

*November 02, 2020*



# Summary Progress Report:

## Executive Summary

*9/30/04 to 9/29/19*

A report on the activity, productivity, and impact of CPCRN over the final year of and the full CPCRN4 funding cycle, as well as across all years dating back to 2004



This report was supported by Cooperative Agreement Number U48-DP001944 from the Centers for Disease Control and Prevention. The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

# CPCRNC Summary Progress Report: Executive Summary

9/30/14 - 9/29/19

The Centers for Disease Control and Prevention (CDC)- and National Cancer Institute (NCI)-funded Cancer Prevention and Control Research Network (CPCRNC) has been in operation since 2002. From 2002 through the end of the fourth funding cycle in 2019, the Network has included a total of 16 CPCRNC collaborating centers, housed at academic institutions across the country. Recently approved for another 5-year funding cycle, “CPCRNC5” will span from 2019 to 2024, comprised of eight collaborating centers, two of which are new brand new to the Network (Table 0.1). This report demonstrates the impact of the work accomplished by CPCRNC members during the previous five-year funding cycle (CPCRNC4) and summarizes the research, dissemination, and implementation activities accomplished by CPCRNC collaborating centers, cross-center workgroups, and the Coordinating Center over three time periods: in the last year (September 2018-2019); throughout CPCRNC4 (September 2014-2019); and across all years since 2004 (September 2004-2019), when the Network’s logic model and progress reporting system were introduced.

**Table 0.1: Funded CPCRNC Centers**

CPCRNC1: 2002-2004	CPCRNC2: 2004-2009	CPCRNC 3: 2009-2014	CPCRNC4: 2014-2019	CPCRNC5: 2019-2024
University of Washington	University of Washington	University of Washington	University of Washington	University of Washington
University of South Carolina	Morehouse School of Medicine	University of South Carolina	University of South Carolina	University of South Carolina
University of Kentucky – West Virginia University	Emory University	Emory University	University of Kentucky	Emory University
Harvard University/ Boston University	Harvard University/ Boston University	Harvard University	University of Pennsylvania	New York University/City University of New York
University of Texas, Houston	University of Texas, Houston	University of Texas, Houston	Case Western Reserve University	University of Arizona
	University of North Carolina <i>(Coordinating Center &amp; Collaborating Center)</i>	University of North Carolina <i>(Coordinating Center &amp; Collaborating Center)</i>	University of North Carolina <i>(Coordinating Center &amp; Collaborating Center)</i>	University of North Carolina <i>(Coordinating Center &amp; Collaborating Center)</i>
	St. Louis University/ Washington University in St. Louis	Colorado School of Public Health	Oregon Health & Science University	Colorado School of Public Health
	University of California, Los Angeles	University of California, Los Angeles	University of Iowa	University of Iowa
		Washington University in St. Louis		

### By the Numbers

CPCRNC has had significant impact on the scientific literature in cancer prevention and control. **During the CPCRNC4 funding cycle, there were 499 CPCRNC-related publications, 69 of which reflected multicenter collaborations, and in the final year of the funding cycle alone, CPCRNC members published 146 articles, 27 of which reflected multicenter collaborations. Since 2004, there have been a total of 1,791 CPCRNC-related publications in peer-reviewed journals, 158 of which reflected multicenter collaborations. CPCRNC members delivered 440 CPCRNC-related presentations during CPCRNC4, 94 of which were multicenter presentations, and 117 in the final year of the funding cycle (12 multicenter). Since 2004, CPCRNC activity has led to nearly 2,000 presentations delivered to outside organizations.** Hundreds of these presentations have been delivered in collaboration with research partner organizations such as Federally Qualified Health Centers (FQHCs, 94 since 2004) and other health care providers (218 since 2004). In the past three years, the CPCRNC Coordinating Center began tracking trainings and educational workshops separately from other types of presentations. During that time, CPCRNC collaborating centers reported **54 training and educational programs conducted**, in part representing expanded collaboration between the University of North Carolina (UNC) and Oregon Health and Science University (OHSU) on delivery of CPCRNC’s Implementing Public Health Evidence in Action training curriculum.

Seeking grant funding for new research and dissemination efforts is a priority for CPCRNC. **In the final year of the funding cycle, members submitted 38 CPCRNC-related applications for grant funding, worth over \$52 million, approximately three-quarters of which (28 applications) were funded for a total of \$34 million dollars awarded. During CPCRNC4, members submitted 199 grant applications worth over \$320 million, of which (116) were funded, for a total of \$150 million in funding secured during CPCRNC4. Since 2004, CPCRNC has applied for 1,283 grants (118 of them multicenter collaborations), totaling over \$1.5 billion in grant applications. More than 600 of those grants were funded, totaling \$670 million.** Multicenter collaborations have clearly brought strength to members’ grant applications. **Of the 118 multicenter grant applications submitted since 2004, 67 (57%) have been funded, securing approximately \$72 million in additional funding for CPCRNC-related collaborative research.** CPCRNC progress

reporting data shows that CPCRN members develop relationships and consistently partner with state and federal breast, cervical, and colorectal cancer (CRC) detection programs as well as health care systems such as FQHCs in their grant-seeking efforts. CPCRN collaborating centers also gave out 36 mini-grants during CPCRN4, ranging from \$500 to \$36,000.

### **Reports, Plans, and Policies Created in Conjunction with State and National Programs**

Over the CPCRN4 funding cycle, centers contributed to 18 plans, 9 reports, and 6 policies in partnership with state and national programs (total N=33). Examples of CPCRN contributions to reports, plans, and policies are below (with partners listed in parentheses):

- Community Cancer Screening Program: Implementing Interventions to Address Disparities; The Community Guide in Action (Colorectal Cancer Screening Program)
- GA Cancer Survivor Needs Assessment (Georgia Cancer Plan)
- NCI HPV Consensus Statement (NCI-designated Cancer Centers Summit)
- Cancer in Iowa 2016 (State Health Registry of Iowa)
- Youth Tobacco Use and Sales Outlets Legislation in Cleveland, Ohio (21 Legislation)
- South Carolina Cancer Plan (South Carolina Cancer Alliance)
- Breast Cancer Disparities Online Toolkit (Association of State and Territorial Health Officials)
- Breathe Free - A Tobacco 21 Working Group (ACS, American Lung Association)
- 2019 Cancer in Iowa (NCI, the State Health Registry of Iowa)
- 2019-2023 Pennsylvania Cancer Control Plan (The Pennsylvania Department of Health)
- Breast, Cervical and Colon Health Program (BCCHP) Evaluation Plan for WA State Department of Health (National Breast and Cervical Cancer Early Detection Program)
- CCO Colorectal Cancer Screening Technical Assistance: Final Report (Oregon Health Authority)
- Evaluation of the Oregon Colorectal Cancer Screening Project (Oregon Health Authority)
- Case Western Reserve University Tobacco-Free Campus Policy (CWRU Smoke-Free Campus)
- Prostate Cancer Recommendations for Improving the Health of Men (Pennsylvania Department of Health)
- Kentucky Adolescent Vaccination for Pharmacists Policy Change (Kentucky Pharmacy Association)
- Patient Preferences for Survivorship Care Plans - Summary Report (Washington Cancer Survivorship Network)

### **Impactful Workgroup Research and Dissemination Activities**

CPCRN workgroups engaged in a variety of research and dissemination activities in this past funding cycle that drove public health impact:

#### **Federally Qualified Health Center (FQHC) Workgroup**

The FQHC Workgroup published results in *The Journal of Community Health* from an eight-state survey of FQHCs to determine which evidence-based CRC screening interventions (EBIs) are currently being used and which implementation strategies are being employed to ensure that the interventions are executed as intended. A follow-up qualitative manuscript was published online in February 2019 in *Translational Behavioral Medicine*. The Workgroup also disseminated data briefs on their work. The study results were used in American Cancer Society (ACS) cancer control collaborative initiatives across multiple states and in a North Carolina Department of Health and Human Services (NC DHHS) application for the CDC's Colorectal Cancer Control Program (CRCCP) application.

#### **Rural Cancer Workgroup**

The Rural Cancer Workgroup engaged in both qualitative and quantitative research projects to examine financial toxicity among rural cancer patients and how those financial burdens were being addressed in clinical settings. The Workgroup also developed manuscripts addressing rural cancer control across the continuum. The Workgroup conducted qualitative interviews with cancer center staff to understand the financial resources that were available for cancer center patients across different types of facilities. The Workgroup presented the results at national conferences and distributed a data brief. The Workgroup also published three peer-reviewed papers utilizing quantitative methods to analyze population-based survey and cohort study data to examine rural-urban differences in financial burden experienced by cancer survivors.

#### **Cervical Cancer Screening Workgroup**

The Cervical Cancer Screening Workgroup completed a systematic review to answer the following research questions: 1) What are the drivers of de-escalation of low-value cervical cancer prevention services and practices? (predictors/

correlates studies) and 2) What methods and approaches have been effective in the de-escalation of low-value cancer prevention services and practices (intervention studies)?

### ***CDC Cancer Screening Workgroup***

In the CDC Cancer Screening Workgroup, CPCRN members collaborated with the CDC to measure CRCCP grantees' use of EBIs to promote CRC screening. This group co-authored multiple papers with their CDC collaborators, one of which was included in a collection of five articles describing evaluation of the CRCCP in *Preventing Chronic Disease*.

### ***Cancer Screening Navigation Workgroup***

The Cancer Screening Navigation Workgroup developed and published a manuscript of patient navigator survey data to describe patient navigator roles and activities as well as reported patient barriers to cancer screening navigation as part of the CPCRN special issue of *Preventive Medicine*.

### ***Implementing Evidence into Action Workgroup***

The Implementing Evidence into Action Workgroup's purpose was to update CPCRN's Putting Public Health Evidence in Action training curriculum and to evaluate its delivery via in-person, distance, and blended formats with the goal of building community and clinical partners' capacity to select, adapt, and implement EBIs. This training was delivered in-person and virtually to hundreds of public health and community partners in North Carolina and Oregon. Findings were published in *Health Promotion Practice*.

This training resource, which supports the selection, adaptation, and effective implementation of EBIs, was originally launched in a previous five-year funding cycle. It was updated, tailored, and scaled up on an ongoing basis during CPCRN4 and disseminated to new audiences in novel settings around the country and as far away as Africa. In addition to the CPCRN website, it has been disseminated through prominent venues such as the Community Guide and Research-Tested Intervention Programs (RTIPs). It was also disseminated through workshops for American Public Health Association (APHA), CRCCP grantees, and UNC Nursing doctoral students. The program's webpage was the most visited page on the CPCRN website, with over 8,600 views during CPCRN4.

### ***Organizational Theory for Implementation Science (OTIS) Workgroup***

The OTIS Workgroup surveyed a group of scholars with expertise at the intersection of implementation and organization science to identify organizational theories that posit organizational determinants of implementation. Workgroup members and external partners have completed abstraction of eleven theories to determine organizational determinants of implementation from the theories and texts identified in the survey. An abstract was presented at the 11th Annual D&I Conference, titled "Development of a framework for organization theory for implementation science (OTIS)".

### ***Modeling Evidence-Based Interventions (EBI) Impact Workgroup***

In the Modeling EBI Impact Workgroup, members engaged in extensive efforts to increase CRC screening in vulnerable populations. Through this Workgroup, CPCRN investigators from UNC and OHSU developed an interactive tool for stakeholders to model the impact of different EBIs and policy changes on CRC screenings and outcomes and used the Workgroup's findings to motivate and implement a CRC screening outreach quality improvement initiative with county and state organizations.

### ***Multiple Cancer Prevention and Control Workgroup***

The Multiple Cancer Prevention and Control Workgroup focused on a scoping review to answer the research question, 'What is the structure, content, and impact of bundled cancer screening programs?'. Workgroup members pulled over 2000 abstracts to be reviewed. The work on this project is continuing currently.

### ***Tobacco/Lung Cancer Screening Workgroup***

The work of the Tobacco/Lung Cancer Screening Workgroup has focused on experiences of FQHCs and their patients. This work has involved analyzing the data reported to the Health Resources and Services Administration (HRSA) by FQHCs (i.e. Uniform Data Set), which led to a subsequent survey conducted among FQHCs on both lung cancer screening and resources for smoking cessation. Three manuscripts were published from analysis of these data sets. This body of work led the group to query FQHC patient experience with smoking and smoking cessation using the Health Center Patient Survey data. The results of this investigation led to a manuscript which is currently under review.

## ***Catalyzing Action and Effecting Change***

CPCRN collaborating centers and workgroups engaged in a variety of activities that demonstrated the Network's impact via catalyzing action and effecting change in partnership with community and policy organizations:

### **Modeling Evidence-Based Interventions (EBI) Impact Workgroup**

Drs. Stephanie Wheeler and Alison Brenner of UNC developed a new partnership with Public Health Department and Medicaid stakeholders to implement mailing reminders and fecal immunochemical test (FIT) kits to Medicaid clients. In addition, the Workgroup's efforts prompted a 6-part series of webinars and a technical assistance program for OHSU partners to assist with implementing EBIs for Coordinated Care Organizations (CCOs) (Oregon's Affordable Care Act healthcare system) to increase CRC screening, resulting in the initiation of multi-component interventions to increase community demand, improve community access, and increase clinical delivery of screening services. Results from the Workgroup also were presented to National CRC Roundtable leadership and to the North Carolina CRC Roundtable.

### **HPV Vaccination Workgroup**

The work of the HPV Vaccination Workgroup influenced passage of Kentucky Senate Bill 101, allowing Kentucky Pharmacists to administer HPV vaccines to adolescents. Lessons learned by a CPRN multicenter pilot grant from the ACS HPV Vaccination Roundtable to examine HPV vaccination in pharmacy settings were disseminated to and informed drafting of legislation by Kentucky pharmacy advocates.

Also working toward cervical cancer control, UI investigators worked with their state's Department of Public Health to demonstrate how analysis of HPV immunization registries can be used to prioritize areas and populations to be targeted for immunization uptake efforts.

### **Tobacco/Lung Cancer Screening Workgroup**

UW's Dr. Steve Zeliadt's SIP-funded research findings suggested prioritizing careful monitoring of tobacco cessation and quit rates by geographic groupings and providing screening programs incentives for close monitoring of the prioritized quality measure that emerged from the study. Dr. Zeliadt's findings were presented at the National Lung Cancer Roundtable and influenced the American College of Radiology Registry to begin routinely calculating and reporting quit rates based on his recommendations, which also informed the American Thoracic Society's Official Research Agenda Policy Statement on integrating smoking cessation into lung cancer screening.

### **Dissemination Communications**

During this funding cycle, CPRN received a broad variety of coverage in the media and other dissemination avenues:

#### **Oregon Health and Science University**

Dr. Kerri Winters-Stone of OHSU conducted a study to determine whether providing a free exercise DVD in addition to an oncologist's recommendation for exercise led to better outcomes than the doctor's recommendation alone; it did. Stories about the program were featured on the OHSU website and in their cancer center's newsletter and disseminated via multiple social media platforms, reaching over 14,000 people's social media feeds. News articles covered OHSU's community ambassadors program, which launched with cancer as its first area of focus. Additionally, seven news stations covered OHSU's vending machine that dispenses DNA kits to study cancer risk based on inherited gene mutations, four local news outlets covered the OHSU Knight Cancer Institute Scholars Program, and Dr. Amanda Bruegl was interviewed by a local news station about her research on the gender gap around vaccination for boys vs. girls for HPV. Lastly, the Cancer Center Cessation Initiative, in which OHSU Collaborating Center members participate, was featured on the NCI website as part of the NCI Cancer Moonshot.

#### **University of Iowa**

UI's Dr. Natoshia Askelson's US Department of Agriculture-funded healthy school lunch research program was featured in two articles: *Iowa Now* and *The Daily Iowan*. UI staged booths at the Iowa Immunization Summit to disseminate infographics about HPV and oropharyngeal cancer and at the Iowa Dental Hygienists' Association Conference to discuss and recruit participants for an HPV Dental project. UI's Dare to Discover campaign, which showcases scholars making important contributions to research and discovery from across UI in banners displayed throughout downtown Iowa City, featured a student member of CPRN. Dr. Charles Lynch published a manuscript in the *Journal of the National Cancer Institute* that garnered international news coverage, with Reuters publishing an article entitled "Large U.S. farm study finds no cancer link to Monsanto weedkiller." UI's CPRN research was also featured in a British National Health Service article about the link between energy-dense foods and obesity-related cancer.

#### **University of Pennsylvania**

Dr. Karen Glanz of UPenn was featured on TV, radio, and in print news coverage. Specifically, she was interviewed for stories about regulations for reef-safe sunscreen for a Hawaii television station and for Wharton Business Radio and wrote an Op-Ed for the Philadelphia Inquirer about the problems that can stem from a single diagnosis framing the way that a patient is seen by medical providers.

### **Case Western Reserve University**

As part of an event hosted by CWRU called *From Risk to Resilience*, two local radio stations broadcasted a story featuring Dr. Erika Trapl of CWRU who discussed Youth Risk Behavior Surveillance System (YRBSS) survey findings about increases in vaping among middle schoolers.

### **University of South Carolina**

ACS's TheoryLab Podcast featured USC's Dr. Jan Eberth discussing her work in eliminating cancer disparities and boosting CRC screening rates. Furthermore, the Association of Schools and Programs of Public Health (ASPPH) Friday Letter highlighted several USC initiatives: 1. Dr. Daniela Friedman's Duke Endowment Grant to address health literacy in SC (which was based on a pilot program funded by CPRN); 2. A multi-site study promoting HPV vaccination by Dr. Heather Brandt; 3. An arts and CRC-focused educational program for faith-based settings developed by church members; and 4. Renewal of funding for USC's PRC and CPRN.

### **University of North Carolina at Chapel Hill**

UNC launched a new implementation science-related Twitter account, @UNCImpSci, with campaigns about University Research Week, UNC presentations at the 12<sup>th</sup> Annual D&I Conference, and an Implementation Science Speakers Series. UNC investigators produced and disseminated two measures to assess tobacco Point of Sale policy change via Counter Tools, a non-profit organization founded by former CPRN Coordinating Center PI and current UNC Cancer Center Program Leader, Dr. Kurt Ribisl. Lastly, Dr. Stephanie Wheeler of the UNC Coordinating Center was featured on NPR, Reuters, HealthDay, Kaiser Health News, and multiple other print and online news sources for her work focused on endocrine therapy use in racially diverse breast cancer survivors and the financial impact of cancer in underserved patients.

### **University of Washington**

UW's mailed FIT program was featured across several online and social media platforms, from a website sharing implementation resources for clinics (including webinars and slides, models, workflows, data tracking forms and patient engagement materials) to technical assistance provided to CCO leaders, presentation at the Oregon CCO conference, LinkedIn Stories, a podcast, and presentations and discussions with over a dozen key stakeholders. UW CPRN members also developed a research brief that was disseminated to primary care researchers serving Spanish-speakers.

### **University of Kentucky**

Dr. Robin Vanderpool of the UK Collaborating Center was interviewed in an article entitled, "Lack of Broadband Limits Telemedicine in Rural Areas"; the article was published on the site NextAvenue on 03/15/2018.

## **Requests for Scientific Expertise**

CPRN members' expertise was in high demand throughout the funding cycle. Members were asked to give presentations to community members, to the NBCCEDP and CRCCP, a Cancer Center Community Outreach Seminar, an NIH workshop, the American Society of Clinical Oncology (ASCO) Annual Meeting, the NCI Health Information National Trends Survey (HINTS) data users conference, the Kentucky Rural Health Association (KRHA), the New Hampshire Colorectal Cancer Screening Program, the NCI Implementation Science program, the ACS, the Washington Department of Health, the NIH Dissemination and Implementation Research in Health Study Section, King County's CRCCP/NBCCEDP programs, San Diego State University, and the University of Queensland, Australia. A brief listing of some of those requests for expertise is featured below; more details are featured in the full report:

### **Case Western Reserve University**

Dr. Siran Koroukian was invited by the CDC and the National Association of Chronic Disease Directors (NACDD) to serve on a panel to explore evidence-based opportunities for cancer prevention during older adulthood.

### **University of Pennsylvania**

Investigators reviewed CDC tip sheets for grantees of the NBCCEDP and the CRCCP about implementing EBIs.

### **University of Kentucky**

Dr. Robin Vanderpool was sought out by NCI to chair the NCI Accelerating Rural Cancer Control Research Conference. Dr. Vanderpool was requested by state teams at the 80% by 2018 forum to provide technical assistance on increasing CRC screening rates through enhanced partnerships between Comprehensive Cancer Control Coalitions and FQHCs.

### **University of Iowa**

- Dr. Askelson and Ms. Laura Seegmiller were sought by the ACS and Iowa Managed Care Organizations to develop an evaluation of a statewide HPV vaccination project.
- Dr. Barbara Baquero was invited to serve as a panel reviewer for the US Department of Agriculture (USDA).

- UI's team was sought by the Iowa Department of Public Health to assist in an Evaluation of HPV vaccination Vaccines for Children Clinics
- Dr. Mary Charlton was invited to join the ACS State Leadership Board.

#### **University of North Carolina at Chapel Hill**

- Dr. Stephanie Wheeler was invited to serve as Vice Chair for the ACS Health Policy and Health Services peer review panel, organizing committee member for the ASCO Quality Care Symposium, and Methods Theme Co-Chair for the AcademyHealth Annual Research Meeting. Dr. Wheeler's expertise in CRC screening decision making and simulation was requested by several organizations including the North Carolina CRC Roundtable, the ACS, CDC, NCI, and National CRC Roundtable.
- UNC's CPCRn members led and evaluated a workshop for the North Carolina CRC Roundtable.
- Dr. Jennifer Leeman was sought to serve on the NCI Qualitative Research in Implementation Science Workgroup and co-authored the white paper sharing their findings.
- Dr. Catherine Rohweder was sought by the National CRC Roundtable to share data from the FQHC Workgroup's survey and qualitative interviews.
- 4CNC investigators and staff were asked by the ACS to evaluate a North Carolina CRC Collaborative with ten FQHCs; results were published in CPCRn's 2019 *Preventive Medicine* special issue.

#### **University of Washington**

- Dr. Beverly Green's expertise was sought out by multiple organizations including the NCI Special Emphasis "Moonshot" Review Panel, the NIH Health Services Organization and Delivery review panel, the Northwestern University Patient-Centered and Engagement Training Program, and an intervention workshop.
- Members were invited to review FQHC proposals to participate in WA's NBCCEDP and CRCCP programs.
- Drs. Peggy Hannon and Gloria Coronado were sought by CDC to serve as members of CDC's Breast and Cervical Cancer Early Detection and Control Advisory Committee.
- Dr. Vicky Taylor was sought out to serve as a reviewer by the CDC and NCI's primary groups seeking to promote evidence-based approaches to cancer control, the CDC's Guide to Community Preventive Services and NCI's Research-Tested Intervention Programs.
- Dr. Coronado was sought by the NW Portland Area Indian Health Board and NW Tribal Clinical Cancer organization to speak at their Clinical Cancer Update meeting about CRC screening as well as by CDC's Community Guide Cancer Screening Evidence Review Committee for her expertise in engaging community health workers to promote cancer screening.

#### **Oregon Health & Science University/University of Washington**

OHSU's Dr. Melinda Davis and UW's Dr. Gloria Coronado were sought by the Oregon Health Authority's Transformation Center for CRC Screening technical assistance at CCOs.

#### **University of South Carolina**

Dr. Daniela Friedman was sought by the South Carolina Hospital Association (SCHA) for assistance in developing a tool to gauge health literacy in patients in all hospital systems in South Carolina. She was also sought by the South Carolina Cancer Alliance for assistance in developing a prostate cancer educational resource.

#### **Other Significant Network Activities**

CPCRn workgroups and collaborating centers were asked to identify their most significant contributions to the Network throughout the CPCRn4 funding cycle. These included:

**All centers collaborated to produce a special issue of *Preventive Medicine*** - The Coordinating Center initiated and managed the development of a 13-article CPCRn special issue in *Preventive Medicine* themed around "Implementation science and population approaches to improve equity in cancer prevention and control" which was published online with open access in December 2019. The [full issue is available for download](#). Articles included in the special issue can also be individually downloaded by following the links below:

- [The Cancer Prevention and Control Research Network: Accelerating the implementation of evidence-based cancer prevention and control interventions](#) (Guest Editor Commentary). Leeman J, Glanz K, Hannon P, Shannon J.
- [The Cancer Prevention and Control Research Network \(CPCRn\): Advancing public health and implementation science](#) (Funder Commentary). White A, Sabatino SA, Vinson C, Chambers D, White MC.
- [Multilevel analysis in rural cancer control: A conceptual framework and methodological implications](#). Zahnd WE, McLafferty SL, Eberth JM.

- [Financial Hardship among Rural Cancer Survivors: An Analysis of the Medical Expenditure Panel Survey](#) Odahowski CL, Zahnd WE, Zgodic A, Edward JS, Hill LN, Davis MM, Perry CK, Shannon J, Wheeler SB, Vanderpool RC, Eberth JM.
- [Mortality-to-incidence ratios by US Congressional District: Implications for epidemiologic, dissemination and implementation research, and public health policy.](#) Eberth JM, Zahnd WE, Adams SA, Friedman DB, Wheeler SB, Hébert JR.
- [Challenges of using nationally representative, population-based surveys to assess rural cancer disparities.](#) Zahnd WE, Askelson N, Vanderpool RC, Stradtman L, Edward J, Farris PE, Petermann V, Eberth JM.
- [Estimating the impact of insurance expansion on colorectal cancer and related costs in North Carolina: A population-level simulation analysis.](#) Lich KH, O'Leary MC, Nambiar S, Townsley RM, Mayorga ME, Hicklin K, Frerichs L, Shafer PR, Davis MM, Wheeler SB.
- [Patient navigator reported patient barriers and delivered activities in two large federally-funded cancer screening programs.](#) Barrington WE, DeGross A, Melillo S, Vu T, Cole A, Escoffery C, Askelson N, Seegmiller L, Gonzalez SK, Hannon P.
- [Mailed FIT \(fecal immunochemical test\), navigation or patient reminders? Using microsimulation to inform selection of interventions to increase colorectal cancer screening in Medicaid enrollees.](#) Davis MM, Nambiar S, Mayorga ME, Sullivan E, Hicklin K, O'Leary MC, Dillon K, Hassmiller Lich K, Gu Y, Lind BK, Wheeler SB.
- [Understanding quality improvement collaboratives through an implementation science lens.](#) Rohweder C, Wangen M, Black M, Dolinger H, Wolf M, O'Reilly C, Brandt H, Leeman J.
- [Advancing the use of organization theory in implementation science.](#) Leeman J, Baquero B, Bender M, Choy-Brown M, Ko LK, Nilsen P, Wangen M, Birken SA.
- [Putting Evidence Academies into action: Prostate cancer, nutrition, and tobacco control science.](#) Glanz K, Green S, Avelis J, Melvin CL. [An application of the Science Impact Framework to the Cancer Prevention and Control Research Network from 2014-2018.](#) Ko LK, Jang SH, Friedman DB, Glanz K, Leeman J, Hannon PA, Shannon J, Cole A, Williams R, Vu T.

**CPCRN's workgroups were especially productive in this final year of the funding period**, continuing research and publishing their findings. Most notably, the Modeling EBI Impact Workgroup produced eleven publications, and the Rural Cancer Workgroup produced six in the past year. In total, in the 5-year funding cycle, CPCRN workgroups published 86 papers, and in the final year of the funding cycle, they published 23 papers.

### **Significant Grants**

- **UNC, UK, and OHSU** were awarded NIH Cancer Moonshot grants around Accelerating Colorectal Cancer Screening and Follow-up Through Implementation Science (ACCSIS). The Modeling EBI Impact Workgroup efforts led to a collaboration among UNC PIs and Co-Investigators Stephanie Wheeler, Jennifer Leeman, Catherine Rohweder, Dan Reuland, and Alison Brenner, as well as OHSU Co-I Melinda Davis, which resulted in over \$5.5 million in funding from NCI for a Moonshot ACCSIS grant titled "Scaling Colorectal Cancer Screening Through Outreach, Referral, and Engagement (SCORE): A State-level program to reduce colorectal cancer burden in vulnerable populations". The University of Kentucky and Oregon Health and Science University also leveraged their involvement in CPCRN to obtain ACCSIS grants.
- **Rural Cancer Control Workgroup efforts led to an NCI R01 grant to UNC to address cancer-related financial toxicity in rural oncology care settings** – Led by UNC Coordinating Center PI Stephanie Wheeler, activities pursued, in part, within the Rural Cancer Control Workgroup resulted in over \$2.3 million in funding to: (1) understand the practice-level determinants of financial toxicity-focused intervention implementation in rural oncology practices; (2) explore the extent to which practice-level technical support and tailored coaching can optimize FN intervention implementation in rural oncology practices; and (3) evaluate the effects of FN implementation on patient- and practice-level outcomes in rural oncology practices.
- **UW received a \$3.8 million P50 grant to create a new Implementation Science Center for Cancer Control (co-PIs: Dr. Bryan Weiner, Dr. Peggy Hannon, and Dr. Cara Lewis):** The mission of the OPTICC (Optimizing Implementation in Cancer Control) Center is to improve cancer outcomes by supporting optimized implementation of EBIs in cancer control, which will develop, test, and refine innovative methods for optimizing EBI implementation a network of diverse clinical and community sites to conduct "in vivo" IS studies, implement cancer control EBIs, and shape the Center's research agenda. The Center's initial studies will focus on optimizing implementation of screening EBIs for cervical, colorectal, breast, and ovarian cancer. However, the methods for optimizing EBI implementation that the Center will develop, test, and refine can be applied broadly across the cancer care continuum for a wide range of cancers, to answer a wide range of IS questions.
- **UW PI Peggy Hannon was awarded a \$2 million dollar R01 grant to increase implementation of EBIs at low-wage worksites** - The program will increase the reach of their intervention program, Connect to Wellness (previously HealthLinks), to small employers with limited capacity for and access to EBIs in several states.



- **UK investigator Angela Carman received a \$25,000 grant from the UK Cancer Center's Pilot Program to build cancer screening capacity in an Appalachian Kentucky FQHC** which focused on adaptation, implementation, evaluation, and dissemination of the evidence-based Proactive Office Encounter (POE) intervention developed at UK in an FQHC located in Lee County, Kentucky, where the colorectal, breast and cervical cancer screening programs are no longer sustainable through the health department. Elevated cancer burden and a shrinking clinical base increased the need to adopt an efficient and effective evidence-based cancer prevention program through the remaining safety-net medical service providers.
- **UI PI Natoshia Askelson received a \$30,000 seed grant from the UI Cancer Center focused on exploring integrated workforce collaboration to promote HPV vaccine uptake** and conduct formative research to test feasibility of using dental hygienists to provide a strong recommendation for the HPV vaccine.
- **OHSU PI Jackilen Shannon was awarded a \$7.7 million dollar R25 training grant to launch the Knight Scholars Program** – The program will provide mentored cancer research training experiences for underrepresented and rural high school students in order to increase access to enhanced STEM opportunities in a manner that takes into account the social and geographic challenges these students may face.

### **Significant Publications**

- Wheeler SB, Davis MM. "Taking the Bull by the Horns": Four Principles to Align Public Health, Primary Care, and Community Efforts to Improve Rural Cancer Control. *J Rural Health*. 2017;33(4):345-349. doi: 10.1111/jrh.12263. Epub 2017 Sep 14. PMID: 28905432
- Zeliadt, S. B., Hoffman, R. M., Birkby, G., Eberth, J. M., Brenner, A. T., Reuland, D. S., & Flocke, S. A. (2018). Challenges Implementing Lung Cancer Screening in Federally Qualified Health Centers. *American journal of preventive medicine*, 54(4), 568-575. doi: 10.1016/j.amepre.2018.01.001
- Wheeler SB, Leeman J, Hassmiller Lich KM, Tangka F, Davis MM, Richardson LC. Data-powered participatory decision making: Leveraging systems science and simulation to guide selection and implementation of evidence-based colorectal cancer screening interventions. *Cancer J*. 2018 May/Jun;24(3):136-143. doi: 10.1097/PPO.0000000000000317. PMID: 29794539 PMID: PMC6047526
- Adams, S.A., Rohweder, C.L., Leeman, J., Friedman, D.B., Gizlice, Z., Vanderpool, R.C., Askelson, N., Best, A., Flocke, S.A., Glanz, K., Ko, L.K., Kegler, M. Use of evidence-based interventions and implementation strategies to increase colorectal cancer screening in Federally Qualified Health Centers. *J Community Health*. 2018; 43:1044. <https://doi.org/10.1007/s10900-018-0520-2>.
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### **Significant Presentations**

- Trapl ES, Smoking and Cessation Behaviors in Patients at Federally Qualified Health Centers. Oral presentation at: The National Conference on Tobacco or Health; August, 2019; Minneapolis, MN.
- Askelson N, 5 State HPV Vaccination Concept Mapping Team. Understanding HPV vaccination disparities from state-level stakeholders. Poster presentation at 12th Annual Conference on the Science of Dissemination and Implementation; December 4-6, 2019; Arlington, VA.
- Vanderpool RC. Cancer Prevention and Control Research in Appalachian Kentucky. Cancer Epidemiologic Research in Understudied Populations Webinar Series. National Cancer Institute, Genomic Epidemiology Branch. January 17, 2018.
- Askelson, N.M., Flocke, S.A., Friedman, D.B., Glanz, K., Heiney, S.P., Ko, L.K., Leeman, J., Parker, E.A., Rohweder, C.L., Seegmiller, L., Stradtman, L., & Vanderpool, R.C. (2017, December). How federally qualified health centers select and implement multi-level evidence-based interventions to improve colorectal cancer screening: A qualitative study. Poster presentation. 10th Annual Conference on the Science of Dissemination and Implementation in Health, Arlington, VA.
- Shannon J, Farris PE, Dickinson C, Howes D. Interview Results from an HPV Vaccination Environmental Scan in Rural and Frontier Oregon Communities. Ignite presentation at Increasing HPV Vaccination in the United States: A Collaboration of NCI-funded Cancer Centers, June 7-8, 2018, Salt Lake City, UT.
- Perry CK, Hemler J, Damschroder L, Woodson TT, Ono S, Cohen D. Specifying implementation strategies used by seven primary care regional cooperatives: Real-world meets theory. Podium presentation, 10th Annual Conference on the Science of Dissemination and Implementation
- Medysky, M, Winters-Stone, K. The Contribution of Muscle and Fat Mass on Lower-Body Physical Functioning in Older Female Cancer Survivors. Poster presentation at: NIH/NCI Role of Muscle and Body Composition in Cancer Risk and Prognosis in Cancer Survivors. National Institutes of Health, Rockville, MD, Sept 25-26, 2017.

### ***Significant Training Workshops***

- **University of Pennsylvania CPCR N hosted Tobacco Control Science Evidence Academy** - The Evidence Academy presented the latest evidence and research about new tobacco products, tobacco regulation, and smoking cessation efforts. The goal of the event was to engage public health professionals, policy makers, researchers, and clinicians to inform them of the most up-to-date research and bridge the gap between research and practice.
- **CPCR N Implementing Evidence into Action Workgroup collaborators traveled to Minnesota to train American Cancer Society using the Putting Public Health Evidence into Action curriculum** - In July 2018, CPCR N collaborators from UNC and Emory University traveled to Minneapolis to provide a day-long training to ACS North Region staff in the hospital and healthcare systems verticals, a version adapted for a more clinically oriented audience. Positive training evaluations led to further refinements in the curriculum for future trainings, and the team is exploring ways to deliver the training to more ACS regions and in alternative formats such as a webinar series.
- **In partnership with NCI, UNC developed and delivered a course called Introduction to Implementation Science** for the American Public Health Association, delivered at their 2019 annual national conference.

### ***Significant Assessment & Evaluation Activities***

- **The UW CPCR N provided implementation and evaluation technical assistance in support of WA State's Breast, Cervical and Colorectal Cancer Screening Program activities** – UW provided extensive consultation, implementation guidance, and evaluation technical assistance to WA's NBCCEDP and CRCCP – CDC's national breast, cervical and colorectal cancer screening programs, respectively. The UW CPCR N worked directly with WA Department of Health and their partner FQHCs (n=10) to support their implementation and evaluation of EBIs to increase screening in their respective settings. They additionally supported WA DOH's work with regional Prime Contractors (n=6) who connected clients with BCC and CRC screening services. UW CPCR N's activities supported both national- and local-level NBCCEDP and CRCCP evaluation efforts.
- **The CWRU CPCR N conducted an evaluation of Cleveland's new Tobacco 21 policy** – The program evaluated the implementation of the Tobacco 21 legislation in Cleveland which raised the minimum age to purchase tobacco and vaping products from 18 to 21 years.

### ***Example Local Center Projects***

- **UK investigators completed four significant projects to advance their collaborating center's work:**
  - The UK CPCR N worked with the leadership, providers, and staff of the largest healthcare provider in Southeastern Kentucky, Appalachian Regional Healthcare (ARH), to provide technical assistance for the implementation of their Proactive Office Encounter (POE) framework through monthly conference calls, routine in-person meetings to discuss progress and troubleshoot current or potential issues, including motivational interviewing training.
  - The UK team completed an Implementation Toolkit for their Proactive Office Encounter intervention to be used for dissemination and implementation of the POE program at FQHCs, Community Health Centers, and other clinical settings, which was posted on their website.
  - After learning that UK's POE model had been implemented in additional FQHCs based on word of mouth from one of their clinic partners, they surveyed leadership at Kentucky's 24 FQHCs to assess their practices and sources of information about innovative preventive care practices.
  - The UK team also developed a Fecal Immunochemical Testing (FIT) kit educational audio card for their clinical partners which includes written and audio motivational messaging from a CRC survivor and instructions on how to properly use a FIT kit. They partnered with the ACS to adapt the cards to provide generalized instructions that could be used by any healthcare organization regardless of which FIT product they use in their clinics. They were disseminated to clinical partners for use.
- **UPenn investigators completed three significant projects to advance their collaborating center's work:**
  - UPenn investigators conducted active surveillance of prostate cancer by exploring patient and provider perceptions and beliefs about treatment decision making, genomic risk assessment, and decision aids or decision supports (e.g., interactive software programs) for men diagnosed with localized, low-risk localized prostate cancer (PCa). This novel and timely study has the potential for high impact on treatment and treatment decision-making among men with prostate cancer.
  - UPenn's CPCR N worked with the Health Federation of Philadelphia and the ACS, South Eastern Division, on a collaborative CRC project to improve the screening processes and/or interventions to increase CRC screening in local FQHCs.
  - The UPenn CPCR N team worked with stakeholders and FQHC partners to identify barriers, challenges, and needs regarding CRC screening and used process mapping to inform development of a project to address critical gaps in the uptake of evidence-based strategies to increase screening. They held a peer learning kick-off event where each of 4 clinic sites developed collaborative action plans for implementing their tailored evidence-based projects.

- **UI's** Dr. Rima Affi helped organize a public event with 145 attendees titled “What are E-Cigs and What Do They Do?”, which included a moderated discussion among a panel of local researchers and community members, including Dr. Affi, with a focus on local prevalence of e-cig usage in the community. Dr. Affi was joined by visiting scholar Dr. Tom Eissenberg, a prominent e-cigarette researcher from Virginia Commonwealth University, who shared his research on vaping which involves developing and demonstrating methods to evaluate modified risk of tobacco/nicotine projects.
- **UNC** focused on increasing use of CRC screening implementation strategies at community health centers across the state, leading to increases in CRC screening rates in vulnerable populations.
- **UW** aimed to understand and enhance the use of EBIs to increase breast, cervical, and CRC screening rates locally and nationally. Locally, they worked with their state DOH and FQHCs (n=10) to support and evaluate their use of EBIs to improve multiple types of cancer screenings (breast, cervical, and CRC), and nationally, they continued a longstanding partnership with the CDC to evaluate use of EBIs in the CRCCP and National Breast and Cervical Cancer Early Detection Program (NBCCEDP).

### CPCRN Coordinating Center & Steering Committee

With leadership from the Coordinating Center, the Steering Committee met regularly to discuss the Network’s strategic planning, scientific direction and productivity, completion of workgroup research projects, and dissemination of Network products. The Steering Committee developed a new **Mission Statement and Network Strategic Plan** (Appendix A1) outlining the Network’s aspirational goals, objectives and tactics to achieve them, and key performance indicators to evaluate success. The Coordinating Center also worked with Steering Committee leadership to develop written **Guidelines for Collaboration** (Appendix A) around group norms for Network collaborations. In January 2018, the CPCRN Principal Investigators (PIs) endorsed a flexible, inclusive new process for developing new CPCRN cross-center workgroups. Four new workgroups formed under this process in Year 4, including the Rural Cancer Workgroup, Multiple Cancer Prevention and Control Workgroup, Cancer Screening Navigation Workgroup, and Organizational Theory for Implementation Science (OTIS) Workgroup.

During CPCRN4, the Coordinating Center continued to develop and improve processes and structures to support CPCRN activities by:

- Revising the progress reporting system using the CDC’S Impact Framework (Appendix A2)
- Implementing and continuing to refine a new communications and dissemination strategy
- Implementing a quarterly emailed newsletter
- Managing a 13-article special issue in *Preventive Medicine*
- Launching new social media accounts on Twitter and Facebook
- Extensively updating the CPCRN website ([www.cpcrn.org](http://www.cpcrn.org))
- Developing new CPCRN logos, PowerPoint Templates, report templates, and letterhead
- Continuing to use the CPCRN listserv to share information, resources, and opportunities
- Planning and hosting annual Network meetings (Table 0.2)
- Planning and hosting opportunities for members to meet at outside conferences (Table 0.2)

**Table 0.2: Multicenter Meetings and Networking Events Planned and Sponsored by the Coordinating Center**

Meeting Name	Date(s)	Location	Attendees
CPCRN4 Kick-Off Meeting	December 11-12, 2014	Atlanta, GA	29 in person
CPCRN4 Spring Workgroup Meeting	May 14, 2015	Chapel Hill, NC	39 in person, 13 virtual
CPCRN4 Annual Scientific Meeting	May 24-25, 2016	Chicago, IL	41 in person, 15 virtual
D&I Meeting in Wash. DC Lunch for CPCRN	December 15, 2016	Washington DC	21 in person
CPCRN4 Annual Scientific Meeting	May 22-24, 2017	Chapel Hill, NC	37 in person, 12 virtual
CDC Cancer Conference	August 16, 2017	Atlanta, GA	21 in person
D&I Meeting in Arlington, VA Reception for CPCRN	December 5, 2017	Arlington, VA	18 in person
CPCRN Year 4 Annual Scientific Meeting	May 21-23, 2018	Chapel Hill, NC	43 in person, 9 virtual
Rural Cancer Workgroup Dinner Meeting during the Accelerating Rural Cancer Control (ARCC) Meeting	May 30, 2018	Bethesda, MD	12 in person
D&I Lunch Meeting in Wash. DC for CPCRN	December 4, 2018	Washington DC	17 in person
CPCRN Year 5 Annual Scientific Meeting	January 30-February 1, 2019	Phoenix, AZ	44 in person

## Conclusion

CPCRN has made substantial impact in cancer prevention and control and implementation science in the past year, across the CPCRN4 funding cycle, and across its history dating back to 2002. Its members continue to innovate, develop, implement, and evaluate evidence-based approaches to cancer prevention and control with their local, state, and national partners, influencing everything from local clinic practices to state cancer plans to national organizations' practices and policies. ***The Network's extensive history of producing nearly 1,800 publications and funded grants totaling \$670 million in research dollars since 2004 demonstrate just two of many ways the Network and its members' expertise has, and continues to have significant impact on the nation's dissemination and implementation of evidence-based cancer prevention and control research.***