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ORIGINAL PAPER

In conclusion: looking to the future of comprehensive cancer control

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Abstract The articles in this monograph illustrate the progress and successes of comprehensive cancer control (CCC) since our 2005 publication. The strides made in CCC demonstrate the energy and commitment of this nationwide movement to reduce the burden of cancer for all people. The purpose of this conclusion paper is to discuss the future of CCC, which promises a new emphasis on policy, primary prevention, public health, evidence-based interventions, and global health supported by advanced communication tools.

Keywords Comprehensive cancer control · Global health · Non-communicable diseases

Introduction

The articles in this Special Issue are a testimony of the impressive strides that have been made in the comprehensive cancer control (CCC) movement since 2005 when the first Special Issue on CCC was published in this journal, Cancer Causes and Control. These articles also demonstrate the critical role of state, tribe or tribal organizations, territory, and Pacific Island Jurisdiction coalitions as the driving force in the CCC movement. In this conclusion article, we discuss future directions for CCC. We consider emerging trends in public health, as well as significant environmental changes such as health care reform, technology and social media, accountability for resources or performance measurement, partnerships, and the continued emergence of global health initiatives. Additionally, we emphasize engagement as a collective call to action—to use what we have learned along with the tools and resources available to us to engage all sectors of society, both nationally and internationally in the CCC movement.

Overall, the topics explored in this Special Issue describe how the CDC's National Comprehensive Cancer Control Program (NCCCP), the Comprehensive Cancer Control National Partnership (CCCNP), and CCC coalitions have engaged and promoted cancer control through the implementation of cancer plans across the continuum of care. We discuss recent policy successes and the importance of policy for moving the CCC agenda forward, and we explore new areas and opportunities for policy action in a time of systemic health care reform and continuing economic challenges. A model for implementation of cancer plans is provided through the use of implementation building blocks—the specific actions necessary to implement priorities from CCC plans through the CCC coalition. The CCCNP, a group of national organizations who voluntarily develop strategies and resources in partnership with CCC coalitions, is cited as a model for partnerships, a critical component to success in CCC. The progress and outcomes described in this special issue include CDC's NCCCP progress, reports on the

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advancements in infrastructure to support CCC, coalitions' strides in fostering and facilitating productive CCC partnerships, and the impressive resources garnered and leveraged since 2005.

Emerging trends

As we conclude this Special Issue recounting the many successes of the comprehensive cancer control movement, we look to emerging trends as a guide to the future. We are standing on the precipice of great change that offers both tremendous opportunity and significant challenges. A number of emerging trends, influencing factors, and new programmatic priorities (Table 1) will shape the CCC movement in the future. Policy interventions will be increasingly important to the future work of cancer control, particularly in the context of health reform. Efforts in primary prevention have been renewed and reenergized as the primary risk factors for many cancers have become better understood and well-defined evidence-based strategies have emerged for their control. Health reform offers new opportunities to increase early detection of many treatable cancers through the expanded use of recommended screening tests. However, the unique needs of underserved and disparate communities persist and must continue to be a constant focus.

Policy-based intervention is an area of increasing emphasis in public health. Policy changes reflect an understanding that the choices individuals have made shape their behaviors. Policy interventions require the least individual effort and have the greatest population impact [1]. While considerable emphasis is placed on federal health policy, states play a significant role in influencing federal policy. State experimentation has significantly influenced nearly every major policy initiative considered by Congress in the last decade [2]. One of the greatest assets of CCC coalitions is their ability to impact local health policy and influence significant changes in institutions like health care systems. Coalitions include a wide range of members who can be influential in effecting health policy, particularly physicians and cancer researchers who have considerable respect and credibility with policy makers. Representatives of cancer philanthropies have direct access to state legislatures through their government relations functions. Elected officials or their staff also serve on many coalitions. Many CCC coalitions have been successful in influencing a range of policy changes including increases in tobacco tax, regulating the use of tanning beds, and implementing state high-risk insurance pools. The article in this Special Issue on policy and advocacy provides specific examples of the policy agenda that has been defined and achieved by CCC coalitions. Member organizations of the CCCNP have had a profound impact at the national level from building capacity for evidence-based practice to increasing the funding and visibility of CCC. In the future, science and surveillance should continue to drive the cancer policy agenda and the efforts of advocates. Surveillance data from cancer registries are a useful resource to coalitions to illustrate the burden of cancer as it relates to evidence-based policy solutions. These data are widely used by cancer coalitions but should be used more extensively and more creatively as a policy change resource.

Table 1 National Comprehensive Cancer Control Program priorities, 2010

1. Emphasize primary prevention of cancer
2. Coordinate early detection and treatment activities
3. Address public health needs of cancer survivors
4. Use policy, environmental and system changes to attain sustainable cancer control
5. Eliminate health disparities to achieve health equity
6. Measure outcomes and impact through evaluation

Advances in primary prevention

Reducing exposure to tobacco products in our society is arguably the most promising preventive intervention currently available [3]. The momentum for tobacco control has increased significantly with the 2006 release of the Surgeon General's Report on the health effects of secondhand smoke and with the adoption of new Food and Drug Administration (FDA) regulation of tobacco products. Tobacco use is a potent risk factor for cancer. It has been definitively linked to more than 10 different types of cancer, contributes to one-third of all cancer diagnoses, and is the primary cause of lung cancer, the leading cause of cancer death in both men and women [4].

Tobacco prevention and control should be a high priority for all CCC coalitions. The policy agenda for tobacco has been well defined by the public health community. Based on sound science, recommended policy interventions include (1) increase the unit price of tobacco products, (2) fund comprehensive state tobacco programs, (3) provide support for those who want to quit, and (4) ban smoking in all worksites and public places. CCC coalitions can be particularly effective in communicating the value of taking these actions through their use of scientific data and individual stories. Cancer registry data can be used to document incidence and mortality rates of tobacco-related cancers and raise awareness about the potential value of these evidence-based policy solutions with policy makers and the public. Other primary prevention opportunities have also emerged.

Obesity is now widely regarded as a significant risk factor for cancer. Increasing public awareness of the scientific links between cancer and obesity is important given the lack of public knowledge about this issue. As the evidence base grows, the policy agenda will continue to influence the pervasive physical inactivity and nutrition behaviors that have contributed to the current obesity epidemic. Worksite interventions are an important approach to obesity control, which have emerged as an evidence-based recommendation of the Guide to Community Preventive Services. While the policy interventions described thus far focus on legislative policy, worksite approaches are designed to support primary prevention through the adoption of institutional policies that change the context for widespread individual behaviors. The evidence base for worksite policy changes is particularly promising. The CEO Gold standard provides a useful, science-based worksite policy framework to work with employers because it was created and endorsed by industry leaders (www.ceogoldstandard.com).

Vaccines such as the human papillomavirus (HPV) and hepatitis B (HBV) vaccine are relatively new focus areas for primary prevention of cancer and take advantage of the traditional public health roles in vaccination. Policy interventions have led to widespread vaccination of infants for HBV. Many states and territories are exploring a policy agenda for HPV vaccine, and progress has been made in assuring coverage of the vaccine by public and private insurance providers.

Health reform

Health reform offers specific opportunities to introduce policies that can have far reaching effects, particularly in increasing the early detection of cancers and in meeting the public health needs of a growing population of cancer survivors. The 2010 Affordable Care Act will substantially reduce financial barriers to screening and treatment services by insuring an additional 35 million Americans through expanded Medicaid coverage or coverage through state health insurance cooperatives. The legislation will further increase the number of Americans who receive cancer screenings by requiring that recommended clinical preventive services and vaccinations are covered without cost sharing. The impact of health reform on tribes and territories has not been well documented. Analysis must be expanded to determine the impact of the law on these specific communities and needs and services that must still be addressed.

A strong and proactive policy agenda can help advance the promise of health reform for widespread early detection of screening amenable cancers. In the health reform legislation, coverage for cancer screening services is required of private plans but only "encouraged" in Medicaid. CCC coalitions can encourage state and national leaders to support strong preventive coverage policies to be included in every state Medicaid program.

There are also concerns that current providers do not have the capacity to meet the anticipated demands for services created by health reform and inadequacies in the adoption of recommended, evidence-based practice preventive care standards among existing providers have already been well documented. CCC coalitions must work to define policies, programs and incentives to expand primary care screening capacity and optimize care delivery standards through support of system change interventions in the practice setting. Research findings from large-scale prevention studies must be systematically disseminated and adopted by medical and public health providers.

Despite the potential of CCC in the era of health reform, resources provided to the NCCCP have been relatively limited and additional resources would be necessary to advance public health's impact on cancer control. CCC coalitions should increase their work on specific activities that are designed to support early detection. Examples of these activities could include: expanded state coverage for uninsured/underinsured populations not covered by national system and state policies, development of population-based surveillance systems for cancer screening with electronic reporting of pathology and radiology cancer diagnoses, and incentives to expand primary care screening capacity, and promote evidence-based practice.

Elimination of health disparities

Racial and ethnic minorities are more likely to be diagnosed with cancer at a later stage, suffer higher rates of complications from their treatments and die from the condition [5]. Early detection programs often fail to reach minority communities because of limited availability of convenient services, limited health literacy, fear and mistrust. CCC coalitions can encourage use of new or existing state funding to cover populations that remain without insurance despite the national reforms. However, reduced access to care explains some but not all health disparities. As screening rates among African Americans approach those of whites, it is clear that differences in the quality of care provided to racial and ethnic minorities also play a role in cancer disparities. CCC coalitions can use state-specific cancer registry data to track late-stage diagnoses of screening amendable cancers to highlight disparities by race, ethnicity and income status. Differences in quality of care can be analyzed by reviewing utilization of services and clinical outcomes when these data are available. Collection of self-reported race and ethnicity data is an accurate and reproducible classification methodology, and CCC coalitions can work with hospitals and insurance providers

to increase collection of these data or work with policy makers to mandate race and ethnicity reporting to state health departments. Coalitions can also work to support a research agenda to define further policies and practices related to health disparities. It is especially important that CCC coalitions help collect data to better understand and document the needs and assets of tribes and territories in cancer control efforts. Speaking with one voice to address disparities is one of the ways the CCC movement can impact policy and social change. CCC coalitions can use data to develop a common understanding of the determinants of health disparities in cancer control and prevention.

Perspectives on the future of implementing a cancer control plan

The CCCNP and their relationship with CCC coalitions demonstrate collaboration that utilizes national priorities and a logical framework for action but allows and encourages CCC coalitions to customize responsiveness to local needs as articulated in their own individual CCC plans. As a result, the CCCNP has an opportunity to benefit from the "local" experiences and may use them as they seek to address their national priorities. From the beginning in 1998, synergies between the CCCNP and the CCC coalitions and the recognition that each coalition is unique have made the CCC movement remarkably successful. Now, as a new era of cancer prevention and control programs emerges with virtually all states, tribes or tribal organizations, territories, and Pacific Island Jurisdictions having completed at least their first plan, an examination of what may be in store for the future of the continuing and eventual full implementation of that plan is in order.

Resources for full implementation of cancer plans

Whereas some plans have focused on a small number of goals and objectives and others have sought to address many, CCC plans have followed the same fundamental structure: goals, objectives, strategies, and measures (baseline and target). In the past few years, an emphasis has been placed on quantifying and projecting the costs of fully implementing components of a CCC plan. For example, if a goal to reduce the mortality rate of colorectal cancer by 5% is stated in the cancer plan, coalitions should be answering questions about what resources would be required, how much would it cost, and from where and how the resources are supplied. Historically because of the realities of congressional funding levels, CDC's approach through its NCCCP has been to provide each CCC grantee with funds to sustain a minimal infrastructure, accomplish elements and associated activities of an annual work plan, and to "leverage" the involvement of a broad array of partners. Determining the resources needed for full plan implementation is challenging and requires a detailed analysis of precisely what it would take to "move the mark" and dictates that resources and funds be identified and committed to priority goals, objectives and strategies within the CCC plan. Therefore, partnerships formed to implement the plan must be much more substantive than those that have been established to develop the plan. Without those substantive partnerships (and the resources and funding that must be committed), the plan will remain just another document that is promoted but never implemented.

As we look to the future, challenges in funding of implementation efforts have emerged such as major reductions in resources provided through non-federal governmental funding as well as the economy and its impact on the public's giving patterns to cancer-related non-profits—local and national. These challenges will call for increased collaboration, a more intensive prioritization on how to address the needs identified in CCC plans, and a greater degree of creativity. Additionally, ensuring that implementation projects are grounded in data and not duplicative of existing efforts is essential to maximizing scarce resources.

Implementation of evidence-based interventions and the need for tailoring

Although each CCC coalition is recognized and supported for its uniqueness, there are some common threads that must serve to tie all CCC efforts together. One such thread is the adoption of evidence-based strategies and interventions. With guidance available from national partners including the Centers for Disease Control and Prevention (CDC), the National Cancer Institute (NCI), the American Cancer Society (ACS), Agency for Healthcare Research and Quality (AHRQ), and the Commission on Cancer (COC) resources to assist coalitions and to build capacity have been developed. The CDC's Community Guide to Preventive Services, NCI's Using What Works: Adapting Evidence-based Programs to Fit Your Needs, and the collaborative web portal, Cancer Control P.L.A.N.E.T. (Plan, Link, Act, Network with Evidence-Based Tools) provide information and tools to support the identification and adaptation of evidence-based interventions. These tools greatly reduce the time and effort required to "find" examples of proven practices that can be adopted and adapted with a higher potential for return on investment. At the same time and given the enormity of the issues associated with cancer prevention and control, the compendium of evidence-based practices is, unfortunately, quite small. CCC coalitions have an opportunity to build evidence where it is lacking by ensuring that evaluation is built into all aspects of CCC plan implementation and then

communicating the results widely, thus establishing an evidence base.

Need for patient and provider perspectives

Concurrent with the increases in the number of people diagnosed annually with cancer, there have also been advances in treatment that have resulted in an increased number of cancer survivors. It is estimated that nationally four percent of the population are cancer survivors—1 in 25 people [6]. And, if the projections made in the April 2009 issue of the Journal of Clinical Oncology are correct, both of these numbers will increase significantly over the next 20 years [7]. As more people survive and as more family members and friends become engaged, cancer advocacy has become a more powerful force. CCC coalitions can transform this energy and interest into concerted efforts by engaging survivors and advocates around a unified cancer plan as many cancer survivors have a passion for involvement in any cause that reduces the burden of cancer, not only for themselves but for others.

As part of the original conceptual framework for CCC, there was a priority to incorporate cancer survivorship into this public health model [8]. Toward this end, many coalitions have held annual meetings that focus exclusively on what's important to survivors and their families, and some have re-created their CCC plans to have cancer survivorship, not cancer the disease, as the centerpiece. Future CCC initiatives may assess how this survivorship focus and engagement has transformed the planning and implementation of CCC plans and impact on delivery of cancer care.

Future CCC initiatives will also benefit from enhanced collaboration with health care providers such as cancer specialists, primary care physicians, nurses, and other health professionals in order to address the entire cancer continuum from prevention through survivorship and end of life care. With the projected increase in cancer incidence and more and more cancer survivors living longer, it is critical that cancer survivors are included in CCC coalitions. Further, more emphasis should be placed on the enlistment of primary care providers as an integral part of the cancer care team—as preventionists, managers of early detection, backup for treatment providers, and those who ensure continuity of care for all survivors, their involvement is critical.

Evaluation and outcome measurement

In the future (and present), the question that needs to be answered is– are CCC coalitions making a difference? Evaluation methodology incorporated in the initial stages of CCC activities and appropriate measures to determine whether desired outcomes are reached are important in determining how well coalitions are utilizing valuable and scarce resources.

CCC coalitions can facilitate evaluation by incorporating evaluation methodologies during initial development and when revising their CCC plans. Finally, it is essential that results from CCC efforts be communicated to stakeholders, funders, policy makers, and to the general public.

Continued emergence of global cancer control efforts

Many influential stakeholders have recognized the importance of global health in building stable and prosperous communities. With more people and diverse disciplines engaged in developing the global health infrastructure in the United States and around the world, national stakeholders engaged in comprehensive cancer control need to get firmly established in this effort as a priority area.

Cancer is a leading cause of death globally. According to the World Health Organization (WHO), 7.6 million people died of cancer in 2005 and without appropriate public health interventions over the next decade, an additional 84 million people will die from cancer [9]. To address the global cancer burden, the 58th World Health Assembly resolution on cancer prevention and control (WHA 58.22) adopted in May 2005 urges member states to collaborate in the development of CCC programmes (an international term) that are tailored to each country's socioeconomic conditions. The resolution states that CCC initiatives should focus on "reducing cancer incidence and mortality and improving the quality of life of cancer patients and their families, specifically through the systemic, stepwise and equitable implementation of evidence-based strategies for prevention, early detection, diagnosis, treatment, rehabilitation and palliative care, and to evaluate the impact of implementing such programmes [10]."

The CCC movement in the United States began in the mid-1990s with a focus on supporting the development, implementation, and evaluation of CCC plans in states, tribes, tribal organizations, territories, and Pacific Islands Jurisdictions and has become a model for other countries as part of a global CCC strategy. In 2006, a global partnership was initiated with the American Cancer Society (ACS), Centers for Disease Control and Prevention (CDC), and the National Cancer Institute (NCI), along with the International Union Against Cancer (UICC) to assist Latin American countries with the development of national cancer control plans. Together, these partners initiated International Cancer Control Planning Forums that adapted the US State Comprehensive Cancer Control Leadership Institute model. The Forums included materials adapted from the US Comprehensive Cancer Control Leadership Institutes, the WHO National Cancer Control Programmes

Policies and Managerial Guidelines, and the UICC National Planning Guide.

Cancer Control Planning Forums were held in 2006 and 2007 and assisted eight Latin American countries (Argentina, Brazil, Chile, Columbia, Mexico, Nicaragua, Peru, and Uruguay) in developing strategies to develop and implement national cancer control plans. Similar to the CCC Leadership Institute model, participants included country representatives from government, NGO's, cancer institutes, and cancer centers as well as tobacco advocates. Topics covered at the Forums included: country cancer profiles, mobilizing support for resources, building and sustaining partnerships, utilizing data for planning, and developing political will for cancer planning. Positive evaluation results from the 2006 and 2007 Forums led to the development of a third Forum, which was held in August 2008, in Geneva, for seven countries including Algeria, Albania, Nicaragua, Sri Lanka, Tanzania, Vietnam, and Yemen). Follow-up for these countries and the delivery of advanced Forums in the future will largely depend on the availability of resources to support global cancer control efforts. Opportunities for countries to share promising practices in cancer control planning have been made available through international conferences such as the World Cancer Congress, International Cancer Congress, and the WHO regional meetings.

Emergence of non-communicable disease plans

National cancer control efforts have evolved over the last decade from a focus on prevention and early detection to a comprehensive approach through comprehensive national cancer plans. An emerging focus is on addressing the global burden of chronic diseases through chronic disease plans, referred to internationally as non-communicable disease (NCD) plans. According to the WHO 2002 World Health Report, the mortality, morbidity, and disability attributed to the major NCDs account for almost 60% of all deaths and 47% of the global burden of disease. Moreover, 75% of the deaths attributed to these diseases occur in developing countries. Four of the most prominent chronic diseases, cardiovascular diseases, cancer, chronic obstructive pulmonary disease, and type two diabetes are linked by common and preventable biological risk factors, notably high blood pressure, high blood cholesterol, overweight, and by related major behavioral risk factors; unhealthy diet, physical, activity, and tobacco use [11].

To address the global burden of chronic diseases, a call (WHA61.14) by the sixty-first World Health Assembly, held in May 2008, to reaffirm the commitment to prevention and control of NCDs that are embedded in the WHO resolution urges member states to strengthen national efforts to address the burden of non-communicable diseases [12]. Some leaders from member states have recognized the need for NCD plans that integrate common risk factors, surveillance, health education, primary care, and other common issues (conversation with Nancy E. Lins, Global Health Department, American Cancer Society May 2010). In certain parts of the world, there is growing attention to the development of NCD plans such as the Pan American Health Organization's (PAHO) work with countries in the Caribbean. Attention given to NCDs is also evident in the publication of a monthly newsletter of the PAHO/WHO Chronic Disease Program [13].

There have been recent developments in the efforts to bring more attention to NCDs on the world health agenda. During a May 2010 press conference at the United Nations (UN) Headquarters, the UN announced the adoption of a resolution by the General Assembly to convene a high-level summit in September 2011 on the issue of prevention and control of NCDs. The landmark resolution was sponsored by 135 member states. A memo from the Global Health Department of the American Cancer Society to its collaborators states, "this high-level meeting will help place the issue of non-communicable diseases on the global development agenda and will help the International community coalesce to reverse a social, economic and health epidemic that is claiming over 35 million lives each year, 80% of which are in low and middle income countries [14]."

Communication channels: the power of social media

Communication about new health care reform opportunities and progress in implementing plans across the nation and internationally can be enabled by new and rapidly emerging technologies. Since the advent of the CCC movement, the communication landscape has changed greatly. In 2010, the Internet is a staple of American life (78% of adults in the United States are Internet users, and 65% of adults have broadband access) and the use of social networking sites and social media has become commonplace for individuals and groups [15]. Forty-seven percent of online adults use social networking sites, up from 37% in November 2008 [16]. Adoption of social media and digital media show little signs of slowing down. Even as these trends grow in the general population, more audiences are emerging, usage by health care professionals is on the rise. Physicians who have joined, or are interested in joining an online community, almost doubled between 2008 and 2009 [17]. The explosion of social media is a global phenomenon that holds new opportunities for collaboration, data sharing, research, training, capacity building in support of comprehensive cancer control. Social media and rapidly emerging innovative technologies are powerful vehicles for expanding the reach of the CCC

movement, fostering its importance worldwide, and achieving outcomes never before possible.

Real-time exchanges of ideas, successes, and challenges

Increasingly, social media are being leveraged by many to strategically further their mission and goals and to generate support for their causes. Wireless networks such as Wi-Fi, 3G, and 4G have transformed the Internet into an interactive forum. These technologies bridge time and distance and allow the average cell phone user to stream live video over the Internet to any location at any time. They open up a world of possibilities for convening meetings remotely, broadcasting important policy sessions, sharing best practices, and linking activities from local and regional levels to state, national, and even international levels. As never before, comprehensive cancer control coalitions can harness technology to create a massive and powerful comprehensive cancer control network that allows them to coordinate efforts, promulgate effective strategies, address common barriers and policy issues, broadcast common messages, and garner widespread support for cancer control initiatives.

Ability to convene communities of practice, communicate and advocate and mobilize

Groups of people who share a concern or a passion for something they do or learn are communities of practice [18]. These communities are springing up around many areas of interest and people are interacting regularly around health topics and public health. The CCC movement has matured. Coalitions are implementing cancer plans and turning their attention to issues of policy. As "real world" communities of practice, coalitions are ripe for a virtual world. Social media can be used to facilitate identification of influencers and as a mechanism for garnering public support and measuring public sentiment across the cancer control continuum. Combined with strategic planning, coalitions can make a profound transformation in cancer control policy by availing themselves of social media's offer of instantaneous communication, far reaching networking ability, and message promotion. Networking and engagement with colleagues and constituents is inexpensive, simple, and powerful.

Ability to communicate CCC outcomes: convey the importance of CCC movement

Social media support the democratization of knowledge and information. Average citizens no longer just consume content, they produce it and are using their own media for broadcasting messages. Compared to traditional media such as newspapers, television, and radio, social media are relatively inexpensive and widely accessible. Seventy-four percent of American adults go online, and 57% of American households are connected [19]. Access is growing and information sharing is crossing boundaries both organizational and geographical. Though governments are generally slower in adopting new technology, at the federal level, new standards and guidelines for use are in development. No doubt, and of necessity, state organizations and others will follow suit. President Obama's 2009 Open Government mandate, requiring federal government agencies to open the floodgates of data for greater transparency, participation, and collaboration, provides coalitions access to vast amounts of information about cancer and cancer control issues. For instance, Recovery.gov (www.recovery.gov), a federal government website that tracks government spending lets users parse through billions of dollars of government spending to get information about state and local monies. The site has 10 million users per hour and one million concurrent users. Federal initiatives such as the Community Health Data Initiative are helping citizens, clinicians, and local leaders use data to improve health and the value of health care [20]. Used effectively, access such as this can help advocates address critical issues and push the cancer control cause to policy makers, stakeholders, and the public. Federal wikis, a database of pages that visitors can edit live, allow direct interactions between the public and federal officials without running afoul of the law. Building on each other's success, coalitions now have the capacity to communicate with federal agencies, link their efforts to national initiatives such as Health People 2020, and create a vivid unified picture of the national impact of the CCC movement on the health of the nation.

Technology: impact on service delivery

In addition to expanding social networking capabilities, technology is enabling interactions between health care and public health professionals, researchers, patients, and the public. In clinical practice, the electronic medical record (EMR) is facilitating an unprecedented ability to coordinate and share information between doctors and patients. Mobile technology, or mHealth, the use of smart phones and personal digital devices coupled with custom applications are being used in the clinic for decision making, patient monitoring, transmission of laboratory results, and cancer information. The use of the Internet on mobile devices has grown sharply, and the digital divide is diminishing for some populations. African Americans are the most active users of the mobile Internet—and their use is growing the fastest [21]. Certainly, these advances are not without concerns, and groups such as the Lance Armstrong Foundation are conducting formative research (share your views on electronic health records) to understand the

needs and concerns of cancer patients(http://www.livestrong.org/). Nevertheless, this trend is only increasing. With proper protections and policies, this technology can connect populations with limited physical reach to services. It can also enhance a coalition's ability to translate cancer plan objectives into mobile messages and to link screening objectives to actual service delivery and outcomes.

Steps to the future

The potential of technology and new media is not without significant barriers and disparities. By design, institutions, especially governments, are slow to change and all organizations fear loss of control over their message, image, and the quality or accuracy of the information posted. But change is occurring despite push back, tension, and resistance. Many business sector organizations whose viability depends on profit and consumer engagement have embraced technology. Others, limited by legal constraints or other restrictions, are slower to follow. Meeting and overcoming challenges by working closely with organizations' chief information officers and chief technology officers and through development of sound policy and guidelines will be necessary to realize the full public health potential of technology. In the meantime, creative collaboration with less constrained partners may provide interim support for a coalition's movement to social media.

Additionally, broadband access and the capacity to use the Internet are not equal. A Pew Internet commentary on broadband access and use in America describes four categories of adults without access. Some are older and do not see the relevance of the Internet to their lives, others own computers but lack skills and interest, others, low income, heavily Hispanic and African American would go online but lack resources, and others are near converts for whom cost is the biggest barrier to having broadband at home [15]. This is rich information for comprehensive cancer control coalitions that points to a focus of efforts. Building literacy and identifying telecommunication partnerships can be targeted as infrastructure priorities. Investment is part of the discussion in President Obama's stimulus package and, in the wake of Health Reform, government agencies and foundations are looking for creative proposals for increasing access and literacy, especially in rural and remote areas.

Social media and new technology is not an end in itself. It is a means to accelerate connectivity, widen social networks, and sharpen the focus on comprehensive cancer control—both its challenges and successes. Active participation in health care, policy making, education, and information are essential to informed decision making. These advances can establish stronger connections within the CCC movement, address issues of time and distance, and help us create and amplify a collective voice.

Call for action

The articles in this Special Issue have illustrated the progress and successes of CCC since 2005. Recounting all we have done and how far we have come is a testament to the energy and commitment of the movement to reduce the burden of cancer for all people. These are exciting times and times of great change. A new emphasis on policy, primary prevention, public health, research-tested interventions, and global health supported by advanced communication tools puts the future in our grasp. The CCC movement has made significant progress in the face of many challenges. We have forged partnerships that have creatively addressed the challenges and leveraged resources. New trends toward open government and a focus on cancer as a non-communicable disease bode well for an increasingly coordinated and comprehensive approach to cancer prevention and promotion efforts. The recognition that policy interventions are some of the most effective routes to wide-scale behavior and systems change gives coalitions and communities the impetus to continue to push forward on making progress in addressing the entire cancer continuum, improving access to screening and early detection, and eliminating disparities. We need to focus our efforts in those areas where we can provide education, improve access, and harmonize data infrastructures to collect the surveillance and clinical data we need to illustrate the burden of cancer and track progress in addressing it. Health reform opens opportunities for educating an additional 35 million newly insured people on what access means, where to obtain services, and the effective evidence-based primary prevention and screening methods. We need to work together to address shortages in the primary care and to build the cancer workforce, especially in geographic (or content) areas of the greatest need.

CCC coalitions with the support of the CCCNP need to redouble their effort to work together as engines of change. Collective movement with a unified voice will help to create change in policy, funding, and persistent social injustice. Together, we have made great strides over the past decade from rapid movement from cancer control planning to implementation. We have achieved a clearer understanding of how to resource plans and what it really takes to implement a plan successfully. This understanding is allowing all of us to assess our partnerships so that we are engaging a wide variety of stakeholders—from advocates to health professionals—who can bring influence, resources, and actual funding dollars to the effort.

Equal to the challenges that confront us are the opportunities we have to make a profound difference in cancer control locally, nationally, and globally. Advanced technology, social media, and a rapidly evolving communication environment will allow us to track and evaluate our efforts, share critical data, and disseminate information to raise awareness, educate, impact policy, and engage critical constituents. We must use these tools responsibly and effectively to engage an ever-growing circle of supporters and to empower increased public participation and representation in the future. In 2010, engagement is the word of the day. CCC is founded on partnership for a unified purpose. We need to use what we've learned and what we've accomplished as a springboard to engage individuals, communities, governments, and all sectors of the society both national and international.

Conflict of interest The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention and National Cancer Institute.

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