural, disabled, and lesbian women). Increase understanding of confusing and frequently changing guidelines for cervical cancer screening.
5. Increase the use of evidence-based, provider-oriented interventions at every opportunity during patient care (provider assessment and feedback, and provider reminder and recall systems) to increase recommendation and delivery of cervical cancer screening services.
6. Support continued review of the efficacy of self-collected pap and HPV testing in women not being regularly screened, as well as primary HPV testing as a screening modality.
7. (Objective 3) For uninsured and underinsured women, particularly those women with disparate cervical cancer incidence and mortality rates noted above, promote and advocate for programs that cover cervical cancer screening, diagnostic, and treatment services.

MORE INFORMATION AND RESOURCES

American Cancer Society – Cervical Cancer
https://www.cancer.org/cancer/cervical-cancer.html

Department of Health Care Services -
Every Woman Counts Program
https://www.dhcs.ca.gov/services/cancer/EWC

COLORECTAL CANCER

Colorectal cancer is the fourth most common cancer and second leading cause of cancer death among men and women combined in California. In 2020, an estimated 15,530 new cases of colorectal cancer will be diagnosed statewide, and 5,480 will succumb to the disease. Screening can prevent colorectal cancer through the detection and removal of precancerous growths and, importantly, detect cancer at an early stage when it is easier to treat, and outcomes are more favorable. Low-cost screening tests can prevent nearly half of all colorectal cancer cases diagnosed at a late stage. Despite being one of the most preventable types of cancer, one in four age-eligible adults have never been screened for colorectal cancer, with underutilization more common among the Medi-Cal insured, uninsured, racial and ethnic minorities. Additionally, there has been an increase in young-onset colorectal cancer (diagnosed under age 50). To address these disparities, the following objectives with accompanying strategies detail the steps that can be taken to reduce the morbidity and mortality from colorectal cancer.

Objective 1: By 2025, decrease the rate of late stage diagnosis of colorectal cancer among those who are covered by Medi-Cal and the uninsured from the baseline of 71% to 64%.

	Baseline	Target
Medi-Cal	71%	64%
Uninsured	71%	64%

Data source: CCR, 2017

Strategies

1. Explore adding colorectal cancer screening as a required reported quality measure for Medi-Cal Managed Care plans.
2. Implement FLU/FIT programs in California's FQHCs.
3. Implement evidence-based strategies (EBS) in California's FQHCs as outlined in Steps For Increasing Colorectal Cancer Screening Rates: A Manual For Community Health Centers and the National Cancer Institute's Research-Tested Intervention Programs (RTIPS) website.
4. Clinics and health plans work with patient navigators/community health workers/ promotores and implement other proven strategies to ensure appropriate follow-up of colonoscopies after a positive or abnormal Fecal Immunochemical Test (FIT).

Objective 2: By 2025, increase the colorectal cancer screening rate among all Californians from the baseline of 70.8% to 80%

Data source: BRFSS, 2018

Strategies

1. Implement Evidence-based strategies as outlined in "Steps For Increasing Colorectal Cancer Screening Rates: A Manual For Community Health Centers" and the National Cancer Institute's Research-Tested Intervention Programs (RTIPS) website.
2. Explore requiring the California Health Care Quality Report Card to report colorectal cancer (CRC) screening for all health plans providing care in California. All health plans should report their CRC screening rate for posting on the quality report card listed above.
3. Develop a FLU/FIT program in every clinic with colorectal cancer screening rates below 60%.
4. Develop clinic navigation to ensure all abnormal stool-based tests receive the required colonoscopy. The percent of abnormal stool testing that receive the needed colonoscopy should be a required quality measure for all health plans using stool-based screening tests.
5. Remove structural barriers (e.g., inconvenient clinic hours, lack of transportation, out of pocket costs, etc.) to CRC screening through the use of patient navigators/ community health workers/ promotores services.

Objective 3: By 2025, decrease late stage diagnosis of colorectal cancer among all Californians between the ages of 40–49 years from the baseline of 69% to 57%.

Data source: CCR, 2017

Strategies

1. Family history of CRC should be routinely asked and recorded in all adults to provide opportunities for earlier identification and screening of high-risk individuals, including with genetic testing, when indicated.
2. Encourage colorectal cancer survivors in all health plans and clinics to promote screening within their families.
3. Screening for hereditary cancer syndromes in patients with CRC should be done and include at a minimum a review of personal and family histories of all cancers.
4. Explore requiring genetic testing of removed colorectal cancers for DNA mismatch repair deficiency and/or microsatellite instability with the results reported to the CCR.
5. Health care providers should follow the ACS's recommendations for evaluation of genetic risk in patients with a family history of colorectal cancer.

MORE INFORMATION AND RESOURCES

American Cancer Society - Colorectal Cancer, Causes, Risk Factors and Prevention
https://www.cancer.org/cancer/colon-rectal-cancer/causes-risks-prevention/genetic-tests-screening-prevention.html

California Colorectal Cancer Coalition – Community Grants Program
https://www.cacoloncancer.org/community-grants/

Centers for Disease Control and Prevention - Screening for Colorectal Cancer: Optimizing Quality
https://www.cdc.gov/cancer/colorectal/quality/index.htm

FLU-FIT Programs
http://flufit.org

National Cancer Institute – Research-Tested Intervention Programs (RTIPs)
https://rtips.cancer.gov/rtips/index.do

State of California - Office of the Patient Advocate
https://www.opa.ca.gov/reportcards/Pages/default.aspx

The National Colorectal Cancer Roundtable
http://nccrt.org/wp-content/uploads/0305.60-Colorectal-Cancer-Manual_FULFILL.pdf

LUNG CANCER

Lung cancer is the leading cause of cancer deaths in the U.S., killing approximately 142,670 people per year - more than colon, breast and prostate cancers combined.[1] For California, the ACS projects 10,210 deaths from lung cancer in 2020 (with 135,720 deaths nationwide).[2] Recent advances in lung cancer detection and treatment include the advent of annual screening with Low-Dose Computed Tomography (LDCT) in high risk individuals, shown to have a mortality benefit and now recommended by the U.S. Preventive Services Task Force (USPSTF), [3] and the development of targeted therapies. Meaningful attempts to reduce lung cancer mortality rates in California should focus on: (1) Increasing the overall number of Low-Dose Computed Tomography Lung Cancer Screening Scans performed (per the USPSTF criteria); (2) Increasing access to those Low-Dose Computed Tomography Lung Cancer Screening Scans (per the USPSTF criteria) by minority underserved communities; and (3) Performing universal genetic, molecular and comprehensive biomarker testing of all lung cancer tumors to determine best therapies for each patient.

Objective 1: By 2025, increase the number of lung cancer screening scans using low-dose computed tomography (LDCT) as indicated by the USPSTF from the baseline of 2,377 to 2,977.

Data source: American College of Radiology, 2018

Strategies

1. Estimate the rate of lung cancer screening in California by surveying health care organizations and using the CDC BRFSS lung cancer screening module.
2. Promote lung cancer screening through public outreach campaigns with state and local agencies and nonprofit organizations.
3. Implement physician and provider outreach on the importance of lung cancer screening and the need for accurate smoking history documentation to determine eligibility.
4. Decrease or eliminate copays for visits for initial lung cancer screening or follow-up procedures or tests.
5. Educate policy makers on the importance of including lung cancer screening as a metric for primary care providers.

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 2: By 2025, increase the number of lung cancer screening scans in minority underserved communities using LDCT as indicated by the USPSTF.

Data Source: TBD

Strategies

1. Identify and promote locations of hospitals and imaging centers that offer lung cancer screening LDCT within 20 miles of minority underserved communities.
2. Include transportation services, including ride-sharing companies (e.g. Uber, Lyft), to lung cancer screening appointments under Medi-Cal insurance coverage.
3. Support screening of underinsured and uninsured individuals; develop lung cancer screening programs within county health systems (e.g., Los Angeles County Department of Health Services); and support accreditation of screening centers in close proximity to minority underserved communities.
4. Eliminate of out-of-pocket costs for both screening LDCTs and follow-up LDCTs for all Medi-Cal insurance plans.
5. Explore requiring FQHCs to collect and record accurate smoking pack-year data and identify individuals eligible for lung cancer screening per USPSTF criteria.

CANCER STORY: LUNG CANCER

My name is Francis Spruit. I live in beautiful Northern California, just half an hour North-East of San Francisco. I was diagnosed with non-small cell lung cancer on December 13, 2007. I was staged 1B because the tumor was confined to my right upper lobe, size 6.1x6.8x6.5 cm (the size of an apple). My pulmonologist called me with the results of the biopsy taken and told me I had Non-Small Cell Lung Cancer. I met with my thoracic surgeon a few days later and had surgery, a right upper lobectomy, the day before Christmas that year. I also went through four cycles of chemotherapy in the spring of 2008.

I am one of the few fortunate ones. Only 15% of lung cancer patients make it past five years. Over the years my wife and I have become very active Lung Cancer advocates and we regularly contact and visit our representatives on Capitol Hill as well as locally here in Northern California to ask for increased funding for Lung Cancer research. Lung Cancer claims roughly 400 deaths per day, every day of the year and is grossly underfunded. We are determined to change that for our children and grandchildren.

-Francis Spruit, Lung Cancer Survivor

6. Collaborate with state and local agencies to increase awareness of lung cancer screening and develop outreach programs and educational materials for both referring providers and the public, with a focus on addressing cultural/language/literacy barriers and stigmatization prevalent in minority underserved communities.

Objective 3: By 2025, reach universal genetic, molecular testing, and comprehensive biomarker testing of all lung cancer tumors to help determine the best selection of therapies for patients.

Data Source: TBD

Strategies

1. Advocate for genetic/molecular/biomarker testing in all stages of newly diagnosed lung cancer patients, not just patients who are late stage (IIIB or IV).
2. Encourage participation of more patients in clinical trials, through patient and provider education. For example, provide patient and provider resources to programs that will assist with matching the patient to appropriate clinical trials (e.g., LungMATCH - https://go2foundation.org/resources-and-support/general-support/lungmatch/).
3. Inform and educate policy makers on the importance of eliminating pre-authorization barriers currently tied to biomarker testing and delaying precision medicine to patients where time is critical and can be life-saving.
4. Advocate for national and local coverage determinations to expand comprehensive biomarker testing (e.g., next-generation sequencing) to all patients diagnosed with lung cancer including those patients where repeat testing is needed due to reoccurrence.
5. Collaborate with state and local agencies to increase awareness around genetic/molecular/biomarker testing including comprehensive biomarker testing and create outreach programs and educational materials to educate providers and patients of all relevant/current coverage policies in addition to the benefits of such testing and precision medicine.
6. Collaborate with state and local agencies to encourage research and data collection around genetic/molecular/biomarker testing to help build patient centered health outcomes and improve patient care. This could be achieved by providing clinical trials, and patient registry resources [e.g., https://www.lungcancerregistry.org][1].

MORE INFORMATION AND RESOURCES

American College of Radiology- Lung Cancer Screening Resources
https://www.acr.org/Clinical-Resources/Lung-Cancer-Screening-Resources

Go 2 Foundation for Lung Cancer - LungMATCH
https://go2foundation.org/resources-and-support/general-support/lungmatch/

LuCa National Training Network
https://lucatraining.org/

Lung Cancer Registry
https://www.lungcancerregistry.org/

National Comprehensive Cancer Network - About the NCCN Biomarkers Compendium
https://www.nccn.org/professionals/biomarkers/default.aspx

U.S. Preventive Services Task Force – Lung Cancer Screening
https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening

MELANOMA

The number of lives lost from melanoma each year continues to rise. Five-year survival rates for people with melanoma depend upon the stage of the disease at the time of diagnosis, racial and ethnic differences, socioeconomic status, and access to state-of-the-art treatment options for advanced disease. When melanoma is found and treated early, the chances for long-time survival are excellent. Therefore, early detection and screening are key to improving patient outcomes. The public and the health care community can play an important role in promoting early detection of melanoma by increasing awareness and early detection among highest risk populations, including those of low socioeconomic and minority groups, promoting access to tele-dermatology and other screening technologies for those in need due to socioeconomic or geographic reasons, and by providing knowledge about treatment options in regions of California disproportionately impacted by late stage diagnoses, in order to reduce mortality.

Objective 1: By 2025, decrease baseline melanoma incidence rate in 16 counties with rates exceeding the baseline rate of 7.9 by 1 to 31.3 per 100,000.

Data source: CCR, 2017

Strategies

1. Establish a Melanoma Advisory Panel (MAP) with representation by academic, public and private dermatologists, county-based public health practitioners, and oncologists, primary care physicians (managing screening to referral), and survivor-advocate organizations. The MAP will guide selection of specific strategies and activities to reduce melanoma incidence and reduction in stage at diagnosis.
2. Establish baseline demographics of the identified 16 counties, based on race, ethnicity, socioeconomic status, insurance status, medical home, access to dermatology specialists, and geographic location to identify common versus unique features to inform evidence-based interventions.
3. Develop a priority ranking and timeline for implementation of specific recommended evidence-based interventions using skin cancer outreach resources available through the NCI, the CDC, the Environmental Protection Agency, and those enacted through the novel Wipe Out Melanoma California initiative.
4. Develop a Melanoma Education and Planning document that will provide guidance for patients at the time of diagnosis on: 1) standard care for follow up; 2) recommended frequency of complete skin checks; 3) resources on the most up to-date treatment options; and 4) discussion of melanoma risk and prevention measures for family members.

Objective 2: By 2025, decrease incidence of thicker cutaneous melanoma (T3-T4) in 15 California counties with rates exceeding the state thickness-specific incidence and melanoma-associated mortality rates exceeding the state average rate of 16.07 by one to nine.

County	Baseline CCR, 2017	Target
Colusa - Glenn - Tehama	24.56	16.07
Lassen - Modoc - Plumas	24.18	16.07
Lake	23.81	16.07
San Bernardino	23.06	16.07
Kern	21.16	16.07
Kings	20.83	16.07
Stanilaus	20.18	16.07
Mariposa - Tuolumne	19.80	16.07
Siskiyou - Trinity	19.57	16.07
Riverside	19.18	16.07
Alpine - Amador - Calaveras	17.20	16.07

County	BaselineCCR, 2017	Target
Nevada	17.15	16.07
Del Norte - Humboldt	16.54	16.07
Ventura	16.35	16.07
Butte	16.26	16.07

Strategies

1. Identify common versus unique features within the 15 counties to establish specific evidence-based interventions using available guidance on effective public health campaigns for reducing the incidence of melanoma, using culturally and linguistically relevant approaches for each region (using CCR/SEER data, OSHPD, CDC, HRSA).

2. Improve melanoma awareness and early detection among low socioeconomic and minority groups, focusing efforts on increased community engagement, education of health care providers and lay personnel, including implementing media campaigns tailored to reach the patients at highest risk of lethal melanoma, including older white men and those of lower socioeconomic class, across all racial-ethnic groups.

3. Increase access to tele-dermatology and other technologies to improve access to care for Californians with limited access to care due to socioeconomic or geographic limitations.

4. Conduct educational outreach to guide patients about standard of care for their stage of diagnosis, new treatment modalities to consider, resources available for melanoma patients through academic medical centers, and options for participating in clinical trials.

MORE INFORMATION AND RESOURCES

Aim at Melanoma Foundation - Clinical Trials in Melanoma
https://www.aimatmelanoma.org/melanoma-treatment-options/clinical-trials-in-melanoma/

American Academy of Dermatology - How to Perform a Skin Self-Exam
https://www.aad.org/public/diseases/skin-cancer/find/check-skin

California Health Maps
https://www.californiahealthmaps.org/?areatype=ctazone&address=&-sex=Both&site=AllSite&race=&-year=05yr&overlays=labels&choroplet=AAIR

National Cancer Institute
- https://www.cancer.gov/types/skin/moles-fact-sheet
- https://www.cancer.gov/types/skin/patient/melanoma-treatment-pdq

National Comprehensive Cancer Network - Treatment Guidelines for Patients
https://www.nccn.org/patients/guidelines/content/PDF/melanoma-patient.pdf

Stanford Health Care - About Melanoma
https://stanfordhealthcare.org/medical-conditions/cancer/melanoma/about-this-condition/overview.html

Stanford Medicine - Wipe Out Melanoma - California
https://med.stanford.edu/cancer/community/projects/WOM.html

PROSTATE CANCER

In accordance with the USPSTF, this chapter aligns with the emphasis on informed discussions between men and their health care providers about whether and when to be screened for prostate cancer. Given that screening can only be useful when followed up appropriately, it must be offered in the context of the latest and best evidence on screening age and intervals, and on risk-stratified approaches to diagnosis of elevated prostate-specific antigen (PSA) tests and the treatment of prostate cancer.[1-3] The primary aim of screening must be to diagnose aggressive, life threatening prostate cancer early; and the aim of diagnosis and treatment must be to maximize benefits and minimize harm. Previous controversies over the PSA test centered on the diagnosis and over-treatment of non life threatening prostate cancers, led to declines in early detection and to under-treatment of high-risk men, particularly African Americans.[4-5] More recent research charts a better course. Key examples include statistical modeling and evidence from long-term cohort studies indicating that early PSA screening (starting at age 45) can prevent more cancer deaths when subsequent screening frequency is tailored (and usually greatly reduced) based on an initial baseline test.[2,6] Importantly, the combination of evidence of the effectiveness of active surveillance to reduce over-treatment and rigorous statistical modeling showing a mortality reduction associated with PSA tests in African Americans must inform discussions with these high-risk men.[7-8] Together, these innovations point the way to smarter screening and smarter (risk-stratified) treatment for the benefit of all men.

Objective 1: By 2025, increase the proportion of average risk men ages 45 years and older who have had an informed discussion about both the advantages and disadvantages with their health care provider regarding prostate cancer testing by 5%.

Indicator	Baseline BRFSS, 2018	2025 Target
Discussed Advantages	45.3%	50.3%
Discussed Disadvantages	20.1%	25.1%

Strategies

1. Educate men and their providers regarding the differences in prostate cancer risk. Those at higher risk include men of African ancestry, men exposed to Agent Orange, and those with blood relatives diagnosed with aggressive prostate cancer.

2. Work with primary care provider networks to encourage providers to obtain and act on the most recent data and tools that support how to best communicate with patients about their risk, the use of PSA testing, the importance of follow-up for elevated PSAs, and to prepare men in advance for the possibility of a low-risk prostate cancer diagnosis which would not require aggressive treatment and how to manage prostate cancer patients who are on active surveillance.

3. Encourage health care institutions to create, adopt, and implement practices and policies consistent with the latest best evidence on risk stratification in the diagnosis of PSA abnormalities and in the treatment of prostate cancer, and in the use of PSA testing including consideration of baseline tests.

4. Develop clear, concise, culturally competent and linguistically appropriate resources and useful facts regarding prostate cancer; make these available to all men and their families. Encourage men to have informed discussions to increase prostate cancer awareness.

5. Strive to unify the messages from cancer authorities using the latest best evidence on risk-based screening, diagnosis, and treatment.

6. Support funding for research and State level programs to improve risk-based testing, diagnosis, and treatment.

Objective 2: By 2025, increase the proportion of African American men 45 years and older who have had an informed discussion with their health care provider regarding both the advantages and disadvantages of prostate cancer testing from 56.6% to 61.6% and from 28.3% to 33.3%.

Indicator	Baseline BRFSS, 2018	2025 Target
Discussed Advantages	56.6%	61.6%
Discussed Disadvantages	28.3%	33.3%

Strategies

1. Educate African American men, their families, and their community that: 1) compared with other race/ethnic groups, they are more likely to have Prostate Cancer (PCa); 2) PCa strikes African Americans at younger ages and more aggressively; 3) once diagnosed, African Americans are more likely to die due to PCa unless it can be diagnosed at an early stage; and 4) diagnosed men can benefit from support groups, health care system navigation services, and support from other diagnosed men.
2. Work with primary care provider (PCP) networks to encourage providers to obtain and act on the most recent data and tools that support how to best communicate with African American patients about their increased risk of prostate cancer, all risks and benefits of PSA testing, the importance of follow-up for elevated PSAs, to prepare men in advance for the possibility of a low-risk PCa diagnosis which would not require aggressive treatment, and how to manage PCa patients who are on active surveillance.
3. Encourage health care institutions to create, adopt, and implement policies that require primary care providers to initiate discussions related to PSA testing to African American men, and for specialists to practice risk stratification in diagnosis and treatment, including active surveillance for patients with low-risk PCa. Inform safety net patients, providers, and programs about the state run and grant administered prostate cancer treatment program.
4. Develop clear, concise, culturally appropriate resources regarding prostate cancer and make these available to all African American men and their families to encourage men to have informed discussions to increase prostate cancer awareness.
5. Conduct events in the African American community that provide education about the high risk of prostate cancer for African Americans, the importance of being informed and empowered, and the nature and importance of follow-up. In addition, assist those who are unaffiliated to establish a medical home, and for others who have a primary care provider, to reconnect for ongoing preventive care.
6. Strive to unify the messages from cancer authorities using the latest best evidence specific to African Americans on risk-based screening, diagnosis and treatment.

MORE INFORMATION AND RESOURCES

California Prostate Cancer Coalition
https://prostatecalif.org/

Department of Health Care Services - Prostate Cancer Treatment Program
https://www.dhcs.ca.gov/services/cancer/PCTP/Pages/default.aspx

Prostate Cancer Foundation
https://www.pcf.org/

ZERO National Prostate Cancer Coalition
https://zerocancer.org/

CANCER STORY: PROSTATE CANCER

A physical examination found that my prostate was enlarged. I was 46 at the time, and cancer wasn't on my radar. I made an appointment with a urologist for a prostate biopsy. The results indicated prostate cancer. He instructed me to find a surgical oncologist to have the cancer removed. After doing some online research about prostate cancer, including how outcomes are worse for African American men, I scheduled the earliest surgical date I could get.

The cancer, although early stage, was aggressive. My oncologist recommended 37 rounds of adjuvant radiation therapy and injections of hormone therapy to reduce my levels of testosterone and decrease my risk of recurrence. The radiation therapy left me so fatigued that I was unable to work for a year.

I launched Men Actively Creating Healthy Outcomes (MACHO), an online resource to raise awareness about cancer risk and improve men's overall health. Today, I visit churches and health fairs and speak to African American men about the cancers that are especially devastating for them, including prostate, colorectal, and lung cancers.

April of 2020, I celebrated two years of being cancer-free, and I'm living my best life.

-Bin McLaurin, Prostate Cancer Survivor

CHAPTER 9

TREATMENT & SURVIVORSHIP

CHAPTER GOAL

To improve California cancer survivors' quality of follow-up care and quality of life, and treatment outcomes through increased awareness, education, and access to survivorship and supportive treatment resources and services, including survivorship care plans that incorporate treatment objectives.

CHAPTER NARRATIVE

Treatment and Survivorship focuses on enhancing the quality of life and treatment options from the time of diagnosis through the end of life.[1] The following objectives and strategies address how those in treatment and survivorship can access more treatment options while receiving improved palliative and supportive care that lead to long-term improvements in patients' physical and mental health. At the earliest stages of treatment, access to and education about available clinical trials is critical to addressing the treatment gap within diverse populations.[2] All cancer patients should receive timely, clinically appropriate, diagnostic, and therapeutic care. Improved supportive care, particularly in the areas of exercise,[3] sexual health and intimacy, and addressing fear of recurrence will provide improved outcomes for patients.[4] Furthermore, increased support for patients facing financial distress due to rising health care costs will improve patient outcomes in treatment and survivorship.[5] By bringing to the forefront these key issues for those in treatment and survivorship, we can begin to address the growing needs those living with and living beyond cancer.

TREATMENT

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 1: By 2025, increase enrollment of diverse populations in cancer clinical trials (therapeutic and non-therapeutic trials)

Data Source: TBD

Strategies

1. Create new funding incentives to develop new trials that focus on diverse populations and to increase diversity of patient pool that participates in existing clinical trials.
2. Promote a minimum percentage of diverse patient populations in clinical trials.
3. Increase patient, caregiver and clinician education on clinical trials which focuses on reducing stigma and misconceptions, as well as overall understanding, of clinical trials so that patients can make a more informed treatment choice regarding standard cancer care versus clinical trials available.
4. Increase awareness among auxiliary clinical trials staff about the importance of including diverse populations in clinical trials and the impact on study outcomes.

Objective 2: By 2025, increase the number of patients who receive supportive care during and after treatment addressing some of the most overlooked issues including sexual health, intimacy, and fear of recurrence.

Data Source: TBD

Strategies

1. Create a standardized model of supportive care assessment to offer to patients as they complete treatment.
2. Assemble and distribute a comprehensive list of state-wide and national resources that are available for patients to address psychosocial impact of treatment.
3. Educate nurse navigators and hospital social workers about stigmatized issues in the survivorship community including sexual health, intimacy, fatigue and fear of recurrence.
4. Expand educational resources available to patients who experience challenges to long-term wellbeing during survivorship including sexual health, intimacy, and fear of recurrence.

Objective 3: By 2025, increase quality of care, improve standard of care in treatment, and increase clinical trial education with patients.

Data Source: TBD

Strategies

1. Educate health care providers on treatment standards.
2. Provide health care professionals with training to explain clinical trials to patients.
3. Encourage communication of cancer treatment goals with patients. The patient and their families are included in the informed treatment decision of Cure, Comfort, or Control.
4. Encourage patients and families to learn more about information on clinical trials.
5. Community based organizations are encouraged to develop and tailor existing resources to provide patient education as well as advocate for clinical trials.
6. Focus efforts on underserved populations.

SURVIVORSHIP

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 1: By 2025, increase awareness and achievement of exercise guidelines for cancer survivors set by the American College of Sports Medicine (i.e. 150 min/week of moderate intensity aerobic exercise).

Data Source: TBD

Strategies

1. Educate health care providers on the value of exercise for cancer patients and survivors.
2. Support CME courses, conferences, and education material for oncology providers.
3. Support the training of exercise trainers with oncology certification (i.e., through the American College of Sports Medicine [ACSM]).
4. Promote the Moving Through Cancer initiative (through the ACSM) which has developed a searchable registry to help health care providers, exercise professionals and patients find appropriately trained professionals and programs in their communities.
5. Encourage gyms and community centers to promote exercise programming for cancer survivors.
6. Promote the development of technology (such as web-based applications and application for smart-phones) to encourage cancer survivors to engage in activity and optimal exercise guidelines.

Objective 2: By 2025, decrease the number of patients with cancer who experience financial distress through health care costs during and after cancer treatment (including preventative screenings and post-treatment maintenance).

Data Source: TBD

Strategies

1. Support efforts to reform health insurance by passing policies that help people affected by cancer, specifically, a definition of “medically necessary” treatments that treatments also previously listed in the “experimental” classification.
2. Provide eligibility requirements and deadlines for California and national financial resources to health care providers to distribute to people diagnosed with cancer to help pay for treatment associated costs.
3. Educate financial navigators and encourage patients to meet with a financial navigator who will teach patients cost-savings programs and health insurance options.
4. Work with hospitals and medical centers to provide transparency related to prices so that both physicians and patients know the costs of medications, tests, and treatments before deciding what treatments and tests to choose.

MORE INFORMATION AND RESOURCES

American Cancer Society
Survivorship: During and After Treatment
https://www.cancer.org/treatment/survivorship-during-and-after-treatment.html

Sex and the Adult Female with Cancer
https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/sexuality-for-women-with-cancer.html

American College of Sports Medicine
American Cancer Society - Certified Cancer Exercise Trainer Program
https://www.acsm.org/get-stay-certified/get-certified/specialization/cet

Moving Through Cancer
https://www.exerciseismedicine.org/support_page.php/moving-through-cancer/

National Cancer Institute - Cancer Treatment
- https://www.cancer.gov/about-cancer/treatment/questions
- https://www.cancer.gov/about-cancer/treatment/types

CHAPTER 10

RESEARCH

CHAPTER GOAL

To strengthen and support cancer research along the lifespan to reduce the cancer burden in California.

CHAPTER NARRATIVE

The purpose of this chapter is to raise awareness of, access to, and participation in cancer research, with special emphasis on minority and underserved populations.

Research is the process of conducting scientific inquiry to respond to specific questions about nature, health or disease.[1] Research, especially as related to therapeutic clinical trials, is crucial as it provides evidence-based guidance regarding the prevention, early detection, regular screening, information on the latest treatments available, and hopefully, control of cancer.

Clinical studies address research questions to improve prevention, diagnosis and treatment of cancer. Participation by minority groups and underrepresented individuals is crucial if these populations are to benefit from the scientific advances and promises offered by precision medicine and other advances in cancer care. Significant challenges exist that need to be addressed. It is estimated that 20% of adults diagnosed with cancer may be eligible to participate in clinical trials. However, fewer than 5% enroll each year. Representation of minorities is even lower. Enrollment of ethnic/racial minorities in clinical trials has become even more urgent given the availability of new immunotherapies that could save lives.[2] Concerns exist regarding the interpretation of trial results, as these may not necessarily reflect true tolerability or the potential efficacy of an agent that has not been tested among minority patients. Low participation could be due in part to factors that range from lack of awareness among community members and health care providers, health insurance, language and cultural differences, for transportation or childcare expenses to participate in the trial. Some patients may be suspicious and mistrust the motivations or intentions or the process or priorities of the researchers. Given several situations of abuses in research that have impacted minorities, this is no surprise.

COMMUNITY-BASED PARTICIPATORY RESEARCH (CBPR):

CBPR ensures results of research studies will have a direct positive impact on the communities where the research is conducted.[3] By involving community members in the process, researchers are able to design and conduct studies that are deeply relevant to the people who participate in the research studies.[4] Whenever CBPR research is not a suitable method of inquiry, community engaged research may provide insights into the best ways to approach and recruit members. Community engaged research is a mechanism by which academic partners establish a meaningful and ongoing collaboration with the population of interest, to ensure that the research is relevant and needed in the community; and conducted in a responsible and respectful manner. It engages communities at different times during the research process.[5]

The following objectives do not currently have identified baseline measures and may be established as part of an implementation plan.

Objective 1: Encourage minority participation through community-based participatory research (CBPR) that involves community members and stakeholders from the beginning stages through all aspects of the research process, (i.e., study design, implementation, study completion and disseminating the research findings).

Data Source: TBD

Strategies

1. Raise awareness about clinical trials and CBPR and monitor progress in inclusion of diverse populations in clinical trials and engagement in therapeutic trials in particular with implications for diverse populations related to precision medicine-oriented efforts.
2. Emphasize improving access to and participation in clinical trials by those disproportionally affected by cancer by focusing efforts on promoting the inclusion of diverse population groups in clinical trials/bio specimen studies.
3. Improve access to and participation in cancer clinical trials and CBPR, particularly for Californians disproportionately affected by cancer.
4. Provide cultural competency training to health care providers to address the needs of minority and underserved populations to increase their referral to cancer clinical trials.

Strengthen the cancer research infrastructure:

Stakeholders should address gaps in communication and coordination among cancer research programs, institutions, and other entities, as well as the limited availability of, and access to, statewide information on clinical trials and CBPR to strengthen its research infrastructure.

Objective 2: Establish the foundation for comprehensive, statewide cancer research efforts that will benefit all Californians through promoting collaboration, consolidating cancer research information, and making use of the latest technological developments (e.g., electronic medical record capability of community-based physicians).

Data Source: TBD

Strategies

1. Develop a comprehensive, community-friendly list of California-specific and national resources about cancer research and make it widely available.
2. Form a statewide cancer clinical trials advisory committee made up of cancer researchers, advocates, and representatives from cancer clinical trials entities to discuss the development of a comprehensive clinical trials database to collect California-specific screening and enrollment data, establish a baseline for clinical trials enrollment, and monitor progress in increasing clinical trials participation.
3. Improve translation of the basic research into public health initiatives and informed policy, which includes educating and informing community members, health care professionals, decision makers, policy makers and opinion leaders about cancer research through outreach, engagement and dissemination of most recent findings in cancer research.
4. Develop an infrastructure of “on the ground” community advocates, patient advocates, community health workers and promotores de salud that represent local communities and train them to sit on advisory committees and engage in research projects and as reviewers of research.

MORE INFORMATION AND RESOURCES

National Institutes of Health

National Cancer Institute (NCI)

https://www.cancer.gov/

Office of Behavioral and Social Sciences Research

https://obssr.od.nih.gov/

National Institute on Minority Health and Health Disparities

Community Based Participatory Research

https://www.nimhd.nih.gov/programs/extramural/community-based-participatory. html

Minority Health and Health Disparities Research Framework

https://nimhd.nih.gov/about/overview/research-framework/

APPENDIX I: ACRONYM LIST

Acronym	Full Name | Label
ACA	Affordable Care Act
ACR	American College of Radiology
ACS	American Cancer Society
AI/AN	American Indian and Alaska Native
BICOE	Breast Imaging Cancer of Excellence
BMI	Body mass index
BRCA	“BR” - Breast “CA” - Cancer
BRFSS	Behavioral Risk Factor Surveillance System
C4	California Colorectal Cancer Coalition
CAIR	California Immunization Registry
CATS	California Adult Tobacco Survey
CCCP	Comprehensive Cancer Control Program
CCCOE	Community Hospital Care Coninuum Centers of Excellence
CCR	California Cancer Registry
CDC	Centers for Disease Control and Prevention
CDOC	California Dialogue on Cancer
CDPH	California Department of Public Health
CHIS	California Health Interview Survey
CMS	Centers for Medicaid and Medicare Services
COG	Children’s Oncology Group
CT	Computer Tomography
CTCCCP	California Tribal Comprehensive Cancer Control Program
CTR	Cancer Tumor Registrar
DHCS	California Department of Health Care Services
EBT	Electronic benefit transfers
ECHO	Extension for Community Health Outcomes
FIT	Fecal immunochemical test
FPL	Federal poverty level
FQHCs	Federally qualified health centers
GI	Gender identity
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B virus

Acronym	Full Name | Label
HCV	Hepatitis C virus
HPSAs	Health Professional Shortage Areas
HMOs	Health maintenance organizations
HPV	Human papillomavirus
ICCC	International Classification of Childhood Cancer
LDCT	Low-dose computed tomography
LGBTQ	Lesbian, gay, bisexual, transgender, and queer
NCCCP	National Comprehensive Cancer Control Program
NCCN	National Comprehensive Cancer Network
NCCRT	National Colorectal Cancer Roundtable
NCI	National Cancer Institute
NHIS	National Health Interview Survey
NIH	National Institute of Health
NPCR	National Program of Cancer Registries
OSHPD	Office of Statewide Hospital Planning and Development
PC	Percent change
PPACA	Patient Protection and Affordable Care Act
PPOs	Preferred provider organizations
PSE	Policy, systems, and environmental
QOPI	Quality Oncology Practice Initiative
SEER	Surveillance, Epidemiology, and End Results
SGM	Sexual and gender minorities
STD	Sexually transmitted disease
SO	Sexual orientation
Tdap	Tetanus-diphtheria-acellular Pertussis
TEROC	Tobacco Education and Research Oversight Committee
THPs	Tribal Health Programs
UCLA	University of California, Los Angeles
USPSTF	U.S. Preventive Services Task Force
UV	Ultraviolet
VSAC	Vital Statistics Advisory Committee

APPENDIX II: RESOURCES FOR EVIDENCE-BASED INTERVENTION AND POLICY, SYSTEMS, AND ENVIRONMENTAL CHANGE INTERVENTIONS

AGENCY FOR HEALTH CARE RESEARCH AND QUALITY (AHRQ) INNOVATIONS EXCHANGE

The Innovations Exchange offers busy health professionals and researchers the opportunity to share, learn about, and ultimately adopt evidence-based innovations and tools suitable for a range of health care settings and populations.
http://www.innovations.ahrq.gov/

AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)

APHA champions the health of all people and all communities. We are the only organization that influences federal policy, has a 140-plus year perspective and brings together members from all fields of public health.
http://www.apha.org/

BEST PRACTICES FOR COMPREHENSIVE TOBACCO CONTROL

CDC's *Best Practices for Comprehensive Tobacco Control Programs—2014* is an evidence based guide to help states plan and establish effective tobacco control programs to prevent and reduce tobacco use.
http://www.cdc.gov/tobacco/stateandcommunity/best_practices/index.htm

CALIFORNIA CENTER FOR PUBLIC HEALTH ADVOCACY (CCPHA)

CCPHA advocates for policy change simultaneously at state and local levels, we network local efforts together for statewide impact, and we support our work with grassroots organizing, strategic research, media advocacy, and direct lobbying.
https://phadvocates.org/

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH SYSTEMS AND ENVIRONMENTAL CHANGES TOOLKIT

The purpose of this toolkit is to support optimal nutrition, physical activity, and breastfeeding through fostering partnerships between local health jurisdiction's Maternal, Child, and Adolescent Health (MCAH) Programs and existing organizations to promote healthy environmental changes.
https://www.cdph.ca.gov/Programs/CFH/DMCAH/NUPA/Pages/Systems-and-Environmental-Change.aspx

CALIFORNIA PAN-ETHNIC HEALTH NETWORK (CPEHN)

The California Pan-Ethnic Health Network is a multicultural statewide advocacy organization that works to improve the health of communities of color.
http://cpehn.org

CANCER CONTROL P.L.A.N.E.T.

Cancer Control P.L.A.N.E.T. portal provides access to data and resources that can help planners, program staff, and researchers design, implement and evaluate evidence-based cancer control programs.
http://cancercontrolplanet.cancer.gov/

CDC MAPPS INTERVENTIONS FOR COMMUNITIES

http://www.cdc.gov/chronicdisease/recovery/PDF/MAPPS_Intervention_Table.pdf

CHANGELAB SOLUTIONS

ChangeLab Solutions provides community-based solutions for America's most common and preventable diseases like cancer, heart disease, diabetes, obesity, and asthma. Our solutions promote the common good by making healthier choices easier for everyone.
http://changelabsolutions.org/

COCHRANE REVIEW

Cochrane Reviews are systematic reviews of primary research in human health care and health policy. They investigate the effects of interventions for prevention, treatment, and rehabilitation.
http://www.cochrane.org/index.htm

THE COMMUNITY GUIDE

The Guide to Community Preventive Services is a free resource to help you choose programs and policies to improve health and prevent disease in your community.
https://www.thecommunityguide.org/

HEALTHBEGINS

HealthBegins helps health care systems and community partners improve outcomes, control costs, and advance equity by addressing social determinants of health. How? Through hands-on training, great tools, deep expertise, and a team that knows how to make complex changes simple. Yes, you are ready to move health care upstream.
http://www.healthbegins.org/

HEALTH IN ALL POLICIES: A GUIDE FOR STATE AND LOCAL GOVERNMENTS

Health in All Policies: A Guide for State and Local Governments was created by the Public Health Institute, the California Department of Public Health, and the American Public Health Association in response to growing interest in using collaborative approaches to improve population health by embedding health considerations into decision-making processes across a broad array of sectors.
http://www.phi.org/resources/?resource=hiapguide

NATIONAL ASSOCIATION OF COUNTY AND CITY HEALTH OFFICIALS (NACCHO)

Model Practices Database
An online, searchable collection of innovative best practices across public health areas.
http://www.naccho.org/topics/modelpractices/

NATIONAL CANCER INSTITUTE (NCI)

The National Cancer Institute is the federal government's principal agency for cancer research and training.
http://www.cancer.gov/

POLICYLINK

PolicyLink is a national research and action institute advancing economic and social equity by Lifting Up What Works.
http://www.policylink.org/

PREVENTION INSTITUTE

Synthesizes research and practice; develops prevention tools and frameworks; helps design and guide interdisciplinary partnerships; and conducts training and strategic consultation with government, foundations, and community-based organizations nationwide and internationally.
www.preventioninstitute.org

PREVENTION RESEARCH CENTERS

The Prevention Research Centers is a network of 26 academic research centers in 24 states that study how people and their communities can avoid or counter the risks for chronic illnesses, such as heart disease, obesity, and cancer.
http://www.cdc.gov/prc/index.htm

RESEARCH-TESTED INTERVENTION PROGRAMS (RTIPs)

RTIPs is a searchable database of evidence-based cancer control interventions and program materials and is designed to provide program planners and public health practitioners easy and immediate access to research-tested materials.
http://rtips.cancer.gov/rtips/index.do

SOCIETY FOR PUBLIC HEALTH EDUCATION (SOPHE)

Committed to chronic disease state policy, SOPHE members and partners, legislators, researchers, political leaders, and health officials can find information and resources on current chronic disease state policy, disparities associated with chronic disease, and collaborating health policy organizations.

https://www.sophe.org/

STATE CANCER PROFILES-STATISTICS

State Cancer Profiles characterizes the cancer burden in a standardized manner to motivate action, integrate surveillance into cancer control planning, characterize areas and demographic groups, and expose health disparities.
http://www.statecancerprofiles.cancer.gov/

THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, MEDICINE – ACCELERATING PROGRESS IN OBESITY PREVENTION: SOLVING THE WEIGHT OF THE NATION

http://nationalacademies.org/hmd/reports/2012/accelerating-progress-in-obesity-prevention.aspx

U.S. PREVENTIVE SERVICES TASK FORCE (USPSTF)

Created in 1984, the U.S. Preventive Services Task Force is an independent group of national experts in prevention and evidence-based medicine that works to improve the health of all Americans by making evidence-based recommendations about clinical preventive services such as screenings, counseling services, or preventive medications.
http://www.uspreventiveservicestaskforce.org/

APPENDIX III: CANCER RELATED DATA SOURCES

- **Behavioral Risk Factor Surveillance System (BRFSS)** is a state-based system of health surveys that generates information about health risk behaviors, clinical preventive practices, and health care access and use primarily related to chronic diseases and injury. (https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDSRB/Pages/BRFSS.aspx)
- **California Adult Tobacco Survey (CATS)** collects information on adults' tobacco-related behaviors, attitudes, and beliefs. (https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CTCB/Pages/SurveyInst rument.aspx)
- **California Cancer Registry (CCR)** collects, compiles, and publishes statewide data that help inform cancer control priorities and strategies. (www.ccrcal.org)
- **California Health Interview Survey (CHIS)** is the nation's largest state health survey and collects information on the health and health care needs of Californians. (www.chis.ucla.edu)
- **The California Healthy Kids Survey (CHKS)** is a comprehensive youth health risk behavior and resilience survey funded primarily by the California Department of Education (CDE). CHKS provides school districts with an instrument to assess an array of health indicated related to academic success and well-being. (https://www.wested.org/project/california-healthy-kids-survey-chks/)
- **California Student Tobacco Survey (CSTS)** is a biennial student survey administered to middle (grades 6–8) and high school (grades 9–12) students on tobacco-use behavior, beliefs, and exposure. (https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CTCB/Pages/SurveyInst rument.aspx)
- **The California Teacher's Study (CTS)** is a prospective study of 133,479 current and former public school teachers or administrators who participate in the California State Teachers Retirement System (STRS). (https://www.calteachersstudy.org/).
- **The California Tribal Epidemiology Center (CTEC)** is one of 12 Indian Health Service (HIS) Division of Epidemiology and Disease Prevention (DEDP)-funded Tribal Epidemiology Centers that provide epidemiologic support to each IHS region. CTEC collects and interprets health information for AIAN in California to help tribes and tribal health programs monitor the health status of Indian people in California and develop effective public health services that respect cultural values and traditions of tribal communities. (https://crihb.org/ctec/)

- **Employer Health Benefits Survey** is a project of the Henry J. Kaiser Family Foundation that conducts an annual survey of employers provides a detailed look at trends in employer sponsored health coverage including premiums, employee contributions, cost sharing provisions, offer rates, wellness programs, and employer practices. (https://www.kff.org/health-costs/report/2019-employer-health-benefits-survey/)
- **The National Cancer Data Base (NCDB)** was established to serve as a comprehensive clinical surveillance resource for cancer care in the United States. The NCDB was the first national database used to track and compare the treatment of most types of cancers. (https://www.facs. org/quality- programs/cancer/ncdb).
- **National Immunization Survey (NIS)** are conducted annually and used to obtain national, state, and selected local area estimates of vaccination coverage rates for U.S. children 19–35 months (NIS-Child) and for U.S. adolescents 13–17 years (NIS-Teen).
  NIS-CHILD: https://www.cdc.gov/vaccines/imz-managers/nis/datasets.html
  NIS-TEEN: https://www.cdc.gov/vaccines/imz-managers/nis/datasets-teen.html
- **State Health Facts** is a project of the Henry J. Kaiser Family Foundation that provides state specific health data based on analysis of the Census Bureau's Current Population Surveys. (http://www.statehealthfacts. org/)
- **The State of Health Insurance in California (SHIC)** is a biennial report produced by the Health Insurance Studies Program at UCLA's Center for Health Policy Research that tracks health insurance coverage nationwide and in California with particular attention to health and health care disparities resulting from lack of insurance. (http://healthpolicy. ucla.edu/programs/health- insurance/Pages/california.aspx)
- ***State Indicator Report on Fruits and Vegetables,* Centers for Disease Control and Prevention (CDC)** provides national and state-specific information on fruit and vegetable consumption as well as policy and environmental indicators that measure a state's ability to support the consumption of fruits and vegetables.
  2018 Report: https://www.cdc.gov/nutrition/downloads/fruits-vegetables/2018/2018-fruit-vegetable-report-508.pdf
  California Action Guide: https://www.cdc.gov/nutrition/data-statistics/pdfs/California_StateActionGuide_Sept2018_508.pdf
- **The Tobacco Use Supplement to the Current Population Survey (TUS- CPS)** is a NCI sponsored survey of tobacco use that has been administered as part of the US Census Bureau's Current Population Survey in 1992-1993, 1995- 1996, 1998-1999, 2000, 2001-2002, and 2003. (https://cancercontrol.cancer.
- gov/brp/tcrb/tus-cps/).

APPENDIX IV: DEFINITION OF TECHNICAL TERMS

AGE-ADJUSTED RATE

A statistical method allowing comparisons of populations that takes into account age distribution differences between populations. Age-adjusting takes the 2000 U.S. population distribution and applies it to other time periods under consideration. This assures that such rates do not reflect any changes in the population age distribution. Rates can be adjusted for the distribution of other characteristics such as race/ethnicity.

CANCER BURDEN

An estimate of the financial, emotional, or social impact that cancer creates within the population. Different racial, ethnic, geographic, and age groups in the United States do not share the burden of disease equally.

FIVE-YEAR SURVIVAL RATE

The percentage of people in a study or treatment group who are alive five years after they were diagnosed with or treated for a disease, such as cancer. The disease may or may not have come back.

INCIDENCE

The number of newly diagnosed cases of cancer during a specific time period.

INCIDENCE RATE

The ratio of the number of new cancers of a specific site/type occurring in a specified population during a year to the number of individuals who were at risk for the given cancer, generally expressed as the number of cancers per 100,000 persons.

MORTALITY

The number of deaths from cancer during a specific time period.

MORTALITY RATE

The number of deaths, with cancer as the underlying cause, occurring in a specific population during a year. Cancer mortality is usually expressed as the number of deaths due to cancer per 100,000 persons.
Mortality Rate = (cancer deaths per year/population) X 100,000

PERCENT CHANGE

The percent change (PC) in a statistic over a given time interval is

Percent change = (Final value-Initial value) / Initial value * 100.

A positive PC corresponds to an increasing trend, a negative PC to a decreasing trend.

CANCER PREVALENCE

The number or percent of people alive on a certain date in a population who previously had a diagnosis of the disease. It includes new (incidence) and pre-existing cases, and is a function of both past incidence and survival.

SEER REGISTRIES

Geographic areas that were selected for inclusion in the SEER Program based on their ability to operate and maintain a high quality population-based cancer reporting system and for their epidemiologically significant population subgroups.

STAGE

Stage provides a measure of disease progression, detailing the degree to which the cancer has advanced. Two methods commonly used to determine stage are AJCC and SEER historic. The AJCC method is more commonly used in the clinical settings, while SEER has standardized and simplified staging to ensure consistent definitions over time.

SEER describes cancers in five stages:

- **In situ cancer** is early cancer that is present only in the layer of cells in which it began.
- **Localized cancer** is cancer that is limited to the organ in which it began, without evidence of spread.
- **Regional cancer** is cancer that has spread beyond the original (primary) site to nearby lymph nodes or organs and tissues.
- **Distant cancer** is cancer that has spread from the primary site to distant organs or distant lymph nodes.
- **Unstaged cancer** is cancer for which there is not enough information to indicate a stage.

STATISTICALLY SIGNIFICANT

Describes a mathematical measure of difference between groups. The difference is said to be statistically significant if it is greater than what might be expected to happen by chance alone 95% of the time. Although statistically significant usually refers to 95% confidence, sometimes other confidence levels such as 99% or 90% are specified.

SURVEILLANCE DATA (CANCER)

Data that is used to monitor changes in cancer in a population. Included are measures of cancer incidence, morbidity, survival, prevalence and mortality. Also included are the assessment of genetic predisposition, environmental and behavioral risk factors, screening practices, and the quality of care from prevention through palliation.

SURVIVAL, OBSERVED

An estimate of the probability of surviving all causes of death for a specified time interval calculated from the cohort of cancer cases. Observed survival does not consider cause of death, it simply looks at who is alive and who is not. Sometimes referred to as overall survival.

SURVIVAL, RELATIVE

A measure of net survival that is calculated by comparing observed (overall) survival with expected survival from a comparable set of people that do not have cancer to measure the excess mortality that is associated with a cancer diagnosis.

Glossary of Statistical Terms, NCI 2013, 2019
Glossary of Statistical Terms, SEER 2019

APPENDIX V: CDOC EXECUTIVE COMMITTEE ROSTER

CDOC EXECUTIVE COMMITTEE

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APPENDIX VII: A CALL TO ACTION WHAT CAN YOU DO?

California's Comprehensive Cancer Control Plan, 2021–2025 lays out broad goals to reduce the burden of cancer among all Californians. In order to accomplish these goals, all Californians need to be involved in this effort. Please join CDOC and other stakeholders throughout the state to make our plan's goals a reality. Below are a few examples of what you can do to help reduce the burden of cancer in our state.

IF YOU ARE A CALIFORNIAN

- Participate in cancer-related health surveys.
- Avoid overexposure to the sun and artificial tanning.
- Get cancer-preventive immunizations such as Hepatitis B and human papillomavirus (HPV).
- Know when to be screened and do it on schedule.
- Support smoke-free environments and avoid secondhand smoke.
- Consider enrolling in a cancer clinical trial.
- Volunteer to support cancer-related activities including joining CDOC efforts.

IF YOU ARE A LOCAL HEALTH DEPARTMENT

- Provide cancer information and resources to the community.
- Collaborate in community health activities and awareness events.
- Work with physicians to promote screening programs and case reporting.
- Provide space for survivor support groups.

IF YOU ARE A COMMUNITY-BASED ORGANIZATION

- Provide cancer information and resources to clients.
- Promote cancer screening among clients.
- Encourage participation in cancer clinical trials.
- Collaborate to provide programs to the community on cancer prevention and screening.

IF YOU ARE A PROFESSIONAL ORGANIZATION

- Provide cancer information and resources to constituents.
- Educate constituents on the importance of promoting cancer clinical trials.
- Support cancer awareness activities of local affiliates.
- Provide cancer control trainings.

IF YOU ARE AN EMPLOYER

- Provide healthy foods in vending machines and cafeterias.
- Collaborate with health care institutions to host screening events.
- Establish a worksite wellness committee.
- Offer employee benefits such as health insurance that covers smoking cessation aids and prevention screening.

IF YOU ARE A SCHOOL/UNIVERSITY

- Include cancer prevention messages in health classes.
- Provide healthy foods in vending machines and cafeterias.
- Increase physical education requirements.
- Make your entire campus a smoke-free environment.
- Encourage sun-safe behaviors.

IF YOU ARE A FAITH-BASED ORGANIZATION

- Provide cancer prevention information to members.
- Provide healthy foods at church activities.
- Provide indoor space for walking clubs when the weather is inappropriate.
- Make your events smoke-free.

IF YOU ARE A HOSPITAL

- Submit complete cancer case reports in a timely manner to the state registry.
- Collaborate to sponsor community screening programs.
- Acquire or maintain American College of Surgeons membership.
- Implement a patient navigation system.

IF YOU ARE A PHYSICIAN OR HEALTH INSURER

- Ensure patients are screened for cancer in accordance with the most current guidelines.
- Implement a cancer screening reminder system.
- Refer patients to smoking cessation classes and nutrition programs.
- Submit complete cancer case reports in a timely manner to the state registry.
- Refer patients to and encourage patients to enroll in cancer clinical trials.

APPENDIX VIII: GET INVOLVED

CDOC represents the infrastructure for coordinating the implementation of California's state cancer plan; however, cancer control stakeholders and community members are ultimately the driving force behind the achievement of the plan's goals and objectives. The implementation of the plan is the responsibility of all cancer control stakeholders. You can be a part of this important effort to reduce California's cancer burden and GET INVOLVED! with CDOC. Visit our website at www.cdoconline.net to learn more.

There are many ways to GET INVOLVED! Below is a list of the many volunteer activities for you to choose from.

IF YOU ARE A CALIFORNIAN

- Become a CDOC member and join our dynamic group of committed and dedicated stakeholders who work collaboratively to reduce the burden of cancer in California. Becoming a member allows you to stay abreast of cancer control activities in our state and participate in California's discussion on cancer prevention and control.
- Volunteer to support cancer-related activities in your community.
- Help promote and disseminate the state cancer plan

IF YOU ARE A CDOC MEMBER

- Help disseminate and promote this state cancer plan to your cancer control partners.
- Join a CDOC Workgroup: CDOC Workgroups prioritize and conduct activities that address cancer plan objectives and strategies.
- Attend a CDOC All Members webinar meeting to stay connected to CDOC as a whole and learn and/or share cancer related activities CDOC members are working on.
- Contribute to CDOC newsletters and announcements as a way to help promote current cancer related activities of our partners, and to educate and update the cancer community about cancer control news and events.
- Contribute to a CDOC Project Spotlight to showcase activities and/or projects you or your organization is working on, particularly those that address goals, objectives, or strategies in this cancer plan.
- Communicate you or your organization's viewpoints to CDOC.
- Inform your community or organization about CDOC decisions and activities.
- In-reach to CDOC for expertise, to leverage resources and other support for your cancer control activities. The CDOC membership is comprised of representatives from a variety of organizations, constituencies, and interest areas in cancer prevention and control. The diverse representation includes state and local governments; private and nonprofit organizations; health, medical, and business communities, and academic institutions; researchers; cancer survivors; caregivers and advocate. The CDOC membership serves as an invaluable resource to inform and support cancer control efforts.
- Initiate a cancer plan implementation project.
- If you or your organization is implementing a strategy or objective from this cancer plan, we want to hear about it! Please report back to CDOC so we may promote your work and/or offer assistance where possible.
- Identify collaborative opportunities by joining others at the CDOC table who share similar concerns and desired outcomes.

APPENDIX IX: REFERENCES

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