COLORADO CANCER EVALUATION PLAN

An integrated approach to assess the Colorado Department of Public Health and Environment's cancer prevention and control efforts.

This document includes evaluation and performance measures for the five-year performance period between June 30, 2017 and June 29, 2022, and fulfills the requirement for evaluation and performance measurement plans for CDC-funded programs across two CDPHE cancer organizational units:

- **Cancer Unit**, which administers two federal funding sources:
    - The National Comprehensive Cancer Control Program (NCCCP, DP17-1701).
    - The CDC's Colorectal Cancer Control Program[1] (CRCCP, DP15-1502).
- **Women's Wellness Connection** (WWC, breast and cervical cancer screening program), which administers funding from two sources:
    - Federal funding from the National Breast and Cervical Cancer Early Detection Program (NBCCEDP, DP17-1701).
    - State funding from Colorado's Amendment 35 Tobacco funds.

[1] The previous iteration of Colorado's CRCCP Evaluation has been fully integrated into this more comprehensive evaluation.

Last revised September 27, 2018

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Plan Overview

This plan represents an integrated and responsive approach to the evaluation and performance measurement of the collaborative cancer prevention and control effort among two Colorado Department of Public Health and Environment (CDPHE) cancer organizational units and several internal and external partners. This evaluation plan is coordinated and led by the Center for Health and Environmental Data's Health Surveys and Evaluation Branch (HSEB). Program staff and key stakeholders played a collaborative role in developing this plan and will continue to advise the evaluation through implementation of this work.

This document describes the coordinated cancer prevention and control efforts at CDPHE and the evaluation approach used to monitor and measure progress. The evaluation questions and performance measures proposed include those that are both shared across and specific to particular CDPHE organizational units or cancer types. The evaluation incorporates process-related questions and measures related to program reach and implementation fidelity to inform program improvement, as well as outcome questions and measures to assess program effectiveness, such as changes in policy/systems/environment (PSE) as well as changes to health behaviors, such as cancer screening.

This plan represents a broad, multiyear framework between January 2018 and June 2022 that addresses both incremental progress and outcomes. Evaluation activities may repeat over the project period for comparative purposes or represent a one-time activity as needed. As the evolving nature of this collaborative work changes, the evaluation matrix (Appendix C) will be updated. A list of acronyms and definitions referenced in this document can be found in Appendix A.

Evaluation Purpose and Framework

Figure 1. CDC Evaluation Framework

The primary purpose of this evaluation is utility: to determine the effectiveness and efficiency of CDPHE's collective cancer prevention and control efforts, and to inform continuous improvement. CDPHE values meaningful, transparent and useful evaluation. As such, this evaluation is based on the CDC's Framework for Program Evaluation in Public Health (Figure 1), which defines six steps and four sets of standards seen as best practice for public health program evaluations. Each of the steps, while not necessarily linear, represent a major procedural element of effective evaluation practice. The four standards describe a larger cluster of guiding principles to which professional evaluation practices should adhere. The steps and standards outlined in this framework have served, and will continue to serve, our planning and implementation of evaluation of CDPHE's cancer prevention and control efforts.

In addition to CDC's framework, CDPHE has also adopted a specific set of theoretical principles to guide the evaluation design, implementation and reporting. Utilization-Focused Evaluation, developed by Michael Quinn Patton (2002), is highly relational, collaborative and situational, and always focused on intended use of the results. "Use" concerns both how individuals experience the evaluation process and how they apply evaluation findings. Therefore, the focus in utilization-focused evaluation is on intended use by intended users. Since no evaluation can be value-free, utilization-focused evaluations work with primary intended users who have responsibility to apply evaluation findings. The evaluator helps them determine what kind of evaluation they need and offers a menu of possibilities within the framework of established evaluation standards and principles. The resulting evaluation design incorporates users' values and priorities, and can be responsive to changing needs and recommendations over time.

Evaluation Stakeholders

Step 1: Engage Stakeholders

As an evaluation designed for utilization, CDPHE will include an Evaluation Stakeholders Workgroup (ESW) in every phase of evaluation, from planning to dissemination, in order to maximize the likelihood that findings will be usable and contribute to the aims of CDPHE cancer programs and the cancer community overall.

In August 2017, the ESW was convened with core program staff and internal partners. Two structured evaluation planning workshops were held in September 2017 and November 2017 with the entire ESW. Workshops were led by the evaluation team and designed to facilitate evaluation planning in a sequential fashion by engaging members in group discussions about evaluation needs, use and priorities. Several meetings were held during this period with smaller groups of program staff to help describe the cancer prevention and control strategies being implemented within and across CDPHE programs, identify evaluation priorities and determine target measures. This evaluation and performance measurement plan resulted from the content of these workshops and was reviewed by the ESW. A detailed description of the evaluation planning process can be found in Appendix B.

Due to the initial complexity of developing an integrated program and corresponding evaluation plan, only internal CDPHE staff members have participated in the ESW to date (Appendix B, Table 1). In January 2018, the evaluation team presented the logic model to two stakeholder groups: the Breast and Cervical Cancer Screening Program Advisory Board and organizations funded to implement interventions through the Cancer Prevention and Early Detection (CPED) Program. The evaluation framework and priorities were shared with the advisory board again in April 2018. While some informal recruitment efforts took place in the form of conversations with external partners early in the planning process, program staff began formally recruiting new external-partner ESW members in September 2018 to provide feedback on the evaluation and performance management plan. The ESW will meet regularly to discuss evaluation data findings, re-prioritize evaluation needs and disseminate results. The next ESW meeting is scheduled for November 2018.

Stakeholder refers to any individual or organization holding interest in or receiving impact from the implementation or results of this evaluation. But not all stakeholders will have the need or capacity to actually *apply* the evaluation findings nor will they have the need to be directly involved in the ESW. Nonetheless, these stakeholders may be interested in background knowledge or outcomes related to CDPHE's cancer prevention and control work. A broader set of identified stakeholders will be included in the dissemination of evaluation results (Appendix B, Table 2).

CDPHE's Integrated Approach to Cancer Prevention and Control

Step 2: Describe the Program

Cancer is the second leading cause of death in Colorado behind cardiovascular disease. In 2015, there were 7,597 cancer deaths in Colorado. In 2014, nearly 22,000 Coloradans were diagnosed with invasive cancers; an additional 3,800 were diagnosed with in situ cancer or benign tumors of the central nervous system. The lifetime risk of being diagnosed with cancer in Colorado is approximately 1 in 2 for males and 2 in 5 for females.[2]

Health Equity Focus

Health equity is an essential component of Colorado's cancer prevention and control efforts. While Colorado's incidence and mortality rates are lower than the national average, disparities in cancer incidence and outcomes across different population groups cause significant concern, with substantial disparities observed on the basis of income. Socioeconomic status, race/ethnicity and gender are important factors in determining the relationship between cancer risk and outcomes, and poverty contributes significantly to the racial/ethnic disparities evident in the burden of cancer. The relationships between poverty and cancer are unsurprising given the differences between socioeconomic groups in tobacco use, adherence to cancer screening and access to appropriate cancer treatment. As stated in the Cancer and Poverty Report: Colorado 2001-2012, the poorest areas of the state have higher incidence rates of cancers of the oral cavity, pharynx, colon/rectum, lung and cervix. Overall 5-year cancer survival rates were 15 percent lower for persons living in the poorest areas compared to those living in the wealthiest areas of the state, and this disparity was seen in nearly all race/ethnicity, gender and age groups.[3]

[2] Colorado Central Cancer Registry.
[3] Colorado Central Cancer Registry and Vital Statistics Program, Colorado Department of Public Health and Environment.

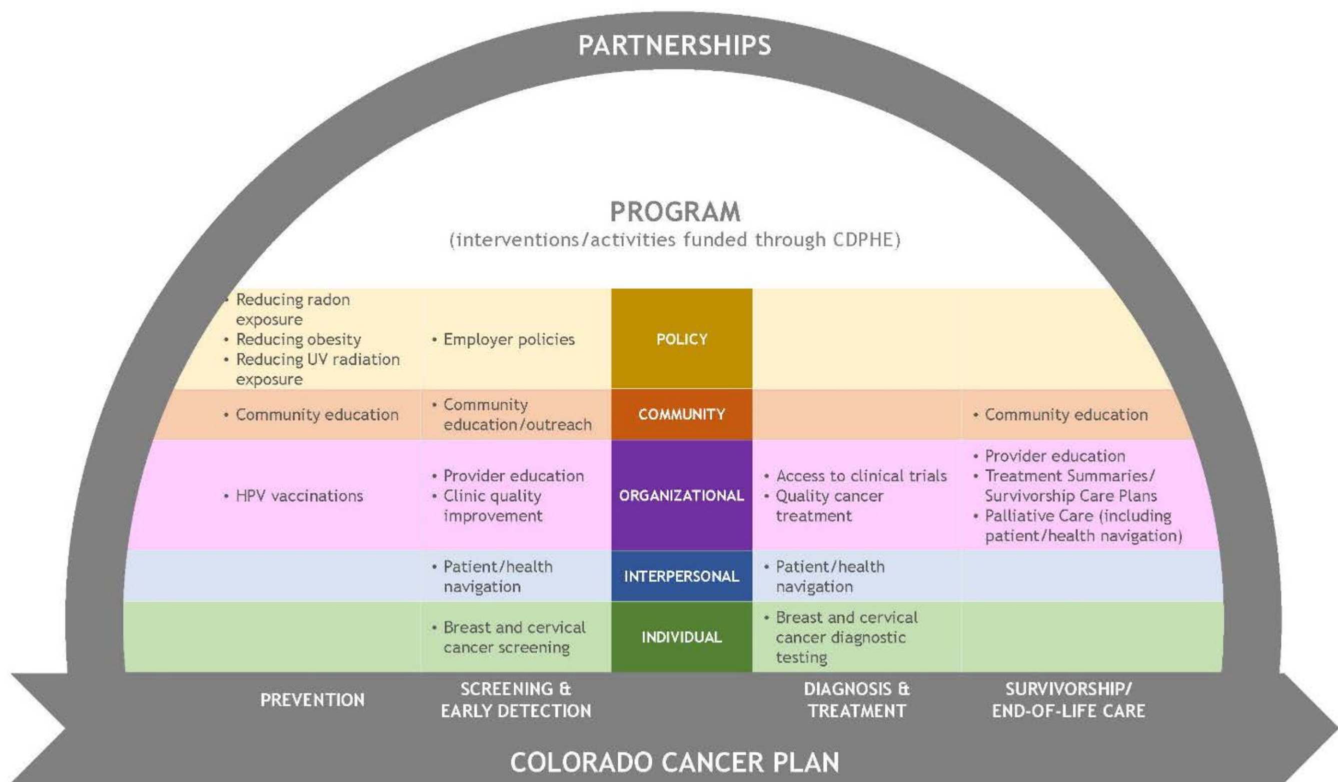
CDPHE acknowledges that generations-long social, economic, and environmental inequities result in adverse health outcomes. They affect communities differently and can have a greater influence on health outcomes than either individual choices or one's ability to access health care. Reducing health disparities through policies, practices, and organizational systems can help improve opportunities for all Coloradans.

A Three-Pronged Approach

CDPHE's three-pronged approach to address cancer prevention and control spans the cancer continuum of care and all levels of the Social Ecological Model[4] (see Figure 2).

- The [2016-2020 Colorado Cancer *Plan*](), which identifies evidence-based strategies to impact the state's cancer burden across all cancer types at all stages of the cancer continuum of care, serves as the foundation for CDPHE's cancer prevention and control efforts.
- Internal and external ***partnerships*** provide an overarching network of stakeholders to leverage resources to address the priorities identified in the cancer plan.
- Cancer-related ***program*** interventions and activities are implemented by organizations funded through CDPHE.

Figure 2. CDPHE's integrated approach to cancer prevention and control



CDPHE's "Partnership" and "Plan" approaches are based on long-standing working relationships and have historically been intertwined. The Colorado Cancer Coalition and the Colorado Cancer Plan have guided the prevention, treatment and control of cancer statewide for more than 20 years. The Colorado

[4] CDPHE utilizes the CDC's adaptations of the Social Ecological Models for CRCCP and NBCCEDP. See: https://www.cdc.gov/cancer/crccp/sem.htm and https://www.cdc.gov/cancer/nbccedp/sem.htm

Cancer Coalition formed in 1993, the first state cancer plan was unveiled in 1996 and Colorado began participating in the National Comprehensive Cancer Control Program (NCCCP) in 1998 with its own Comprehensive Cancer Program (CCCCP). This history of partnership and connection across the Coalition, the Cancer Plan and CCCCP have solidified the fundamental principles of collaboration, coordination and leveraging of resources. External partners that have played a critical role in the Coalition include the American Cancer Society (ACS), the University of Colorado Cancer Center, Komen Colorado and the Rocky Mountain Public Health Training Center, among others. Non-traditional partnerships are also being explored with external partners, including the Colorado Department of Corrections, CEO Cancer Gold and Health Links. CDPHE also leverages resources and expertise from internal partnerships through the Clinic Quality Improvement (CQI) Project, the built environment effort, the Immunization Program and the Radon Program.

CDPHE's "Program" approach is based on more traditional partnerships through provision of funding to health systems, community-based organizations and network organizations statewide to implement some of the cancer prevention and control interventions and activities. Two key funding sources for programmatic work are the Cancer Prevention and Early Detection (CPED) Program and Cancer, Cardiovascular and Pulmonary Disease (CCPD) Grants Program. Both programs prioritize efforts to increase health equity through funding decisions based on regional cancer burden and populations less likely screened for cancer.

- The CPED Program[5] aims to promote and improve prevention and early detection of breast, cervical and colorectal cancer among underserved Coloradans. This program, which replaces WWC's former breast and cervical cancer screening program with a more expansive approach that includes colorectal cancer,[6] is focused on increasing access to cancer screening and reducing screening disparities. CPED identified priority populations for each cancer type (breast, cervical, colorectal) that are less likely to be screened for breast, cervical or colorectal cancer and utilized this information to make funding decisions.[7] To ensure funded organizations are focused on health equity, organizations must complete an annual needs assessment and strategic planning process to identify disparities in the populations they serve and which cancer prevention and early detection interventions and activities (community outreach/education, health systems change through EBIs [clinic quality improvement], health navigation and/or breast and cervical cancer screening and diagnostic clinical services) may be best suited to help them address these needs. CDPHE has developed an interactive data resource to help organizations identify and direct their interventions to priority populations in their service area.
- The CCPD Grant Program[8] aims to reduce chronic disease in Colorado by providing a comprehensive approach that focuses on prevention, early detection and treatment for cancer, cardiovascular disease and chronic pulmonary disease. CCPD focuses on improving the health of Coloradans by building capacity and support for the implementation of chronic disease

[5] CPED is funded through pooled resources among WWC (NBCCEDP), and the Cancer Unit (NCCCP and CRCCP) to implement cancer prevention and early detection strategies. The first funding opportunity was released in 2017 and 46 health systems, network organizations and community-based organizations were funded beginning January 2018.
[6] Colorectal cancer-focused prevention and control interventions are only funded through CPED's Targeted Community Outreach and Clinic Quality Improvement strategies.
[7] Characteristics for priority populations differ by cancer type and were ordered from most to least impact on an individual's odds of being screened. Details on how priority populations were identified is described here: https://cohealthviz.dphe.state.co.us/t/HealthInformaticsPublic/views/RFACancerScreeningRankingsandRiskFactors/CancerRFA?:embed=y&:showShareOptions=true&:display_count=no&:showVizHome=no
[8] CCPD is funded through Colorado's Amendment 35 Tobacco Tax and has been in operation since 2005. The most recent awards provide funds for 18 grantees, three of which are working on cancer prevention and control strategies, beginning July 1, 2018.

prevention and health promotion. CCPD prioritizes funding for organizations that focus on reducing chronic disease in Colorado, specifically in populations most burdened by cancer, cardiovascular and pulmonary disease by using evidence-based strategies and/or evidence-informed innovative approaches. The program developed a Disease Disparity Index to rank Colorado counties based on combined chronic disease and cancer burden and socio-demographic data, and utilized this information to make funding decisions. CCPD cannot fund breast or cervical cancer interventions or activities. CCPD funded 10 initiatives for the prevention, early detection and treatment of cancer between July 2015 and June 2018, including increasing HPV vaccinations, reducing radon exposure, adherence to cancer screening guidelines, improving cancer survivorship, and reducing UV exposure and increasing active living through the built environment. CCPD awarded funding to seven initiatives for a three-year period from July 2018 to June 2021, and development of evaluation plans are currently in progress.

Reasoning for Integrated Approach

Multiple cancer programs at CDPHE have historically collaborated across organizational units to align efforts for increased impact. The Colorado Central Cancer Registry (CCCR), the Cancer Unit, WWC and CCPD have aligned their efforts with the Colorado Cancer Plan's prioritized objectives. The Colorado Cancer Control Leadership Team, comprised of representatives from CCCR, the Cancer Unit, WWC, and evaluation, has assisted in this collaboration since 2012. A noteworthy example of this integrated effort is the recent collaboration between two cancer organizational units within CDPHE's Prevention Services Division to create and implement the Cancer Prevention and Early Detection (CPED) Program described in the previous section.

1. **The Cancer Unit** implements work through four funding sources:
    - **The Colorado Comprehensive Cancer Control Program (CCCCP)**, funded through the NCCCCP (DP17-1701), works in partnership with the Colorado Cancer Coalition and numerous internal and external partners to identify statewide priorities for cancer prevention and control. In this capacity, CCCCP is instrumental in leveraging resources from the state's chronic disease and tobacco grants programs.
    - **The Colorectal Cancer Control Program (CRCCP)**, funded through CRCCP (DP15-1502), focuses primarily on the implementation of evidence-based interventions within health systems and communities that serve populations less-likely to be screened for colorectal cancer in Colorado. CRCCP was fundamental in piloting the Clinic Quality Improvement Project beginning in 2011. CQI expanded in 2015 to include multiple cancer and chronic disease measures.
    - **The Clinic Quality Improvement (CQI) initiative**, funded in part by CRCCP and WWC, houses the Cancer Health Systems Specialist position, which works to increase breast, cervical and colorectal cancer screening rates in health systems across Colorado.
    - **The Cancer, Cardiovascular Disease, and Pulmonary Disease Grants Program (CCPD)**, funded by Colorado's Amendment 35 Tobacco Tax funds, implements work from the Colorado Cancer Plan and is supported by staff housed within the Cancer Unit.

2. **The Women's Wellness Connection (WWC)**, Colorado's breast and cervical cancer program, is funded by both the NBCCEDP (DP17-1701) and Colorado's Amendment 35 Tobacco Tax funds. WWC's primary purpose is to increase breast and cervical cancer screening rates by funding organizations to provide direct services and health navigation to eligible low-income women. In alignment with recent changes to NBCCEDP and internal strategic planning efforts, WWC has more recently funded clinic quality improvement work in partnership with the CQI initiative to improve screening rates and funded community education and outreach to reach prioritized populations. WWC has traditionally partnered with the American Cancer Society and Komen Colorado, and participated in Coalition task forces to coordinate breast and cervical cancer screening efforts throughout the state.

In early 2017, these programs worked together with data teams from the Center for Health and Environmental Data (e.g., Public Health Informatics Program, Health Surveys and Evaluation, Colorado Central Cancer Registry, etc.), internal support teams (e.g., contracting, compliance, fiscal, etc.), and with input from chronic disease programs (WISEWOMAN, Chronic Disease and School Health, etc.), to take a progressive step toward a more comprehensive approach to cancer screening and early detection. This internal partnership enabled CDPHE to contribute to a broader, statewide cancer prevention and control effort and resulted in a new funding opportunity for external contractors: the Cancer Prevention and Early Detection (CPED) Program (discussed in the previous section). Through this collaboration, it also became apparent that many aspects of this integrated work—including evaluation—could, and should, be combined.

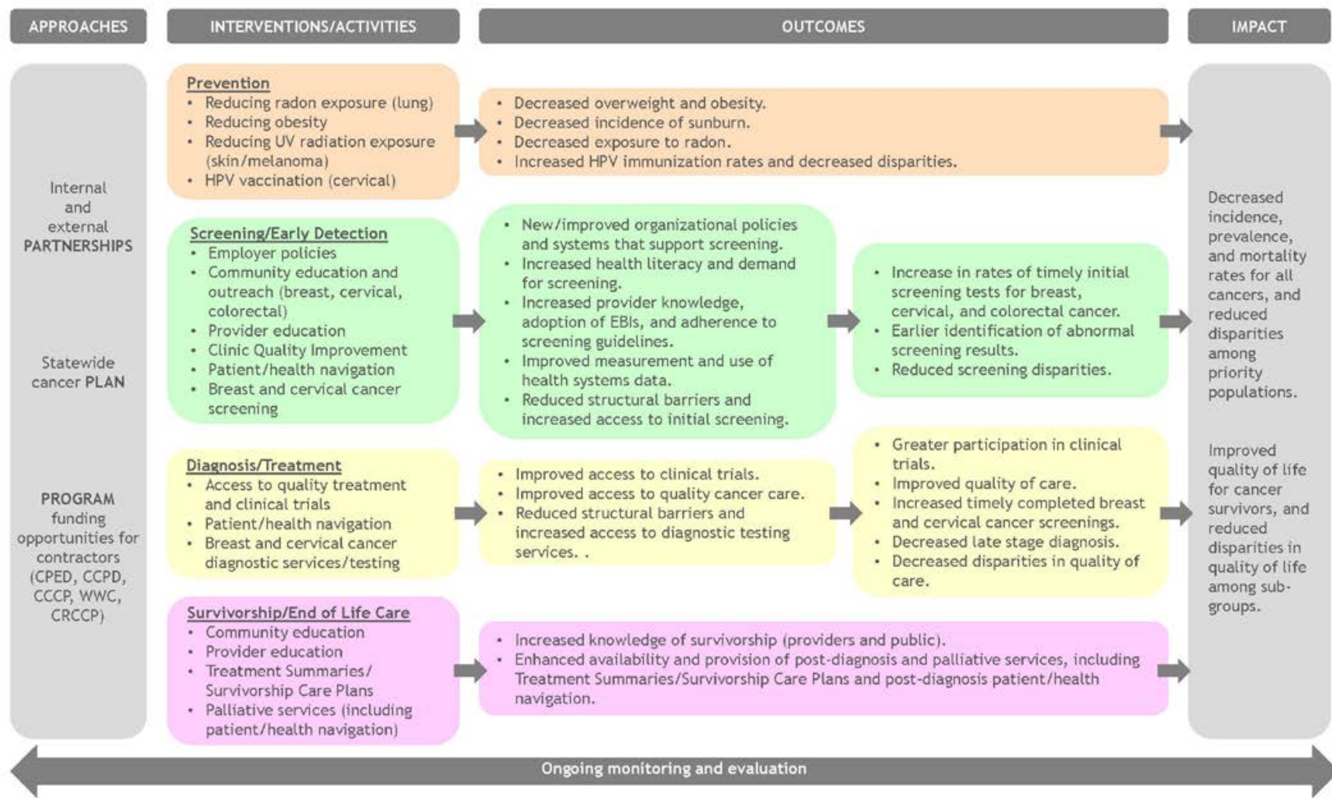
Logic Model

CDPHE's 17 interventions and activities[9] are organized by the four stages of the cancer continuum of care: Prevention, Screening/Early Detection, Diagnosis/Treatment and Survivorship/End-of-Life Care (Figure 3). Each intervention and activity differs in its scope, cancer focus, populations served, stage of implementation and timing.[10] Interventions may also span different approaches (partnerships, cancer plan and programs), continuum stages (e.g., health navigation is a single intervention that occurs uninterrupted through multiple stages of care) or funding sources (CPED, CCPD, and additional program funds).

[9] Health navigation and breast and cervical cancer screening/diagnostic services/testing are continuous interventions split between two stages of the cancer continuum of care (Screening/Early Detection, and Diagnosis/Treatment), resulting in 15 interventions and activities. Because they are displayed in both stages on this model, and because distinct activities and metrics can occur within each stage, each intervention is counted twice for our purposes, resulting in 17 total interventions.

[10] For instance, WWC has been implementing health navigation, community outreach and CQI interventions for breast and cervical cancer screening since 2015.

Figure 3. CDPHE Cancer Prevention and Control Logic Model



Not all interventions and activities will be evaluated. In the description below, those interventions and activities with performance measures are marked with a cross (†) and those that include focused evaluation questions are marked with an asterisk (*). Funding sources are included in parentheses. A detailed evaluation matrix can be found in Appendix C.

Prevention

- **Reducing radon exposure**† (CCCCP) is a policy-level activity in partnership with Colorado's Radon Program and the CCPD-funded Public Health Radon Reduction Roadmap (PH3) project to encourage cities and counties to include local building codes for radon-resistant features in new construction. To address health equity concerns, CCCCP will continue to work with the Colorado Radon Program and the Built Environment Specialist to encourage efforts that reduce exposure to radon in new AND existing construction using strategies with realtors, builders and city planners and officials to support environmental approaches to increasing testing, mitigation and radon resistant construction. This activity syncs well with Colorado's recently passed legislation to provide financial assistance to low-income individuals for radon mitigation in their homes.
- **Reducing obesity**† (CCCCP) is a policy-level activity through built environment work to encourage consideration of physical activity in urban design and land use policies through education and technical assistance to state and local communities. This activity is aligned with reducing UV radiation exposure as part of a larger strategy to improve healthy eating and activity living through built environment.
- **Reducing UV radiation exposure**† (CCCCP) is a policy-level activity through built environment work to encourage adoption of shade policy language in planning guidelines through education and technical assistance to city official, planners and community members. Improved shade

policies in park plans, increased access to shade, sunscreen use and smoke-free parks policies are aimed at reducing UV exposure and sunburn incidence.

- **HPV vaccination**† (CCCCP, CCPD) is an organizational-level intervention aimed at increasing vaccination rates among adolescents aged 13-17. By leveraging partnerships with CDPHE's Immunization Unit to align strategies across state and local agencies and piloting HPV vaccination with the Clinic Quality Improvement Project, CDPHE aims to increase preventive service adherence rates. This intervention will focus on clinics and health systems that serve underserved populations (Federally Qualified Health Centers and other safety-net clinics) as recent data suggests that populations near poverty have lower HPV vaccination rates and disparities in cervical cancer outcomes. This intervention aligns with the Colorado Cancer Plan (Objective 3.2) and the HPV Vaccination Task Force. The CCPD Grant Program has also funded four organizations to implement strategies to improve vaccinations within their communities.

Screening and Early Detection

- **Employer policies** (CCCCP, WWC) is a policy-level partnership activity to encourage employers to adopt policies aimed at removing barriers to cancer screening services. CDPHE is currently focusing efforts on internal collaborations with state departments, but may, in the future, explore the possibility of partnerships with external organizations and programs such as CEO Cancer Gold, ACS Workplace Solutions and Health Links.
- **Community education and outreach**†* (CPED, CCPD, CCCCP) is a community-level intervention to increase health literacy and increase access to health care services. CDPHE funds multiple interventions to increase health literacy and access to cancer screenings:
    - CPED's *Targeted Community Outreach** strategy funds community-based organizations and health systems to provide education in the community about breast, cervical and colorectal cancer prevention and early detection. Additionally, this intervention enables community health workers to provide direct assistance to eligible women to access breast and cervical cancer screening services at a health system.
    - CCCCP and CCPD community outreach activities are aimed at raising awareness and increasing health literacy about cancer risk in general.
- **Provider education** (CCCCP, WWC, CRCCP, CPED, CCPD) is a community-level activity aimed at increasing awareness and knowledge of current cancer screening guidelines. CCCCP, WWC and CRCCP will partner with the Colorado Cancer Genetics Alliance, the Coalition's Family History and Genetics Task Force and Screening Coordination Committee, and the Rocky Mountain Public Health Training Center to offer provider trainings. CCPD and CPED also provide technical assistance, direct training and access to training funds for their respective grantees.
- **Clinic Quality Improvement (CQI)**†*[11] (CPED, WWC, CRCCP) is an organizational-level intervention that funds evidence-based changes in administrative and clinical processes, policies, and protocols; utilizes health information technology to improve cancer prevention and early detection; and increases capacity of health systems to monitor performance and implement targeted interventions. CQI offers multiple activities and intervention options. Appropriate selection of interventions is based on the funded organization's structure, existing activities, etc. The CQI initiative also works across multiple chronic disease programs funded through CDPHE.

[11] The CQI Project is also funded by chronic disease programs to engage health systems in improving chronic disease rates.

- **Health navigation**[12]†* (CPED, CCPD, CCCCP) is an interpersonal intervention providing navigation services to help eligible clients into timely and complete cancer services. This intervention is aimed at reducing disparities by helping underserved clients overcome health care system barriers and facilitate timely access to quality services. This intervention spans two stages of the cancer care continuum (Screening and Early Detection, Diagnosis and Treatment). CDPHE funds two navigation interventions and one activity:
  - Breast and cervical cancer:†* CPED funds health systems for the *Health Navigation* strategy to navigate eligible[13] women into timely and complete breast and cervical cancer screening services, including diagnostic services/testing (see Diagnosis and Treatment below). This strategy is aimed at reducing disparities by helping eligible women overcome barriers. CPED will also collaborate with Colorado Cancer Screening Program (CCSP) to closely align work and data points.
  - Colorectal cancer: CCPD funds CCSP to navigate eligible clients through colorectal cancer screening.
  - Assessment of care quality: CDPHE will assess the current state of quality of care, services (including availability and quality of health navigation) to help determine next steps. This will include post diagnosis experience and integration of health navigation as it relates to quality of care and services.
- **Breast and cervical cancer screening**† (CPED), CPED's *Clinical Services* strategy, is an individual-level intervention aimed at reducing disparities by reducing out-of-pocket costs of screening for eligible[14] women. This intervention is only funded in combination with CPED's *Health Navigation* strategy and also includes diagnostic services/testing (see Diagnosis and Treatment below).

Diagnosis and Treatment

- **Access to Quality Treatment and Clinical Trials** (CCCCP) is an organizational-level intervention aimed at reducing disparities. CDPHE will assess the current state of quality of care and services (including access/participation in clinical trials) to help determine next steps. This will include assessment of current registry and other data on disparities in cancer clinical trial availability, systems, access and enrollment.
- **Health navigation**†* (CPED, CCPD) continues navigation services for clients with abnormal results into timely and complete diagnostic services and testing to the point of treatment referral. This intervention spans two stages of the cancer care continuum (Screening and Early Detection, Diagnosis and Treatment).
  - Breast and cervical cancer:†* CPED funds health systems for the *Health Navigation* strategy to navigate eligible[15] women through breast and cervical cancer diagnostic services and testing.
  - Colorectal cancer: CCPD funds CCSP to navigate eligible clients through colorectal cancer diagnostic services and testing.

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[12] "Health Navigation" is the official CDPHE term that refers to the patient navigation strategy.
[13] Eligible populations for this intervention are lawfully present in the United States (if applicable),(below 250 percent of the federal poverty level, and within age guidelines (40-64 for breast cancer screening and 21-64 for cervical cancer screening)
[14] Eligible populations for intervention are uninsured or underinsured women, who are lawfully present in the United States (if applicable), are below 250 percent of the federal poverty level and within age guidelines 450-64 for breast cancer screening and 21-64 for cervical cancer screening).
[15] Eligible priority populations for this intervention are based on income (below 250 percent of the federal poverty level), age (50-64 for breast cancer screening and 21-64 for cervical cancer screening) and lawful presence (if applicable).

- **Breast and cervical cancer diagnostic testing** (CPED) is the same intervention as the *Clinical Services* strategy mentioned under Screening and Early Detection. This intervention is the continuation of diagnostic services and testing to the point of treatment referral.

Survivorship and End-of-Life Care

- **Community education** (CCCCP) is a community-level intervention to increase health literacy and awareness of survivor resources.
- **Provider education**† (CCCCP) is an organizational-level intervention that provides training and information to health professionals and paraprofessionals about cancer survivors.
- **Treatment Summaries/Survivorship Care Plans (TS/SCPs)**† (CCCCP) is an organizational-level activity aimed at improving survivor quality of life. CDPHE will partner with the American College of Surgeons, Commission on Cancer, University of Colorado Cancer Center and Coalition task forces to complete a statewide assessment of hospital systems and oncology centers regarding processes related to TS/SCPs to identify gaps and needs.
- **Palliative Services (including health navigation)**† (CCCCP) is an organizational-level activity aimed at improving survivor quality of life. CDPHE will partner with ACS, University of Colorado, oncology centers/hospitals, American College of Surgeons and Coalition task forces to assess post-diagnosis and palliative services, gaps, processes, grants and best practices, as well as funding levels to include: patient navigation, genomics, cancer self-management programs/tools (including links back to primary care), smoking cessation for survivors, and clinical trials.

Evaluation Focus

Step 3: Focus Evaluation Design

The evaluation focus was determined through an evaluation planning process with the Evaluation Stakeholder Workgroup (ESW) to identify both shared and program- or cancer-specific priority areas for evaluation. In determining this focus, the ESW considered the stage of implementation and evaluability of the intervention or activity. Previous evaluation of continuing interventions (particularly CPED strategies related to targeted outreach, health navigation and health systems change) also provided useful context for determining evaluation priority. Consideration of changes to how and for whom these interventions and activities are implemented beginning in June 2018 has also informed evaluation needs.

The evaluation of Colorado's cancer work is guided by two overarching questions:

1. **How do CDPHE's combined cancer prevention and control efforts impact Coloradans?**
2. **How do CDPHE's combined cancer prevention and control efforts help to reduce health disparities and increase health equity?**

Focused evaluation will be conducted across all three approaches (Partnership, Plan and Program) to better understand:

1. **Partnership:** Internal and external partner experiences and perceptions, including CDPHE program staff, funded contractors and Coalition members.
2. **Plan:** The value and use of Colorado's statewide cancer plan.
3. **Program:** The process and outcomes of specific interventions within the "Screening and Early Detection" and "Diagnosis and Treatment" stages, including:

- The factors that contribute to successful outcomes of **community education and outreach.**
- The process, experience, value and outcomes of **CQI** among participating health systems.
- The processes by which health systems are providing **health navigation** to insured and uninsured individuals, and the degree to which funding is appropriately allocated by CDPHE.

Specific performance measures have been established for 12 of the 17 interventions and activities and will be monitored over time to understand and describe the process and outcomes of CDPHE's cancer prevention and control work.

The evaluation matrix provides a detailed description of all performance measures and evaluation questions (Appendix C). Additional evaluation questions of interest were also identified in the planning process and will be revisited in future revisions of this plan (Appendix B, Table 3). Each year, or as needed, the ESW will review and prioritize evaluation needs based on performance measurement data, program maturity, and the information needs identified by stakeholders.

Data Collection

Step 4: Gather Credible Evidence

Given the goals and evaluation questions described herein, the evaluation will require a mixed methods approach to data collection. The evaluation and data teams at CDPHE are experienced in both qualitative and quantitative research methods and will employ them appropriately to gather reliable evidence, including original and existing data. Specific evaluation activities may be conducted by multiple partners across CDPHE, including evaluators and epidemiologists (HSEB), data managers and informatics professionals (PHIP), program management and staff (WWC, CCCCP, CRCCP) or funded contractors; responsibilities are noted in the evaluation matrix (Appendix C).

Baseline data for performance measures related to new interventions and activities will be collected or established during the first year of this collective effort, which occurs approximately between July 2018 and June 2019, or when data are available. A sample of key data sources and use includes:

- **Individual-level data** collected monthly through the Electronic Cancer Surveillance Tracking (eCaST) web application for breast and cervical cancer screening services to individual clients for breast and cervical cancer screening clinical services, and health navigation interventions.
- **Aggregate data** collected twice annually through progress reports for services provided to women reached through CPED's Targeted Community Outreach strategy.
- **Clinic-level data** collected annually via EHR-reported screening rates as part of the CQI Project and/or CPED's CQI strategy. EHR-reported screening rates are validated through a chart-review process as needed. These data are stored centrally in an Access database (Clinic Quality Measures, cQM).
- **Self-reported and opinion** data collected from various sources, including:
    - **Progress reports** (via online survey) administered twice yearly to CPED-funded organizations.
    - **Online surveys** administered every two years or as needed to:
        - Organizations funded through any programs in the Health Services and Connections branch to gather feedback about their experience working with CDPHE.

    - Internal and external partners to collect perspective and behavior data about partnerships, and the value and use of the Colorado Cancer Plan.
  - **Focus groups/key informant interviews** administered as needed with funded organizations, as well as internal and external partners, to understand perspectives about facilitators and barriers to implementation of cancer prevention and control interventions, such as health navigation and targeted community outreach as well as success stories, partnership experience/opinion and unanticipated outcomes/lessons learned.
- **Program-level administrative documents,** reviewed as needed, including notes from meetings, check-in calls, site visit reports, funding applications and contracts.
- **Surveillance data** from existing sources, including the Colorado Cancer Registry and population health datasets, such as the Behavior and Risk Factor Surveillance System (BRFSS), monitored as available.

A complete list of potential data sources, descriptions and use is included in Appendix D.

Data Analysis and Interpretation

Step 5: Justify Conclusions

Assessment of process and outcomes indicators will occur continuously throughout the length of intervention implementation. Analysis of measures will be used for quality assurance, to inform best practices along the way and to measure the outcomes and impact of CDPHE's overall cancer prevention and control efforts.

The evaluators, epidemiologists, informaticians, and other data managers who comprise the CHED data teams possess complimentary skills that will ensure successful implementation of the overall evaluation. Where needed, longitudinal data sets (e.g., cQM, eCaST) will be developed and/or updated, which will feed into visualizations of performance measures using Tableau. Quantitative analysis will be conducted using Statistical Package for the Social Sciences (SPSS) or Statistical Analysis Software (SAS). Analysis of quantitative data will be dependent on the type of data collected and may include descriptive statistical analyses (frequencies, cross tabulations of eCaST and other individual-level data, as well as survey responses), and statistical testing (i.e., T-tests, ANOVA, linear regression, etc.) where appropriate. A Data Management Plan for two primary datasets is included in Appendix E.

The evaluation team will also maintain and analyze qualitative data such as key informant interviews, focus groups, open-ended survey responses and program administrative data such as site visit and routine check-in reports. These qualitative data will be maintained across multiple years and thematically analyzed using Atlas.ti as needed.

Data will be analyzed based on specific timelines identified in the evaluation matrix (Appendix C) to make judgments about the implementation and outcomes of the strategies pursued. Because the evaluation will be using a mixed methods approach, evidence patterns will be detected by isolating important findings and combining different sources of information to reach a larger understanding. The ESW will be highly engaged in this aspect of evaluation, and their standards and values will be considered to ensure that conclusions are justified then used for continuous quality improvement.

Dissemination and Use

Step 6: Use and Share Lessons Learned

Results from ongoing evaluation efforts will guide cancer prevention and control efforts at CDPHE. Initial findings will be shared with program staff and key program stakeholders on a rolling basis to identify technical assistance and training needs across multiple programs; these continuous feedback loops will also help to provide necessary feedback about the evaluation accuracy or enable course corrections when needed. Such use will also enable programs to make ongoing improvements and ensure annual work plans reflect the lessons gleaned in the previous year.

Evaluation findings will be shared with the ESW regularly as available to maintain stakeholders' values identified throughout the early stages of evaluation planning and to gain feedback about the results; the ESW will also be engaged to help determine needs for revising future measurement and evaluation. Performance measures will be updated at regular intervals as defined in the evaluation matrix (Appendix C) and will be shared using custom Tableau dashboards for various stakeholder groups.

Final evaluation reports, including recommendations, will be shared with relevant stakeholders as they are completed, including the ESW, internal partners at CDPHE and external partners such as the Colorado Cancer Coalition. These reports will also be shared at least annually with funded organizations by posting results on CDPHE website, sharing in e-newsletters to contractors and/or presenting results at meetings with advisory committees and funded contractors. The CDPHE evaluation, informatics and/or program teams will develop presentations for delivery at annual meetings such as the American Public Health Association (APHA) and the American Evaluation Association (AEA) when relevant. These reports and any results will also be shared annually or as available with the CDC as part of performance reporting.

Through evaluation, surveillance and continuous performance measurement of the CDPHE's cancer programs, we will be able to closely track the interventions being implemented through this integrated approach to increase the promotion and reinforcement of evidenced-based practices related to prioritized cancer prevention and control activities with a strong focus on breast, cervical, colorectal cancers.

Evaluation Timeline

The evaluation plan is intended to be a living document that guides the overall measurement and evaluation of CDPHE's collective cancer prevention and control efforts. This plan describes a cross section of multiple strategies implemented across multiple programs with intersecting timelines dependent upon program implementation as well as surveillance data.

Initial evaluation activities will include ongoing data collection for continuing interventions/activities to inform process measures and short-term outcomes. Evaluation planning will also continue during this timeframe, particularly the development and testing of data collection instruments and data analysis plans for new or revised interventions/activities. Future evaluation and performance measurement activities will focus on assessing the mid-term and longer-term outcomes of implemented interventions.

Timelines for specific evaluation activities are noted in the Evaluation Matrix (Appendix C).

Appendix A: Acronyms and Definitions

The following acronyms and definitions are used in this evaluation plan.

- **BRFSS:** Behavior and Risk Factor Surveillance System.
- **CCCCP:** Colorado's Comprehensive Cancer Control Program, funded through the National Comprehensive Cancer Control Program (NCCCP).
- **CCPD:** Cancer, Cardiovascular and Chronic Pulmonary Disease Grants Program.
- **CCSP:** Colorado Cancer Screening Program, a health navigation intervention funded in part through the CCPD Grants Program. (Formerly known as the Colorectal Cancer Screening Program.)
- **CDC:** Centers for Disease Prevention and Control.
- **CDSH:** Chronic Disease and School Health, Colorado's State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health program.
- **CDPHE:** Colorado Department of Public Health and Environment.
- **CHED:** Center for Health and Environmental Data, a division within CDPHE.
- **CPED**: Cancer Prevention and Early Detection program. Through CPED, CDPHE (WWC and CRCCP) funds organizations to implement strategies to address cancer prevention and early detection at one or more levels of the socio-ecological framework, depending on the needs of the underserved population served by and living within the service area of the organization.
- **CRCCP:** Colorectal Cancer Control Program, funded by the CDC through DP15-1502.
- **cQM:** Clinic Quality Measures database
- **CQI:** Clinic Quality Improvement for Population Health Project.
- **CS:** Clinical Services.
- **DOCK:** The data reporting system for the CCPD program's contracted evaluator.
- **eCaST:** Electronic Cancer Surveillance Tracking system.
- **ESW:** Evaluation Stakeholder Workgroup.
- **HIDS:** Health Informatics Data System, which houses eCaST and other data collection and reporting systems.
- **HKCS:** Healthy Kids Colorado Survey.
- **HSEB:** Health Surveys and Evaluation Branch, a branch within CDPHE's CHED division.
- **MDE:** Minimum Data Element.
- **NBCCEDP:** National Breast and Cervical Cancer Early Detection Program, a cooperative agreement funded by the CDC through DP17-1701.
- **NCCCP:** National Comprehensive Cancer Control Program, a cooperative agreement funded by the CDC through DP17-1701.
- **PHIP:** Public Heath Informatics Program.
- **PIU:** Primary Intended User.
- **HN:** Health Navigation.
- **PiER Center:** the contracted evaluator for the CCPD grants program.
- **PSD:** Prevention Services Division, a division within CDPHE.
- **PSE:** Policy, Systems and Environment.
- **TABS:** The Attitudes and Behavior Survey on Health.
- **TCO:** Targeted Community Outreach.
- **WWC:** Women's Wellness Connection, Colorado's breast and cervical cancer screening program funded through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and Colorado Amendment 35 (Tobacco tax) funds.

Additional definitions related to Cancer Prevention and Control work at CDPHE can be found at: https://www.colorado.gov/pacific/cancerplan/program-manual

Appendix B: Evaluation Planning Process

Staff from the Health Surveys and Evaluation Branch (HSEB) in the Center for Health and Environmental Data (CHED) convened an evaluation stakeholders group (ESW) to facilitate evaluation planning for integrated cancer prevention and control efforts. This decision to evaluate CDPHE's integrated approach to cancer work resulted from earlier discussions with CDPHE's breast and cervical (WWC), colorectal (CRCCP) and comprehensive cancer (CCCCP) programs as they began to work through details of a new funding collaboration, the Cancer Prevention and Early Detection Program (CPED). Through conversations with the program managers, it became apparent that evaluation of integrated cancer work could be much broader than originally planned. With a broader vision in mind, the ESW was created with the aid of subject matter experts, grant monitors, data experts and program managers. Table 1 lists all ESW members who participated in the two workshops as well as positions planned for recruitment. Additionally, Esperanza Ybarra, Branch Chief of the Health Services and Connections Branch, where WWC is housed, also offered feedback on an early draft of the evaluation plan.

Table 1. Evaluation Stakeholder Workgroup (ESW)

Name	Title/Position	Organization
Christi Cahill	Cancer Outreach Specialist	CDPHE
Gabby Elzinga	CQI Evaluator, Center for Health and Environmental Data	CDPHE
Sara Grassmeyer	Health Systems Specialist	CDPHE
Ivy Hontz	Program Coordinator, Women's Wellness Connection	CDPHE
Emily Kinsella	Section Manager, Women's Wellness Connection	CDPHE
Christen Lara	Data Quality and Analytics Manager, Public Health Informatics Program	CDPHE
Shannon Lawrence	Lead Cancer Evaluator, Center for Health and Environmental Data	CDPHE
Westley Lighthall	Cancer Health Systems Specialist	CDPHE
Kris McCracken	Program Coordinator, Women's Wellness Connection	CDPHE
Kristin McDermott	Evaluation Unit Manager, Center for Health and Environmental Data	CDPHE
Krystal Morwood	Manager, Cancer Unit	CDPHE
Becky Selig	Cancer Program Specialist	CDPHE
Patricia Uris	Senior Consultant for Health Care Innovation, Health Navigation Workforce Development	CDPHE
To be recruited by November 2018	Leadership team member to be determined by Coalition	Colorado Cancer Coalition
To be recruited by November 2018	Representative from funded organization (rural region)	To be determined by funded organization
To be recruited by November 2018	Representative from funded organization (urban region)	To be determined by funded organization
To be recruited by November 2018	CCPD representative	To be determined by external partner

ESW members participated in two large-group workshops. Workshops were designed to engage the ESW in group discussions about the use and priorities of the evaluation in a sequential fashion:

1. September 15, 2017: This workshop focused on describing all components of the integrated cancer work, including stage of development, plans for revisions to current work, and overlap between traditionally siloed programs. The ESW made the decision to frame cancer prevention and control efforts across the cancer continuum of care, and brainstormed possible evaluation areas. Following this workshop, the evaluation team led several small-group meetings with subject-matter experts, strategy leads and program managers to describe the program and develop a logic model/theory of change, and brainstorm priority evaluation questions. ESW members were asked to review and provide feedback on the larger logic model independently.

2. November 29, 2017: This workshop focused on priority setting. ESW members individually ranked evaluation questions for each of the selected interventions and results were aggregated in real time. Top priorities were established across the entire evaluation. The ESW prioritized evaluation questions based on applicability to program decision-making (e.g., areas that would most directly inform cancer work, build on previous findings, and enable data-driven decision-making), evaluability (e.g., general readiness, such as stage of intervention implementation, and access to measurement) and evaluation resources. Following this workshop, the evaluation team circulated a draft evaluation and performance measurement plan to the ESW for review and feedback and incorporated ESW input. In January 2018, the integrated approach to cancer was also shared with the BCCSP Advisory Board and with CPED-funded organizations during two Post-Award Meetings. The finalized evaluation and performance measurement plan was submitted to the CDC on January 31, 2018 and will be updated as needed (annually at minimum) to reflect necessary updates and new priorities.

The ESW will reconvene at least annually to review data findings, disseminate important evaluation results, and set new priorities for evaluation. Additional stakeholders who may have an interest in these findings are listed in Table 2.

Table 2. Cancer Prevention and Control Stakeholders

Stakeholder	Role/Stake	Program Operations	Served/ Affected by Program	Primary Intended User
CDC (NBCCEDP, NCCCP, NCRCCP)	Funder	X		X
Colorado Taxpayers	Funder		X	
CDPHE Prevention Services Division Leadership Team	Oversight	X		X
Cancer Control Leadership Team	Oversight	X	X	X
BCCSP Advisory Board	Oversight	X	X	X
Women's Wellness Connection	Core program	X		X
Comprehensive Cancer Control Program	Core program	X		X
Colorectal Cancer Control Program	Core program	X		X
Clinic Quality Improvement Project	Core program	X		X
Health Surveys and Evaluation Branch	Core program	X		
Public Health Informatics Program	Core program	X		X
Funded healthcare organizations	Core program	X	X	X
Funded network organizations	Core program	X	X	X
Funded community-based organizations	Core program	X	X	X
Colorado Central Cancer Registry	Internal partner	X	X	
Colorado Cancer Genetics Alliance	Internal partner		X	
WISEWOMAN	Internal partner		X	
Chronic Disease and School Health Program	Internal partner		X	
Colorado Cancer Coalition	External partner		X	
American Cancer Society	External partner		X	
Rocky Mountain Public Health Training Center	External partner		X	
University of Colorado Cancer Center	External partner		X	
Komen Colorado	External partner		X	
Komen Colorado South	External partner		X	
Health First Colorado (Medicaid)/Colorado Department of Health Care Policy and Financing	External partner		X	
Regional Accountable Entities	External partner		X	
Colorado Department of Corrections	*External partner*		*X*	
CEO Cancer Gold	*External partner*		*X*	
Health Links (Colorado School of Public Health)	*External partner*		*X*	
Colorado Cancer Caucus	Legislative		X	
Colorado women ages 21-64, <250% FPL, lawfully present	Eligible		X	
All Coloradoans	Eligible		X	

Many other areas of interest were discussed during the evaluation planning workshops, but were not prioritized for immediate evaluation. These evaluation questions are listed in Table 3 for future consideration.

Table 3. Additional Evaluation Questions Considered

APPROACH Intervention/ Activity	Evaluation Questions
PARTNERSHIPS	• How successful are efforts at developing non-traditional external partnerships? What external partnerships and/or collaborations were fully established during the project period? What were the facilitators and barriers to establishing partnerships? • Who are our non-traditional partners? Who's missing to help move cancer strategies forward? • How successful were partnership efforts aimed at increasing employer policies regarding screening? • Who is already working with employers? What work are they doing? Where are the employers we should work with? • Who is missing from our efforts? Who should we pursue? How can we engage others? • Is our role at CDPHE helping/hindering funded contractors? Are the CDPHE expectations worth the work/administrative burdens?
PLAN	• Is the 5-year cancer plan a high quality plan? To what extent are stakeholders involved in development of plan? To what extent does the cancer plan use cancer burden data to identify priorities? Is the scope statewide vs regional? Are relevant/appropriate objectives aligned to goals? What is the evaluability of the cancer plan? Is the cancer plan easily accessible?
PROGRAM Targeted Community Outreach	• Are funded contractors implementing community outreach with fidelity to program guidance? • Are funded contractors providing outreach services to women most in need of screening, and as defined through the CPED application and/or Assessment and Planning process? • To what extent are funded contractors utilizing data to monitor their outreach efforts and adjusting as needed? • Are funded contractors satisfied with the assistance they receive from CDPHE? • What resources are needed to provide community outreach? What accounts for cost variances? • What client barriers do we see most often for insured women? What client barriers do we see most often for uninsured women? Which client barriers are hardest to address?
Clinic Quality Improvement	• Access to screening and quality of care (COMP PPO/AO 5): Do efforts to implement EBIs in clinics and health systems result in improved health care provider practices and systems to support screening in general and quality screening in particular? • What clinic or project characteristics were associated with improved measures, or lack thereof? • What clinic characteristics are associated with high levels of engagement in the project? • What, if any, policy and systems changes in partner health systems that support improved access to CRC screening did the award support?* • How long do clinics participate in CQI? Why/when do they stop engaging? • What cost savings are produced by increases in cancer screening rates related to EBIs implemented in CQI? • In what ways do the activities in each phase of the CQI process add value, or not add value, to clinics/health systems?* • How has the implementation of EHR evidence based interventions impacted the clinics ability to use data? What change resulted from the implementation of the four EBIs? How have these changes helped to monitor the progress and use of data?* • What motivates clinics/health systems to initially engage in the CQI project? • What packages of EBIs do health systems select? How do packages of EBIs impact screening rates differently than individual EBIs?
Patient/ health navigation	• How much time does it take funded contractors to conduct navigation? How much time is needed to achieve success? Does time vary based on populations served? If so, why? • Are we changing how health systems do navigation with all their clients, as a result of our funding for navigation of specified and priority populations? • What barriers/facilitators exist at the clinic/health system-level when providing navigation to address client barriers? (structure, workflows, etc.) • Does the average time for completion of breast screening services differ for African American women compared to other women?

Appendix C: Evaluation Matrix

This living document details the evaluation activities and performance measures for CDPHE's integrated breast, cervical and colorectal cancer programs. This matrix covers the five-year period from June 30, 2017 to June 29, 2022 and includes both single- and multi-year priorities for evaluation and performance measurement determined by the ESW. This evaluation matrix will be revised annually to reflect the changing priorities of CDPHE's cancer work.

This matrix can be used as follows:

SECTIONS: The evaluation matrix is divided into three primary sections that mirror CDPHE's three-pronged approach to cancer prevention and control: Partnerships, Plan and Program. The Program section also includes four sub-sections organized by the stages of the cancer continuum of care: Prevention, Screening/Early Detection, Diagnosis/Treatment, and Survivorship/End-of-Life Care. Each sub-section includes prioritized **interventions or activities** that will be monitored or evaluated.

PERFORMANCE MEASUREMENT TABLES: This plan includes process and outcome performance measures for each aspect of cancer work funded at CDPHE that will be monitored over the evaluation period. Progress will be tracked as available and updates reported annually or as needed. Each performance measure table includes a description of the intended purpose for that measure or set of measures. Measures are primarily intended to track data over time to monitor program progress and/or inform one or more of the following questions:

1. What is the reach of CDPHE's cancer prevention and control efforts?
2. What is the effectiveness of CDPHE's cancer prevention and control efforts?

Performance measurement data are collected from various surveillance sources, including population health surveys (e.g., BRFSS, HKCS, TABS, etc.) and other surveillance systems such as the Colorado Cancer Registry, the Colorado Immunization Information System (CIIS) and Environmental Public Health Tracking (EPHT). Additionally, program records, including individual-level data (MDEs, collected through eCaST) and clinic-level data (collected through cQM and/or the Assessment and Planning process), will be assessed as needed. Performance measurement tables include the following descriptive columns:

- **Report:** the CDC-funded program(s) receiving data reports. Reporting method may be included in parentheses (MDE, B&C-BARS, C-BARS), if applicable.
- **Frequency:** the interval with which information will be reported.[16]
- **Lead:** the person responsible for reporting data.
- **Focus:** the cancer type or site, if applicable.
- **Measure/Indicator:** the description of the metric being used.
- **Source:** the source from which data is being collected (e.g., eCaST, survey, focus group/interview, administrative data, etc.).
- **Baseline:** the quantifiable measurement and type (e.g., percentage, volume, etc.), including the year.
- **Target:** the quantifiable measurement and type (e.g., percentage, volume, etc.), including the year.
- **CDC Strategy:** the strategy identified by the CDC for 17-1701 awards, if applicable.
- **EBI:** the evidence-based intervention associated with the measure for 17-1701 awards, if applicable.

[16] Performance measures relying on data from population health surveillance systems will be reported based on availability. Additionally, some performance measures will align with activities funded through CDPHE grant programs, including CPED or CCPD. Thus, reporting timeframes may occur beyond the defined scope of this evaluation plan.

EVALUATION QUESTIONS TABLES: Focused evaluation questions are included only for specific interventions and activities within the Partnership and Plan approaches, and in the Screening and Early Detection and Diagnosis and Treatment sections of the Program approach, as these efforts were prioritized for evaluation by the ESW. Evaluation tables include the following descriptive columns:

- **Report:** the CDC-funded programs receiving reports. Reporting method will be by evaluation report unless otherwise noted.
- **Evaluation Question:** the specific question(s) related to that evaluation.
- **Indicators:** the metrics that define what is being evaluated (e.g., "Success" "reach" "representation," etc.) and that will be used to answer the evaluation question.
- **Methods:** the data source, data collection and analysis methods used to inform the indicators and data range, if applicable. The individual(s) or units responsible for conducting this work are noted in parentheses.
- **Timing/Use:** The range during which evaluation findings will be analyzed and disseminated, and for what purpose.

LIST OF TABLES

Table	Program			Type		Approach			Stage				Cancer Focus						Strategy (if applicable)
	NCCCP	NBCCEDP	CRCCP	Performance Measure	Evaluation Question	Partnership	Plan	Program	Prevention	Screening & Early Detection	Diagnosis & Treatment	Survivorship/ End-of-Life Care	Breast	Cervical	Colorectal	Lung	Skin	All/other	
Table 1-1	X			X		X												X	
Table 1-2	X	X			X	X												X	
Table 2-1	X			X			X											X	
Table 2-2	X				X		X											X	
Table 3-1	X			X				X	X							X			
Table 3-2	X			X				X	X									X	
Table 3-3	X			X				X	X								X		
Table 3-4	X			X				X	X					X					
Table 3-5	X				X			X	X					X		X			
Table 3-6A	X	X	X	X				X		X			X	X	X				Community Education & Outreach
Table 3-6B		X			X			X		X			X	X	X				Community Education & Outreach
Table 3-7A		X	X	X				X		X			X	X	X				Clinic Quality Improvement
Table 3-7B	X	X	X		X			X		X			X	X	X				Clinic Quality Improvement
Table 3-8A		X		X				X		X			X	X					Health Navigation
Table 3-8B		X			X			X		X			X	X					Health Navigation
Table 3-9		X		X				X		X			X	X					Cancer Screening
Table 3-10		X		X				X			X		X	X					Health Navigation
Table 3-11	X			X				X				X						X	Provider education
Table 3-12	X			X				X				X						X	Treatment Summaries/Survivorship Care Plans
Table 3-13	X			X				X				X						X	Palliative Care (including Health Navigation)

SECTION 1: PARTNERSHIP APPROACH *(3 performance measures; 4 evaluation questions)*

TABLE 1-1. PARTNERSHIP PERFORMANCE MEASURES *n=3*

These performance measures will inform CDPHE about the reach and engagement of external partners with statewide cancer prevention and control efforts.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	Annual	C. Cahill	All	Percent of Coalition members actively engaged in task forces	Admin records	0 (FY16-17)	10% (FY18-19)	Partnership	N/A
NCCCP	Annual	C. Cahill	All	Number of new Coalition newsletter subscribers	Admin records	116 (FY16-17)	250 (FY18-19)	Partnership	N/A
NCCCP	Annual	C. Cahill	All	Volume of Coalition website traffic (total number of views)	Web analytics	19,230 (FY16-17)	36,500 (FY18-19)	Partnership	N/A

TABLE 1-2. PARTNERSHIP EVALUATION QUESTIONS

Report	Evaluation Question	Indicator(s)	Methods (Lead)	Timing/Use
NCCCP	1. How successful are our partnerships through the Colorado Cancer Coalition? How do partners (members) perceive the Coalition? (Process)	• Engagement and motivation self-indicated by interview or survey respondents. • Perceptions of coalition organization (structure, practice, appropriate work/focus) self-indicated by KIIs/focus groups with Coalition leadership, key members and key cancer stakeholders not involved in the Coalition and/or survey respondents. • Satisfaction self-indicated by KII/focus group or survey respondents.	• Descriptive and thematic analysis of the interview/focus group or survey responses. [HSEB/S. Lawrence]	October 2017: Cancer symposium evaluation will inform Coalition interest and priorities. June 2019: KIIs will inform CCC about engagement/ motivation to help direct Coalition recruitment efforts. Initial finding will also help determine next steps and methods to be used in future data collection. 2020, 2022: Focus group and/or survey findings will inform Coalition leadership and steering committee regarding ongoing Coalition partnership needs.
NCCCP	2. What is the membership of the Colorado Cancer Coalition? Does the Coalition membership represent Colorado's population and cancer needs, including those characteristics and affiliations identified by the CDC? What representation is missing? (Process)	• Characteristics/affiliations listed in CD-MIS, such as: ○ Number and percent of Coalition members representing specific regions (rural/frontier, urban), populations (race/ethnicity, gender, survivors), cancer types, cancer stages, etc. ○ Number and percent of Coalition members by role/position, expertise and organizational affiliation	• Descriptive analysis (frequencies) of Coalition members [CCCCP/B. Selig, C. Cahill with HSEB consult]	Fall 2018: Initial membership assessment only will identify the characteristics/affiliations to help Coalition leadership and steering committee direct recruiting efforts. Fall 2020, 2022: Membership assessment will help to inform progress toward closing gaps in membership needs.

TABLE 1-2. PARTNERSHIP EVALUATION QUESTIONS				
Report	**Evaluation Question**	**Indicator(s)**	**Methods (Lead)**	**Timing/Use**
NBCCEDP NCCCP	3. Has the integrated approach to cancer prevention and control at CDPHE been successful, including the CPED program? What are the facilitators and barriers to success? (Process)	• Percentage of funded organizations reporting high levels of satisfaction with the CPED program. • Percentage of funded organizations reporting improved experience with CDPHE as a result of the CPED program. • Percentage of organizations demonstrating improved performance serving priority populations (e.g., women served, screening rates, intervention fidelity, etc.). • Percentage of organizations demonstrating improved performance with grant management (e.g., meeting spending targets, deadlines, deliverables, etc.). • Successes self-indicated by funded organizations and/or internal partners. • Barriers self-indicated by funded organizations and/or internal partners. • Perceptions of CPED Program (structure, priorities, effectiveness, facilitators and barriers) self-indicated by CPED funded organizations, external partners and internal partners, including those no longer funded.	• Descriptive and thematic analysis of responses from biannual HSCB contractor survey and exit interviews [HSCB & HSEB/S. Lawrence] • Document review of administrative records (e.g., site visit reports, screening rates, spending performance, CMS ratings, etc.) [WWC/ I. Hontz, K. McCracken with HSEB consult] • Thematic analysis of responses from focus group and/or KIIs with funded organizations or internal or external partners (if needed) [HSEB, S. Lawrence]	December 2018 & 2020: Findings will inform successes and areas in need of improvement for CDPHE's cancer prevention and control coordinated efforts.
NBCCEDP	4. Are organizations funded through CPED reaching the highest areas of need for priority populations? What gaps still exists? (Process)	• Percent of CPED-funded organizations serving counties with a high proportion of individuals at risk for not being screened (by CPED strategy if applicable) • Percent of women served who reside in counties with a high proportion of individuals at risk for not being screened • Percent of women served who have one or more characteristics associated with being at risk for not being screened • Distribution of clients served by characteristics associated with being at risk for not being screened	• Descriptive analysis of eCaST data and administrative records [HSEB/R.Wauters PHIP/C.Lara]	December 2019: Planning, trial analysis and data collection/analysis refinement December 2020, 2021, 2022: Findings will inform program improvement and funding decisions.

SECTION 2: PLAN APPROACH *(3 performance measures; 2 evaluation questions)*

TABLE 2-1. PLAN PERFORMANCE MEASURES

n=3

These performance measures will inform CDPHE about the reach and engagement with the Colorado Statewide Cancer Plan.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	Annual	C. Cahill	All	Number of Coalition members engaged in the Cancer Plan Steering Committee	Admin records	12 (FY15-16)	12 (FY18-19)	N/A	N/A
NCCCP	Annual	C. Cahill	All	Percent increase in volume of Cancer Plan website traffic	Web analytics	0% (FY17-18)	10% (FY21-22)	N/A	N/A
NCCCP	Annual	B. Selig	All	Number of periodic assessments of data gaps	Admin records	0 (FY17-18)	3 (FY21-22)	Data and Surveillance/ Health equity	N/A

TABLE 2-2. PLAN EVALUATION QUESTIONS

Report	Evaluation Question	Indicator(s)	Methods (Lead)	Timing/Use
NCCCP	1. How, and to what extent, do Colorado cancer professionals use the statewide Colorado Cancer Plan to inform their work? (Process)	• Number/percentage of respondents reporting high value of cancer plan in key informant interviews/focus groups and/or survey conducted every other year • Type of use self-indicated by respondents	• Descriptive and thematic analysis of survey and/or KII/focus group responses [HSEB/S. Lawrence]	February 2019: Partner with Cancer Plan Steering Committee to determine best methods to assess needs for new cancer plan. January - December 2020: Findings from KIIs/focus groups and/or survey will identify priorities and potential gap areas to inform the development of the next statewide cancer plan, which is used to prioritize Coalition/task force and/or CDPHE work/resources.
NCCCP	2. What are the key accomplishments that task forces have made toward cancer plan goals and objectives? (Process and Outcome)	• Number of task force and Coalition meetings • Number and type of actions/projects completed • Percentage point increase towards cancer plan targets	Document review of administrative reports; Descriptive and thematic analysis of task force progress (CCCCP/B. Selig, C. Cahill]	January 2019, 2020, 2021, 2022: Findings will inform Coalition and cancer partners about work accomplished and help inform Coalition/task force priorities.

SECTION 3a: PROGRAM APPROACH | Prevention *(4 interventions/activities; 6 performance measures; 1 evaluation question)*

TABLE 3-1. REDUCING RADON EXPOSURE PERFORMANCE MEASURES

This performance measure will inform progress toward adoption of building codes that address radon exposure.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	1x/year	B. Selig	Lung	Number of building codes implemented that require radon-reducing features in new single-family homes[17]	EPHT	26 (2016)	30 (2022)	Environmental approaches	Reduce exposure to radon in new or existing construction

TABLE 3-2. REDUCING OBESITY PERFORMANCE MEASURES

This performance measure will inform impact of efforts aimed at reducing obesity and overweight.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	Every 2 years (even)	B. Selig	Obesity	Percentage of adults ages 18+ who are overweight and obese	BRFSS	58.1%[18] (2016)	55% (2022)	Environmental approaches	Community-scale urban design and land use policies to increase physical activity

TABLE 3-3. REDUCING UV RADIATION EXPOSURE PERFORMANCE MEASURES

n=2

These performance measures will inform behavior change and outcomes related to sun safety.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	1x/year	B. Selig	Skin	Rate of melanoma incidence per 100,000 people	CCCR	21.6% (2016)	20% (2022)	Environmental approaches	Multi-component community interventions to influence UV-protective behavior and prevent skin cancer
NCCCP	Every 2 years (even)	B. Selig	Skin	Adults with at least one sunburn in the past year	BRFSS	20.2%[19] (2016)	18% (2020)	Environmental approaches	

TABLE 3-4. HPV VACCINATION PERFORMANCE MEASURES

n=2

These performance measures will inform behavior change related to HPV vaccinations.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	1x/year	B. Selig	Cervical	Adolescent female HPV vaccination rate (ages 13-17) up-to-date	NIS-TEEN	42.1% (2016)	50% (2022)	Health systems change	Health care system-based interventions implemented in combination to increase appropriate vaccination
N/A	1x/year	B. Selig	Cervical	Adolescent male HPV vaccination rate (ages 13-17) up-to-date	NIS-TEEN	21.9% (2016)	30% (2022)	N/A	N/A

[17] Due to the available data, Colorado will use the performance measure stated, which replaces NCCCP LIDS indicator: New single-family homes constructed with radon-reducing features, especially in high-radon-potential areas.
[18] This rate replaces the 57.4 baseline rate (BRFSS 2014) recorded in Colorado's NCCCP Year 1 work plan. This updated rate shows a gain of .7 percentage points from 2014.
[19] This rate replaces the 37.5 baseline rate (BRFSS 2014) recorded in Colorado's NCCCP Year 1 work plan. The way this question was asked has changed since 2014. Therefore, a new target will be developed.

TABLE 3-5. PREVENTION EVALUATION QUESTIONS

Report	Evaluation Question	Indicator(s)	Methods (Lead)	Timing/Use
NCCCP	1. **What are the evaluation findings for CCPD's cancer prevention activities?**	• TBD by contractor/PiER Center[20] for cross-cutting indicators and indicators by cancer focus (if available): • Lung cancer (radon exposure) • Skin cancer (built environment) • Obesity (built environment) • HPV vaccination	• TBD by contractor/PiER Center	September 2018: Contractor and grantee final reports will inform progress and outcomes 2015-18 grant cycle. January 2019: Evaluation plan finalized for 2019-2021 grant cycle will inform evaluation scope and targets.

[20] CCPD's new funding cycle began in July 2018 and evaluation planning is underway. Evaluation Plans are expected to be finalized by June 2019.

SECTION 3b: PROGRAM APPROACH | Screening/Early Detection

(4 interventions/activities; 48 performance measures, 13 evaluation questions)

TABLE 3-6A. COMMUNITY EDUCATION AND OUTREACH PERFORMANCE MEASURES *n=11*

These performance measures will inform CDPHE about the reach and effectiveness of community education and outreach interventions to reduce health disparities.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NBCCEDP	1x/year (August)	S. Lawrence	Breast, Cervical	Among women who received direct assistance through CPED TCO strategy, percentage who accessed a health care system	TCO Data Portal and/or eCaST	49% (FY17-18)	80% (FY18-19)	Community-clinical linkages	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP	1x/year (August)	S. Lawrence	Breast	Among women who received direct assistance through CPED TCO strategy, percentage who completed a mammogram	TCO Data Portal and/or eCaST	48% (FY17-18)	80% (FY18-19)	Community-clinical linkages	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP	1x/year (August)	S. Lawrence	Cervical	Among women who received direct assistance through CPED TCO strategy, percentage who completed a Pap test	TCO Data Portal and/or eCaST	28% (FY17-18)	61% (FY18-19)	Community-clinical linkages	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP	1x/year (August)	S. Lawrence	Breast	Among women who received direct assistance through CPED TCO strategy and completed an initial mammogram, percentage who indicated that direct assistance greatly improved their ability to obtain a mammogram	Client self report	TBD August 2019	90% (FY18-19)	Community-clinical linkages	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP	1x/year (August)	S. Lawrence	Cervical	Among women who received direct assistance through CPED TCO strategy and completed a Pap test, percentage who indicated that direct assistance greatly improved their ability to obtain a Pap test	Client self report	TBD August 2019	90% (FY18-19)	Community-clinical linkages	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP	1x/year (July)	S. Lawrence	Breast, Cervical, Colorectal	Number of organizations funded to implement the CPED TCO strategy[21]	Admin. records	13 (FY17-18)	13 (FY18-19)	Program management, partnerships	Small media Group education 1:1 education Reducing structural barriers Reducing out-of-pocket costs
NBCCEDP, CRCCP	1x/year (August)	S. Lawrence	Breast, Cervical, Colorectal	Number of community organizations receiving presentations, trainings, and distribution of information about cancer risk factors and screening guidelines by organizations funded for the TCO strategy	Progress reports	209 (FY17-18)	200 (FY18-19)	Community-clinical linkages	Small media Group education
NBCCEDP, CRCCP	1x/year (August)	S. Lawrence	Breast, Cervical, Colorectal	Number of community education events (for cancer risk factors and screening guidelines) held or participated in by organizations funded for the TCO strategy	Progress reports	262 (FY17-18)	200 (FY18-19)	Community-clinical linkages	Small media Group education

[21] This includes health systems and community-based organizations funded through CPED as well as tribal organizations funded through separate contracts.

TABLE 3-6A. COMMUNITY EDUCATION AND OUTREACH PERFORMANCE MEASURES

n=11

These performance measures will inform CDPHE about the reach and effectiveness of community education and outreach interventions to reduce health disparities.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NBCCEDP	1x/year (August)	S. Lawrence	Breast, Cervical	Number of women receiving direct assistance through CPED TCO strategy	Progress reports, TCO Data Portal	1,088 (FY17-18)	2,000 (FY18-19)	Community-clinical linkages	1:1 education Reducing structural barriers Reducing out-of-pocket costs
NCCCP CRCCP NBCCEDP	1x	C. Cahill	Colorectal, Breast, Cervical	Total reach of radio advertisements related to SE Colorado screening text messaging campaign pilot	Admin. records	0 (FY17-18)	TBD (FY18-19)	Community-clinical linkages, Partnerships (CCSP and CCC)	Small media
NCCCP CRCCP NBCCEDP	1x	C. Cahill	Colorectal, Breast, Cervical	Total number of subscribers to SE Colorado screening text messaging campaign pilot	Admin. records	0 (FY17-18)	50 (FY18-19)		

TABLE 3-6B. COMMUNITY EDUCATION AND OUTREACH EVALUATION QUESTIONS

Report	Evaluation Question	Indicator(s)	Methods (Lead)	Timing/Use
NBCCEDP	1. How do organizations implement CPED's Targeted Community Outreach (TCO) strategy? (Process) • What are the different methods utilized to deliver community outreach and direct assistance? • How are women in priority populations identified within communities?	• Types and description of community education methods used by each funded organization (e.g., locations, partners, events self-identified by funded organizations). • Type and description of methods used to provide direct assistance. • Factors informing outreach strategy decision-making self-identified by funded organizations. • Type and description of strategies used to identify women in need of direct assistance.	• Thematic analysis of open-ended responses provided in July 2019 progress report (survey). [HSEB/S. Lawrence] • Summative description of outreach methods utilized by organizations. [HSEB/S. Lawrence] • Thematic analysis of focus group/ interviews (if needed). [HSEB/S. Lawrence]	August 2019: Findings will inform programmatic decisions about best approaches for identifying populations in need of outreach.
NBCCEDP	2. Among organizations funded for the TCO strategy, what barriers prevent outreach workers from getting into the community? (Process)	• Barriers self-identified by funded organizations.		

TABLE 3-6B. COMMUNITY EDUCATION AND OUTREACH EVALUATION QUESTIONS				
Report	**Evaluation Question**	**Indicator(s)**	**Methods (Lead)**	**Timing/Use**
NBCCEDP	3. What populations are served by organizations funded for the TCO strategy? • To what extent are priority populations and identified sub-populations being served through the TCO strategy? 4. Among women served through CPED's Targeted Community Outreach (TCO) strategy, what factors contribute to women accessing a health system and/or completing initial screening procedures (Pap tests and/or Mammograms)? What factors continue to be barriers among the priority population?? (Process) • To what extent do organization characteristics or outreach methods contribute to completion of initial screening procedures?	• Number, percent and combination of potential predictors of interest, such as: location of first client encounter (or how client heard about TCO), type of assistance received, number of contacts, length of direct assistance, type of organization providing direct assistance, • Number, percent and combination of client characteristics among women receiving direct assistance through TCO strategy, such as: age, ethnicity, race, county of residence, insurance status, previous access to screening, barriers reported. • Number, percent and combination of organizational characteristics, such as: organization rate of success, outreach methods implemented [1], number of outreach workers or budget size, • Parameter estimates derived from regression analyses representing the effect of organizational characteristics, outreach methods, and population characteristics on health system access and screening completion.	• Descriptive analysis (frequencies/crosstabs) of values reported in the TCO Data Portal to define and determine predictors of interest [HSEB/R. Wauters & I. Danielson] • Inferential analysis (principal component analysis and/or multiple regression, TBD) to determine predictive sets of characteristics in determining successful screening outcomes [HSEB/I .Danielson & R. Wauters] • Thematic analysis of progress report open-ended responses (if needed). [HSEB/S. Lawrence] • Document review of budgets/invoices, site visit reports, and other administrative data (if needed). [WWC/I. Hontz and K. McCracken].	January 2019. Findings from this trial run will be used to inform the formal analyses scheduled in FY19-20. October 2019. Additional dates TBD if needed. Findings will inform programmatic decisions about best methods for conducting outreach and inform guidance included in the program manual.

TABLE 3-7A. CLINIC QUALITY IMPROVEMENT PERFORMANCE MEASURES *n=11*

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
CRCCP	Every 2 years	B. Selig	Colorectal	Rate of colorectal cancer screening among men and women in Colorado ages 50-75	BRFSS	67.7% (2016)	80% (2020)	Data and surveillance	N/A
CRCCP	Every 2 years	B. Selig	Colorectal	Rate of colorectal cancer screening among men and women in poverty (<250% FPL) in Colorado	BRFSS	57.8% (2016)	67.8% (2020)	Data and surveillance	
CRCCP	Every 2 years	B. Selig	Colorectal	Rate of colorectal cancer screening among men and women who live in rural or frontier counties in Colorado	BRFSS	57% (2016)	70% (2020)	Data and surveillance	
CRCCP	Every 2 years	B. Selig	Colorectal	Rate of colorectal cancer screening among men and women who have Medicaid in Colorado	BRFSS	52.3% (2016)	51.8% (2020)[22]	Data and surveillance	
CRCCP	Every 2 years	B. Selig	Colorectal	Rate of colorectal cancer screening among Hispanic/Latino men and women ages 50-75 in Colorado	BRFSS	55.3% (2016)	65% (2020)	Data and surveillance	
CRCCP	1x/year	G. Elzinga	Colorectal	Percent of CQI-participant health systems with at least one year of substantive work on colorectal cancer screening that have improved their colorectal cancer screening rate since baseline	cQM	0% (FY17-18)	50% (FY19-20)	Health systems change (Enhancing Service Delivery Using Evidence-Based Interventions)	All
NBCCEDP	1x/year	G. Elzinga	Cervical	Percent of CQI-participant health systems with at least one year of substantive work on cervical cancer screening that have improved their cervical cancer screening rate since baseline	cQM	0% (FY17-18)	50% (FY19-20)		
NBCCEDP	1x/year	G. Elzinga	Breast	Percent of CQI-participant health systems with at least one year of substantive work on breast cancer screening that have improved their breast cancer screening rate since baseline	cQM	0% (FY17-18)	50% (FY19-20)		
NBCCEDP CRCCP	1x/year	S. Grassmeyer	Breast, Cervical, Colorectal	Number of CQI-participant health systems working on cancer-related work funded through CPED	Admin data	0 (FY17-18)	3 (FY18-19)	Program management, partnerships	N/A
				Number of CQI-participant health systems working on cancer-related work funded through non-CPED sources	Admin data	10 (FY17-18)	0 (FY21-22)		
NBCCEDP CRCCP	1x/year	S. Lawrence	Breast, Cervical, Colorectal	Percent decrease of CQI-participant health systems working on cancer-related work funded through non-CPED sources	Admin data	0% (FY17-18)	100% (FY21-22)		

[22] The Colorado Cancer Plan target for 2020 (51.8%) was exceeded. A new target (or a plan for setting a new target) will be revised in the next iteration of the statewide cancer plan.

TABLE 3-7B. CLINIC QUALITY IMPROVEMENT EVALUATION QUESTIONS				
Reporting	**Evaluation Question**	**Indicator**	**Methods (Lead)**	**Timing/Use**
CRCCP, NBCCEDP	1. How do measures of cancer screening change over time amongst CQI-participant health systems? (Outcome)	By cancer type: • Number/percent of health systems who experienced statistically significant improvements to targeted clinical outcome measures (i.e., cancer screening rates, etc.) from baseline, by years of CQI participation • Number/percent of health systems who experienced statistically significant improvements to targeted clinical outcome measures (i.e., cancer screening rates, etc.) from baseline, by activity/EBI implemented • Average change in targeted clinical outcome measures (i.e., cancer screening rates, etc.) from baseline	Descriptive and inferential analysis (i.e., paired T-test) using EHR-reported data [HSEB/G. Elzinga]	
CRCCP, NBCCEDP	2. To what extent do health systems participating in CPED's CQI strategy increase implementation of established, evidence-based best practices for primary care? (Outcome)	• Of eligible health systems, number/percent of health systems that have adopted and follow a nationally recognized screening guideline system-wide • Of eligible health systems, number/percent of health systems that have developed a policy and/or standard workflow for delivering age- and risk-appropriate colorectal cancer screening tests • Of health systems using colonoscopy as their primary colorectal cancer screening test at baseline, number/percent of health systems that use FIT/FOBT or FIT-DNA as their primary colorectal cancer screening test post-implementation • Of eligible health systems, number/percent of health systems that have developed a policy and/or standard workflow for closed loop referrals to targeted internal or external programs (i.e., specialty care for follow-up cancer screening, lifestyle interventions, etc.) • Among eligible health systems, average percentage increase in number of closed loop referrals to targeted internal or external programs (i.e., specialty care for follow-up cancer screening, lifestyle interventions, etc.)* • Of eligible health systems, number/percent of health systems that have improved utilization of best practices for team-based care from baseline • Among eligible health systems, average change in care team utilization of staff (i.e., medical assistants, nurses, lay-persons, etc.) to their maximum skill and practice authority • Of eligible health systems, number/percent of health systems that routinely collect and share patient experience data with staff (i.e., patient satisfaction, average wait time, no show rates, etc.) • Among eligible health systems, average change in self-reported, estimated staff time spent delivering primary care services (per patient or patient encounter type) from baseline* • Successes, barriers, and lessons learned from CQI implementation	• Descriptive analysis of program data (pre- and post-implementation) [HSEB/G.Elzinga] • Thematic analysis of interviews/focus groups and open-ended survey responses [HSEB/G.Elzinga]	October 2020: Outcomes will be reported to CDC and CDPHE-related programs to determine impact
CRCCP, NBCCEDP	3. Do CQI-participating health systems build and sustain meaningful Health Information Technology (HIT) infrastructure?	• Of health systems reporting inaccurate rates at baseline, number/percent of health systems that are able to accurately report cancer screening rates and chronic disease control measures post-implementation • Of health systems without a registry at baseline, number/percent of health systems who have successfully created a registry in their EHR to identify, track, and monitor patients eligible for cancer screening and/or other targeted areas in preventive care	• Descriptive analysis of EHR data, chart reviews and program data [HSEB/G.Elzinga]	

TABLE 3-7B. CLINIC QUALITY IMPROVEMENT EVALUATION QUESTIONS

Reporting	Evaluation Question	Indicator	Methods (Lead)	Timing/Use
		• Of health systems without a closed loop referral system at baseline, number/percent of health systems who have established a documented, closed loop referral system within their HER • Of health systems not documenting demographic data at baseline, number/percent of health systems that document patient demographic information (i.e., race/ethnicity, income, payor, etc.) in their EHR • Of eligible health systems, number/percent of health systems that implement provider reminder and recall systems within their EHR		
CRCCP, NBCCEDP	4. To what extent do CQI-participant health systems build and sustain a culture of quality improvement within their organization?	• Of eligible health systems, number/percent of health systems who have developed a patient experience program and/or routinely utilize patient experience data as a part of their quality improvement efforts • Of health systems who self-report limited leadership buy-in pre-implementation, number/percent of health systems who have achieved buy-in from health system leadership (i.e., their Chief Medical Officer actively participates in QI activities, delegates funding to QI work, etc.) • Of health systems without a designated QI champion/lead at baseline, number/percent of health systems who have designated a QI champion/lead post-implementation • Of health systems not sharing data with staff at baseline, number/percent of health systems who actively, routinely share clinical outcome measures with all staff • Number/percent of health systems who experienced improvements in their staff-reported organizational culture of quality improvement • Of eligible health systems, number/percent of health systems who fully implement provider assessment and feedback system-wide	• Thematic analysis of interviews/focus groups and open-ended survey responses [HSEB/G.Elzinga] • Descriptive analysis of EHR data, chart reviews and program data [HSEB/G.Elzinga]	
CRCCP, NBCCEDP	5. How is CQI leveraging opportunities and partnerships to help participant health systems meet national guidelines and goals?	• Number/percent of health systems that were able to leverage their work with CQI to meet goals for recognition, accreditation, or certification programs (i.e., PCMH, DSME, etc.) • Description of collaboration and integration efforts between CQI program staff and internal and external partners	• Descriptive analysis of survey and program data, and thematic analysis of focus group/focused conversations. [HSEB/G.Elzinga]	
NCCCP	6. What are the evaluation findings for CCPD's clinical system quality improvement activities related to cancer?	• TBD by contractor/PiER Center[23]	• TBD by contractor/PiER Center	January 2019: Evaluation plan finalized

[23] CCPD's new funding cycle began in July 2018 and evaluation planning is underway. Evaluation Plans are expected to be finalized by June 2019.

TABLE 3-8A. HEALTH NAVIGATION PERFORMANCE MEASURES

n=10

The following measures will help to inform the reach and effectiveness of the health navigation intervention for insured and uninsured women.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NBCCEDP	2x/year	M.Milzner	Cervical	Percentage of Pap test with follow up indicated that complete follow-up (overall, and by insurance status)	eCaST/ HIDS	87.9%[24] (FY16-17)	>=90%	Health system change (Direct Screening and Patient Navigation)	Reducing structural barriers Reducing out-of-pocket costs 1:1 education
NBCCEDP	2x/year	M.Milzner	Cervical	Percentage of Pap tests with follow up indicated and completed where the time between the Pap test/referral and final diagnosis was > 60 days (overall, and by insurance status)	eCaST/ HIDS	87.6%[22] (FY16-17)	<=25%		
NBCCEDP	2x/year	M.Milzner	Cervical	Percentage of abnormal Pap tests with complete follow up (overall, and by insurance status)	eCaST/ HIDS	81.0%[22] (FY16-17)	>=90%		
NBCCEDP	Monthly, 1x/year	M.Milzner	Breast	Percentage of abnormal breast screenings with complete follow-up (overall, and by insurance status)	eCaST/ HIDS	94.5%[22] (FY16-17)	>=90%		
NBCCEDP MDE	2x/year				eCaST/ MDEs[25]	93.7%[22] (FY16-17)			
NBCCEDP	Monthly, 1x/year	M.Milzner	Breast	Percentage of abnormal breast screenings where the time between the screening/referral and final diagnosis was > 60 days (overall, and by insurance status)	eCaST/ HIDS	6.0%[22] (FY16-17)	<=25%		
NBCCEDP MDE	2x/year				eCaST/ MDEs	5.4%[22] (FY16-17)			
NBCCEDP	1x/year	M.Milzner	Breast, cervical	Number of additional unique women who have ONLY received patient navigation support into and through the screening process AND were not included in the NBCCEDP-funded screening estimates [testing was reimbursed through other sources (e.g., state funds, private insurance, Medicaid, Medicare, etc.)] (overall, and by insurance status)	eCaST	6,387 (FY16-17)	7,040 (FY18-19)		
NBCCEDP	1x/year	E.Kinsella	Breast, cervical	Number of organizations funded to implement the CPED Health Navigation & Clinical Services strategy for uninsured and underinsured women	Admin data	36 (FY16-17)	36 (FY18-19)	Program management, partnerships	
NBCCEDP	1x/year	E.Kinsella	Breast, cervical	Number of organizations funded to implement the CPED Health Navigation strategy for insured women	Admin data	24 (FY16-17)	24 (FY18-19)		

[24] The numbers included here demonstrate the overall rate for insured and uninsured clients combined. When reporting measures, these percentages will be broken down as indicated.

[25] The numbers generated here represent those calculated through the preliminary MDE core performance indicator report that CDPHE submits to CDC, which is produced from CDC's MDE Edits application.

TABLE 3-8B. HEALTH NAVIGATION EVALUATION QUESTIONS

Reporting	Evaluation Question	Indicator	Methods (Lead)	Timing/Use
NBCCEDP	1. How are organizations funded for the Health Navigation (HN) strategy providing navigation to clients? (Process) a. Where does navigation happen most frequently in the screening cycle? b. What is the process and who is responsible for conducting each component of health navigation (barrier assessment, client reminders, etc.)? c. Is health navigation being implemented with fidelity to CPED program guidance?	• Description and timing of navigation components and processes self-reported by funded organizations through interviews, surveys and visuals (e.g., flow chart) • Percent of funded organizations implementing HN and undergo data chart reviews who are adhering to CPED program guidance	• Document review of site visits, data chart reviews (client barrier assessment tool documentation), process flow charts, etc. [WWC/I. Hontz, K. McCracken with HSEB consult] • Descriptive and thematic analyses of administrative documents and past progress reports [HSEB/S. Lawrence] • Thematic analysis of focus group or interviews (if needed). [HSEB/S. Lawrence]	August 2019: Determine implementation fidelity at individual organizations, identify TA needs to improve program administration.
NBCCEDP	2. What client barriers are most common for women being navigated? (Process) a. Which barriers are the most difficult to address, and why? b. How do barriers vary between insured and uninsured populations?	• Client barriers self-identified by funded organizations • Challenges to addressing client barriers self-identified by funded organizations • Differences in barriers among demographics self-identified by funded organizations • Number and type of barriers most commonly noted in sample of client charts	• Document review and/or descriptive analysis of data chart reviews and site visit reports. [WWC/I. Hontz, K. McCracken with HSEB consult] • Thematic analysis of open-ended responses in progress reports and/or focus group or interviews. [HSEB/S. Lawrence] • Descriptive and thematic analysis of survey to funded organizations regarding records not meeting diagnostic work-up indicators. [HSEB/S. Lawrence]	January 2020: Identify most common barriers and best practices to identify TA needs.
NBCCEDP	3. Is CDPHE reimbursing funded organizations appropriately for implementing health navigation? Are funds being leveraged correctly? (Process)	• Indicators TBD by Contractor [M. Whittington]	• Cost analysis [M. Whittington, contracted Economic Evaluator]	July 2019: Determine appropriate reimbursement amount for HN work to inform funding formula/budgeting, and identify any follow up needs.

TABLE 3-9. CANCER SCREENING PERFORMANCE MEASURES *n=16*

These performance measures will inform the effectiveness and reach of breast and cervical cancer screening interventions, including CPED's Clinical Services strategy.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NBCCEDP	Every 2 years	B.Selig	Breast	Rate of Colorado women ages 50+ who had a mammogram within the last two years	BRFSS	71.7% (2016)	81.1% (2020)	Data and surveillance	N/A
NBCCEDP	Every 2 years	B.Selig	Breast	Rate of Colorado women ages 50+ in poverty (under 250% FPL) who had a mammogram in the last two years	BRFSS	63.9% (2016)	81.1% (2020)	Data and surveillance, Health equity	N/A
				Rate of Colorado women ages 50+ who live in rural or frontier counties who had a mammogram in the last two years	BRFSS	63.6% (2016)	81.1% (2020)		
				Rate of Colorado women ages 50+ who have Medicaid who had a mammogram in the last two years	BRFSS	71.1% (2016)	81.1% (2020)		
NBCCEDP	Every 2 years	B.Selig	Breast	Rate of Colorado women ages 40-49 who had a mammogram within the last two years	BRFSS	58.6% (2016)	63.4% (2020)	Data and surveillance	N/A
NBCCEDP	Every 2 years	B.Selig	Cervical	Rate of Colorado women ages 21-65 who had a Pap test within the last three years	BRFSS	80.7% (2016)	93% (2020)	Data and surveillance, Health equity	N/A
				Rate of Colorado women ages 21-65 who live in rural or frontier counties who had a Pap test within the last three years	BRFSS	78% (2016)	93% (2020)		
				Rate of Colorado African American women ages 21-65 who had a Pap test within the last three years	BRFSS	83.1% (2016)	93% (2020)		
NBCCEDP	1x/year	M. Milzer	Cervical	Percentage of initial program Pap tests provided to never/rarely screened women	eCaST/ HIDS	45.4% (FY16-17)	>=20%	Health equity	Reducing out of pocket costs
					eCaST/ MDEs[26]	47.9% (FY16-17)			
NBCCEDP	1x/year	M. Milzer	Breast	Percentage of NBCCEDP funded mammograms provided to women 50 years of age and older	eCaST/ HIDS	65.4% (FY16-17)	>=75%	Program management	Reducing out of pocket costs
					eCaST/ MDEs	63.0% (FY16-17)			
NBCCEDP	1x/year	M. Milzer	Breast, cervical	Number of women who received at least one NBCCEDP-funded clinical service: Mammogram, Clinical Breast Exam, Pap test, HPV test, or Diagnostic service.	eCaST Monthly report	4,233 (FY16-17)	4,743 (FY18-19)	Health systems change (Direct Screening and Patient Navigation)	Reducing out of pocket costs
			Breast	Number of women who received at least one NBCCEDP-funded mammogram or other breast diagnostic service	eCaST Monthly report	2,944 (FY16-17)	2,413 (FY18-19)		
			Cervical	Number of women who received at least one NBCCEDP-funded pap test, HPV test or other cervical diagnostic service	eCaST Monthly report	2,962 (FY16-17)	3,200 (FY18-19)		
NBCCEDP	1x/year	E. Kinsella	Breast, Cervical	Number of contractors implementing the CPED Clinical Services strategy (same as uninsured in PN/HN strategy)	Admin records	36 (FY17-18)	36 (FY18-19)	Program management, Partnerships	Reducing out of pocket costs

[26] The numbers generated here represent those calculated through the preliminary MDE core performance indicator report that CDPHE submits to CDC, which is produced from CDC's MDE Edits application.

SECTION 3c: PROGRAM APPROACH | Diagnosis/Treatment

(1 intervention, 5 performance measures)

TABLE 3-10. HEALTH NAVIGATION PERFORMANCE MEASURES *n=5*

These performance measures will inform the effectiveness of health navigation at the diagnostic stage of cancer screening.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NBCCEDP (MDEs)	2x/year	M. Milzer	Breast	Percentage of final diagnosis of breast cancer where treatment has been started	eCaST	97.7% (FY16-17)	>=90%	Health systems change (Direct Screening and Patient Navigation)	Reducing structural barriers
NBCCEDP (MDEs)	2x/year	M. Milzer	Breast	Percentage of final diagnosis of breast cancer where the time between the date of final diagnosis and the date of treatment initiation is >60 days	eCaST	2.3% (FY16-17)	<=20%		
NBCCEDP (MDEs)	2x/year	M. Milzer	Cervical	Percentage of final diagnosis of HSIL, CIN2, or CIN3/CIS where treatment has been started	eCaST	80.8% (FY16-17)	>=90%		
NBCCEDP (MDEs)	2x/year	M. Milzer	Cervical	Percentage of final diagnosis of HSIL, CIN2, or CIN3/CIS where the time between the date of final diagnosis and the date of treatment initiation is > 90 days	eCaST	9.5% (FY16-17)	<=20%		
NBCCEDP (MDEs)	2x/year	M. Milzer	Cervical	Percentage of final diagnosis of invasive cervical carcinoma where the time between the date of final diagnosis and the date of treatment initiation is >60 days	eCaST	0% (FY16-17)	<=20%		

SECTION 3d: PROGRAM APPROACH | Survivorship/End-of-Life Care

(3 interventions/activities, 3 performance measures)

TABLE 3-11. PROVIDER EDUCATION PERFORMANCE MEASURES

This performance measure will inform reach related to provider education related to cancer survivorship.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	1x/year	B. Selig	All	Number of trainings on cancer survivorship for health professionals and paraprofessionals	Admin. records	0 (FY17-18)	6 (FY21-22)	Health systems change	Assess and enhance availability and provision of post-diagnosis and palliative services to cancer survivors

TABLE 3-12. TREATMENT SUMMARIES/SURVIVORSHIP CARE PLANS PERFORMANCE MEASURES

This performance measure will inform progress on establishing standards toward TS/SCP guidelines.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	Once	Cancer Oncology Specialist (TBD)	All	Number of assessments completed about processes for Treatment Summaries/ Survivorship Care Plans at hospitals and oncology centers	Admin. records	0 (FY17-18)	1 (FY18-19)	Health systems change	Establish and/or disseminate guidelines that support quality and timely service provision to cancer survivors

TABLE 3-13. PALLIATIVE SERVICES (INCLUDING HEALTH NAVIGATION) PERFORMANCE MEASURES

This performance measure will inform training needs related to palliative services, including health navigation.

Report	Frequency	Lead	Focus	Measure/Indicator	Source	Baseline	Target	CDC Strategy	EBI
NCCCP	Once	Cancer Oncology Specialist (TBD)	All	Number of assessments completed related to post-diagnosis and palliative resources (including health navigation) to determine training needs	Admin. records	0 (FY17-18)	1 (FY18-19)	Community-clinical linkages	Develop, test, maintain, and promote patient navigation systems for people living with cancer

Appendix D: Data Sources and Use

Data source	Description	Use
Behavioral Risk Factor Surveillance Survey (BRFSS)	Rates and information from Colorado-administered BRFSS.	• Surveillance/performance measurement (Cancer Plan)
Cancer Conference evaluations	Paper and online evaluation administered following annual Colorado cancer conference.	• Feedback on conference content and delivery
CCC Quarterly Meeting evaluations	Paper and online evaluation administered following quarterly Coalition meeting.	• Feedback on partnership and Coalition
Coalition Communication Data	Download from Constant Contact including all communication subscription information for Coalition partners.	• Use and reach of cancer communication (email)
Coalition Partnership & Plan Evaluation	Key informant interviews, focus groups and/or biannual survey of Colorado Cancer Coalition members.	• Assess partnerships • Understand value and use of cancer plan
Colorado Central Cancer Registry (CCCR)	Colorado's tumor registry.	• Monitor cancer burden in Colorado • linked to eCaST data to determine CPED reach • Inform CCC Year in Review
Contractor Monitoring Documents	Spreadsheets utilized across programs to document funded contractor contractual compliance and fiscal responsibility.	• Inform grantee progress and funding status. • Identify technical assistance needs.
CPED Assessment and Planning tool	Template completed by all CPED-funded contractors as part of assessment and planning process (three versions based on type of organization: health systems, community-based organizations, network organizations).	• Contractor assessment of program need and strategy selection • Identify population served and regional needs for funded contractors.
CPED Continuation Application	Administrative document completed by all CPED-funded contractors.	• Documents and describes agreed-upon strategies to be implemented, including associated budget.
CPED progress reports	Online survey of funded contractors administered twice annually (or as needed), including reporting of aggregate data.	• Measures individual and aggregate contractor performance. • Informs evaluation of program/strategy implementation. • Provides description and raw data related to outreach efforts by funded contractors.
CPED site visit reports	Reports completed by program staff for funded contractors.	• Documents individual contractor performance, for contract monitoring. • Informs evaluation of program/strategy implementation, including fidelity.
CPED Strategic Action Plan	Annual plans submitted by individual CPED-funded organizations identifying plans for implementing selected CPED grant strategies.	• Identifies work and priorities for CPED-funded contractors.
CQI annual grantee survey	Annual survey to health systems/clinics participating in CQI.	• Identify progress made across entire program year as well as facilitators and barriers to implementation, and assess contractor engagement and performance
CQI contractor surveys	Monthly check-in surveys. Quarterly evaluation surveys.	• Identify TA needs • Monitor contractor progress
CQI monthly progress reports	Monthly survey to health systems/clinics participating in CQI.	• Identify TA needs • Monitor contractor progress
CQI Program documentation	Program administrative documentation, such as notes from monthly check-ins, etc. from Clinic Quality Improvement (CQI) project.	• Assess contractor performance
CQI Quarterly Survey	Quarterly survey to health systems/clinics participating in CQI.	• Identify TA needs • Monitor contractor progress

Data source	Description	Use
		• Assess facilitators and barriers to CQI implementation
cQM	Clinic-level data from Clinic Quality Improvement (CQI) project.	• Assessment of outcomes, impact and reach of CQI activities
Reports and data from partner programs	Reports and data (as available) from external CCPD evaluation contractor (PiER Center/Kaiser).	• Describe CCPD interventions • Demonstrate reach, effectiveness and impact
eCaST (Electronic Cancer Surveillance Tracking) system	Individual-level data collection for all clients participating in breast and cervical cancer navigation and screening through CPED (Women's Wellness Connection).	• Contractor payments through Bundled Payment System • Informs MDEs to CDC • Evaluation of reach, populations served, volume of services provided • Contract monitoring • Individual contractor performance
Focus group/Key Informant Interviews	Ad hoc and planned interviews with individuals or groups of individuals identified by CDPHE staff.	• Understand facilitators and barriers to program implementation
Healthy Kids Colorado Survey (HKCS)	Biannual voluntary survey of Colorado adolescents (6th-12th grade) aligned with CDC's Youth Risk Behavior Survey (YRBS) to measure youth health and health behaviors administered in Colorado schools and districts.	• Surveillance/performance measurement (Cancer Plan)
HSCB biannual contractor survey	Online survey administered through Health Services and Connections Branch for all contractors funded through CPED/Women's Wellness Connection, School-Based Health Centers, and Family Planning (Title X).	• Contractor feedback on program implementation
Internal meeting minutes	Notes from evaluation check-in meetings, leadership team meetings, CPED meetings, etc.	• Inform document review
Technical assistance and Training evaluations	Paper and/or online evaluation administered following a technical assistance meeting or training event.	• Feedback on technical assistance meeting or training delivery and content measurement of knowledge gain
The Attitudes and Behavior Survey on Health (TABS)	Survey on tobacco and health behaviors among Colorado adults.	• Surveillance/performance measurement (Cancer Plan)
Training registration data (Women's Health Conference, Provider Training, etc.)	Individual data about providers attending training events.	• Reach, volume and description of attendees
Web analytics	Google analytics from cancer-related websites, including CDPHE and Colorado Cancer Coalition.	• Use and reach of cancer website, including statewide cancer plan

Appendix E: Data Management Plan

Table 4. Data Management Plan for eCaST

Data source name	eCaST (Electronic Cancer Surveillance Tracking) system
Description (short)	Individual-level data collection for all clients participating in Colorado's breast and cervical screening program (Cancer Prevention and Early Detection Program, Health Navigation and Clinical Services strategies)
Use	• Contractor payments through Bundled Payment System • Informs MDEs to CDC • Evaluation of reach, populations served, volume of services provided
CDC Program	NBCCEDP
Responsible	PHIP
Timing	Monthly
Format	SQL
Description of data collected	PHIP developed and released the eCaST web-based public health surveillance system in 2005 for collection of breast and cervical cancer screening data. Patient-level data is manually entered into eCaST by funded health systems for all CDC-required MDEs in addition to the following data elements: insurance status including referral for enrollment in an insurance plan, percent of FPL, medical history to identify increased cancer risk, PN services provided to women who do not complete diagnostic work-up, enrollment in the Breast and Cervical Cancer Medicaid Treatment program (BCCP) and dispersal of award funds to contractors for services rendered. Funded health systems enter patient-level data into eCaST on women served and a series of manual and automated quality checks are applied to all data entered to confirm women meet program eligibility requirements and that their services follow program-approved clinical algorithms. Data is transformed from the eCaST relational database structure to the MDE flat-file structure nightly. To facilitate cancer data use, WWC will continue linking screening and diagnostic data for NBCCEDP-eligible patients diagnosed with breast or cervical cancer in eCaST with CCCR treatment data at least once each year of the project period to collect cancer stage and treatment initiation data for MDEs. The eCaST surveillance system will be modified as needed for CDC reporting purposes or effectively monitor progress as part of this award.
Standards	Data submitted into the eCaST surveillance system adhere to standards defined within a relational model of database architecture that is stored within discrete tables and data fields (text field options are limited to where absolutely necessary). All data is validated through foreign key constraints as well as inline post-entry field and interfield data validation checks. Monthly data quality reviews by the Data Manager are completed to identify data quality issues and data collection compliance. In addition to automated and routine data quality feedback loops, data standards are conveyed to data entry staff at funded health systems through training required prior to gaining access to the eCaST surveillance system. PHIP technical assistance staff offer training materials/videos that is available to provide support during regular business hours.
Storage and security	The eCaST database where all Personal Health Information (PHI) is collected as part of this award is housed behind implemented firewalls on the secure state data center database server architecture and is maintained by the Office of Information Technology (OIT) state directed IT services. The eCaST data collection application is hosted on a SSL (Secure Socket Layer) for web delivery method encryption. The eCaST application is also hosted on secure state data center web server architecture and maintained by OIT. The eCaST database is backed up nightly, weekly and monthly along with the web application on VM ware servers imaged, serviced and stored within OIT secure service locations.
Access and sharing	Users from funded health systems and within CDPHE are granted access to eCaST by PHIP staff after completing training including confidentiality and security requirements. PHIP maintains role-based user access including limited data visibility within the eCaST web application and in-coordination with OIT to assign access by minimum necessary standards to data stored within the eCaST database to associated PHIP and related internal personnel. Analyses and reports produced using data from the eCaST database are extracted and reviewed by PHIP data management staff with expert knowledge of database structure and limitations of each dataset. Data released for use by stakeholders or the public is reviewed and approved by PHIP data management staff prior to release.
Statement on use of data standards	PHIP ensures the use of DUA (Data Use Agreement's) in accordance with CDPHE Privacy and Security policies.
Archiving and long-term preservation	The WWC program annually reviews and renews a Data Retention Plan in accordance with CDPHE policies which includes retention of award data collected through eCaST.

Table 5. Data Management Plan for cQM

Data source name	cQM (Clinic Quality Measures) database
Description (short)	Clinic-level data for clinics and health systems participating in the Clinic Quality Improvement (CQI) Project
Use	• Assessment of outcomes and impact through clinic-level and aggregate assessment of breast, cervical and colorectal cancer screening rates over time • Informs data reporting to CDC through C-BARS and B&C-BARS • Evaluation of outcomes and impact
CDC Program	CRCCP, NBCCEDP
Responsible	HSEB
Timing	Twice yearly
Format	Microsoft Access
Description of data collected	PHIP developed and released the Clinic Quality Measures (cQM) database in 2015 for collection of clinic cancer screening and chronic disease control rates, EHR functionality, EBIs implemented, and dispersal of award funds to funded health systems for EBI implementation. Additional data collection tools were developed for use outside of the cQM database for documentation of health system process flow and standing orders/policies for cancer screening. The existing cQM database, which was housed in SQL Server, is currently in the process of being transitioned into a Microsoft Access system. The new system that is being developed will be housed by the Health Surveys and Evaluation Branch (HSEB). Under the new data management system, data collected from health systems will be entered alongside internal EBI tracking information to ensure that all CBARS and B&CBARS required elements are captured and easily exportable for reporting purposes. This transition will begin in April 2018, and will be completed and prepared for launch on July 1, 2018. The new cQM system will be continuously reviewed, and will be modified as needed for reporting purposes and/or improvements.
Standards	Data stored within the cQM database adhere to standards defined within the relational database structure in Access and are stored within discrete data fields. Data entered into the new cQM database are either entered by HSEB staff, the program's data analyst, or by other program staff with review from HSEB staff.
Storage and security	The cQM database does not contain any Personal Health Information (PHI) and is stored on secured drives on CDPHE's internal server system.
Access and sharing	Only HSEB staff and the program's data analyst will have access to the new version of the cQM database. Analyses and reports produced using data from the cQM database are produced and reviewed by HSEB staff with knowledge of the database and the limitations to the data. Data released for use by stakeholders and/or the public is reviewed and approved by HSEB staff prior to release.
Statement on use of data standards	HSEB operates in accordance with CDPHE Privacy and Security policies. No identifiable patient-level data is collected through this system.
Archiving and long-term preservation	The cQM database is housed in one of CHED's shared network drives, where other original evaluation data are stored. The drive is backed up regularly as part of CDPHE's standard data back-up procedures. HSEB follows CDPHE data retention policies, which includes retention of award data collected through the cQM database.