

# Building Community Capacity to Participate in Cancer Prevention Research

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## Introduction

Over the past decade, scientists have made significant progress in identifying the mechanisms responsible for the initiation and progression of cancer. Rapidly expanding knowledge about cancer processes at the genetic, molecular, and cellular levels offers myriad possibilities for preventing cancers or detecting them early enough to limit disease effects.<sup>1</sup> To demonstrate efficacy, many of these new interventions will have to be tested in large populations of healthy or at-risk individuals over extended periods of time. Stronger partnerships between academic researchers and community clinicians will be needed to identify and enroll study participants, manage participant follow-up, and facilitate the transfer of effective interventions into routine clinical practice.

Recent reports have proposed academic-community partnerships to test preventive and therapeutic interventions.<sup>2-4</sup> However, little is known about changes that must occur at the local level to facilitate community clinicians' participation in cancer prevention research involving healthy populations. This study examines how local networks of hospitals and physicians funded by the Community Clinical Oncology Program (CCOP) of the National Cancer Institute (NCI)

have adapted their organizational structures and strategies to recruit participants to *primary prevention* studies, which evaluate new methods to prevent or suppress carcinogenic progression, and *secondary prevention* studies, which evaluate promising biomarkers and screening technologies. Although the NCI's cancer prevention and control (CP/C) research portfolio also includes *tertiary prevention* (cancer control) studies that evaluate symptom management and supportive care interventions designed to improve quality of life, this study focuses on the strategies used to recruit individuals seldom seen in oncology practices.

Four questions guided this study of community participation in primary and secondary prevention research (hereinafter referred to as prevention research). (1) What staffing arrangements enable community oncologists to participate in prevention research? (2) What outreach strategies encourage primary care physicians and other non-oncologists to refer patients to prevention clinical trials? (3) What outreach strategies encourage consumers to self-refer to prevention clinical trials? (4) What types of prevention protocols are most feasible for implementation in community settings? This article concludes with a discussion of three necessary conditions for building cancer prevention research capacity at the community level.

## Background

Established in 1983, the Community Clinical Oncology Program funds networks of community hospitals, physicians, and clinical research staff (CCOPs) to enroll participants in cancer treatment and CP/C clinical trials designed and monitored by cancer centers and clinical cooperative groups that the NCI has designated as "CCOP research bases." Although CCOPs have multidisciplinary memberships, most participating physicians are oncologists. As of December 2004, 63 CCOPs located in 35 states, the District of Columbia, and Puerto Rico were participating in NCI-sponsored clinical trials.

The initial CCOP Request for Applications (RFA) sought to increase the participation of community oncologists and their patients in cancer treatment research while "establishing a base" for future CP/C research.<sup>5</sup>

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**Abbreviations used in this paper:** CCOP = Community Clinical Oncology Program, CP/C = cancer prevention and control, CRA = clinical research associate, STAR = Study of Tamoxifen and Raloxifene, SELECT = Selenium and Vitamin E Cancer Prevention Trial.

During the first funding cycle, CCOPs demonstrated their ability to accrue large numbers of patients to treatment trials, meet quality control standards, and expedite the diffusion of state-of-the-art cancer care.<sup>6,7</sup> A second RFA, issued in 1986, expanded the program's scope to include research on cancer prevention, early detection, and cancer control interventions. The new program guidelines required CCOP research bases to design CP/C clinical trials for implementation by their CCOP members and non-CCOP members (eg, academic medical centers, NCI-designated cancer centers, and community-based affiliates). The guidelines also established minimum annual CP/C accrual requirements for CCOP grantees.

Although the CCOP research bases and CCOPs had some experience with cancer control clinical trials, the design and conduct of prevention trials for cancer-free study populations represented a significant departure from their treatment-oriented research.<sup>8</sup> An evaluation of the second (CCOP-II) funding cycle conducted between 1988 and 1991 documented modest increases in CP/C protocol availability and CCOP accruals to these trials.<sup>8,9</sup> However, the ability of CCOPs to build the infrastructures and community linkages necessary for successful accrual to prevention trials remained in question. This study examines the adaptations that CCOPs have made to increase community participation in cancer prevention trials since the CCOP-II evaluation.

## Methods

### *Study Sample and Data Collection*

Between October 2002 and August 2003, we conducted case studies of CP/C research in four CCOP research bases using a protocol approved by the University of North Carolina School of Public Health's Institutional Review Board. Although 14 cancer centers and cooperative groups serve as CCOP research bases, the four cooperative groups studied are among the few research bases that have been continuously funded since the program's inception. Selected to investigate approaches to CP/C research in groups with diverse scientific agendas and organizational structures, our sample included the Eastern Cooperative Oncology Group (ECOG), the National Surgical Adjuvant Breast and Bowel Project (NSABP), the North Central Cancer Treatment Group (NCCTG), and the Southwest Oncology Group (SWOG).

By scheduling site visits to coincide with semianual cooperative group meetings, we conducted 1-hour interviews with 65 group leaders, CP/C committee chairs, investigators from academic medical centers and cancer centers, and CCOP principal investigators and clinical research staff. We used semistructured discussion guides tailored to the interests and expertise of individual participants to guide the interviews. Our interviews with cooperative group leaders and investi-

gators explored how the groups have acquired resources and built internal capacity to design and conduct CP/C research.<sup>10</sup> Our interviews with CCOP physicians and staff explored how they have staffed and conducted varied types of CP/C clinical trials at the community level. With permission, we taped and transcribed all interviews verbatim.

Working from a list of registered meeting participants, each cooperative group's meeting planner attempted to help us identify interviewees from CCOPs with mixed experiences implementing CP/C research programs. All of the contacted CCOP representatives agreed to be interviewed. The 26 CCOP interviewees included 12 current or former CCOP principal investigators and 14 nurses or clinical research associates (CRAs).

The NCI's Division of Cancer Prevention (NCI/DCP) assigns a credit value to each cancer treatment and CP/C protocol approved for CCOP use. Credit values range from 0.1 to 1.5, depending on the intervention's complexity, data management requirements, and follow-up period. To receive NCI funding, each CCOP must earn at least 50 treatment accrual credits and 50 cancer control accrual credits per year. The 24 CCOPs included in our sample had varied track records accruing participants to CP/C clinical trials. Based on a 3-year (FY 2000–FY 2002) average of earned cancer control accrual credits, 10 (42%) of these CCOPs ranked in the top quartile, 9 (38%) ranked in the second quartile, 2 (8%) ranked in the third quartile, and 3 (12%) ranked in the bottom quartile. Although this distribution was skewed toward high-performing CCOPs, subsequent analyses revealed no qualitative differences in the themes discussed.

### *Analytic Methods*

We used a systematic text analysis procedure to ensure accurate presentation and analysis of the study results. The interview transcripts were entered into a qualitative data analysis software program (Atlas.ti 4.2; Atlas.ti Scientific Software Development, Berlin, Germany) to manage the study data. After coding the data topically by study question, we conducted a thematic analysis within and across question categories. We also analyzed CCOP accrual data provided by NCI/DCP staff. Below we report the themes consistently mentioned by CCOP interview participants.

## Results

### *CCOP Accrual Trends*

Fig 1 compares the number of participants that CCOPs accrued to CP/C trials vs cancer treatment trials over a 10-year period in which four large-scale prevention trials and many smaller-scale CP/C and treatment trials were active. With both the Breast Cancer Prevention

Trial<sup>11</sup> and the Prostate Cancer Prevention Trial<sup>12</sup> open for accrual in FY 1994, CP/C study participants represented about 45% of new CCOP enrollments. Between FY 1995 and FY 1998, the CP/C percentage of total CCOP accruals ranged from 31% to 40%. The activation of the Study of Tamoxifen and Raloxifene (STAR) breast cancer prevention trial<sup>13,14</sup> in July 1999, followed by the activation of the Selenium and Vitamin E Cancer Prevention Trial (SELECT) prostate cancer prevention trial<sup>15</sup> in July 2001, helped boost the CP/C proportion of total accruals from 44% (FY 1999) to 56% (FY 2003).

Fig 2 shows temporal trends in the minority percentage of study participants that CCOPs accrued to CP/C and cancer treatment trials. Between fiscal years 1995 and 2001, minorities comprised 8.7% to 12% of CP/C trial enrollees (median, 10.5%) and 12.8% to 16.5% of treatment trial enrollees (median, 14.9%). Following the July 2001 activation of SELECT, CCOPs began accruing higher percentages of minorities to CP/C trials than

to treatment trials. During fiscal years 2002 and 2003, the minority percentages of CP/C trial enrollees were 14.6% and 17.8%, respectively. By comparison, minorities accounted for an estimated 14.6% of new cancer cases diagnosed in the United States between 1999 and 2002 (written communication, B. A. Miller, DrPH, NCI Surveillance Research Program, January 2006).

Succeeding sections describe the structural and strategic adaptations that CCOPs have made to conduct cancer prevention trials and the protocol attributes affecting ease of implementation.

### Staffing Adaptations

We've had to develop all new systems for how to do prevention research because there was no prevention in my training... Part of the problem is that I am not seeing the people whose cancers I'm trying to prevent. I'm catching you after you have cancer... At least in our shop, we've had to create a whole new section to get into other physicians' practices to get these supposedly well people.

— Interview with a CCOP oncologist

CCOPs have significantly altered their staffing arrangements to conduct cancer prevention research. In the early years of the CP/C research initiative, CCOPs attempted to conduct all types of CP/C studies with existing staff. CCOP oncologists, already struggling to fit discussions of treatment protocols into their busy schedules, made it clear that nurses and CRAs would have to assume primary responsibility for CP/C research. The activation of the Breast Cancer Prevention Trial in 1992 and the Prostate Cancer Prevention Trial in 1993 forced CCOPs to reassess their staffing arrangements. To evaluate the efficacy of chemopreventive agents in reducing cancer incidence, both studies recruited thousands of healthy individuals whose ages, medical histories, and/or other factors placed them at increased risk for breast or prostate cancer. Recognizing that the recruitment of such individuals would require significant staff time, many CCOPs began setting up “parallel structures” of nurses and/or CRAs to work solely or primarily on prevention trials.

Today, almost every CCOP has some dedicated research staff assigned to prevention trials. While these staff have helped CCOPs build the community linkages necessary for prevention trial recruitment, few CCOPs have sufficient staff to conduct extensive community outreach. Explaining the prevention protocols to interested but wary individuals, obtaining informed consent, and following study participants over multiyear periods place heavy time demands on limited CCOP staff.

Interviewees expressed concern that, with no major prevention trials scheduled to follow STAR and SELECT, CCOPs might be unable to earn sufficient cancer control accrual credits to maintain dedicated staff. A CCOP administrator explained, “We are held by an NCI mandate, by our goals, to earn so many [cancer control] accrual credits a year to get our funding. I do

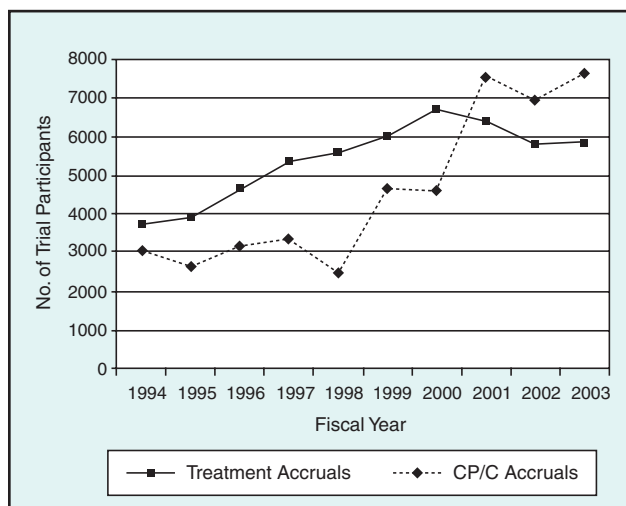


Fig 1. — CCOP accrual trends, FY 1994–FY 2003. The number of funded CCOPs ranged from 55 to 61 over this 10-year period.

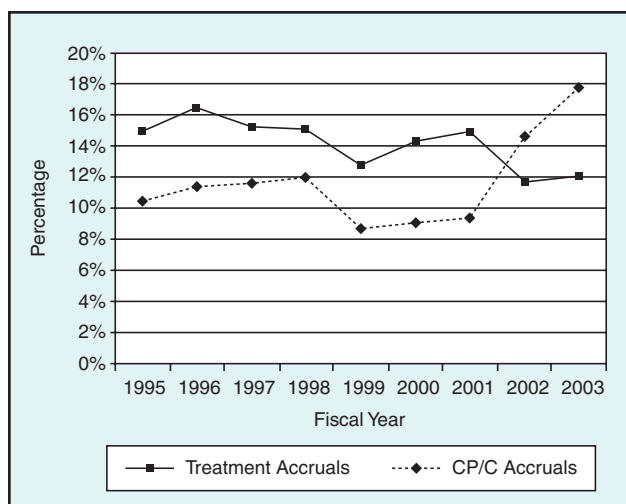


Fig 2. — Minority percentage of participants accrued to clinical trials by CCOPs.

get a little concerned that the SELECT trial is halfway through accrual and we don't have another one to back it up." Another interviewee declared, "If NCI wants to do large phase III prevention trials, we're going to need to maintain the infrastructure — not shut it down and restart it simply because we don't have an immediate replacement trial." As an additional issue, CCOP interviewees said their inability to offer competitive salaries, along with expanding workloads, has made it difficult to retain prevention research staff. To keep prevention trials on course through staff transitions, some CCOPs are offering mentoring programs for new staff or are cross-training existing staff to manage several prevention studies.

### Physician Outreach Strategies

Physicians have to buy into prevention first of all. We've got physicians in the outlying areas who do everything. What they're doing is more immediate care — taking care of broken bones and so on. When they're focused on those kinds of things, how do you get them interested in prevention?

— Interview with a CCOP CRA

Because cancer prevention trials target healthy or at-risk individuals seldom seen by oncologists, CCOPs have had to develop relationships with primary care physicians and specialists outside their usual networks. To encourage referrals from non-oncologists, many CCOPs have adopted

the academic detailing approach used by pharmaceutical companies. This strategy involves visiting medical offices to talk with physicians and nurses about prevention trials for which their patients might qualify. Visits to medical offices reportedly produce the best results when CCOP nurses are able to present a panel of protocols, offer lunch or refreshments, and maintain regular contact. Interviewees also stressed the importance of providing continual feedback on the progress and results of prevention studies. Table 1 summarizes additional methods of building local physicians' awareness and support.

Although CCOPs have devoted significant staff resources to the development of physician referral networks, interviewees described these efforts as only "marginally successful." As noted above, some physicians are too busy treating patients' medical problems to give much thought to cancer prevention. Some do not refer patients because they are opposed to or disinterested in clinical trials. However, for most physicians, the major deterrent is simply finding the time to discuss prevention trials with potentially eligible patients. As additional barriers to network development, CCOP representatives mentioned pharmaceutical trials that compete for physician referrals and their inability to offer competitive reimbursement rates to local physicians performing protocol-required diagnostic tests and examinations.

**Table 1. — CCOP Strategies for Building Physician Referral Networks**

Strategy	Examples
Communications and Presentations	<p>CCOP nurses regularly visit medical offices to present new cancer prevention protocols and to remind staff of ongoing prevention trials</p> <p>CCOP targets physicians with large patient bases for study-specific mailings</p> <p>CCOP investigators present new prevention protocols at grand rounds, tumor board meetings, and local medical conferences</p> <p>CCOP publicizes prevention clinical trials in hospital, medical staff, and CCOP newsletters and on hospital Web sites</p> <p>CCOP offers CME/CEU programs on cancer prevention research</p>
CCOP Staff Support	<p>CCOP nurses regularly visit medical offices to screen patient charts for protocol eligibility*</p> <p>CCOP provides financial support for a designated office nurse to screen patient charts for protocol eligibility</p> <p>CCOP nurses help physicians explain cancer prevention trials to patients and to obtain informed consent</p> <p>CCOP sends reminders to physicians of study participants when protocol-required tests and examinations are due</p>
Incentives and Recognition	<p>CCOP invites referring physicians to serve as CCOP investigators</p> <p>CCOP provides travel support for high-referring physicians to attend cooperative group/cancer center meetings on cancer prevention research</p> <p>Physicians contributing to prevention clinical trials are recognized in hospital newsletters and/or local newspapers</p> <p>CCOP takes "thank you" breakfasts and lunches to medical offices that have referred the most patients</p>

\* The "preparatory to research" provision of the Health Insurance Portability and Accountability Act of 1996 allows medical offices to disclose protected health information to researchers to aid in study recruitment. CCOP = Community Clinical Oncology Program, CME = continuing medical education, CEU = continuing education unit.

## Consumer Outreach Strategies

Initially we rely on the media burst that comes from the national level [to publicize a new prevention trial]. Then we rely on our local media to tie in and get the word out. We have to keep using some recruitment measure all the way through. But that gets us off the ground running so that we can grow off of that.

— Interview with a CCOP research nurse

To maximize possible sources of prevention trial participants, CCOPs have partnered with a variety of health organizations and groups and conducted direct-to-consumer marketing (Table 2). The relative effectiveness of each strategy seems to depend on the protocol requirements, the agents being tested, and the population being targeted. For example, some CCOPs successfully used newspaper advertisements and/or targeted mass mailings, followed by large-group information sessions, to recruit men 55 years of age and older to two prostate cancer prevention trials. However, when they held large group sessions to explain breast cancer prevention trials, they found that women wanted one-on-one discussions with research nurses.

Interviewees described partnerships with cancer screening programs as one of the best ways to target consumers who are concerned about preventive health care. For example, one CCOP persuaded a large mammography center to offer STAR breast cancer risk assessment forms to all women being screened. Women completing the risk assessment forms gave written permission for the CCOP to share the results with their primary care physicians. Those determined to be at high risk for breast cancer were invited to attend STAR informational sessions, and their physicians were added to the list of medical offices being targeted for special presentations on STAR. Another CCOP

recruited SELECT participants through the free prostate cancer screening clinics offered by its parent cancer center. At each monthly clinic, a CCOP CRA met with screening participants to invite them to attend small group meetings on SELECT.

To recruit racial and ethnic minorities, interviewees reported supplementing the above activities with advertisements in minority-targeted media outlets, presentations at minority churches, and information booths at minority-focused health fairs. Some said their CCOPs had received grant support from STAR, SELECT, or the Susan G. Komen Breast Cancer Foundation to hire minority outreach coordinators. Although CCOP accrual data (Fig 2) and two descriptive studies<sup>16,17</sup> provide evidence of increasing minority participation in cancer prevention trials, interviewees reported difficulties building awareness and acceptance of cancer prevention research in minority communities. They noted that trial-specific funding for minority outreach staff and time gaps between prevention trials limit the ability of CCOPs to maintain a continuous presence. A CCOP oncologist observed, “The issue basically is building trust and that doesn’t occur over a year. That occurs over a five- to ten-year period, and no one is going to fund that.”

Regardless of the population being targeted, direct-to-consumer marketing requires a substantial investment of staff and financial resources. Although CCOPs can use some of their grant award to hire prevention research staff, the funding for advertisements, mass mailings, educational materials, and other recruitment-related expenses must be pieced together from other sources. In some cases, pharmaceutical companies and foundations have provided financial support. For example, the manufacturer of raloxifene (Evista; Eli Lilly and Co, Indianapolis, Indiana) is supporting participant

**Table 2. — CCOP Strategies for Generating Consumer Self-Referrals**

Strategy	Examples
Print and Electronic Media	Newspaper publicity (articles and/or advertisements on cancer prevention clinical trials) Radio and television publicity (advertisements, public service announcements, talk shows) Articles on prevention clinical trials in hospital and company newsletters Placement of brochures and posters in medical office waiting rooms Targeted mass mailings inviting recipients to information sessions on specific prevention clinical trials
Partnerships With . . .	Prevention trial participants (recruitment of friends and family members) Hospitals, health maintenance organizations (HMOs), and multispecialty clinics (in-house study recruitment) Mammography centers (help with STAR publicity and breast cancer risk assessments) Prostate cancer screening programs (help with SELECT publicity and recruitment) Breast cancer and prostate cancer support groups (help with study publicity and recruitment)
Community Outreach	Presentations to civic clubs and community groups Presentations to churches and parish nurses; publicity in church bulletins Presentations at targeted sites (eg, senior centers, public housing) Participation in health fairs, women’s health symposia, Race for the Cure, and other health-related events

recruitment and adherence initiatives at STAR study sites. Looking toward the future, interviewees identified dedicated funding for consumer-targeted marketing as “essential” for successful prevention trial recruitment.

### Protocol Attributes Affecting Community Implementation

If CCOPs had more input into the design of cancer prevention and control studies, there might be more buy-in. First of all, the studies would be more doable. There’s got to be a willingness on the academic people’s part to give in. You know, they want to do all these extra biopsies and to generate all these extra beautiful data... I think that sometimes the academic guys don’t want to give away some of the strength of the study to make it more doable, and that hurts the study because, if it’s not doable, we [CCOPs] have got other sources.

— Interview with a CCOP oncologist

CCOP strategies for meeting CP/C accrual goals depend on the number and types of protocols available to them. Having access to different types of CP/C protocols not only allows CCOPs to select those that fit best with their needs, resources, and local environments, but also reduces vulnerability to study closures. However, interviewees emphasized that the protocols must be feasible for implementation in community settings. A CCOP principal investigator explained, “Phase III studies can be tested out in academic centers, but if the study design isn’t something that is going to play down at the community level, which is where the majority of cancer patients are being treated, it isn’t going to fly.”

Table 3 lists the foci and design features of the cancer prevention protocols that CCOP physicians and staff said would be “most feasible” to implement. Drawing on previous studies of the innovation attributes influencing adoption decisions,<sup>18-20</sup> these indicators can be grouped into three categories: (1) compatibility — the extent to which CCOP physicians and research staff view the study protocol as consistent with their professional values, experiences, and community needs, (2) complexity — the perceived difficulty of explaining, understanding, and/or implementing the study protocol, and (3) cost — the estimated

financial and time costs for the CCOP and study participants. The ways in which these protocol attributes affect implementation in community settings are described below.

When discussing compatibility issues, interviewees most often cited the need for broad eligibility criteria. “Eligibility is a big issue,” said one CCOP oncologist. “You may have the population, but if you have to jump through hoops to get it, it’s going to be a problem.” Interviewees noted that, because SELECT imposes minimal eligibility criteria, they have a large pool of eligible men from which they can recruit study participants. They described STAR recruitment as a much greater challenge because eligibility is restricted to postmenopausal women at high risk of developing breast cancer. “We get a lot of women who are interested, but they’re either not the right age or they don’t have enough risk,” a CCOP nurse lamented.

Because CCOPs have limited staff to allocate to cancer prevention trials, the complexity of the study design has a major impact on their ability to participate. Interviewees stated that the most feasible prevention trials involve (1) simple interventions that can be easily explained to potential participants, (2) measurement instruments requiring minimal staff time to learn and administer, (3) limited office visits, and (4) short-term participant follow-up. For example, the North Central Cancer Treatment Group successfully conducted several large smoking cessation trials by evaluating simple interventions, such as nicotine patches, rather than intensive behavioral interventions, such as in-person counseling.

When assessing the feasibility of prevention protocols, CCOPs also consider the human and financial costs of participation. Interviews with CCOP representatives highlighted resource differences between cancer research centers and community oncology practices that sometimes go unrecognized in trial design. To illustrate these differences, a CCOP oncologist described an academician’s proposal for a computer-based behavioral intervention:

**Table 3. — Attributes of Most Feasible Cancer Prevention Protocols**

Protocol Attribute	Examples
Compatibility	Study targets a prevalent type of cancer (eg, breast, colorectal, lung, prostate) Protocol eligibility criteria are broad and fit with local demographics Study has the potential to attract local interest and support
Complexity	Study design is fairly simple (eg, two arms, short-term intervention) Study can be coordinated by nurses and/or CRAs Measurement instruments can be easily administered and require little or no staff training Minimal office visits are required
Cost	Required tests and procedures are fully covered by health insurance or some other funding source Laboratory correlative studies fully cover collection, storage, and shipping costs Study does not require heavy time commitments from participants or clinical research staff

The investigator was saying, "We should have something where people sit down at the computer kiosk and we teach them about this, that, and the other thing ... and evaluate how well this works versus pamphlets." I said, "You know, number one, we don't have a computer kiosk in the office. Number two, even if you give it to us, we have no place to put it. Number three, no one can sit around an hour in one of our rooms because we don't have a room to spare for an hour." The investigator said, "Well, but we do!" I said, "Well, it doesn't help us that you have a cancer center with some computers sitting around because you're proposing something we can't possibly ever implement."

Other interviewees cited problems with "unfunded mandates," such as blood draws, biopsies, and dietary assessments that do not qualify for insurance reimbursement. While expressing strong support for laboratory correlative studies, they emphasized that CCOPs cannot afford to collect, store, and ship biospecimens without supplemental funding or extra accrual credit. Even when supplemental funding is available, many CCOPs have difficulty meeting "unusual" tissue storage requirements, such as access to a refrigerated centrifuge, because of their limited collection and storage capabilities.

To varying extents, all of the cooperative groups have CCOP representation on their CP/C research committees. Yet, in three cooperative groups, interviewees expressed concern that CCOP comments on "practical issues" affecting protocol implementation were not receiving sufficient consideration. A CCOP oncologist summarized their views as follows: "If you think about it, these things [protocols] are developed in back rooms, and we don't have the power or the opportunity to interact on the design." Of the four cooperative groups visited, only one routinely circulates draft protocols among member institutions for review and comment. This cooperative group and one other group appoint a designated "community co-chair" for each protocol. However, interviewees reported that the co-chairs sometimes are appointed too late to have meaningful input. While acknowledging that many community oncologists and research nurses are too busy to review draft protocols, interviewees urged CCOP research bases to seek ways of more actively involving those who are willing to commit the necessary time.

## Discussion

During the final year of this study (2003), CCOPs accrued participants to 90 NCI-sponsored CP/C clinical trials.<sup>21</sup> Twenty-six of these clinical trials (29%) evaluated primary or secondary prevention interventions (written communication, L.M. Minasian, MD, NCI/DCP, January 2006). The CCOPs' experiences offer important insights on the staffing requirements, technical and financial support, and protocol design considerations needed to facilitate community clinicians' participation in cancer prevention research. First, the involvement of

community clinicians in prevention research requires an investment in dedicated research staff. Second, community clinicians need guidance regarding effective recruitment strategies as well as adequate funding to implement these strategies. Third, clinical cooperative groups and cancer centers need to actively solicit community clinicians' comments during the protocol design phase to ensure that prevention studies are feasible for implementation in community settings.

### *Dedicated Staff Support*

Because community physicians have limited time to devote to clinical research, they rely on nurses and CRAs to perform nearly all of the work involved in recruiting and consenting potential prevention trial participants, collecting and submitting study data, and performing protocol-required follow-up. To attract and maintain skilled research staff, community physicians must be able to offer competitive salaries and reasonable assurance of steady employment. Once staff members are trained and data management systems are developed, this infrastructure must be maintained even if there is not an immediate replacement trial. Therefore, payment mechanisms must provide a high enough level of reimbursement to fully cover infrastructure costs during and between large prevention trials.

### *Technical and Financial Support*

Community clinicians need guidance on strategies that have been effectively used to achieve high levels of participation in cancer prevention trials. When possible, strategies should be differentiated by protocol requirements, target populations, and the characteristics of local service areas. To successfully execute these strategies, community clinicians need significant financial support. Community clinicians cannot afford to run advertisements, conduct mass mailings, or cultivate partnerships with cancer screening programs without adequate and predictable funding.

### *Greater Community Input on Protocol Design Issues Affecting Feasibility*

Clinical cooperative groups and cancer centers need to consider the resource and time limitations of community clinical practices when designing cancer prevention protocols. By providing varied opportunities for community clinicians to review and comment on draft prevention protocols, protocol design teams can ensure that the studies are relevant and feasible. The prevention protocols most feasible for community implementation have broad eligibility criteria, are relatively simple to execute, and involve minimal financial and time costs for clinicians and study participants. The accessibility of target populations and the adequacy of funding for participant recruitment and long-term follow-up are key considerations.

## Conclusions

CCOPs have made major structural and strategic adaptations to increase the participation in cancer prevention research. To recruit healthy individuals seldom seen in oncology practices, they have hired dedicated prevention research staff, actively sought referrals from primary care physicians, partnered with cancer screening programs, and conducted direct-to-consumer marketing. Their experiences highlight new models of academic-community cooperation that, with adequate financial and technical support, can broaden community participation in the evaluation of preventive interventions.

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