



Developing a Community of Practice Model for Cancer and Chronic Disease Prevention

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Submitted by;

Chronic Disease Prevention Alliance of Canada

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MAIN MESSAGES

- ⌘ The literature on communities of practice has evolved our understanding of their structural elements, organizational design factors, and the practical steps required for development and success.
- ⌘ The existing literature has little to offer with respect to evidence of outcomes beyond the level of case and descriptive studies. That said there is a burgeoning account of the inherent value of communities of practice, for both the individual and the organization.
- ⌘ Recommended topics of focus for a cancer and chronic disease prevention community of practice were varied, requiring further distillation in a planning workshop. The topics most frequently cited were *service delivery issues; knowledge exchange and partnerships; and research and evaluation*.
- ⌘ Recommendations regarding community membership were equally varied, with the most frequent targets being *allied organizations and volunteer health sector; government; health promotion and public health; practitioners, health care providers; academics and researchers; and the public*.
- ⌘ Survey respondents recommended a community structured as follows:
 - Having the leadership of “thought leaders” and “recognized experts”;
 - Focusing on topics considered important and relevant by the sector and community;
 - Being a catalyst for “real dialogue” on “cutting edge issues”;
 - Supported by real protected time for involvement;
 - Incorporating characteristics associated with community success (i.e., *facilitator, access, leadership support; kind of knowledge shared; level of trust; potential for collaboration; relevance to daily work*)
 - Annual face-to-face interaction;
 - Virtual web-based interaction and resources (i.e., discussion forums)
- ⌘ Travel and time were the largest barriers, making a virtual community the most appropriate format for interaction.
- ⌘ Respondents indicated a high level of interest in the community of practice concept and were most attracted by the *opportunity to gain knowledge, leverage strategic goals, stimulate ideas, access special skills, and gain experience*.
- ⌘ Five main themes emerged from key informant interviews:
 - The need for a clear definition of purpose in creating a community of practice as a first step, beginning with defining a strategy for health systems change and knowledge translation and then determining whether a community of practice fits the strategy;
 - The necessary conditions for creating an effective community of practice (i.e., small, relevant, functional structure, value);
 - The kinds of issues that could be addressed at a national level including *connecting cancer with other disease processes; connecting systems; build and/or supporting national advocacy approaches for policy development; risk factors across chronic diseases, and chronic disease prevention in remote or northern communities*.
 - There is a potential role for existing organizations to nurture and facilitate the development of communities of practice in existing cancer and chronic disease prevention communities;
- ⌘ A 14-step model is proposed, following from the work of the Defense Acquisition University.

EXECUTIVE SUMMARY

This project sought to develop recommendations for the design and implementation of a Community of Practice (CoP) model to support shared priorities for cancer and chronic disease prevention. It was developed from on a high level pragmatic review of selected literature pertaining to communities of practice, a web-based survey designed to assess structural and functional elements and overall interest from potential community members, and a set of key informant interviews held with stakeholders working in cancer and chronic disease prevention.

Health care professionals too rarely have opportunities to consider and reflect upon available scientific and practice knowledge, both explicit and implicit, within the contexts of their clinical and organizational reality. Communities of practice (CoP) offer a flexible modality for interaction with peers and experts, allowing issues to be framed within real-world contexts. They provide a forum for practitioners to interact and share knowledge and experiences pertinent to their tasks at hand, to solve problems, and to address gaps in knowledge, research, and practice.

The literature on communities of practice has evolved our understanding of their structural elements, organizational design factors, and the practical steps required for development and success. The existing literature has little to offer with respect to evidence of outcomes beyond the level of case and descriptive studies. That said there is a burgeoning account of the inherent value of communities of practice, for both the individual and the organization.

In setting out to develop a community of practice the first step is to determine whether there is a potential core membership and a domain or focus. Initially, the domain and structural features were investigated through the use of survey and interview methodology. The survey served to identify possible domains within cancer and chronic disease prevention and yielded a rather lengthy and varied list of issues. These will require further distillation in a planning workshop. The topics most frequently cited were *service delivery issues; knowledge exchange and partnerships; and research and evaluation*. With respect to membership, survey respondents recommended an equally long and varied list, with the most frequent targets being *allied organizations and volunteer health sector; government; health promotion and public health; practitioners health care providers; academics and researchers; and the public*.

The community of practice structure also began to take shape through the survey. Respondents formed a collective vision of a community that is lead by “thought leaders” and “recognized experts” and that focuses on topics considered important and relevant by the sector and community. There is a desire for the community to be a catalyst for “real dialogue” on cutting edge issues”, and there is recognition that success can only be achieved if the members can garner real protected time for involvement. Themes consistent with community success factors reported by other authors were also evident, such as the need for good facilitation, ease of access, leadership support, a high degree of trust, relevance to daily work, and a community that has potential for fostering collaborations. Respondents envisioned a community that would meet once a year in a face-to-face format, and would interact in virtual space the rest of the time. These proposed structures will easily off-set the identified barriers of travel and time.

Overall, respondents showed a high level of interest in the community of practice concept and were most attracted by the opportunity it presents *to gain knowledge, leverage strategic goals, stimulate ideas, access special skills, and gain experience*.

Delving into deeper meaning through 11 key informant interviews yielded five main themes. First, informants identified a role for CDPAC¹ to nurture and facilitate the development of communities of practice in existing cancer and chronic disease prevention communities. Second, they identified a need for a clear definition of purpose in creating a community of practice, beginning with defining a strategy for health systems change and knowledge translation and then determining whether a community of practice fits the strategy. Third, many reiterated the necessary conditions for creating an effective community of practice – the need to be small and relevant, have a functional structure, and bring value. Fourth, they identified the kinds of issues that could be addressed at a national level including *connecting cancer with other disease processes; connecting systems; build and/or supporting national advocacy approaches for policy development; risk factors across chronic diseases, and chronic disease prevention in remote or northern communities.*

The recommended model is a *Distributed Community of Practice* that is primarily virtual but supported by annual opportunities for face-to-face interaction. Successful distributed communities of practice are designed and nurtured so as to overcome the barriers of time, size, affiliation, and culture. The proposed model development follows the 14-steps described in the work of the Defense Acquisition University in the United States. Detailed action steps are laid out yet it is important to realize that communities of practice are *emergent* and not (entirely) prescriptive. While there is much to be learned by how others have proceeded, several key facets of a cancer and chronic disease community of practice must emerge from community consultation. A developmental workshop is proposed to guide the community through this early consultation process. The proposed community of practice will necessarily cross organizational boundaries and expose members to new and diverse sets of ideas. This boundary-spanning will provide fertile ground for innovation and fosters the transfer of best practices across organizations.

In undertaking to develop a community of practice for cancer and chronic disease prevention, CPAC will follow in the footsteps of a handful of other health innovators in breaking new ground. Not only is there great potential to improve research, health care, and health outcomes with this emergent method for knowledge exchange and management, but the work set forth in this report will contribute to the science in support of the community of practice model. It will be important for the community to document their journey and report on their effectiveness, including the metrics they will find useful, to others in the health field who have a keen interest in knowledge translation and hope to follow in their footsteps to leverage learning and knowledge exchange in their own domains. It will be fascinating to follow the journey.

¹ Chronic Disease Prevention Alliance of Canada, CDPAC.

PURPOSE AND SCOPE

The project sought to develop recommendations for the design and implementation of a *community of practice model* to support shared priorities for cancer and chronic disease prevention through the mandate of the *Canadian Partnership Against Cancer - CPAC*. The model recommendations stem from a high level pragmatic review of the relevant literature, a survey of stakeholder priority areas and structural preferences, and an understanding of current priorities for collaborative action suggested by key informants in the field.

METHODOLOGY

Data for this project were collected in three main phases. In the first phase, a high level review and synthesis of the literature on communities of practice was undertaken. In the second phase, an online survey was developed with input from CDPAC and administered via *SurveyMonkey™* to a broad range of CDPAC stakeholders. In the third phase, 11 key informants selected by CDPAC were interviewed².

Synthesis of CoP Literature. There is a burgeoning literature on communities of practice, comprising theoretical pieces, some empirical work, and several descriptive case studies³. As the scope of the proposed work did not entail a systematic review of the literature, a list of relevant recent work was generated for the CDPAC team, from which they selected the relevant documents for inclusion in this review.

Survey. The content of the survey was developed by the author with feedback provided by the CDPAC team. The survey was developed using *SurveyMonkey™*.

Key Informant Interviews. Eleven key informants were interviewed⁴ in order to gain an understanding of current priorities for collaborative action and to enrich our understanding of the survey findings. Key informants were selected by CDPAC on the basis of their knowledge exchange expertise and represented a range of cancer and chronic disease prevention efforts in Canada⁵. Survey findings were used to develop a line of questioning. Key informants were provided with a copy of the questions, along with background material to provide context, in advance of the interview. All interviews were conducted by telephone and were audio-taped (with the key informant's permission) to aid in transcription. The transcribed interviews were then analyzed to identify common themes and messages.

² Key informant interviews were conducted and analyzed by Anya Keefe.

³ A Medline conducted January 18th 2008 for the period 2006 through 2008 and using the search phrase "communit\$ of practi#e.tw." yielded 82 citations, of which approximately 48 seem relevant to this project.

⁴ As a community of practice can be viewed as a mechanism to facilitate knowledge exchange, CDPAC indicated a preference that the key informant interviews for this project be tied in with those being conducted for another project on enhancing CDPAC's knowledge exchange capacity.

⁵ Key informants represented cancer and chronic disease prevention efforts at the national and provincial levels, as well as public health more broadly at the federal and provincial/territorial levels. Key informants were chosen by CDPAC using sources such as participant lists from the CPAC meeting on primary prevention, as well as CDPAC stakeholders in chronic disease prevention.

BRIEF PRAGMATIC REVIEW

The Concept

Health care professionals too rarely have opportunities to consider and reflect upon available scientific and practice knowledge, both explicit and implicit, within the contexts of their clinical and organizational reality. Communities of practice (CoPs) offer a flexible modality for interaction with peers and experts, allowing issues to be framed within real-world contexts.

Communities of practice are “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, & Snyder 2002, p. 4). While they are not new, they are relatively new to the business and health sector as organizations work to become more intentional and systematic about managing knowledge.

A community of practice provides a forum for practitioners to interact and share knowledge and experiences pertinent to their tasks at hand, to solve problems, and to address gaps in knowledge, research, and practice. “Communities provide a mechanism for individuals to keep each other current in the developments of a shared discipline, and they assist with better top-down communication by providing multiple and more direct methods of disseminating information and ideas. The community structure provides broad access to peers, expert help, best practices, lessons learned, and innovative ideas because it is not constrained by the conventions of traditional hierarchical structures” (DAU, 2005, p.5).

Not only do we recognize that we know more than we can tell (Polyani 1966), we also know that it is unrealistic to expect professionals to be aware of all the burgeoning developments in their respective field. Communities of practice are based on the notion that the tacit aspects of knowledge are more often the most valuable (Nonaka & Takeuchi 1995; Leonard & Sensiper 1998) because they consist of expertise that cannot always be codified in written form. They also manifest our knowledge that humans are social animals and learning is inherently a social activity. Many organizations are discovering that communities of practice are the “ideal social structure for ‘stewarding’ knowledge. By assigning responsibility to the practitioners themselves to generate and share the knowledge they need, these communities provide a social forum that supports the living nature of knowledge” (Wenger, McDermott, & Snyder 2002, p. 12).

To be truly useful, research evidence must be taken up and considered actively. One way to move our knowledge utilization from passive to active is to consider it in social interactions where individuals can contribute their own knowledge and experiences. “Effective CoPs represent a viable way to provide a knowledge-sharing environment that facilitates the context building and interaction essential to move beyond the piles of information and into the realm of synthesis, action, and organizational learning” (Garcia & Dorohovich, 2007, p. 21).

In business and now increasingly in healthcare, organizations are recognizing the importance of communities of practice for spreading best practices and research knowledge to improve health services and outcomes (Bate & Robert 2002). CoPs provide structures, in vivo and/or online, for explicit knowledge to be integrated with individual and collective tacit knowledge. The intended result is that evidence be implemented and taken up to produce changes in practice that have impacts on science, programs, policy, and health outcomes.

In a recent research synthesis of communities of practice in health care and business, Li, Grimshaw, Graham, Nielsen, Judd and Coyte (2007) found that learning and sharing information through socialization were the central characteristics of communities of practice. Their review centered on authors' interpretations of the community of practice concept, key characteristics of communities, and common elements of communities described in the literature. Li et al., (2007) found that all health care and business groups demonstrated characteristics associated with socialization, knowledge-sharing, knowledge-creation, and identity building. They also concluded that a lack of consistency in the interpretation of community of practice theory and group structure is evidence in health care and business literatures. Clearly, the concept, its application and its evaluation are still evolving.

Community Value

The extant literature regarding outcomes or the value associated with communities of practice are mainly descriptive and in the form of case studies. Taken together, these suggest several benefits of CoPs. The following table is adapted for this report from the work of several authors (i.e., Garcia & Dorohovich 2007^(a); Barwick, Peters, Barwick, Boydell 2008^(b); Wenger et al., 2002^(c)) to reflect short and long-term benefits of communities of practice in health care and health research.

Table 1 Value of Communities of Practice to Organizations and Members

	Short-term value	Long-term value
	Improve practice & research outcomes	Develop individual & organizational capabilities
Benefits to the Organization	<ul style="list-style-type: none"> • Facilitates rapid identification of individuals with specific knowledge/skills/expertise^(a) • Fosters knowledge sharing across organizational and geographic boundaries (boundary spanning)^(a) • Promotes and facilitates capture & reuse of existing knowledge and retention of organizational memory^(a) • Improves rate of implementation of evidence-based practices^(b) • Facilitates faster, better-informed decision-making^(a) • Improves the quality of the research and practice^{(a)(b)} 	<ul style="list-style-type: none"> • Ability to execute strategic plan^(c) • Authority with clients (stakeholders)^(c) • Increased retention of talent (practitioners/researchers)^(c) • Capacity for knowledge-development projects^(c) • Forum for “benchmarking” against rest of industry (sector)^(c) • Knowledge based alliances (partnerships, collaborations)^(c) • Emergence of unplanned capabilities^(c) • Capacity to develop new strategic options^(c) • Ability to foresee technological developments (products)^(c) • Ability to take advantage of emerging market opportunities (emerging strategic grants)^{(b)(c)}
	Improve Experience at Work	Foster Professional Development
Benefits to Community Members	<ul style="list-style-type: none"> • Provides safe environment for sharing problems, challenges, & test new ideas^(a) • Reduces learning curves for new employees^(a) • Improves topical knowledge among practitioners^(b); • Fosters interaction between new/junior practitioners and senior/experienced practitioners^(a) • Facilitates the building of mentor-protégé relationships^(a) 	<ul style="list-style-type: none"> • Forum for expanding skills & expertise^{(b)(c)} • Network for keeping abreast of field^(c) • Enhanced professional reputation^(c) • Increased marketability & employability^(c) • Strong sense of professional identity^(c)

Communities of practice are not a ‘silver bullet.’ They are not designed to do the work of business units and practice teams. That said they do create value for members and their organizations (Wenger et al., 2002). In the short-term, communities offer a structure in which to address immediate problems which means members can often spend less time searching for information or knowledge to solve a particularly

thorny or immediate problem. New knowledge is accumulated and captured in written form, where possible, so that it serves as a record for future similar topics or issues. Members also can keep in touch with new developments in their field more easily and access new knowledge in a just-in-time fashion. It is critical for success that members perceive their participation as translating to improvements in their work.

Structural Elements

There exist a wide variety of communities of practice, and there is evidence that they have, to some extent, been oversold such that 'communities of practice' has become a catch phrase to denote a variety of groups without full consideration of whether they meet the basic structural elements as defined by the originating authors (i.e., Wenger et al., 2002). Communities of practice can be small or big; long-lived or short-lived; colocated⁶ or distributed⁷; homogeneous or heterogeneous; inside and across boundaries⁸; spontaneous or intentional (purposeful); and unrecognized to institutionalized. Regardless of how the community may vary along the aforementioned elements they all share a basic structure:

The *domain* of knowledge which defines a set of issues and which serves to create a common ground and sense of common identity. The domain inspires members to contribute and participate, guides their learning and gives meaning to their actions;

A *community* of people who care about the domain;

A *shared practice* that is developed by members in order to be effective in their domain. The practice is a set of frameworks, ideas, tools, stories, and documents that community members share; it is the specific knowledge the community develops, shares, and maintains.

Development and Implementation

As originally conceptualized, communities of practice emerge naturalistically (Wenger, McDermott, & Snyder 2002) although it is recognized that organizations have an important role to play in ensuring they grow, prosper, and offer value. Communities often take flight in situations where there already exists a core group of individuals who meet to discuss and share knowledge on a particular topic. Recently, some investigators have experimented with the creation of 'purposeful' communities of practice, with a view toward using the social learning method to move evidence into practice (e.g., Barwick et al., 2008; Fung Kee Fung, 2008). Barwick and colleagues have purposefully developed communities of practice to support the implementation of an outcome measurement tool in Ontario's child and youth mental health sector. Recent research has demonstrated that clinicians participating in the community of practice developed more knowledge of the tool, felt more supported in their implementation, and adopted the tool more quickly than newly trained clinicians who were not part of the community but could avail themselves of considerable provincial support. Fung Kee Fung and colleagues (2008) have developed CoPs for the sharing of common regional guidelines and pathway for surgical oncology.

⁶ A community of members who work in the same organization or live in the same area.

⁷ The emergence of Web2.0 technologies and the need for globalization are making distributed communities of practice the standard rather than the exception (Wenger et al., 2002).

⁸ Within organizations, across business units or departments, or across organizational boundaries.

Despite enthusiasm for communities of practice their success as agents of knowledge exchange and practice change rely upon the following key organizational design factors (Sanders & Heller 2006; Garcia & Dorohovich 2007):

- Clarity of purpose and core membership
- Healthy infrastructure
 - Leadership
 - Organizational culture
 - Information systems
 - Human resource management
- Community-building process
- Measuring results

Clarity of Purpose and Core Membership. Success in community of practice development begins with a clear understanding of the community's purpose, mission – or how it will be used, and the outcomes it is expected to generate. “There needs to be enough common ground among members for them to feel connected and see the value of sharing insights, stories, and techniques” (Wenger et al., 2002, p.71). *Core members* – those individual who are highly committed to developing and contributing to the community of practice – have to be cognizant of their responsibilities and available for a high degree of participation.

Core membership is both a function of self-nomination and peer nomination. The right core membership from the onset of planning is an important element in earning trust (Garcia & Dorohovich 2007). To the degree that health practitioners are overworked, the target membership must have confidence that the community of practice is worthy of the time invested and offers considerable value within its selected (expert) members.

It is recommended that the community's intended audience, mechanisms for interaction, sponsorship, and leadership be explicitly documented in a *community of practice charter* or *memoranda of understanding*; this is described later in the model section of the report.

Healthy Infrastructure. A community's infrastructure stems from three components: *people*, *process*, and *technology*. On the *people* side, a number of roles function to support the implementation and adoption of the community. While Garcia and Dorohovich (2007) point out that a single person may in fact handle multiple roles, there must be a plan for how to support all of these functions⁹:

- *Community sponsor:* the sponsor provides high-level support for the community and acts as the champion, promoting the value of the community across an organization or sector, thereby encouraging growth and commitment of in-kind and substantive resources.
- *Community leader:* the community leader is an active member and helps to guide the purpose and strategic intent, energizes the process, and provides intellectual nourishment for the community.
- *Subject Matter Experts:* Subject matter experts are knowledgeable and experienced members of the community who use their knowledge of the field to help shape what is important and useful and to integrate new information into the existing knowledge base.

⁹ The six role definitions stem from the Community of Practice Implementation Guide developed by the Defense Acquisition University, 2003.

- *Content Editor*: Content editors are responsible for content within a certain defined scope, e.g., manages the process for review and approval of member contributions.
- *Facilitator*: The facilitator fosters and facilitates member interaction, often acting as knowledge broker.
- *Community Member*: Membership that is voluntary and supported by the value derived through participation.

The support of a knowledge broker and administrative personnel is widely acknowledged as important for communities of practice to thrive. Garcia and Dorohovich (2007) point out that “when this function is designated entirely as collateral duty to someone with other higher priorities, it is difficult to sustain a viable community of practice (p. 25).

From a *process* perspective, it is recognized that established, proven, and repeatable processes provide a consistent methodology for ensuring that all aspects of the community’s development are well thought out, that objectives are identified, roles designated and properly aligned to organizational goals.

The community’s exchange of knowledge relies on the *technological* piece of the infrastructure. Worthy of consideration here are the capabilities and functions that IT tools (i.e., website, wiki) provide the end user member, availability of hardware and connectivity capable of scaling to the intended audience, and its ease of use. Garcia and Dorohovich (2007) recommend conducting a needs assessment at the front end and then matching member needs to available technologies.

The Community Building Process. Several authors have proposed stage models for describing the evolutionary development of communities of practice. In their work with *IBM Global Services™*, Gongla and Rizzuto (2001) summarized the overall evolution pattern into five stages: potential, building, engaged, active and adaptive (see Table 2).

While the Wenger and McDermott’s models offer a life cycle approach, Gongla and Rizzuto’s model does not. Rather, they suggest that communities may remain at certain stages failing to continue to the next; may move backwards and forwards between stages; may demonstrate characteristics of one stage and another simultaneously, and lastly, may ‘rest’ for extended periods of time at one particular stage and then show a burst of movement to another stage.

The most detailed process description for developing a community of practice stems from the work of Garcia and Dorohovich at the *Defense Acquisition University* (2007; 2003). These authors have developed and repeatedly implemented a 14-step process to initiate, build, and operate communities of practice based on collective knowledge acquired over 40 years of knowledge management experience and a variety of organizations. Their model for how to proceed has been adapted for this purpose and is detailed further in this report (see Model Recommendation).

Wenger’s Principles for Community Success

In their seminal book on communities of practice, Wenger, McDermott, and Snyder (2002) describe seven principles that work to ensure that the community of practice will come to life and become the dynamic entity it is intended to be. The first principle is to *design for evolution* - building the community on preexisting personal networks. Communities of practice must be dynamic; members must bring in new interests and subsequently may pull the focus of the community in different directions. For instance, once people become engaged in a topic and begin to build relationships, core members can introduce

other elements of community structure such as a wiki, website, or linkages to other communities, thereby ensuring change and growth.

Table 2 Community Evolution Models

<i>Gongla and Rizzuto's (2001) Community Evolution Model</i>					
STAGE	Potential	Building	Engaged	Active	Adaptive
DEFINITION	A community is forming.	The community defines itself & formalizes its operating principles.	The community executes and improves its processes.	The community understands and demonstrates benefits from knowledge management and the collective work of the community.	The community and its supporting organization(s) are using knowledge for competitive advantage.
FUNCTIONS	Connection	Memory and context creation.	Access and learning.	Collaboration.	Innovation and generation.
<i>Wenger's (1998) Community Development Model</i>					
STAGES	Potential	Coalescing	Active	Dispersed	Memorable
	People face similar situations without the benefit of shared practice.	Members come together and recognize their potential.	Members engage in developing a practice.	Members no longer engage very intensely, but the community is still alive as a force and centre of knowledge.	The community is no longer central but people still remember it as a significant part of their identities.
<i>McDermott's (2000) Community Development Model</i>					
STAGES	Plan	Start-up	Grow	Sustain/Renew	Close

A second ‘Wenger’ design principle is to *open a dialogue between inside and outside perspectives*. Effective communities build on the collective experience of community members: “only an insider can appreciate the issues at the heart of the domain, the knowledge that is important to share, the challenges their field faces, and the latent potential in emerging ideas and techniques” (Wenger et al., 2002, p.54). That said, it often takes an outside perspective to help members see possibilities; “good community design brings information from outside the community into the dialogue about what the community should achieve” (Wenger et al., 2002, p. 54). In health, many experts associated with a particular field are distributed across the country and internationally. Thus, it is important to bring them into the community on occasion to offer their expertise and their perspective on the community’s projects and goals.

The third Wenger principle is to *invite different levels of participation*. While a core membership is essential to any community of practice, many different levels of participation are typical and to be expected – there is a natural ebb and flow. To some extent, this is because individuals participate in communities for varying reasons; findings from our survey will illuminate this point later in the report. It is unrealistic to presume that all members will participate equally. As discussed earlier, communities require a facilitator who can organize events and connect community members. However, the intent is that other community members will assume leadership roles as time passes. Typically, a community of practice has a small *core group* who actively participate with a relatively high degree of frequency. Over time, members of this core group are likely to assume leadership responsibilities to augment the work of the coordinator. Beyond the core is the *active group* - members who attend meetings regularly and occasionally participate

in community forums. Lastly, there are the *peripheral members* who rarely participate but who may check in from time to time to see what is going on. The key to good community participation is to design community activities that allow participants at all levels to feel like full members (Wenger et al., 2002, p. 57).

The fourth Wenger principle is to *develop public and private community spaces*. Public spaces include the meetings, web site, and wiki, whereas private space is the one-on-one networking among community members. “Most communities have public events where community members gather – either face-to-face or electronically – to exchange tips, solve problems, or explore new ideas, tools, and techniques” (Wenger et al., 2002, p. 58). They are public because they are open to all members. It would be a mistake, however, to focus all the community’s energies on public spaces as it is equally important to foster linkages among individual members and to entice them to share their knowledge with others.

As mentioned earlier, communities thrive because they *deliver value* to members and their organizations. This value evolves over time, with early value stemming from a focus on common problems, to deeper value emerging from activities and events where members can get to know one another and share.

Communities of practice need to *engender a sense of familiarity and excitement*. They need to be places of comfort where members feel at ease to share and discuss new ideas, but they also need to have exciting activities (i.e., bringing in a controversial speaker, staging a debate on a controversial topic) in order to stay dynamic and keep the membership engaged.

Lastly, communities of practice need a *tempo or rhythm*. At their core they reflect a web of enduring professional relationships, and yet the tempo of their interactions is shaped by the rhythm of community events. Regular meetings, teleconferences, web site and wiki activity set the pace for the community, which should be neither too lax nor too lively.

Effectiveness and Evaluation

While there are no standardized metrics for evaluating the value of a community of practice, several methods have been employed that can assist in determining how effective the community is in reaching and provide value to the members, and in meeting its objectives. As with all forms of outcome measurement it is important to measure periodically and in a formative fashion so that the results can be directed to continuous improvement of the community.

Typically, a combination of both quantitative and qualitative measurement is recommended (Garcia & Dorohovich 2007; Gongla & Rizzuto, 2001). Quantitative indicators can include the number of meetings, number of attendees, number of members accessing web forums or documents. Web statistics can be useful in tracking the number of page views, number of times a document is viewed or downloaded, and number of new discussion threads. Qualitative measures are also important because they lend themselves to contextualizing the numbers. “Surveys, interviews and unsolicited feedback from members provide a better indication of value and how effective the community is in meeting its intended objective” (Garcia & Dorohovich, 2007, p.30).

Another metric is sustained growth over time, both in terms of membership and contributions to the community’s body of knowledge. Tracking the number of members over time will provide an indication of growth. Contributions of ‘knowledge objects or nuggets’ can also be tracked as can ‘deliverables’ stemming from the activity of the membership.

Some investigators have attempted to capture learning within the community of practice environment through participant observation (Gongla & Rizzuto, 2001), member documentation in reflective practice journals and through commitment-to-change statements (Barwick et al., 2008). Minutes of meetings can also serve as documentation that can be 'measured' over time, e.g., what topics are discussed, what actions taken, what knowledge shared. These types of measures lend themselves much more to small communities of practice, yet they are part of the menu of indicator options for measuring change, growth, and learning in communities of practice.

Communities of Practice in Health Care

Researchers in the United Kingdom are undertaking two action research projects to develop CoPs (Lathlean & LeMay 2002) in primary care groups and outpatient services for dermatology and Ear, Nose, and Throat specialties. Observations, field notes and interviews will 1) describe the development and workings of each CoP, and 2) explore the use of knowledge within each CoP.

A virtual (web) CoP for cardiovascular health had nurses share their knowledge and experience on cardiovascular illness and patient care using the Knowledge Forum™ discussion software (Paquet, Leprohon & Cantin 2004). Questionnaire data showed the CoP had positive effects on the acquisition and maintenance of knowledge in cardiovascular care but had little impact on the resolution of problems relative to cardiovascular treatment. Nurse respondents felt they benefited from sharing the diverse experiences of other members of the community and 80 percent reported they would continue to participate in the community.

Cancer Care Ontario is supporting five CoPs for the next year in the areas of ovarian, colorectal, thoracic, & pancreatic/hpb cancer surgery, in addition to an Ottawa regional CoP (K. Sequiera, personal communication, 2005). CoP has been used to support tobacco prevention (Lambraki, Atkinson, Leatherdale, Lineker, Manske, Robinson, Skinner, Wong K & Wong SL, 2004) and Parboosingh and colleagues are examining CoP in selected clinical areas (Parboosingh 2005, 2002). Emergency care CoPs are being studied by National Institute of Clinical Studies in Australia with a view toward improving mental health care in emergency using qualitative case study methods (Hudson 2004).

VIEWS OF SURVEY RESPONDENTS

The survey was emailed to 524 respondents by the CDPAC office. A total of 69 respondents logged into the survey, of whom 3 either agreed or declined participation, and one declined participation due to lack of time and lack of relevance to their work. The majority of the questions had 32 respondents, representing 6% of the sampled population. One-third of respondents were affiliated with provincial health-related organizations and slightly less than one-quarter worked for national health-related organizations or a university-based research centre. It will be important to partner nationally to solicit membership across the country.

Topics for Discussion

Wenger et al., (2002) review four common strategic intents for communities of practice: (1) *Helping communities* that focus on creating forums for people to connect across teams, geography, or business units and decide for themselves what knowledge to share, how to assess its value, and how to disseminate good ideas to the rest of the community; (2) *Best-practice communities* that focus on

developing, validating, and disseminating specific practices; (3) *Knowledge-stewarding communities* that focus on hosting forums for members to connect, develop, and verify practices. Their main intent is to organize, upgrade, and distribute knowledge their member use every day. In this sense, these types of communities are about knowledge management in particular. Lastly (4), *innovation communities* encourage members to develop and contribute practices. They aim to foster unexpected ideas and innovations and do so by crossing boundaries and mixing members who have clearly diverging points of view.

To determine the ‘typology’ that best suits the context for the cancer and chronic disease prevention community, respondents were asked to list up to five topics, issues, or area of interest that they would like to see the community of practice focus upon. This yielded the wide variety of topics listed in Table 3.

Table 3 Topics of Interest

<i>Advocacy</i> (1)	<i>Obesity</i> (4)
<i>Best Practice</i> (6)	<i>Organizational Learning</i> (1)
<i>Behaviour Change</i> (2)	<i>Physical Activity</i> (8)
<i>Change Management</i> (4)	<i>Policy</i> (8)
<i>Community Capacity Building</i> (4)	<i>Prevention</i> (5)
<i>Diseases</i> (10)	<i>Research & Evaluation</i> (12)
<i>Education</i> (1)	<i>Social Determinants of Health</i> (6)
<i>Environment</i> (6)	<i>Tobacco Control</i> (5)
<i>Ethics</i> (1)	<i>Special Populations</i> (3)
<i>Food Security</i> (1)	<i>System Change</i> (5)
<i>Healthy Eating</i> (8)	<i>Service Delivery / Service Integration</i> (14)
<i>Health Promotion</i> (3)	<i>Surveillance</i> (3)
<i>Implementation</i> (1)	<i>Therapeutics</i> (2)
<i>Income Security</i> (1)	<i>Ultraviolet Radiation</i> (1)
<i>Knowledge Exchange / Translation & Partnerships</i> (12)	

Consistent with the notion of *helping communities*, respondents recommended topics such as *advocacy*, *community capacity building*, *health promotion*, and *knowledge exchange and partnerships* in which the focus is on connecting groups or members to share knowledge. In addition, other topics were aligned with *best practice communities*, including *best practices*, *diseases*, *healthy eating*, *obesity*, *physical activity*, *prevention*, *health promotion*, *social determinants of health*, *tobacco control*, and *service delivery*. Other topics pertained to areas seeming to require further development, such as *environmental issues*, *ethics*, *food security*, *health eating*, *educational issues*, *policy*, *system change*, *surveillance*, and *service delivery issues*.

In all, 32 respondents proposed 29 topics, yielding a highly diffuse domain focus among survey respondents (See Table 3; a full listing appears in Appendix A). Clearly, cancer and chronic disease prevention relates to a great many issues in our daily health and life. If we look mainly at the topics that were more frequently proposed the list of foci begins to narrow slightly. *Service delivery issues* comprised a first tier of issues and were nominated by 44% of the respondent group, followed by a second tier of interest for *knowledge exchange & partnerships* and *research and evaluation* which were identified as key topics by 38% of respondents. A third tier of interest centered on *specific diseases* (most notably Cancer, but also mental illness, asthma, kidney disease, and musculoskeletal health). The fourth and final tier included such topics as *best practice* (19%), *environmental issues* (19%), *health eating* (16%), *physical activity* (19%), *policy*, *prevention* (16%), *social determinants of health* (19%), *tobacco control* (16%), and *system change* (16%).

Membership

Thinking more generally about chronic disease and cancer prevention in Canada, respondents were asked to identify those individuals or groups who should be invited as members to the community of practice. As with the nominated topics of interest, this question also yielded an exhaustive list of potential stakeholders which was not surprising given the overarching impact of cancer and chronic disease on health and daily living.

Overall, 32 respondents proposed 24 stakeholder groups (See Table 4; full listing in Appendix B). Groups that were identified most frequently included *allied organizations and volunteer health sector* (58 references); *government* (federal and provincial) (43 references); *health promotion and public health* (18 references); *practitioners and health care providers* (17 references); *academics / researchers* (16 references); and the *public* (13 references). There was also some interest in involving *community service sectors* (6 references); *consumer organizations* (6 references); the *education sector* (7 references); *cancer agencies* (8 references); *municipalities* (7 references); and the *sports and recreation sector* (5 references).

Table 4 Stakeholders

<i>Academics / Researchers</i> (16)	<i>Government</i> (41)
<i>Advocates</i> (1)	<i>Health Promotion / Public Health</i> (18)
<i>Allied Organizations - Volunteer Health Sector</i> (59)	<i>Information Technology Specialists</i> (1)
<i>Cancer Agencies</i> (8)	<i>Knowledge Exchange Specialists</i> (2)
<i>Cancer Survivors</i> (1)	<i>Media</i> (1)
<i>Community Service Sectors</i> (6)	<i>Municipal Leaders</i> (7)
<i>Consumer Organizations</i> (6)	<i>Practitioners / Health Care Providers</i> (17)
<i>Consumers / Patients</i> (3)	<i>Private Sector</i> (4)
<i>Education Sector</i> (7)	<i>Public</i> (13)
<i>Environmental Organizations</i> (2)	<i>Physical Activity / Sports Sector</i> (5)
<i>Experts</i> (3)	<i>Policy</i> (3)
<i>Funding Agencies</i> (1)	<i>Special Populations</i> (2)

Structure

Leadership. The most highly favored leadership style was an inspirational one provided by thought leaders and recognized experts (48.6%). Leaders with strong interpersonal skills who demonstrate a capacity to ‘weave the community’s social fabric’ were also highly regarded (40.5%), as were those who could connect this community to others (37.8%). Respondents are looking for more than a leader who can organize the group or who can collect and organize information. Slightly greater than a quarter of the respondents also value leadership that maintains links with other organizations and who can lead ‘out-of-the-box’ initiatives (see Table 5).

Key Components. The literature suggests several factors that are of central importance in attaining successful communities of practice. All those listed were regarded as very important by respondents, with greatest agreement shown for a focus on topics that important to the sector and community members, and a community of practice that can be a catalyst for real dialogue about cutting edge issues (See Table 6). Respondents also valued the importance of protected time to participate in the community and encouragement to do by their organizational leadership. They also agreed, for the most part, that ease of contribution and access are important factors for success.

Table 5 Communities of practice are shaped by the type of leadership they have in place. Please select the leadership styles you think would be of greatest benefit to this community of practice.

Answer Options	Response Percent	Response Count
Leadership provided by thought leaders and recognized experts (Inspirational)	48.6%	18
Leadership provided by those who organize activities for the group (Day-to-Day)	18.9%	7
Leadership provided by those who collect and organize information in order to document practices (Classificatory)	16.2%	6
Leadership provided by those who weave the community's social fabric (Interpersonal)	40.5%	15
Leadership provided by those who connect the community to other communities (Boundary Leadership / boundary spanners)	37.8%	14
Leadership provided by those who maintain links with other organizational constituencies, in particular the official hierarchy (Institutional Leadership, i.e., from the sponsoring organization)	27.0%	10
Leadership provided by those who shepherd 'out-of-the-box' initiatives (Cutting-Edge)	29.7%	11
No opinion at this time	8.1%	3
<i>answered question</i>		37
<i>skipped question</i>		32

Table 6 Several 'success factors' have been identified for communities of practice. Please identify how important each of these factors is to you for collaboration and successful knowledge exchange in this community of practice.

Answer Options	Not important	Neither important or not important	Important	Very Important	Not sure / Don't know	Rating Average
Focus on topics that are important to our (health) sector and to our community members	2.7%(1)	0.0%(0)	13.5%(5)	83.8%(31)	0.0%(0)	3.78
Find a well-respected community member to coordinate the community	5.4%(2)	8.1%(3)	48.6%(18)	37.8%(14)	0.0%(0)	3.19
Make sure people have (protected) time and encouragement to participate from their leadership	5.4%(2)	8.1%(3)	24.3%(9)	62.2%(23)	0.0%(0)	3.43
Build on core values and strategic goals of your organization	5.4%(2)	5.4%(2)	37.8%(14)	51.4%(19)	0.0%(0)	3.35
Get key thought leaders involved (i.e., invited experts)	5.4%(2)	5.4%(2)	29.7%(11)	59.5%(22)	0.0%(0)	3.43
Build personal relationships among community members	5.4%(2)	10.8%(4)	32.4%(12)	51.4%(19)	0.0%(0)	3.30
Develop an active passionate core group of members	5.4%(2)	10.8%(4)	27.0%(10)	56.8%(21)	0.0%(0)	3.35
Create fora (forums) for thinking together as well as systems for sharing information (i.e., web 2.0 technologies)	2.7%(1)	5.4%(2)	35.1%(13)	51.4%(19)	5.4%(2)	3.43
Make it easy to contribute and access the community's knowledge and practices	2.7%(1)	0.0%(0)	29.7%(11)	67.6%(25)	0.0%(0)	3.62
Create real dialogue about cutting edge issues	2.7%(1)	0.0%(0)	21.6%(8)	75.7%(28)	0.0%(0)	3.70
<i>answered question</i>						37
<i>skipped question</i>						32

Functionality. Several characteristics must be met in order to develop and sustain a community of practice. Table 7 below lists seven functional elements that must be present: presence of at least one person who could assume a coordinating or facilitator role; access to email and presence of web infrastructure; leadership support; human resource or in-kind support; physical venues for meeting purposes; membership; and involvement of experts (see Table 7).

<i>Table 7 Communities of practice require certain supports and characteristics in order to be successful as a knowledge exchange opportunity.</i>						
Answer Options	No	Unlikely	Likely	Yes	Not sure / Don't know	Rating Average
There is at least one person in our organization who would be willing to play a co-coordinating or facilitator role ...	2.8%(1)	19.4%(7)	27.8%(10)	30.6%(11)	19.4%(7)	3.07
We have access to email & web infrastructure to support involvement in a CoP	2.8%(1)	0.0%(0)	13.9%(5)	80.6%(29)	2.8%(1)	3.77
We have (or could secure) leadership support and acknowledgement of the time required from us to participate in a CoP	2.8%(1)	11.1%(4)	30.6%(11)	47.2%(17)	8.3%(3)	3.33
Our organization is willing to provide human resource time as an in-kind support to the CoP	5.6%(2)	25.0%(9)	27.8%(10)	19.4%(7)	22.2%(8)	2.79
Our organization is willing to provide a venue for a face-to-face CoP	5.6%(2)	13.9%(5)	27.8%(10)	27.8%(10)	25.0%(9)	3.04
There are members of our organization who would be willing to participate ...	2.8%(1)	0.0%(0)	36.1%(13)	58.3%(21)	2.8%(1)	3.54
Our organization would value the involvement of topic experts from time to time	2.8%(1)	0.0%(0)	36.1%(13)	55.6%(20)	5.6%(2)	3.53
					<i>answered question</i>	36
					<i>skipped question</i>	33

There is strong evidence of the importance of these functional elements among the respondents, although weaker commitment in their willingness to provide human resource time as in-kind support, or their ability to provide a venue for the community.

Roughly one quarter of the respondents were uncertain as to whether there was a potential facilitator in their midst, whether they could provide in-kind support, or would be able to offer a venue.

Structure. Communities of practice can meet with varying frequency; in the real world or in the virtual world, or using a combination of the two. In this regard, 88% of the respondents felt that some opportunity for face-to-face interaction was either 'very important' or 'important.' Equally so are web-based resources for storing and accessing knowledge (i.e., documents, research resources, clinical resources, expert and member directories). Only half of respondents felt there was an importance to supporting the community of practice using collaborative web 2.0 technologies, such as a wiki¹⁰. Several respondents did not have an opinion about wikis in this instance, suggesting that they are still rather

¹⁰ A **wiki** is software that allows users to easily create, edit, and link pages together. Wikis are often used to create collaborative websites and to power community websites. These wiki websites are often also referred to as *wikis*; for example, Wikipedia is one of the best known wikis (Wikipedia, March 21 2008, <http://en.wikipedia.org/wiki/Wiki>).

uncommon and that individuals working in health have not yet had adequate experience with them (see Table 8).

Table 8 In thinking about how the community of practice should be structured, please indicate the importance of the following elements.

Answer Options	Not important	Neither important or not important	Important	Very Important	Not sure / don't know	Rating Average
At least some opportunities for face-to-face interaction	5.6%(2)	5.6%(2)	41.7%(15)	47.2%(17)	0.0%(0)	3.31
Supported by web-based resources for storing and accessing knowledge in the form of documents, research resources, clinical resources, directories of experts and members	2.8%(1)	5.6%(2)	30.6%(11)	61.1%(22)	0.0%(0)	3.50
Supported by a wiki - software that allows users to create, edit, and link web pages easily. Wikis are often used to create collaborative websites and to power community websites	2.8%(1)	25.0%(9)	25.0%(9)	30.6%(11)	16.7%(6)	3.00
<i>answered question</i>						36
<i>skipped question</i>						33

Of the options provided, the majority of respondents considered ‘the kind of knowledge that could be shared in a community of practice as either ‘important’ or ‘very important’ (97.2% combined). In fact, all of the dimensions listed were highly valued, including the degree of connectivity between members, the level of integration between shared knowledge and everyday work, the level of trust in the community, and the potential for inter-professional or inter-organizational collaboration. There was very little discrimination among these dimensions (see Table 9).

Table 9 Communities of practice can differ with respect to the dimensions. How important these dimensions are to you.

Answer Options	Not important	Neither important or not important	Important	Very important	Not sure / Don't know	Rating Average
The kind of knowledge the community shares	2.8%(1)	0.0%(0)	25.0%(9)	72.2%(26)	0.0%(0)	3.67
The degree of connection and identity among members	5.6%(2)	2.8%(1)	61.1%(22)	30.6%(11)	0.0%(0)	3.17
How closely integrated sharing knowledge is with people's everyday work	5.6%(2)	2.8%(1)	36.1%(13)	55.6%(20)	0.0%(0)	3.42
The level of trust in the community	2.8%(1)	5.6%(2)	44.4%(16)	47.2%(17)	0.0%(0)	3.36
The potential for interprofessional or inter-organizational collaboration	2.8%(1)	2.8%(1)	36.1%(13)	58.3%(21)	0.0%(0)	3.50
<i>answered question</i>						36
<i>skipped question</i>						33

Defining a Core Membership. Respondents were asked to comment on how often they would prefer to meet in face-to-face and/or virtually. The majority, that is 30.6%, prefers to meet face-to-face on an annual basis, and perhaps there is an opportunity to do so on the occasion of national conferences. Slightly less than one-quarter of respondents did not yet have an opinion, while one-fourth would prefer to meet every 4-6 months. One respondent offered the possibility of videoconferencing; something that could

also be explored (see Table 10). When considering a virtual format, the preferred frequency of contact was shorter, with 39% selecting an interval of every 2-4 months, and 22% preferring every month.

<i>Table 10 How frequently should the community of practice 'convene' face-to-face ?</i>		
Answer Options	Response Percent	Response Count
Never meet face-to-face; just online	2.8%	1
Every month	13.9%	5
Every 2-3 months	8.3%	3
Every 4-6 months	16.7%	6
Every year	30.6%	11
I don't have an opinion about this at the moment	22.2%	8
Other (please specify)	5.6%	2
<i>Never - this tool should not be pursued</i>		
<i>Face to face is great but distance wise could be difficult- annually would be good if distance would allow otherwise on line or videoconference</i>		
	<i>answered question</i>	36
	<i>skipped question</i>	33

An active and engaged membership is essential to any community of practice. As such, it is important to gauge the frequency with which potential members will be involved on a regular basis. When asked to reflect on this question, one half (50%) of respondents felt they would be involved at least quarterly, and a further 28% could commit to monthly contact. This demonstrates a solid potential for membership involvement among survey respondents (see Table 11).

<i>Table 11 How frequently should the community members 'meet' online, in a virtual format?</i>		
Answer Options	Response Percent	Response Count
Never meet 'on-line' - just face-to-face	0.0%	0
Every month	22.2%	8
Every 2-4 months	38.9%	14
Every 4-6 months	13.9%	5
Every year	0.0%	0
I don't have an opinion about this at the moment	13.9%	5
Other (please specify)	11.1%	4
<i>Every 2-4 months for webinars, but allow flexibility for people engage online via discussion boards or other at their leisure.</i>		
<i>Whenever they need to - group members decide</i>		
<i>Asynchronous participation</i>		
<i>Never - this tool should not be pursued</i>		
	<i>answered question</i>	36
	<i>skipped question</i>	33

Nearly half of the respondent group felt they would 'very likely' be a core member of the community; someone who will contribute highly to the development and ongoing work of the community. A further 28% felt this level of involvement was 'somewhat likely' on their part. Together, this yields a potential 26 community members who currently view themselves as likely 'active' members of the community.

Communities of practice can benefit greatly from recognizing and valuing the contributions made by their members. Several methods of member acknowledgement can be found in the literature. Of these, respondents most favoured ‘naming practices or ideas after their originating authors’ (47.2%) or naming a ‘contributor of the month’ (44.4%) (See Table 12).

Table 12 Communities of practice can benefit greatly from recognizing and valuing the contributions made by their members. Please select the methods of recognizing member contributions that you prefer from the list that follows.

Answer Options	Response Percent	Response Count
Contributor of the month	44.4%	16
Scrolling thanks or kudos on a website or wiki	33.3%	12
Quotable quotes on a website or wiki	38.9%	14
Naming practices or ideas after their originating authors	47.2%	17
Do not recognize member participation	5.6%	2
Other (please specify)	11.1%	4
<i>The value of this service is not clear.</i>		
<i>Be useful: highlight learnings, provide some synthesis or reflection</i>		
<i>Put their name to their contribution. Good work and those who do it will stand out.</i>		
<i>Personal recognition (i.e. letter of thanks)</i>		
	<i>answered question</i>	36
	<i>skipped question</i>	33

Barriers. The literature has identified potential barriers to participation in community of practice and to their success. Among these, time to interact regularly (41.7%) and attendance at monthly (face-to-face) meetings (41.7%) represented medium barriers for nearly half the respondents. A greater barrier, reported by just over one-third of respondents was the cost and time needed for travel to face-to-face meetings (36.1%). These three barriers are not independent as they all pertain to time and/or cost (i.e., travel costs and opportunity costs related to being away from the job). It is evident that web-based solutions will be an important and feasible solution to overcome these hurdles.

Respondents’ personal level of interest in the community of practice, their ability to garner support for their involvement from their leadership, and their ability to access a website, e-forum, or wiki, were mainly viewed as insignificant barriers. It is notable, however, that personal interest was a perceived barrier to some degree for 30.6% of the respondents (see Table 13).

Relevance

The literature has identified several virtues or qualities of the community of practice model that attract member participation. Among those, respondents were most drawn to the potential to gain knowledge (72.2%), leverage or stimulate strategic goals (58.3%, 55.6% respectively), stimulate or cross-fertilize ideas (55.6%), access special skills (55.6%), and gain experience (50%).

Of least relevance were aspects such as making visibly their own expertise (16.7%), utility in training new colleagues (22.2%), or increasing their efficiency (30.6%). There was some acknowledgement of the relevance in promoting their own organization with the sector (38.9%), stimulating research agenda (47.2%), increasing productivity (38.9%), and overcoming intellectual isolation (36.1%) (See Table 14).

Table 13 Thinking about what your motives would be for actively participating in this community of practice, please identify all of those relevant to you from the list below. Select all that apply.

	Not a barrier (0)	Small barrier (1)	Medium barrier (2)	Large barrier (3)
Your personal level of interest	69.4%(25)	11.1%(4)	5.6%(2)	13.9%(5)
The time available to interact regularly	5.6%(2)	16.7%(6)	41.7%(15)	36.1%(13)
Garnering real support from your leadership	38.9%(14)	27.8%(10)	22.2%(8)	11.1%(4)
Travel to face-to-face venues (i.e., cost and/or time)	16.7%(6)	19.4%(7)	27.8%(10)	36.1%(13)
Access to a website, e-forum, or wiki	91.7%(33)	5.6%(2)	0.0%(0)	2.8%(1)
Attending monthly meetings	13.9%(5)	25/0%(9)	41.7%(15)	19.4%(7)
Other (please specify both the barrier and its (#) strength)				
<i>Currently (we) are developing provincial-level communities of practice among Ontario public health unit's tobacco control workforce. If (we) can somehow link with this emerging endeavor, (it) will help overcome some barriers (time, organizational support, relevance, redundancy, etc).</i>				
<i>All the above would clearly depend on the content / focus of the CoP</i>				
<i>Technical level of the information - academia vs normal literacy levels # 1</i>				
<i>Very little time and money!!!</i>				
<i>Who the other members are... if this is mainly program people, then the resource from my (organization) would not be me; it would be someone who does programming. If it was leaders in CDP, then it would be my involvement.</i>				
<i>answered question</i>				36
<i>skipped question</i>				33

Most communities serve more than one relevant focus for their membership (Wenger et al., 2002). One exploratory study found four different strategic intents for forming communities for professionals working on different teams or at different locations: (1) to help each other solve everyday work problems; (2) to develop and disseminate a set of best practices; (3) to develop and steward the tools, insights, and approaches needed by members in field assignments; and (4) to develop highly innovative solutions and ideas (American Productivity and Quality Center, 2000). Results from the CDPAC survey are congruent with those reported by others.

Sustaining. Overall, 24 respondents shared their thoughts regarding what would ensure and sustain the success of a community of practice. Their comments were reminiscent of the questions posed earlier in the survey and the community characteristics noted to be of importance in the literature:

- a clear mandate and agenda;
- need for the community of practice to be flexible in how members interact (e.g., webinars, face-to-face, discussion forums, asynchronous access);
- build on existing communities and networks;
- ensure meaningful and relevant content;
- active participation with a balanced schedule of activities that does not overwhelm the time demands or workloads;
- strong committed leadership;
- ease of access;
- funds to support the community – organizational and secretarial support;
- trust;
- moving beyond knowledge exchange to actionable items resulting in relevant outcomes;

Table 14 Thinking about what your motives would be for actively participating in this community of practice, please identify all of those relevant to you from the list below. Select all that apply.

Answer Options	Response Percent	Response Count
Access to special skills	55.6%	20
Visibility of my knowledge & expertise	16.7%	6
Recognition of my organization within the sector/field	38.9%	14
Increased efficiency, i.e., use of time, use of human and financial resources	30.6%	11
To gain experience	50.0%	18
To gain knowledge	72.2%	26
To train new colleagues	22.2%	8
To stimulate research ideas	47.2%	17
To stimulate strategic goals	55.6%	20
To leverage strategic goals	58.3%	21
To increase our productivity	38.9%	14
To overcome intellectual isolation	36.1%	13
To garner support for a work in progress or problem	50.0%	18
Need for stimulation or cross-fertilization of ideas	55.6%	20
Just because it's there... serendipity	11.1%	4
Other (please specify)	5.6%	2
<i>To explore collaborative action across COP members (not necessarily all)</i>	2.8%	1
<i>The value-add for this service is not clear. This appears to be a duplication of efforts already underway by various disease agencies, federal and provincial governments and non-profit health agencies.</i>	2.8%	1
	<i>answered question</i>	36
	<i>skipped question</i>	33

Lastly, there was also a comment made as to whether a community of practice is the best way for the field to proceed, with the comment that “additional work needs to be done to confirm the need and desire for a CoP on this topic?” and a request for evidence supporting a decision to move in this direction. This comment is particularly aligned to a major theme stemming from the key informant interviews (see *Clear Definition of Purpose*, p. 30).

Level of Interest. Respondents were asked to comment on the extent to which they were in favour of a community of practice for chronic disease prevention. Greater than half, 58.8%, view the community of practice as ‘very useful’ with a further 32.4% voting it to be ‘useful.’ Only one respondent was not in support at all, and two respondents remained uncertain.

General Comments. General comments were invited and subsequently provided by 7 respondents. One respondent commented on the existence of other communities of practice related to chronic disease prevention across Canada, the need to avoid replicating them and the desire to provide linkages among them. Another respondent commented that they needed more information about communities of practice and how they have worked in the past. They also astutely pointed out that the scope of chronic disease is so vast that it is challenging to select out one focus area.

KEY INFORMANT INTERVIEWS

Key informants were asked a series of questions to elicit information that would help CPAC strategically plan next steps for the development of a community of practice. These questions focused on potential themes or domains, membership, gaps and opportunities, linkage into existing initiatives, and factors influencing success. Although the interviews were structured around these core questions, key informants were also given the opportunity to speak to other issues that they felt were important about implementing a community of practice or that they felt should be drawn to CPAC's attention.

It should be noted that these interviews were conducted in conjunction with another project examining CDPAC's knowledge exchange activities. The key messages and themes to support the development of Communities of Practice are summarized below.

Major Themes

In analyzing the content of the key informant interviews, the following themes emerged: the need for a clear definition of purpose, the necessary conditions for creating an effective community of practice, creating a community of practice, and the kinds of issues that could be addressed at a national level.

Clear Definition of Purpose. When asked to comment on potential themes or domains of a community of practice, key informants consistently stated the need for a clear definition of purpose. The key informants responded in a similar fashion when asked how they would advise CPAC about potential membership, with most of them noting that the topic and a clear statement of purpose would then help to identify who should be at the table. They unanimously agreed that articulating a clear definition of purpose is the first step in creating a community of practice. Once the purpose is identified, a problem statement (i.e., theme or domain) can be articulated and potential core membership identified. At least three of the key informants commented on how there is often confusion about the meaning of a "community of practice" and recommended that CPAC be clear on the difference between a community of practice, a network and a project team.

Several key informants advised CPAC to consider the following issues before proceeding with a community of practice:

- the need to ensure that the CoP fits within the existing CPAC strategy and supports the strategies that PPAG have defined;
- the specific value-add that a community of practice run through CDPAC would offer; and,
- where the opportunities to be strategic exist (i.e., where can CPAC leverage in)
- the reasons that might motivate someone to participate at a national level as opposed to a provincial or local level.

Necessary Conditions for an Effective Community of Practice. When asked for their thoughts on the factors contributing to the success or failure of a community of practice, key informants offered the following practical insights:

- Start small, be relevant and meet the needs of the members.
- Structure (i.e., systems and web-based tools) and capacity are critically important elements of making a community of practice happen.
- A community of practice can only be sustained by hard work and commitment.

- Members have to care enough and to see the “value add” to come together on a regular basis. That is, they need to see what’s in it for them and how participation in a community of practice will help them accomplish their work.

Creating a Community of Practice. When asked what role an external organization could play in the creation of a community of practice, key respondents noted the following:

- A community of practice cannot be *created* by an external body. A community of practice has to be created on a self-selecting basis (i.e., a group of people come together around a common concern).
- An external body can, however, *facilitate* the creation of a community of practice. This could occur by the framing of an issue and the bringing together of a small group of expert leaders/program leaders whom the external body thinks would have common ground. Those invited leaders would meet to do the initial thinking, hone in on common ground, commit to making it viable and then move out to the next layer of interested participants.
- The most logical role for CPAC (or other similar organization working at the national level) would be to nurture communities of practice and to facilitate the process. One key informant suggested that such an organization could take on the role of a Secretariat and “structure builder”. Another suggested working with organizations that already bring communities together and support their role to create opportunities for face-to-face interaction, by making teleconferences happen, by modeling how knowledge exchange could occur or by financing the sharing of information across provincial boundaries.
- A national level organization could take on a role of building capacity for provincial organizations to facilitate the creation of communities of practice at the local level. This could involve creating a template for how to do it and providing advice on how to go about doing it.

It was noted by one key informant that specific “value add” for an organization working at the national level was in the linking together of similar communities who were struggling with similar problems in different places.

Kinds of Issues that a National Community of Practice Could Address. Although the key informants unanimously expressed the importance of identifying strategic priorities before embarking on a community of practice, some informants did offer suggestions on the kinds of issues that a CPAC-sponsored community of practice could address.

- **Connecting cancer with other disease processes** – The kinds of questions that such a community of practice could address include: Where should it be just about cancer prevention? Where does it make sense that we understand what is going on with other diseases? Where does it fit with the CUBE project? Where do we leverage in or don’t do something because it’s already being done?
- **Connecting the system pieces together** – The kinds of questions that such a community of practice could address include: What is the system story for research into practice and practice into research? What are the pieces of the system? How do they connect together? How are they useful to researchers and practitioners?
- **Building and/or supporting national approaches for policy development** – The kinds of questions that such a community of practice could address include: What’s the policy

perspective? What's the issue? Is there agreement on the issue? What is it that we're trying to accomplish? What's the policy development process?

- **Looking across risk factors for chronic disease** – What are the lessons learned from tobacco control?
- **Chronic disease prevention in remote or northern communities** – The kinds of questions that such a community of practice could address include: What is the context for chronic disease prevention in remote communities across the provinces and territories? How does that context differ from urban communities? How is that context similar to other northern countries? How does that context impact on the capacity to apply current knowledge and thinking about chronic disease prevention?

In thinking about criteria that could be used to select an issue for a national community of practice to address, several key informants suggested that relevance across issues or disease strategies was an important consideration, as were the numbers and the impact on the health of Canadians. Two key informants felt that the social determinants of health was an issue that fits well nationally, has a big impact on health, and is something that people are struggling with at a community level.

Regardless of the issue that is selected for a *national* community of practice, one key informant felt that it is vitally important to think about how to bring *international* thinking to the table¹¹.

MODEL RECOMMENDATIONS

The proposed model recommends the necessary steps for creating and sustaining a community of practice. It is heavily informed the *Defense Acquisition University (DAU) Community of Practice (CoP) Implementation Guide* (DAU, 2005), which is the best available reference document for establishing and launching communities of practice.

Although specific action steps are laid out in this document, it is important to realize that communities of practice are *emergent* and not (entirely) prescriptive. While there is much to be learned by how others have proceeded, several key facets of this model must emerge from member consultation (i.e., at the workshop stage, for instance).

The proposed community of practice will necessarily cross organizational boundaries and “expose members to new and diverse sets of ideas, allowing members to learn before doing, to find and accelerate solutions, to think differently about problems, and to leverage the know-how of a variety of experienced practitioners” (DAU, 2005, p.5). The boundary-spanning aspect of communities offers fertile ground for innovation and fosters the transfer of best practices across organizations. Members should be encouraged to do the following, allowing them to arrive at solutions more efficiently and effectively:

- Replicate proven practices and share lessons learned;
- Improve access to relevant and authoritative information sources;
- Leverage individual experience and expertise;
- Foster an environment of collaboration and knowledge transfer that provides fertile ground for business process innovation.

¹¹ Likewise, for a *provincial* community of practice, it is vitally important to bring *national* thinking to the table.

The model recommended here is a *Distributed Community of Practice* that is primarily virtual but is supported by face-to-face interaction. Successful distributed communities of practice are designed and nurtured so as to overcome the barriers of time, size, affiliation, and culture. A virtual model is warranted in light of the identified time and travel barriers highlighted in the survey.

Readiness to move to a community of practice strategy is an important consideration, and to some extent, it is evident in the responses provided to the survey and key informant interviews. The following types of questions will help to assess the level of readiness for establishing a community and its likelihood of success (adapted from DAU, 2005):

- Is there top-level sponsorship?
- Is there an existing sense of community within the targeted CoP?
- Is there a sense of energy and passion around the community?
- Is there a recognized need that the community can meet, thus providing value to the members and their organizations?
 - *Increasingly, professionals and practitioners are looking for efficient and useful methods to augment their (continuous) learning and to improve their practice, research, and outcomes. Clearly, a community of practice method has achieved this for other communities and survey and interview findings indicate that this would be a useful direction to pursue in cancer and chronic disease prevention.*
- Is there a significant or critical issue facing the community that knowledge sharing can positively impact? (This implies that there is significant interest or urgency around the issue; these tend to focus on specific process topics.)
 - *There are no shortage of identified concerns and issues that are suggestive of a domain of interest. The task ahead will be to provide greater focus and drill down to one domain.*
- Are there resources (i.e., money and people) to support the community?

Roles, responsibilities and supports also need to be articulated and put in place at the front end. A *support team* is needed to provide the operational infrastructure, procedural guidelines, technical support, user support, and community support for the community. The support team provides training, deployment, and startup functions, as well as process and infrastructure support for communities. Given that survey participants identified as provincial more than federal it might be useful to distribute key contacts across the country, Specific areas of responsibility include the following:

- Perform *Chief Editor* functions for the community – manage consistent community look and feel, member administration, security, content management processes, and permission-based rules;
- Advise and consult with potential communities;
- Conduct tool training and offer community development support;
- Support HTML, graphic and instructional design;
- Perform outreach, marketing, and communications support – interface with the Community Leaders and Facilitators to advertise and market communities:
 - Advertise and market the community – publish tri-folds, marketing materials, etc.
 - Publish articles in subject-appropriate magazines and newsletters;
 - Speak at events specific to the community;
 - Advertise community successes;
 - Recruit new members.

In addition to the activities detailed below, the community requires a *Community Sponsor* and a *Community Leader*. The *Community Sponsor* provides high-level sponsorship and support and champions the community to the public. In the current context it is important to note that sponsorship may stem from several individuals or organizations. Ideally, the *Community Sponsor* performs these tasks:

- Provides the Community Leader with guidance by acting as a sounding board for ideas;
- Bolsters community membership by spreading the word;
- Ensures that the community focuses on business-critical issues by monitoring the outcomes achieved by the community;
- Advocates the community and acts as the community's champion;
- Provides resources for expansion of the community and usually "sponsors" the Community Leader and Facilitator roles in the community.

The *Community Leader* helps to guide the community's purpose and strategic intent and energizes the process. Again, as articulated by the DAU Implementation Guide (DAU 2005), the *Community Leader* performs the following tasks:

- Interfaces with the *Community Sponsor* and reports the progress of the community, if applicable;
- Organizes and coordinates the startup activities for the community;
- Assists community development by establishing and articulating community purpose and strategic intent;
- Connects members with each other;
- Brings in new ideas when the community starts to lose energy;
- Identifies community stakeholders and potential community members;
- Builds/maintains participation and membership by promoting the community, monitoring membership changes, and recruiting new members;
- Plans/schedules periodic face-to-face meetings;
- Acts as liaison with other communities;
- Serves as a *Subject Matter Expert* (SME) on the focus of the community;
- Acts as lead editor for the community, designates content editors, and assumes overall responsibility for its content;
- Manages the budget for the community.

The 14-step model that follows was developed and is recommended by *Defense Acquisition University* (DAU) and articulated in their *Community of Practice (CoP) Implementation Guide* (DAU, 2005).

Step 1 – Initial Concept Formulation

The initial concept has been explored through the use of survey and interview methodology, reported herein. This work has provided the potential scope of the community's focus, and suggested individuals and organizations believed to be critical for its success.

Step 2 - Core Planning Workshop

A facilitated community of practice planning workshop should be held in order to build on the results of the initial scoping survey and key informant interviews. The workshop should focus greater detail on the domain, structure/format, core membership, development the community of practice Charter for posting or circulation, and technology issues. Given the breadth of topics and suggested stakeholders, a well

facilitated workshop could serve to focus in on a core group and core issues on which the community would begin to build.

Planning Workshop Activities

1. Secure venue and date; consider aligning this activity with a national conference at which many invitees will already be assembled.
2. Secure workshop facilitator; an individual with knowledge and experience in developing communities of practice who is also capable of facilitating the workshop to arrive at key decisions for next steps.
3. Send invitations with an executive summary of this report, requesting participation in the creation of a community of practice for cancer and chronic disease prevention. Invitees should include the following:

Academics, Researchers, and Experts working in cancer and chronic disease prevention
Allied Organizations - Volunteer Health Sector
Government: Federal, Provincial, territorial
Health Promotion / Public Health
Cancer Agencies
Community Service Sectors
Consumer Organizations
Consumers / Patients
Education Sector
Environmental Organizations
Knowledge Exchange Specialists
Practitioners / Health Care Providers

4. Workshop
 - a. *Achieve stakeholder alignment.* It is critical to very clearly define the domain and garner commitment from the leadership within affiliated organizations. Begin by assuming that there exist conflicting priorities, a lack of connection and trust among potential community members, and so beginning with defining these elements is the key to success.
 - b. *Identify focus areas to start the community.* Several areas of focus were suggested by the survey respondents, and those that received greatest endorsement need to be further discussed and refined by the stakeholders:
 - Service delivery issues*
 - Knowledge exchange & partnerships*
 - Research and evaluation*
 - Specific diseases (Cancer, mental illness, asthma, kidney disease, and musculoskeletal)*

A sample workshop agenda is included in Appendix C

Step 3 – Drafting a Community Charter

Communities of practice are strongly recommended to establish a charter that communicates the community purpose and objectives. The output and captured account of the workshop should provide much of the input to the charter. A charter template is provided in Appendix D.

Step 4 – Establish Community Structure

A distributed community of practice requires a structure that allows members to communicate despite the barriers imposed by distance and organizational issues. A website is an obvious solution. The intended membership should be considered in the development of the community structure, to ensure that the content best serves their needs – this is an example of where the community’s development requires ongoing participatory involvement from the membership. “A good rule of thumb is to create a structure within which a user can navigate to the desired information within three (3) mouse clicks. In addition, shortcut URLs and cross-referencing of content is recommended to minimize clicks and to increase the likelihood of members finding desired information, regardless of the navigation path they use to enter (DAU, 2005, p. 18).

Step 5 – Inventory of Knowledge Assets

The knowledge that gets situated within the structure or website must be selected with care. As the community decides what knowledge ‘nuggets’ are desired, there must be a plan for who will be responsible for updating.

Step 6 – Organize the Content within the Community Structure

A decision must then be made regarding where each knowledge contribution made by the membership will reside within the community workspace.

Step 7 – Identify and Develop any Content that will Specifically Support the Community

Communities of practice are designed to encourage members to identify knowledge gaps in the field or focus area. Often, these are questions or topical areas that would benefit from further instruction or input from community members. One way to collect this ‘tacit’ knowledge is in the form of Frequently Asked Questions, learning materials, or other forms of content. These additional knowledge contributions should be created and located appropriately within the website.

Step 8 – Identify Content Editors of the Community

Content Editors are responsible for monitoring existing and new content within the community. Qualifications for *Content Editors* should include familiarity with the structure, layout, and functionality of the content area being managed, as they will coordinate with the community *Subject Matter Experts* (SMEs) in order to maintain the accuracy of their communities. The *Content Editor* performs these tasks:

- Manages the process for review and approval of member contributions and, as appropriate, works with SMEs to validate and approve member contributions;
- Communicates guidelines to members for contributing knowledge objects and initiating discussion threads;
- Works with SMEs to identify and map critical knowledge objects and to develop the logical organization of content, making it readily available and easily accessible to members;
- Cross-references and submits information from outside the community, making it available to members;

Subject Matter Experts (SMEs) are knowledgeable and experienced members of the community who use their knowledge of the discipline to judge what is important, groundbreaking, and useful, and to enrich information by summarizing, combining, contrasting, and integrating it into the existing knowledge base. It will be important to tap into SMEs located across the country. The *Community Subject Matter Expert* performs these tasks:

- Assists in the identification and mapping of critical knowledge applicable to the community;
- Harvests/creates new knowledge;
- Helps to establish the community organizing structure;
- Works with the Content Editor to ensure that knowledge objects are relevant, valid, and best sources;
- Works with the Content Editor to refresh and expand the knowledge base;
- Suggests potential topics for face-to-face community meetings and participates in meetings;
- Reviews community member contributions to ensure quality and relevancy of material;
- Provides process analysis expertise;
- Participates in the community as a member

Step 9 – Train the Content Editors to Use the Community Tool

To perform their job effectively, *Content Editors* must be trained how to use the CoP tool, i.e., website or wiki. In addition, they must learn the basics of content management.

Step 10 – Manage the Content

Operating a community is an iterative process. “*Content Editors* must continually monitor both existing and new content and determine where each knowledge object should reside within the community’s structure, determine if the submitted knowledge object is relevant to the community, and approve or deny the submission based upon its potential value to the community. *Content Editors* must also decide if a knowledge object should be prominently featured within the community to draw additional attention to them, as well as determine if an existing knowledge object is still relevant or has become obsolete due to new procedures, advancements within the field of focus, etc. Complete content reviews are recommended at 6- to 12-month intervals” (DAU 2005, p. 19). This is an important human resource consideration.

Step 11 - Facilitate the Interaction within the Community.

The *Facilitator* of the community is primarily responsible for keeping the community growing by encouraging the formation of relationships between community members. Typically, *Facilitator(s)* have several skills to help accomplish this goal, including the ability to arrange and run community meetings, start discussions on hot topics of concern to the members, and put people with questions in touch with subject matter experts who have the answers. That national scope of this community suggests having a team of facilitators in key areas across Canada.

The *Facilitator* provides an essential function for the community by fostering and facilitating member interaction. Facilitators can ensure that community forums are productive for all members by acting as an independent community process expert. The *Facilitator* performs these tasks:

- Monitors community activity to ensure community responsiveness to members;

- Serves as an expertise locator (knowledge broker);
- Provides collaborative tool expertise;
- Provides expertise about group dynamics and techniques to help the community solve problems and evolve over time;
- Assists in building/maintaining participation and membership:
 - Stimulates knowledge sharing across the community by coordinating collaboration within the community;
 - Initiates personal contact with community members to generate interest in the community site;
 - Seeks out potential content contributions;
 - Seeks to understand what is of particular value to the members.
- Coordinates and facilitates face-to-face community meetings;
- Maintains, analyzes, and reports on previously established community metrics (activity and performance);
- Interfaces with other support personnel on outreach and marketing efforts for the community.

Step 12 – Market the Community

“Effective marketing of the community is essential to the overall growth of the community and its members. Marketing the community can be accomplished in a variety of ways, from telling a friend, to passing out brochures at a conference, to e-mailing a news group, etc. This role should not reside with just a single member but rather should be embraced by all members of a community. Community leaders should set the example for others. All community members serve as ambassadors for their community and should use any opportunity to spread the word and encourage others to join the community as a member” (DAU, 2005, p.19).

Step 13 – Keep Content Current and Relevant

As the community evolves, new issues arise, and areas of focus may change. Part of the role of the Community Leader and Content Editor is to keep the community relevant to the needs of the members. Ensuring that the content is up-to-date is critical to the credibility of the community as a valued resource and to keeping the members interested and engaged. Members should also be encouraged to contribute content that is relevant and useful to the community. Another method of keeping content current/relevant is through research-related endeavors and adding hyperlinks to “golden sources” or sources of interest related to the community.

Step 14 – Determine the Effectiveness of the Community

The last (iterative) step is to determine the value of the community to its members and the success in achieving intended goals. Appendix E provides a list of possible metrics that can assist in assessing community effectiveness.

OTHER CONSIDERATIONS

Wenger et al., (2002) proposes four key developmental activities that should also be considered: (1) achieve stakeholder alignment; (2) create a structure that promotes both local variations and global connections; (3) build a rhythm strong enough to maintain community visibility; and (4) develop the private space of the community more systematically.

Achieve stakeholder alignment. Distributed communities of practice must contend with geography, competing affiliations and cultures, and thus require more time and effort to define the domain and secure commitment from leaders, sponsors, and members. Moreover, when the community involves many members preparation must be very extensive and can be as prolonged as 6 months. Experience dictates it is often best to begin with the 'innovators' and the 'early adopters' and hope that the 'early majority' and 'late majority' will follow suit (Rogers, 1995). Beginning with those individuals who elect to participate in the planning workshop would be a good place to start this process.

Create a structure that promotes both local variations and global connections. Distributed communities of practice need to avoid the downfall of being 'too big.' Thus, one way to approach this potential barrier is to regard membership in the global (i.e., national) community as resulting from first belonging to a local one. "You can't have a direct experience of community with a thousand people, but if you are affiliated with a smaller group, that sub-community is your connection to other local communities as well as to the larger community" (Wenger et al., 2002, p. 125).

One way to divide a larger community into cells is illustrated by multi-national businesses such as *Shell*TM, where geographic localities are connected to each other through a hub-and-spoke network of community facilitators (Wenger et al., 2002). Each local community has a coordinator who maintains the local group and helps link people with problems to those with solutions in other hub communities. Another method is to develop topic-focused cells in which community members typically participate in more than one. Having *Local Facilitators* to support a *Lead Facilitator* should be considered.

Achieving a vibrant community structure also requires having the central and the local coordinators broker relationships among individuals within and beyond hubs. Once the connection has been brokered, members connect via email, telephone, community bulletin board or in person. The availability of a pick list of mechanisms for connecting with one another allows members to use the medium that is most comfortable and most appropriate for exchanging knowledge. It is also worthwhile to consider bringing coordinators together in a face-to-face venue, perhaps a few times per year, as recommended by survey respondents.

Community coordinators must really act as brokers of knowledge rather than keeper of knowledge. Once an introduction is made, individual members can make contact with each other directly. Eventually, members become more familiar with each other and don't hesitate to make contact.

Build a rhythm strong enough to maintain community visibility. Not surprisingly, the Web is the main conduit for exchange among members of a distributed community of practice and the preferred medium in this instance. Depending on whether the community is national or international will dictate the use of asynchronous tools, such as threaded discussions, that allow members to participate in discussion in their own time. Web-based exchange must be augmented by regular events such as teleconferences or meetings of local cells; these serve to regularly remind people of the community's presence.

Communities of practice commonly create a rhythm of exchange through teleconferences (Wenger et al., 2002). Depending on the size the community, such teleconferences can include all members or subgroups of members who share an interest in a subtopic. Teleconferences offer a more personal connection than web-based communication and allow members to interact more directly to solve problems and share knowledge.

At least one annual meeting per year can also help to build a rhythm and sense of connection among members. Again, depending on the size of the community, one meeting or several meetings running concurrently in different locations may offer the best option. Some communities have opted to rotate the location of annual face-to-face meetings, for instance. Consider using the community's web presence to prepare for annual or regional meetings, thereby linking the available modes of interaction to leverage the community's activities.

Develop the private space of the community more systematically. One of the central roles of the community's coordinator is to help members to bridge across geography, affiliation, and culture, and to create a sense of trust. Their role is to increase the exposure of community members to one another; "the more time and energy coordinators spend networking, the more active their communities" (Wenger et al., 2002, p. 134). Some strategies recommended to strengthen the personal network include *personalizing the membership* (i.e., pictures of members posted on the website, a small picture of the author with each posting on a discussion board); hold *small group meetings or projects* (i.e., provides a way for small clusters to connect with members across sites); *organized or impromptu site visits* that offer an opportunity for members to visit other organizations and learn from them onsite; and lastly, *being opportunistic* (i.e., keeping a community calendar on the website where members can post when they will be visiting different cities and might find occasion to visit other members).

APPLICATION AT A NATIONAL LEVEL

While developing a singular community of practice is a considerable undertaking, developing a community of practice having a national scope is even more complex in some respects. We provide something of a case example to help the reader conceptualize what a national community of practice might look like,

Situated within CDPAC's membership is a provincial-territorial alliance or network (P/T Network). The P/T Network is comprised of one representative from each province and territory and together they form this particular "community." In broader terms, it is likely that a community of practice for cancer and chronic disease prevention would encompass a much larger membership, because the unit of discovery and knowledge is the individual rather than the province.

A Terms of Reference defines the purpose of the P/T Network in much the same way a community of practice charter would define structural and procedural elements of the cancer and chronic disease prevention community. The purpose of the P/T Network is to improve and maintain communication and collaboration between the provinces and territories and national organizations on topics and issues relating to maintaining health and the prevention of chronic diseases. The purpose of the proposed community of practice for cancer and chronic disease prevention would be delineated in the development workshop, as proposed, and capture in charter.

The work of the P/T Network takes the form of information sharing and the identification of collaborative activities that can be completed. The work of the proposed community of practice for cancer and chronic disease prevention would likely be less prescribed, however there should be opportunities for collaborative projects as defined by the members themselves. Such groups will emerge naturally through the course of communication and knowledge sharing. Documents and descriptions of the ongoing work can be posted electronically on a website or an interactive wiki environment thereby giving other members an opportunity to view it, comment, and participate where possible.

CONCLUDING REMARKS

In undertaking to develop a community of practice for cancer and chronic disease prevention, CPAC follows in the footsteps of a handful of other health innovators in breaking new ground. Not only is there great potential to improve research, health care, and health outcomes with this emergent method for knowledge exchange and management, but the work set forth in this report will contribute to the science in support of communities of practice as a model. It will be important for the community to document their journey and report on their effectiveness, including the metrics they will find useful, to others in the health field who have a keen interest in knowledge translation and hope to follow in their footsteps to leverage learning and knowledge exchange in their own domains. The methods used in this report to determine the structure, membership, and domain for a community of practice, and the work of seminal thought leaders (i.e., Wenger, McDermott) and practice leaders (i.e., Garcia and Dorohovich and the Defense Acquisition University team) in the field provide a strong beginning. It will be fascinating to follow the journey.

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APPENDIX A TOPICS OF INTEREST

ADVOCACY (1)

BEST PRACTICE (6)

best practice interventions & evidence; best practices in CDP system change; evidence-informed practice tools; best practices in the area musculoskeletal conditions

BEHAVIOUR CHANGE (2)

approaches to personal behaviour change; lifestyle behaviours

CHANGE MANAGEMENT (4)

change management strategies; opportunities for change; changing individual attitudes toward disability social change

COMMUNITY CAPACITY BUILDING (4)

engagement; community design for chronic disease prevention; community development

DISEASES (10)

CANCER; cancer; cancer prevention strategies; modifiable risk factors for cancer; needs of those living with cancer

MENTAL ILLNESS; depression

ASTHMA

KIDNEY DISEASE

MUSCULOSKELETAL & BONE HEALTH

EDUCATION (1)

ENVIRONMENT (6)

built environment/housing; environmental risk factors, such as smog, pesticides, plastics; built environment-walkable, cycleable communities; creating supportive environments & community action the environment and cancer

ETHICS (1)

ethics in chronic disease prevention

FOOD SECURITY (1)

HEALTHY EATING (8)

consumption of fruits and vegetables; healthy eating/healthy body weight

HEALTH PROMOTION (3)

health promotion/illness prevention; marketing and advertising to children - how to address this promotion of exercise

IMPLEMENTATION (1)

information on how to facilitate community mobilization through implementation to evaluation.

INCOME SECURITY (1)

KNOWLEDGE EXCHANGE / TRANSLATION & PARTNERSHIPS (12)

conferences/events of interest; emails of community; document exchange; effective partnerships & collaboration-CDP, private sector; connecting the dots (stakeholders); knowledge exchange issues in tobacco control; links to knowledge exchange resources/practice ideas; putting knowledge into practice; web links to related activities

OBESITY (4)

childhood obesity and underlying reasons for same; nutrition/obesity; obesity control / prevention

ORGANIZATIONAL LEARNING (1)

PHYSICAL ACTIVITY (8)

physical activity and healthy eating programs

POLICY (8)

healthy public policy; making an impact on policy development; policy / program related to physical activity for youth; policy development for chronic disease prevention; policy in Chronic Disease Prevention; policy updates; recommendations for policy change that can be adaptable to a variety of settings, (Government levels, workplaces, etc...)

PREVENTION (5)

prevention intervention in the area of musculoskeletal conditions such as arthritis and osteoporosis; primary care providers and their role in prevention; risk factor lens on Chronic Disease Prevention; youth prevention strategies

RESEARCH & EVALUATION (12)

Assessment; evaluation; efforts for CDP system change; conducting qualitative research; approaches to evaluation of strategies, policies, and programs; funding opportunities and proposal support; methods for "natural experiments"; minimal data set of measures for CDP; research that supports policy change; research, evaluation and the health promotion practitioner

SOCIAL DETERMINANTS OF HEALTH (6)

addressing poverty reduction; implications of determinants of health on chronic disease; health inequities; social determinants of health strategies

TOBACCO CONTROL (5)

cessation of smoking for those aged 20-39; tobacco consumption as a determinant of CD

SPECIAL POPULATIONS (3)

Diabetes

Aboriginal programming

Early childhood

SYSTEM CHANGE (5)

CDP- system change strategies underway in Canada & beyond; development of action plan; brainstorm reduction of risk strategies; changing school practices to incorporate/blend learning and health; town planning for individual mobility

SERVICE DELIVERY / SERVICE INTEGRATION (14)

abilities to serve based upon existing resources; practical measures to minimize trespass; continuity of care; deficiencies in resources that are barriers to serving population needs; integrated CD prevention and management; integrated chronic disease initiatives including musculoskeletal conditions; integration of chronic disease message; how best to decrease these deficiencies; how to work within a settings based approach to CDP; outline barriers and how to overcome them; priorities of service based upon population served; programs; outline high risk activities what didn't work and why, or assumptions about why

SURVEILLANCE (3)

surveillance for healthy eating/physical activity; surveillance that informs policy/ practice

THERAPEUTICS (2)

role of Vitamin D; self management for chronic disease

ULTRAVIOLET RADIATION (1)

APPENDIX B - STAKEHOLDERS

ACADEMICS / RESEARCHERS (16)

Canadian CDP researchers; epidemiologists; research community; research groups/institutes; population health (i.e., University of Waterloo);

ADVOCATES (1)

ALLIED ORGANIZATIONS - VOLUNTEER HEALTH SECTOR (59)

Alliance for the Canadian Arthritis Program; Arthritis Society; Canadian Partnership for Cancer Control; Canadian Public Health Association; Canadian Association of Occupational Therapists; CDPAC; Canadian Cancer Society ; Ontario Tobacco Research Unit; childcare services; chiropractors; chronic disease organizations (e.g. Heart and Stroke Foundation); Canadian Medical Association; College of Nurses of Ontario; Pediatric Pharmacy Advocacy Group; Canadian Population Health Initiative; Canadian Institute for Health Information; Statistics Canada; community health centres; Dermatologists (dermatology association); Health agencies/charities; health focused non-governmental organizations (i.e., cancer, diabetes, kidney, recreation & sport); healthy eating/active living coalitions; Public Health Agency of Canada; WHO Regional Office for the Americas; Stroke strategy; Tobacco alliance / coalitions; resource centres; Lung strategy; other disease specific groups

CANCER AGENCIES (8)

Alberta Cancer Board; British Columbia Cancer Agency; Canadian Cancer society; Canadian Cancer Society; National Cancer Institute of Canada; Cancer agencies prevention leaders; Cancer Care agencies; Cancer Care Ontario

CANCER SURVIVORS (1)

COMMUNITY SERVICE SECTORS (6)

community groups; community leaders; food banks; leaders in early childhood (community services/daycare); leaders in school health (departments of education); sector representatives allied with the community of practice topic (e.g. transportation)

CONSUMER ORGANIZATIONS (6)

Arthritis consumers experts; Canadian Arthritis Patient Alliance; cycling organizations; diabetes strategy; fitness organizations; food security and agriculture focused non-governmental organizations

CONSUMERS / PATIENTS (3)

Patients; victims; population being served

EDUCATION SECTOR (7)

Educators: PHE supervisors; schools; professors teaching in health care professions; teachers; students (i.e., elementary and high school)

ENVIRONMENTAL ORGANIZATIONS (2)

environmentally focused NGOs

EXPERTS (3)

Dr. Nick Kates - Shared Mental Health Care; Dr. Roger Bland - Alberta Mental Health Board; experts allied to the community's topic(s)

FUNDING AGENCIES (1)

GOVERNMENT (41)

GOVERNMENT – FEDERAL (Environment; Health Canada; Education); government CDP policy makers, Ministry of Health Promotion – equivalents; Provincial and territorial ministries of health

GOVERNMENT – PROVINCIAL (provincial ministries of health; Quebec Ministry of Health; provincial health region officials; provincial ministries prevention leads; provincial-territorial alliances; provincial-territorial-CDP alliances; LHINs,

HEALTH PROMOTION / PUBLIC HEALTH (18)

health promoters; public health (i.e., managers, nurses; staff); public health units across Canada working in chronic disease prevention areas

INFORMATION TECHNOLOGY SPECIALISTS (1)

KNOWLEDGE EXCHANGE SPECIALISTS (2)

knowledge exchange professionals; designated Knowledge Managers for each community

MEDIA (1)

MUNICIPAL LEADERS (7)

city/municipal planners; civil servants; municipalities; local city councils

PRACTITIONERS / HEALTH CARE PROVIDERS (17)

health professionals (i.e., clinical, community based; front line; hospital-based; front line – dietitians, pediatricians, family doctors, family clinic nurses, clinical nutritionists, occupational health and safety; physiotherapists); staff in public health; hospitals & community health centres;

PRIVATE SECTOR (4)

food industry; advertising; private sector organizations with an interest in knowledge exchange

PUBLIC (13)

the less well educated; lower socioeconomic groups; population(s) that are being serviced in other areas; volunteers; those in positions to effect change; organizations addressing specific risk factors; those overly influenced by advertising; those who are strong advocates for change; those who commit others to work in risk; those who must work in risk situations; those who typically oppose risk reduction; those with little ability to determine exposure; those with low self esteem

PHYSICAL ACTIVITY / SPORTS SECTOR (5)

physical activity and sport sectors; physical activity coordinators; recreation/sports facilities; sports organizations; sport and recreational professionals

POLICY (3)

Policy makers; politicians

SPECIAL POPULATIONS (2)

Aboriginal groups

APPENDIX C - SAMPLE COMMUNITY OF PRACTICE WORKSHOP AGENDA¹²

0800-0830	Welcome, Background, Meeting Objectives, Review of Agenda
0830-0900	Introductions, Sign-in, Logistics
0900-0930	Introduction to Communities of Practice
0930-0945	Break
0945-1130	Review of Survey and Interview Findings
1130 –1215	Group Brainstorm: Which of the suggested issues/challenges can be improved by knowledge sharing? Which should the community focus upon?
1215-1300	Lunch
1300-1430	Group Brainstorm: Which of these issues/challenges can be improved by knowledge sharing? (continued)
1430-1530	Identify Key Stakeholders and Community Members: Who among those recommended in the survey are the community’s target audience?
1530-1600	Discussion of Charter Elements: community purpose and objectives
1600-1645	Wrap-up: Action items, what’s next?

¹² Adapted from DAU 2005.

APPENDIX D – SAMPLE CHARTER TEMPLATE¹³

Community Name:

(Identify the name of the Community, i.e., Cancer Prevention CoP.)

Community Membership/Audience:

(Identify the audiences / stakeholders that the community is targeting or is trying to attract, i.e., narrow down the list)

Community Purpose/Intent:

(Identify the purpose/intent of the community, i.e., the community is focused on documenting, sharing, and transferring best practices in cancer prevention.)

Type of Community or Knowledge Area:

(Identify the type of virtual space that best supports the community’s purpose)

Community Objectives:

(Identify the community objectives, i.e., the specific areas/issues that the community is interested in addressing.)

Community Roles:

(Identify by name the individuals who are filling roles.)

Sponsor _____

Leader _____

Content Editor _____

Critical Business Issues:

(Identify the critical business issues faced by the community.)

Resources:

(Identify the resources required to support the community, i.e., the organic resources that are available, the contractor support that is required, any performance engineered content that needs to be developed.)

Measures of Success:

(List measures of success as determined by the community during the Workshop.)

¹³ Adapted from DAU 2005.

APPENDIX E – COMMUNITY EFFECTIVENESS METRICS¹⁴

Both quantitative and qualitative metrics can assist communities in determining how effective the community is in reaching and providing value to the members. Metrics not only track effectiveness, they also indicate actions that will help to build and improve the community.

Activity Metrics (Quantitative)

- Website Page Views;
- New Website Accounts;
- New Topics;
- New Knowledge Objects;
- New Discussion Forums;
- Member Logins;
- Community Page Views;
- Number of Times Knowledge Object is Viewed;
- Most Viewed Knowledge Objects;
- Membership growth trends;
- Contribution growth trends;
- How often users interact (face-to-face meetings, virtual discussions, etc.).

Performance Metrics (Qualitative)

Performance metrics indicate the value of the web tool to community members:

- Usability:
 - Unsolicited, through on-line CoP feedback tools.
- Testimonials and other user feedback (e.g., examples of specific mistakes or problems that were avoided or solved, time saved, etc.):
 - Unsolicited, through CoP feedback tools;
 - Solicited, through various mechanisms:
 - Emails targeted at specific communities of the AT&L workforce;
 - Conference surveys;
 - Phone calls;
 - In-person meetings;
 - Written forms;
 - Interviews;
 - Workshops;
 - Group meetings;
 - Focus groups of users (i.e., ask the users how the community has helped them).
- Community of Practice Early Progress Checklist (see Appendix F);
- Story Telling (e.g., anecdotes, insights, lessons learned, and actions).
-

Performance Metrics Examples

- Satisfaction of specific knowledge goals;
- Reduction in hours needed to solve problems;

¹⁴ Adapted from DAU 2005.

- Reduction in planned or actual schedule hours;
- Reduction in learning time;
- Reduction in rework;
- Improvement in speed of response;
- Increase in innovative and breakthrough ideas;
- Increase in reach to customer;
- Reduction in cost to support collaborative workspaces;
- Transfer of best practices (tacit knowledge) from one member to another;
- Adoption of best practices or innovations that were “not invented here”;
- Reduction in redundancy of effort among members;
- Avoidance of costly mistakes;
- Reduction of specific cost due to superior knowledge resources or shared knowledge of experts;
- Increase in the productivity of knowledge workers;
- Improvement in the quality of decision making;
- Increase in user satisfaction with the ability to access knowledge.

APPENDIX F - COMMUNITY OF PRACTICE EARLY PROGRESS CHECKLIST ¹⁵

Review the CoP Early Progress Checklist to gauge how the community is progressing with regard to the activities taking place.

Community of Practice Early Progress Checklist
<ol style="list-style-type: none">1. Does the community have a common purpose? Is the purpose compelling to leadership, prospective members, and their functional managers?2. Is the common purpose aligned with sponsor and organizational strategies?3. Is the right sponsorship in place, i.e., a respected leader who is willing to contribute to the community?4. Does the Functional Sponsor(s) agree with the community's scope, purpose, and membership?5. Are Core Group Members and the Community Leader enthusiastic, content experts, and able to develop the community?6. Do members' Functional Managers agree that time away from the job is valuable?7. Does the community have the right content experts to provide perspective and meaning to its membership?8. Does the community have enough members to stay alive?9. Are collaborative tools in place and easily accessible? Are members willing and able to use them?10. Are needed resources available, e.g., meeting rooms, participation in conferences, travel dollars, conference fees, etc.?

¹⁵ Adapted from DAU 2005.