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How the Comprehensive Cancer Control National Partnership shapes the public health workforce

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Abstract

This paper explores how, through its extensive network of partners, the Comprehensive Cancer Control National Partnership (National Partnership) has provided a robust array of trainings, learning institutes, webinars, workshops, mentorship programs, and direct technical assistance to comprehensive cancer control programs and coalitions over the past 20 years. Mapping these activities to specific cancer control competencies revealed that the efforts of the National Partnership adequately address the core competencies necessary for an effective workforce and have the potential to increase practitioner capacity to adopt and implement evidence-based cancer control programs. Ensuring the continued availability and uptake of these tools, trainings and partnerships could potentially address gaps and barriers in the public health workforce related to evidence-based practice.

Keywords

Comprehensive cancer control; Workforce development; Training and technical assistance; Competency mapping; Cancer prevention and control

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Introduction

Comprehensive cancer control (CCC) is a collaborative process through which a community pools resources to reduce the burden of cancer—resulting in reduced cancer risk, earlier detection of cancer, better treatment outcomes, improved quality of life for cancer survivors, and enhanced palliative care. CCC coalitions bring together cancer control leaders and organizations in every state, as well as many territories, U.S. Pacific Island Jurisdictions, and tribes. These coalitions develop, implement, and evaluate CCC plans and initiatives for the communities where they live and work. CCC coalitions represent an engine of change in the U.S. for cancer issues. Across the nation, thousands of organizations and individuals are involved in CCC coalitions [1].

The CCC National Partnership (National Partnership) consists of 19 leading national organizations that come together to utilize their combined strengths and resources to support and advance the work of CCC [2]. The National Partnership specifically focuses on supporting CCC coalitions in ways that no one member could do alone. Arguably, nowhere is this truer than in its work in addressing the workforce capacity needs of cancer control practitioners.

The cancer control workforce—like that across public health practice—varies widely in terms of education, experience, and job duties [3]. Practitioners may include health educators, clinicians, nurses, social workers, community health workers, and allied health professionals. Formal training of persons working in public health is much more variable than in medicine or other clinical disciplines [4]. Most public health practitioners lack formal training in more than one public health discipline (e.g., epidemiology, health behavior, environmental health) [5, 6]. Although training might vary, public health organizations and academic institutions do use the Public Health Foundation's Core Competencies as a general framework for workforce development, training, and accreditation [7].

While CCC coalitions and programs face some workforce challenges, it is important to note that they also benefit from having members with different skills and expertise. Many CCC coalitions and programs incorporate (a) a core group of local organizations and individuals who provide coalition leadership and take responsibility for selected activities, (b) a convening organization that coordinates activities and monitors the jurisdiction's cancer burden, and (c) a broad partnership that is dedicated to implementing the jurisdiction's cancer control plan [8]. This strategic and diverse composition places them in a unique position to encourage the uptake of cancer-related evidence-based interventions (EBIs) such as the cancer prevention and early detection interventions in the *Guide to Community Preventive Services* [9].

The National Partnership approach to workforce capacity building in cancer control

Individually and in collaboration with each other, members of the National Partnership utilize a variety of approaches to provide training and technical assistance to CCC coalitions

and awardees of Centers for Disease Control (CDC)'s National Comprehensive Cancer Control Program (NCCCCP). These capacity-building activities include in-person and online forums where practitioners can learn, share, and expand cancer control efforts; tailored on-site assistance; and technical assistance workshops that provide educational training, tools, resources, and opportunities for networking and peer-to-peer learning. The intended goal of the National Partners' collective technical assistance and training efforts is to support coalitions in implementing CCC plans [10]. The National Partnership designed a technical assistance and training model to assist coalitions in achieving several initial, intermediate, and long-term outcomes, all related to successful implementation of CCC plans, found in Fig. 1.

As described in the 2010 Special Issue on CCC [10], the National Partnership began providing a variety of technical assistance and training opportunities for CCC coalitions after its inception in 1999. Organizational members plan and deliver customized support to coalitions and programs through a combination of consultants and member representatives who have expertise in specific cancer control topic areas. Funding for this support comes from the organizational members of the National Partnership. Significant support for early National Partnership efforts was provided through a cooperative agreement between the CDC and the American Cancer Society (ACS) and was supplemented by additional partners' contributions over time. This included Leadership Institutes (2000–2010), Policy and Practice Summits (2008, 2009), Local Implementation Webinars (2008), Resources Workshops (2009), and customized technical assistance visits to several CCC coalitions to assist with plan development, revision, and implementation (2003, 2004, 2008). Examples of direct technical assistance to CCC coalitions supported by the National Partnership include assistance to states that had not yet developed CCC plans to begin development (2003); to improve coalition functioning (2013); to help strengthen policy, system, and environmental (PSE) change efforts (2013–2014) and help with coalition functioning and increasing CRC screening prevalence (2015, 2016, 2017, 2018).

Since 2010, the National Partnership has continued to provide opportunities for CCC coalitions to learn from each other and national partners about how to sustain effective CCC coalitions that are successful in implementing CCC plans. See Table 2 for a more detailed analysis of the National Partnership's collaborative capacity-building activities.

The role of the National Federal Partners

As the lead federal agencies involved with the National Partnership, the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI) have contributed to cancer control capacity building on a national level through training, priority-setting, and guidelines for implementing evidence-based practices.

Centers for Disease Control and Prevention

Since 1998, CDC's NCCCCP has provided the funding, guidance, and technical assistance that state, tribal, and territorial programs use to design and implement strategic cancer control plans [11].

In 2002, CDC published *Guidance for Comprehensive Cancer Control Planning*, the first official guidance for cancer control awardees charged with developing actionable CCC plans. A companion toolkit [12] included examples other states had implemented which addressed the “building blocks” of cancer control planning: (a) enhancing infrastructure, (b) mobilizing support, (c) using data and research, (d) building partnerships, (e) assessing and addressing cancer burden, and (f) evaluation. This guidance continues to undergird the cancer control capacity building provided by CDC and other National Partnership members.

In 2010, CDC established six priorities to help NCCCP-funded programs focus on cancer prevention and control components that can best reduce cancer burden and health disparities. Funded programs select interventions that incorporate all the over-arching and cross-cutting cancer priorities. The three over-arching priorities recommend that awardees create programs that (1) emphasize primary prevention of cancer, (2) support early detection and treatment activities, and (3) address the needs of cancer survivors. To strengthen and advance programs, CDC requires three additional crosscutting priorities, which are to (4) implement policy, systems, and environmental approaches, (5) promote health equity, and (6) demonstrate outcomes through evaluation. Together, these priorities ensure that awardees are working across the cancer control continuum [13] to deliver timely, targeted, and appropriate programs and services. Furthermore, through these priorities, CDC emphasizes accountability and stewardship by funding EBIs and approaches.

CDC awards CCC funding through cooperative agreements, which require CDC to be significantly involved in their awardees’ program activities [14]. Cooperative agreements specify that certain types of technical assistance need to be coordinated across programs to ensure consistency and build awardee capacity. Technical assistance areas include program implementation, fiscal and grants management, surveillance and epidemiology, evidence-based policy, systems, and environmental interventions, health education and promotion, health equity, evaluation, and community–clinical linkages [15].

CDC focuses on developing workforce capacity by prioritizing events and resources that meet the technical assistance and training needs of awardees. CDC convenes trainings, meetings, web forums, and conference calls, and develops relevant resources for awardees to use to plan, implement, and evaluate their cancer control plans. Specific expertise areas include scientific support and clinical translation, communications and trainings, program evaluation, and partnerships. CDC additionally funds national organizations and a consortium of national networks to enhance implementation of CCC activities across the country and in special populations. See Table 3 for a more detailed analysis of CDC’s workforce capacity-building activities.

CDC Program Consultants offer unique and relevant experiences that connect their local awardee programs with necessary resources to build their capacity to advance successful cancer control, by connecting local programs with researchers and subject matter experts, cancer control partners, and data sources. See Table 3 for more examples of Program Consultant’s workforce capacity-building activities.

CDC also funds the ACS and George Washington Cancer Center [16] to provide technical assistance and training to NCCCCP awardees and their partners that focuses on:

- Local implementation of CCC activities.
- Identification and implementation of systems and environmental change strategies that promote health, support healthy behaviors, and facilitate community-clinical linkages to build support for interventions to prevent and reduce the cancer burden.
- Enhancement and sustainability of partnerships.
- Support for communication strategies to promote CCC program successes and leverage additional resources for cancer control and prevention.

National Cancer Institute

The NCI has sought to build workforce capacity primarily around the uptake of research-tested cancer control programs. The need for this focus is ongoing—Hannon and colleagues reported that less than half of cancer control practitioners had ever used evidence-based resources [17]—the NCI focuses its partnership efforts on increasing the implementation of evidence-based cancer control strategies to ensure that all benefit from all the research-driven knowledge available.

To further the practical application of evidence-based cancer control practice, the NCI created the Cancer Information Service (CIS) Partnership Program in 1993. The regionally based national program formed academic and community partnerships with more than 900 organizations and coalitions. By working directly with researchers and practitioners, the CIS Partnership Program built partners' capacity to identify EBIs, adapt them to their communities, and disseminate programs that addressed cancer health disparities [18].

CIS Partnership Program staff developed partnerships with non-profit, private, and other government organizations to provide technical assistance in all aspects of program development and evaluation and deliver messages and materials about cancer to medically underserved populations. As its focus on developing strategic partnerships became clearer, the NCI recognized the need to develop a staff training program based on core competencies for public health professionals [19]. The performance-based staff training program, anchored in communication science and cancer public health core competencies, is described in detail elsewhere [20].

Central to this work was providing partners with technical assistance and workforce training on the use of evidence-based planning tools such as NCI's Cancer Control P.L.A.N.E.T. (Plan, Link, Act, Network with Evidence-based Tools [21]; <http://ccplanet.cancer.gov>). The P.L.A.N.E.T. web portal was designed to provide access to data and resources to help cancer control planners, program staff and researchers design, implement and evaluate evidence-based cancer control programs [22]. It was developed in partnership with the CDC, ACS, the Substance Abuse and Mental Health Services Administration (SAMSHA), the American College of Surgeons Commission on Cancer, and the Agency for Healthcare Research

Quality (AHRQ). NCI further developed a robust searchable database of evidence-based cancer control interventions and program materials. Research-tested Intervention Programs (RTIPs) is designed to provide program planners and public health practitioners easy and immediate access to research-tested materials [23].

The NCI convened an online community of practice, Research to Reality (R2R), to help further the practical application of cancer control research. From its launch in 2011 until its end in 2018, R2R aimed to infuse evidence-based strategies into communities by engaging researchers and practitioners in a joint approach to research dissemination [24]. Through an 18-month pilot program, R2R supported six mentor-mentee pairs and aimed to improve the skills of practitioners to navigate within the complex real-world settings in which evidence-based cancer control occurs. A full description of the program is published elsewhere [25] but the pilot offered a capacity-building model that enhances the skills and knowledge of cancer control practitioners and promotes dialogue around translation.

Through large-scale efforts, such as the CIS Partnership Program, Cancer Control P.L.A.N.E.T., RTIPs, and R2R, NCI has not just placed a wide array of EBIs in the hands of cancer control practitioners but provided several opportunities to improve a coalition's understanding and ability to implement a specific evidence-based intervention. NCI is committed to building on and expanding upon these efforts by including a specific mandate into its NCI-Designated Cancer Center supplements [26-28], enhancing ability to disseminate culturally appropriate, evidence-based cancer information through its National Outreach Network [29], and positioning its Contact Center [30] as an information broker for information around and access to evidence-based tools and data sources.

See Table 3 for a more detailed analysis of NCI's workforce capacity-building activities.

The roles of non-Federal Partners

Non-federal organizations of the National Partnership, including those who receive CDC funding specifically to provide technical assistance to NCCCP awardees, impact cancer control activities at the coalition and local levels. These partners specialize in creating and facilitating the use of resources based on the specific needs of each CCC coalition. A sample of activities undertaken by the non-Federal Partners describes how, despite their different mission and focus, they engage their constituencies around community-level implementation of cancer control and prevention, as well as evaluation, and evidence-based communication strategies.

American Cancer Society

The ACS provides national, state, and local leadership and subject matter expertise in cancer control and research. ACS' Blueprint for Cancer Control in the twenty-first Century [31] provides the scientific basis for their cancer control approach, focusing on areas such as survivorship, prevention, screening and early detection, cancer care and treatment, and research. ACS builds workforce capacity to engage in effective partnerships and to work through health systems to plan and implement integrated, evidence-based, and cost-effective interventions throughout the cancer continuum to prevent cancer and reduce the suffering it

causes. ACS convenes several national roundtables and partnerships, including the National Partnership, the National Colorectal Cancer Roundtable, the National HPV Vaccination Uptake Roundtable, the National Lung Cancer Roundtable, to name a few, providing leadership, staffing, and other resources to advance the shared vision of its member organizations. ACS staff and volunteers also provides leadership, resources, and support to CCC coalitions and other cancer-focused coalitions and roundtables at the state, tribal, local, and territorial levels. Table 3 outlines the capacity-building activities of ACS.

George Washington University Cancer Center

The GW University Cancer Center's technical assistance model follows an adapted framework for capacity-building interventions, which expands upon the Interactive Systems Framework and Evidence-Based System of Innovation Support [32]. The approach incorporates the structure and strategies described by Leeman et al. [28] including dissemination and development of tools, online and live trainings, tailored technical assistance, peer networking, and incentives. Some of GW University Cancer Center's enduring, open-source, and most frequently used resources are described in Table 3. Funding for these activities all came through CDC, unless otherwise noted. To improve sustainability and cost-effectiveness of technical assistance funding, GW has also developed a series of online trainings [33], which span all the competency domains.

After the NCI completed the R2R Mentorship Program, GW University Cancer Center developed an adapted program. GW University Cancer Center's pilot cohort consisted of three mentor-mentee pairs and maintained R2R's approach and emphasis on using evidence to guide practice [34-36]. Unlike NCI's program, GW's mentorship focused on helping mentees develop specific public health competencies in communication and apply evidence through a mentored project experience, a series of seminars, and relationships with mentors and peers. GW is launching a larger cohort in 2019 focused on communication of evidence-based cancer screening interventions. See Table 3 for more examples of the capacity-building activities of GW University Cancer Center.

National Association of Chronic Disease Directors (NACDD)

The NACDD focuses its workforce capacity-building efforts around three areas:

1. Professional development in identifying, acquiring, linking, developing, and providing training opportunities to enhance member knowledge and competency
2. Identifying, developing, acquiring, and disseminating resources and tools to enhance program effectiveness and efficiency
3. Leadership development through a Peer-to-Peer Connection program run by the NACDD Cancer Council itself, through which Cancer Council members provide orientation and support for others moving into new positions.

The NACDD's Cancer Council is comprised of staff working in cancer projects at the state, tribal, territorial, Pacific Island Jurisdiction and the District level. This includes staff working in the NCCCP projects funded by CDC. It has over 480 members nation-wide and

meets with all members quarterly to provide opportunities to share experiences, successes, and challenges. The Council also holds quarterly meetings for those program areas that address early detection (screening) and a Communications Workgroup addresses professional development via webinars. Recently a workgroup addressing palliative care was formed at the request of Council members. The Council's monthly leadership team meetings include representatives from the Comprehensive Cancer Control National Partnership (CCCNP). Agenda items for full NACDD Cancer Council meetings have included communications development for coalitions and discussion about technical assistance opportunities from each other (peer-to-peer) including working with coalitions and information about national efforts at technical assistance regarding CCC.

National Association of County and City Health Officials (NACCHO)

NACCHO provides technical assistance to help local health departments implement CCC efforts in their communities. Over the past 5 years, NACCHO's technical assistance has focused on:

- Supporting health department implementation of smoke-free housing interventions.
- Providing information on how CCC coalitions can partner with health departments to implement national strategies into the Community Health Assessments and Community Health Improvement Plan processes.
- Developing and providing resources, including a Framework for Building Successful and Sustainable Cancer Coalitions, to help local health departments collaborate with state partners to implement CCC activities.

The *Framework for Local Comprehensive Cancer Control Implementation* [37] guides NACCHO's capacity-building efforts. NACCHO works directly with staff from local health departments to evaluate their cancer control and prevention efforts and align local goals with state and federal cancer control initiatives. Much of their work in capacity building is intended to help local health departments assess community needs and create strategic cancer control and prevention responses. To this end, NACCHO provides not only surveillance and evaluation data to assist with cancer assessment and planning efforts, but specific guidance on how to use surveillance and evaluation data for program planning, implementation, and evaluation. In 2018, NACCHO conducted a survey of local health department officials to catalog the national landscape of current local cancer prevention, education, screening, and control activities. The survey also identified the technical assistance and resource needs of local health departments, as well as their capacity to implement evidence-based practices [38]. This work is funded through a sub-award agreement with the ACS.

Susan G. Komen®

National Partnership members also work through their local affiliates and chapters to increase cancer control capacity. For example, local Susan G. Komen® affiliates award grants to community-based organizations to increase access and utilization of quality care to

reduce late-stage breast cancer diagnosis and breast cancer mortality [39]. Susan G. Komen® has leveraged Cancer Control P.L.A.N.E.T. and other National Partner resources in their community assessment and cancer control trainings for affiliates.

LIVESTRONG Foundation and YMCA-USA

In 2008, the LIVESTRONG Foundation partnered with another national partner, YMCA-USA, to develop and offer safe and effective physical activity options for those living with, through, and beyond cancer [40]. Through this 12-week, small-group (< 16 participants) program designed for adult cancer survivors, YMCA fitness instructors work with each participant to fit the program to their individual needs. The instructors are trained in the elements of cancer, post-rehabilitation exercise, and supportive cancer care [41]. This intervention not only provides a novel mechanism to disseminate high-quality exercise programming to a diverse group of cancer survivors [42] but also expands the capacity of affiliate staff to deliver responsive EBIs.

Mapping National Partners' Efforts to Public Health Competencies

To demonstrate how the technical assistance efforts of the Comprehensive Cancer Control National Partnership aligned with public health workforce needs and priorities, we compared them to workforce competencies used in relevant evidence-based practice and public health trainings [7, 43]. The Core Public Health Cancer Control Competencies in Table 1 are a result of a mixed-method evaluation of core evidence-based public health competencies related to cancer control by the NCI in 2014 [34]. To further substantiate the selection of these competencies, we conducted a crosswalk of Public Health Foundation competencies [44]. This led to the addition of the “financial planning and management skills” domain to adequately cover the National Partnership’s range of technical assistance and training. Table 1 includes a detailed list of these skills and competencies.

In early 2018, all National Partnership members were asked to identify how their capacity-building efforts address each of the cancer control competencies. A collection of their detailed responses is captured in the tables below. Table 2 outlines the collaborative efforts of the National Partnership. Tables 3 and 4 outline the efforts of the national and organizational level partners.

Analysis

The mapping exercise revealed that every technical assistance and training activity performed by the organizations of the National Partnership addresses at least one cancer control competency. No activity was without a matching competency. Activities were often mapped with multiple competencies across multiple domains, substantiating that members of the National Partnership have provided quite the robust array of trainings, learning institutes, webinars, workshops, mentorship programs, and direct technical assistance to CCC programs and coalitions.

Notably, the collaborative efforts of the National Partnership, as detailed in Table 2, were mapped with 14 to 20 competencies each, spanning all the cancer control domains.

Additionally, the activities documented by the National Federal Partners, CDC, and the NCI individually and collectively cover all the cancer control domains. National subject matter expertise and consultation has been provided across the cancer continuum and has addressed cancer prevention, screening, treatment access, patient navigation, palliative care, survivorship, and caregiver support. Although some of the organizational partners do not address all the domains within the scope of their individual activities, coalitions and programs still have the opportunity to receive a full range of technical assistance in each competency area as a result on the aggregate efforts of the National Partnership.

Limitations

Several weaknesses of our study need to be noted. Because we sought to capture concise, representative samples of the technical assistance and capacity building undertaken by the National Partnership, it was not possible to collate an exact compendium of activities completed by each partner over the specified timeframe. Additionally, the scope of the study focused on collecting a meta-analysis of what technical assistance has been provided by the National Partnership. Therefore, we do not have longer-term data regarding the maintenance and sustainment of the initiatives over time or data quantifying resulting increased capacity. Only 10 of the 19 cancer organizations that make up the National Partnership elected to be included in this review. Although these 10 organizations still constitute a representative sample of the National Partnership's work, we acknowledge that this is not a complete list of partners' activities.

Discussion

This article reports on the technical assistance initiatives undertaken by the National Partnership and explores how these efforts cover core cancer control competencies. Establishing strong partnerships, providing guidance on program adaptation and implementation, and disseminating evaluation tools have been the hallmarks of National Partnership efforts to build a more effective cancer control workforce. The findings show the National Partnership provides appropriate, well-rounded training programs and technical assistance that support CCC programs and coalitions across the United States.

In addition to training and technical assistance activities, we also value the increased availability and use of resources, such as those developed and funded by the Federal Partners as well as the National Partnership, as partial solutions to improving workforce capacity in cancer control and prevention [32]. While tools and resources are essential in cancer control practice, making these tools accessible is only the first step in building capacity. Multiple studies of practitioners [47, 48] suggest that most state or local public health practitioners learn about new research via seminars or workshops. These studies suggest that in-person capacity-building activities are an effective delivery method for technical assistance. Such in-person trainings are resource-intensive and therefore may benefit most from National Partnership support.

The collaborative nature of the National Partnership offers an opportunity to share best practices and implementation materials. As noted throughout this article, the organizational

members often collaborate with one another to support customized technical assistance to individual CCC coalitions, assisting coalitions with addressing a specific challenge facing the coalition or increasing a coalition's understanding and ability to implement a specific evidence-based intervention. Indeed, bidirectional discussions between the National Partners and coalition members, as well as ongoing discussions across the partnership, can help best direct efforts.

Cancer control practitioners also have an opportunity to expand workforce capacity by sharing evaluation plans and outcomes, program adaptation, what worked, and, equally important, what did not work. This kind of collaboration would improve the reach of the evidence base for more consistent and effective implementation. Further data gathering from the programs on the impact of the National Partnership's technical assistance activities would be instrumental in determining the extent to which they are building capacity for cancer control. Data could also help the National Partnership refine and improve activities to better suit the needs of the cancer control workforce.

Although the technical assistance and program development approaches reported in this article were limited, they suggest that the key components of the CCC National Partnership Technical Assistance and Training Model (Fig. 1) are implemented as intended across the partnership. Thorough long-term or continued evaluation of other aspects of the program, including changes in practitioners' competency, program delivery, and use of evidence-based resources, could inform future technical assistance and capacity-building efforts.

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Fig. 1.
CCCNP technical assistance and training model

Table 1

Core Public Health Cancer Control Competencies

Domain	Number	Competency description
Analytical and Assessment Skills	1.1	Defines and prioritizes problems
	1.2	Understands how the data illuminate ethical, political, scientific, economic, and overall public health issues
	1.3	Identifies relevant and appropriate data, information sources, and types of evidence
	1.4	Makes relevant inferences from quantitative and qualitative data, determines appropriate uses and limitations of both quantitative and qualitative data, and understands the difference between primary and secondary research evidence
Policy Development and Program Planning Skills	2.1	Collects, summarizes, and interprets evidence-based guidelines and systematic reviews on cancer control approaches
	2.2	Utilizes current techniques in decision analysis and health planning (e.g., PICO, comparing the strengths and weakness of different kinds of research evidence)
	2.3	Develops a plan to implement evidence-based cancer control intervention, including goals, outcome and process objectives, and implementation steps
Cultural Competency Skills	3.1	Evaluates the applicability of the evidence for a individual or population
	3.2	Uses appropriate methods for interacting sensitively, effectively, and professionally with persons of diverse cultural, socioeconomic, educational, racial ethnic and professional backgrounds, and persons of all ages, backgrounds, and lifestyles, especially with individuals or communities affected by the decision intervention
	3.3	Understands the interaction of diverse variables which affect behaviors/motivations, and which would inform delivery of evidence-based cancer control intervention
Public Health Science Skills	3.4	Develops and adapts evidence-based cancer control interventions to diverse audiences and situations that consider cultural influences
	4.1	Applies the basic public health sciences including behavioral and social sciences
	4.2	Identifies and retrieves current relevant scientific evidence
Partnership, Collaboration, and Community Engagement Skills	4.3	Identifies the limitations of research and the importance of observations and interrelationships
	5.1	Define a health issue according to the needs and assets of the population/community
	5.2	Understand the importance of collaborative partnerships between researchers and practitioners and of traditional and non-traditional partnerships (e.g., Planners, department of transportation) when designing, implementing, and evaluating evidence-based interventions and policies and how to build/enhance these partnerships
Advocacy and Communication Skills	5.3	Evaluates available expertise and resources, including partnerships and collaborations, needed to implement evidence-based cancer control intervention and acknowledges their importance
	5.4	Engage community members (e.g., focus groups, talking circles, formal meetings, key informant interviews) to improve health in a community; Collaborate with community partners to improve health in a community (e.g., participate in committees, share data and information, connect people to resources)
	6.1	Effectively communicate evidence and research/evaluation findings to policy makers, press, and other non-technical staff and key decision makers to gain interest, political/organizational support, and to advocate for funding, resources, etc.

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Domain	Number	Competency description
Financial Planning and Management Skills	7.1	Leverages public health and health care funding mechanisms and procedures (e.g., categorical grants, fees, third-party reimbursement, tobacco taxes, value-based purchasing, budget approval process) for supporting population health services
	7.2	Prepares information for proposals for funding (e.g., foundations, government agencies, corporations)
	7.3	Contribute to development of program budgets
	7.4	Motivates personnel for achieving program and organizational goals (e.g., participating in teams, encouraging sharing of ideas, respecting different points of view)

Source: Crosswalk of Sanchez [34] and Public Health Foundation [44]

Mapping the Collaborative Workforce Development Activities of the National Partnership to Competencies

Table 2

	Capacity-building activity	Cancer control competencies
National Partnership (CCCNP)	Creating and delivering Comprehensive Cancer Control Leadership Institutes for CCC coalition leaders ^a	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Providing Policy and Practice Summits for CCC coalitions	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Delivering Resources Workshops to assist coalitions with development and implementation of resource plans to support plan implementation ^a	1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 3.4, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.2, 7.3, 7.4
	Educating programs about the 9 Habits of Successful CCC Coalitions and other issue through the Comprehensive Cancer Control Coalition Technical Assistance Workshops	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Delivering the PSE Change Forum in 2012 for six states ^a	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Hosting the American Indian/Alaska Native Summit in 2016	1.1, 1.2, 1.3, 2.1, 2.3, 3.1, 3.3, 3.4, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1
	Creating and facilitating the CCCNP Priority Workshops to address specific focus areas of CCCNP (colorectal cancer, human papillomavirus, tobacco) ^a	1.1, 1.2, 1.3, 2.1, 2.3, 3.1, 3.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Creating and delivering a Sustaining Coalitions Workshop in 2017 related to the 9 Habits of Successful CCC Coalitions ^a	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Providing customized technical assistance to individual CCC coalitions	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.4
	Creating webinar series on: local implementation of plans; tobacco, obesity, and CCC efforts; tobacco cessation for cancer survivors; improving local implementation of cancer plans around CRC screening and tobacco control	1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 4.2, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1

Source: Self-reporting mapping by organization representatives

^aPrimary support of these activities through the ACS through a cooperative agreement with CDC [45]

Mapping the Workforce Development Activities of the National Federal Partners to Competencies

Capacity-building activity		Cancer control competencies
Centers for Disease Control and Prevention (CDC)	Establishing the National Comprehensive Cancer Control Program (NCCCP) Priorities—primary prevention, early detection and treatment, survivorship, PSE approaches, health equity, and evaluation	1.1, 2.2, 2.3, 3.1
	Providing Notice of Funding Opportunity (NOFO) guidance for operationalizing the NCCCP Priorities through multiple cooperative agreements	1.1, 1.2, 1.3, 2.3, 3.1, 4.1, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3
	Publishing and providing TA related to <i>Guidance for Comprehensive Cancer Control Planning</i> (volumes 1 and 2)	2.1, 2.2, 2.3
	Funding a consortium of eight National Networks that support cancer control activities in special population groups across the NCCCP	3.1, 3.2, 3.3, 3.4, 5.1
	Funding technical assistance cooperative agreements	1.2, 1.3, 1.4, 2.1, 2.2, 3.1, 3.3, 3.4, 4.1, 6.1
	Co-convene national roundtables (i.e., HPV, CRC)	1.1, 1.2, 1.4, 2.2, 3.1, 3.3, 3.4, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1
	Scientific Support and Clinical Translation Technical Assistance (TA)	
	Disseminating cancer control-related scientific research findings	1.1, 1.2, 1.3, 1.4, 4.1, 4.2
	Providing expertise and recommendations on specific types of cancer (e.g., breast, cervical, colorectal, lung, and liver cancers)	1.1, 1.2, 1.3, 1.4, 4.1, 4.2
	Providing best practices and recommendations for evidence-based strategies and interventions (e.g., smoking/tobacco reduction, healthy eating, physical activity, community-clinical linkages)	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.4, 4.1, 4.3, 5.1
	Accessing peer-reviewed publications, public health recommendations, and up-to-date clinical guidelines to inform cancer control activities	1.2, 1.3, 1.4, 2.1, 2.2, 4.1, 4.2, 5.1
	Connecting awardees with epidemiology and surveillance centers for access to reliable and valid risk factor data and resources	1.3, 1.4, 2.1, 4.2, 5.1
	Hosting seminars related to scientific writing, publishing manuscripts, and statistical analysis software	1.3, 1.4, 4.3, 6.1
	Collaborating with awardees to publish cancer control reports and articles	1.2, 1.4, 4.3, 6.1
	Communications and Trainings TA	
	Managing the Cancer Information Channel (CIC), which includes materials on data sources, evidence-based guidelines, program planning, professional development, funding, cancer disparities	2.1, 2.2, 3.1, 3.2, 3.3, 3.4, 4.2, 5.2
	Facilitating cooperative agreement business meetings and program calls	1.1, 2.2, 3.2, 3.3, 3.4, 5.2, 5.4, 6.1, 7.4
	Hosting communications webinars (e.g., success stories, plain language, social media, social marketing, and media planning)	1.2, 3.2, 6.1
	Planning trainings about the NCCCP priorities, cancer health disparities, public health policy, effective cancer control work plans, etc.	2.1, 3.1, 3.2, 4.3
	Maintaining the NCCCP Communications listserv, website, and Intranet for resource and information sharing	4.2, 5.2, 6.1
	Publishing weekly Cancer and Related News electronic newsletter	4.2, 6.1

Capacity-building activity	Cancer control competencies
Creating and facilitating program consultant inservices	1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.4, 5.2, 6.1, 7.1
Program Evaluation TA	
Providing guidance to awardees on using the Comprehensive Cancer Control Branch Evaluation Toolkit and Cancer Plan Self-Assessment Tool	1.4, 2.1, 2.2, 2.3, 3.1, 4.3, 5.3
Managing and training awardees to use the Chronic Disease Management Information System (CDMIS)	1.4, 2.1, 2.2, 4.3, 5.3
Creating awardee performance assessments	1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.4, 4.2
Informing the Library of Indicators and Data Sources (LIDS) and assisting awardees with selecting performance measures	1.3, 2.1, 2.2, 2.3, 4.2, 4.3
Facilitating information sharing through the Evaluation Bulletin	1.3, 2.1, 4.2
Partnership TA	
Helping awardees identify potential partners to achieve their cancer control goals	5.2, 5.3, 5.4, 7.1
Publishing and disseminating guides and toolkits that help awardees cultivate, develop, maintain, and sustain partnerships	3.2, 5.2, 5.3, 5.4
Facilitating the use of the Collaboration Guide for Pacific Island Cancer and Chronic Disease Programs as needed	3.2, 5.2, 5.3, 5.4
CDC Program Consultant TA	
Connecting awardees with Subject Matter Experts and other resources to understand cancer burden	1.1, 1.2, 1.3, 1.4, 4.3, 5.1, 5.3
Assisting program directors and staff in developing work, action, leadership, and evaluation plans that include project period and annual objectives that are based on available surveillance data	2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 4.3, 5.1, 5.3, 6.1, 7.1, 7.2
Aligning plans and activities with NCCCC priorities and NOFO guidelines	2.1, 2.3, 3.4, 4.1, 5.3, 7.2
Ensuring that work plans are aligned with state cancer plans and are feasible with available funding, coalitions, and other local resources	2.3, 3.4, 5.3, 7.3
Monitoring progress and achievement of outcomes along proposed timelines and budgets with technical reviews	2.3, 7.1, 7.3
Adjusting work plans based on programmatic performance levels and availability of financial resources	2.3, 5.3, 7.1, 7.3
Providing strategic planning advice to maintain coalition sustainability and stamina	5.2, 5.3, 5.4
Monitoring and tracking of budgets and key personnel changes	5.3, 7.3, 7.4
Providing guidance on the development and sustainability of local and state coalitions	5.2, 5.3, 5.4, 7.1, 7.4
Ensuring collaboration and synergy between NCCCCP and other DCPC programs	5.2, 5.3, 5.4, 6.1, 7.1, 7.4
Disseminating the Cancer Information Service (CIS) Partnership Program Training Curriculum;	1.1, 1.2, 1.3, 1.4, 2.2, 2.3, 3.1, 3.3, 5.2, 5.3
National Cancer Institute (NCI)	
Training entry- and mid-level cancer health and research professionals through the Cancer Research Training Award, National Outreach Network and NCI Contact Center	2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 4.3, 5.1, 5.3, 6.1, 7.1, 7.2
Convening an online community of practice through Research to Reality (R2R)	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.4, 4.2, 4.3, 5.1, 5.3, 6.1, 7.2

Capacity-building activity	Cancer control competencies
Facilitating the R2R Mentorship Program	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.4, 4.2, 4.3, 5.1, 5.3, 6.1
Facilitating uptake of evidence-based tools such as Using What Works, Making Data Talk, and Putting Public Health Evidence into Practice via webinar and in-person trainings	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.4, 4.1, 4.3, 5.1
Providing technical assistance and workforce training on the use of Cancer Control P.L.A.N.E.T.; Research-tested Intervention Programs (RTIPS); NCI Risk Assessment tools and related research-tested interventions	2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 4.3, 5.1, 5.3, 6.1, 7.1, 7.2

Source: Self-reporting mapping by organization representatives

Table 4
Mapping the Workforce Development Activities of the Non-Federal Partners to Competencies

Capacity-building activity	Cancer control competencies
American Cancer Society	1.1, 1.2, 1.3, 1.4, 2.1, 2.1, 2.1, 2.3, 3.1, 3.2, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1
Engage a regional cancer control workforce to work across health systems to build partnerships and coalition capacity to deliver evidence-based interventions across the cancer continuum:	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.2, 7.3, 7.4
<ul style="list-style-type: none"> • State health systems including state, tribal, local, and territorial health departments, comprehensive cancer control coalitions and other cancer-specific coalitions and roundtables, health plans, government payer programs, and quality improvement organizations • Primary care systems including Federally Qualified Health Centers, community health centers clinics, and private practices • Hospital systems including integrated delivery systems, hospitals, cancer centers, COC cancer programs, and NCI-designated cancer centers 	1.1, 1.2, 1.3, 1.4, 2.1, 2.3, 4.2, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1
Provide workforce skills trainings on:	
<ul style="list-style-type: none"> • Facilitation skills • Working with health plans and government payer programs • Working through partnerships and coalitions • Practice facilitation and quality improvement • Commission on Cancer standards • Cancer prevention and screening evidence-based strategies and interventions • Cancer screening guidelines • Cancer survivorship care planning 	
Provide on-site technical assistance workshop and post-workshop technical assistance to select coalitions on effective strategies to support the implementation of smoke-free policies for Public Housing Agencies (PHAs) and Multifamily federally assisted properties (Rule 48)[46]	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 4.2, 5.1, 5.2, 5.3, 5.4, 6.1
Developing resources, tools, and trainings to improve and enhance communication techniques and skills of NCCCP grantees:	6.1
<ul style="list-style-type: none"> • Promoting Existing Comprehensive Cancer Successes • Earning Your Earned Media • Digital Storytelling • Cancer Coalition Identity, Branding, and Marketing • Copywriting to Effectively Communicate Coalition Messages 	

Capacity-building activity		Cancer control competencies
Commission on Cancer George Washington University Cancer Center (*=non-CDC-funded TA)	Producing guides, briefs, and holding webinars and workshops that focus on strategies for implementing policy, systems, and environmental changes (Policy, Systems and Environmental Change Resource Guide and Policy, Systems and Environmental Change: Effectively Engaging Your Coalitions When Working with Media)	2.1, 2.2, 2.3
	Engaging local health departments in comprehensive cancer control planning via sub-award to NACCHO	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.4
	Supporting selected state, territorial, and tribal BRFSS programs in partnership with CCC programs in collecting population-based cancer survivorship data via implementation of the Cancer Survivorship module. (2010 BRFSS survey)	1.1, 1.2, 1.3, 1.4
	Implementing the Commission on Cancer Standard 3.1: Patient Navigation Process (12 month 1-on-1 technical assistance)	1.2, 1.3, 2.1, 2.2, 2.3, 4.2, 5.2, 5.4, 6.1
	Maintaining the Action for PSE Change website (Action4PSEchange.org) and training	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 5.1, 5.2, 5.3, 5.4, 6.1, 7.4
	Creating the Advancing the Field of Cancer Patient Navigation: A Toolkit for Comprehensive Cancer Control Professionals	2.3, 3.1, 3.2, 5.2, 6.1
	Hosting community roundtables	1.1, 2.3, 3.3, 3.4, 5.1, 5.2, 5.3, 5.4, 6.1
	Developing the series of Communication Trainings for CCC Professionals	1.1, 1.2, 1.3, 1.4, 2.3, 3.1, 3.2, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1
	<ul style="list-style-type: none"> 101: Media Planning and Media Relations and Communication Training for Comprehensive Cancer Control Professionals 102: Making Communication Campaigns Evidence-Based 	
	Hosting the Executive Training on Navigation and Survivorship	1.1, 1.2, 2.1, 2.2, 2.3, 4.3, 7.1, 7.2, 7.3, 7.4
National Association of Chronic Disease Directors	Implementing the Commission on Cancer Standard 3.1 Patient Navigation Process: A Road Map for Comprehensive Cancer Control Professionals and Cancer Program Administrators	1.2, 1.3, 1.4
	Developing and implementing Mentorship Program	1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.4, 4.2, 4.3, 5.1, 5.3, 6.1
	Developing the Oncology Patient Navigator Training: The Fundamentals from consensusbased patient navigator competencies* led by GW	1.1, 1.3, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 5.1, 5.2, 5.4, 7.4
	Creating the Patient Navigation Barriers and Outcomes Tool (PN-BOT™) and providing corresponding TA*	1.1, 1.3
	Creating the State Cancer Plans Priority Alignment Resource Guide & Tool	2.3, 5.1
	Supporting Cancer Survivors through CCC Programs	1.2, 2.3, 3.1, 4.2, 5.2, 5.3
	Creating and disseminating Social Media Toolkits	3.2, 6.1
	Hosting the Together-Equitable-Accessible-Meaningful (TEAM) education program*	1.1, 1.3, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 5.3, 7.4
	Creating the Cancer Council Steering Committee (reviews and prioritizes issues that impact cancer burden, quarterly meetings, includes linkages to Tribal and Pacific Island Jurisdictions)	1.1, 3.2, 5.1, 7.3
	Hosting webinars and peer-to-peer mentoring on public health ethics	4.1
	Creating partnership resources to increase capacity to implement evidence-based interventions	5.3
	Creating a Community of Practice around communication skills (webinars on communications plans, success stories, and evaluation of communication)	6.1

Capacity-building activity	Cancer control competencies
National Association of County and City Health Officials	7.1 1.1, 1.3, 2.1, 2.3, 4.2, 4.3 1.1, 2.2, 4.1, 5.2, 5.3, 7.1, 7.4 1.2, 1.4 1.3, 7.1 1.2, 1.3, 1.4 1.4 2.1 2.1 2.1, 2.2, 2.3, 3.1, 3.2, 4.1, 5.1, 5.2, 5.3, 5.4, 6.1, 7.1, 7.2, 7.3, 7.4 2.1, 3.1, 4.1, 5.2, 5.3, 5.4, 6.1 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.2, 5.1, 5.2, 6.1 2.2, 4.2, 4.3, 5.2, 6.1 3.1 3.2, 5.2 3.3 3.3, 5.1, 7.4 3.3, 4.1, 6.1 3.3 5.1 7.4 1.1, 1.2, 1.3, 2.1, 2.2, 3.1, 3.4, 4.2, 4.3, 5.1, 5.2, 6.1 1.1, 1.2, 1.3, 1.4, 2.3, 4.1, 4.2, 4.3, 6.1, 7.2, 7.3 3.1 2.2, 4.2, 4.3, 5.2, 6.1
Providing personalized TA with states to leverage funds and expand work	
Providing webinars, peer-to-peer sharing forums, action planning formats, and reporting templates for annual/bi-annual Community Health Needs Assessments	
Hosting Leadership Academy to train incoming health officers on developing a vision for community health	
Training local health departments on effective development of assessment instruments through webinars, publications, peer-to-peer learning forums	
Recommending information technology updates and considerations for local health departments	
Assisting local health departments in collecting and analyzing local health data	
Providing training for local health departments approaching accreditation on gathering and using evidence-based public health decision making in implementing and developing community-level interventions	
Researching and evaluating all programmatic, technical assistance, training, and capacitybuilding efforts	
Facilitating the Informatics Program	
Creating the Mobilizing Action Planning Program (MAPP) series	
Creating the Emergency Preparedness-Medical Reserve Corp program	
Providing learning communities, forums, and meetings about the Community Health Improvement Plan (CHIP)	
Facilitating the Model Practice Award/Recognition programs	
Supporting the development of effective and evidence-based communications that inform, encourage, and educate	
Sharing information on the minimum standards for effective community communication processes	
Facilitating the Health Equity program	
Facilitating the Performance Improvement program	
Creating and hosting member advisory groups that are based on skills, expertise, and experience	
Hosting disease and health issues experience workgroups	
Creating community health coalitions	
Creating and funding scholarship programs for local public health officials to attend meetings, forums, advisory groups, conferences, etc.	
Hosting the Using What Works and Cancer Control PL.A.N.E.T. training	
Susan G. Komen for the Cure	
Creating Community Profile resources and webinars	
Creating Evidence-Based Resources webinars	
Promoting Physical Activity for Cancer Survivors: LIVESTRONG at the YMCA	
LIVESTRONG Foundation and YMCA-USA	

Source: Self-reporting mapping by organization representatives